THE

NAUTICAL MAGAZINE.

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NAUTICAL MAGAZINE

AND

Naval Chronicle,

FOR 1842.

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ON SUBJECTS CONNECTED WITH

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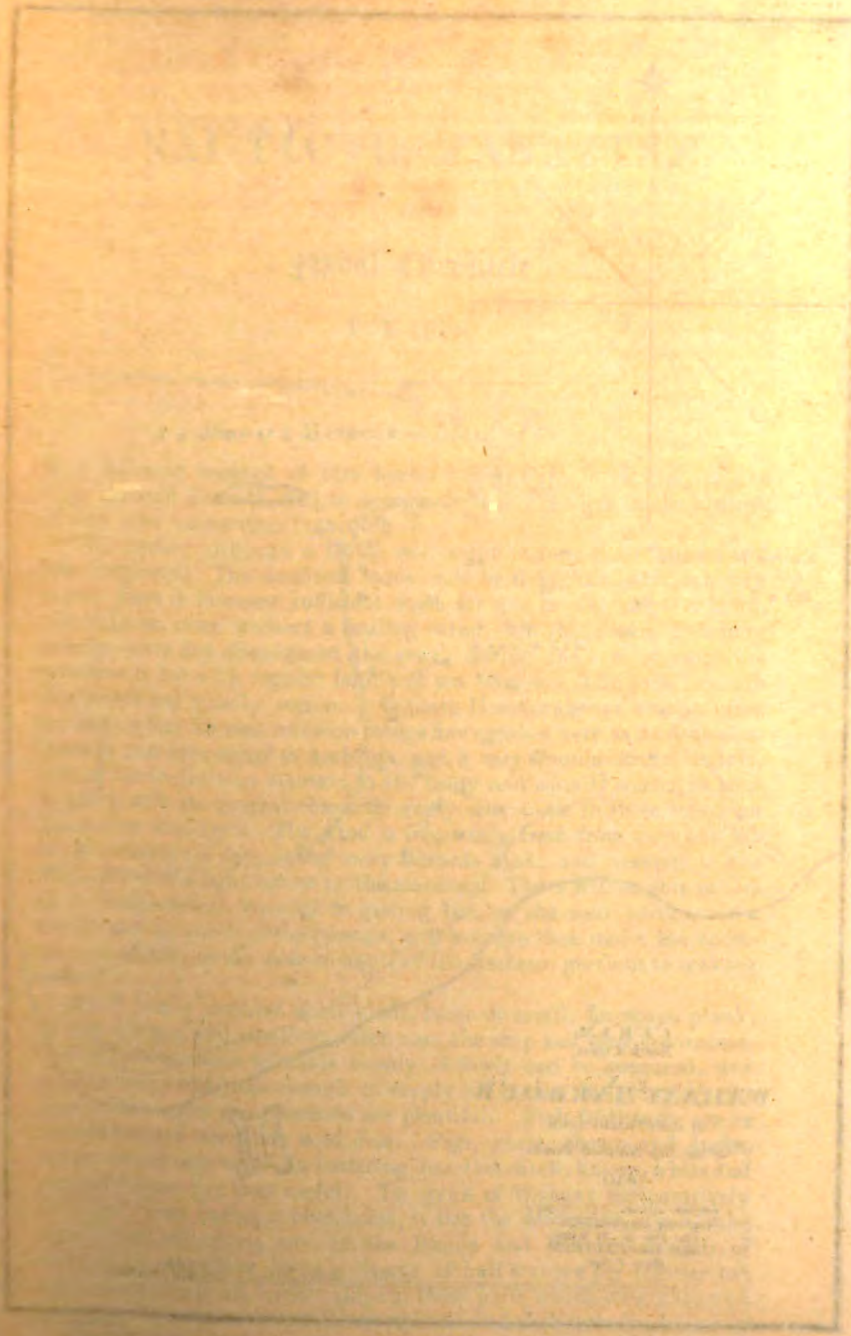

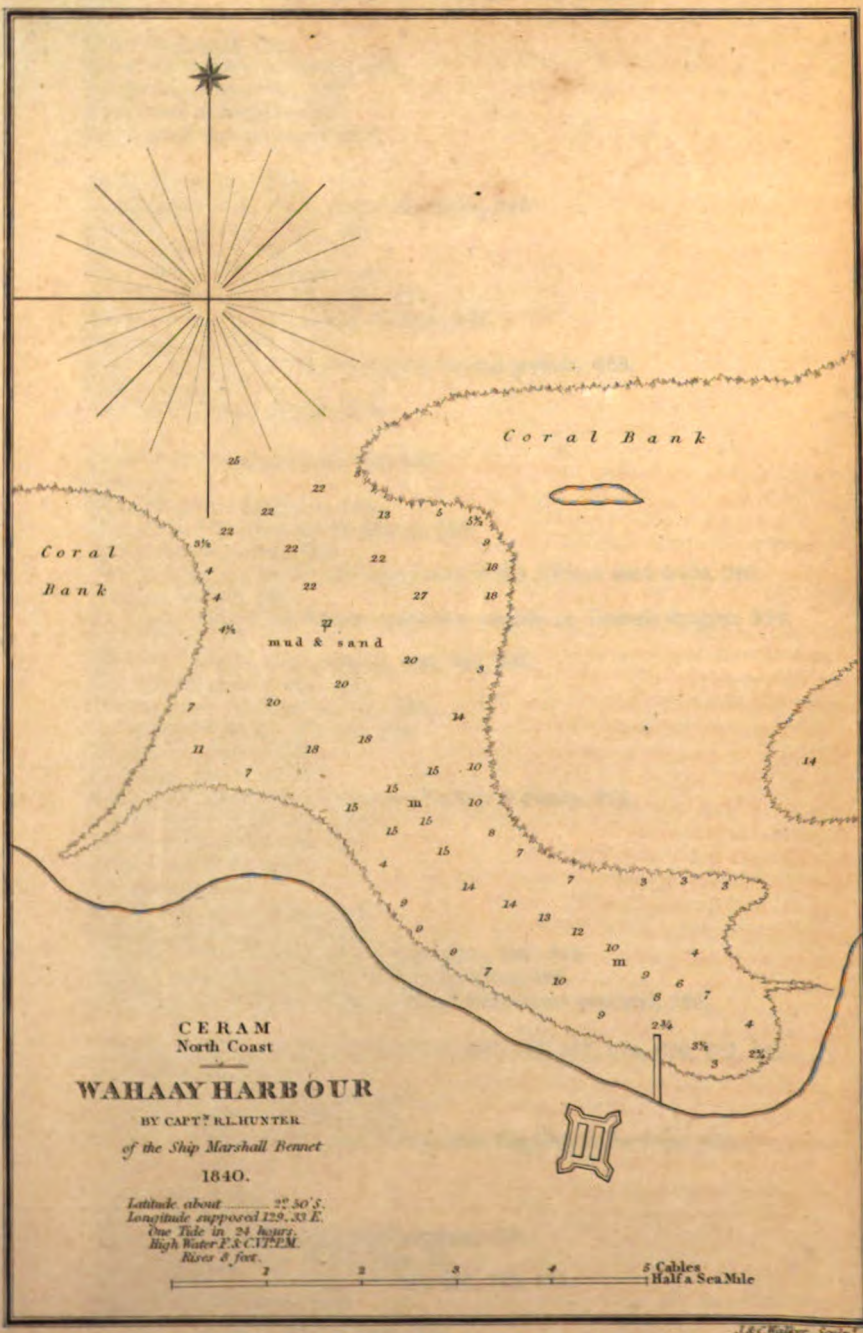

J.& C. Walker, Sculp.t

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WAHAAY HARBOUR.—*Island of Ceram.*

THE following account of this harbour from Captain Hunter, of the ship Marshall Bennett, will be acceptable to our readers in the absence of any other information regarding it.

This harbour although a Dutch settlement is very little known and less frequented. The confined space will be thought objectionable by some, there is however sufficient room for five or six ships to moor. No ship can enter without a leading wind, but this occurs I believe nearly every day throughout the year; during the east monsoon the weather is fine with regular land and sea breezes. The west monsoon is the wet and squally season. Captain Horsburgh has been in error in stating that the west monsoon brings fine weather here as at Amboina. This is true with regard to Amboina, and a very singular exception it is, but at Ceram the west monsoon is the rainy and squally season, in conformity with its general character every where else in these seas from December until April. The wind is frequently fresh from west and W. N.W. during the day, dying away towards night and veering to the W.S.W. with a light breeze in the morning. There will at this period be a little caution required in getting out, as the west wind sends a swell into the mouth of the passage, and you are then under the necessity of warping to the western angle of the harbour previous to making sail.

Wood here is plentiful of all kinds, large or small, for spars, plank, or any purpose, and excellent water near the ship and very convenient.

For refreshments a tolerable supply of fowls can be procured, and we obtained sweet yams enough to supply all hands daily during our stay. Pine apples and plantains are plentiful. Fish frequently are in abundance, and sometimes wild deer. Pigs, goats, sheep, and ducks, are scarce and expensive. In bartering, handkerchiefs, knives, white and printed calicoes are most useful. To speak of Wahaay comparatively with the known harbours hereabouts, it has the advantage over all the other Dutch settlements amongst the Banda and Molucca Islands, of being a free port, there being a charge of half a rupee per register ton for harbour dues to all foreign ships at those ports which we are allowed to visit. From Amboina and Banda we are excluded entirely, unless in

great distress. The advantages over Geby Harbour, are superior refreshments, with an excellent and healthy place ashore for a scorbutic crew, and with every wish on the part of the officer who is commandant to accommodate ships; in fact, he appears very glad when a ship calls, and it is only justice to say that we were treated with marked goodwill and hospitality.

I made this harbour in 129° 33′ E. by chronometer from Amblaw, which places it something to the westward of the situation assigned to Flat Point of the charts. Wahaay, however, is at no point, nor is the land near it at all remarkable for flatness; in fact, the houses are on the rise of a hill of some height which by preventing stagnant water and being exposed to the sea breeze conduces very materially in my opinion to its salubrity. It presents from the offing a strait coast, therefore it is necessary in running for it to keep within four or five miles of the shore that the houses may be seen; the adjoining land also appears more cleared here than elsewhere. I may likewise remark that on leaving this port in the middle of January during the strength of the west monsoon, we weathered Mysole and Kanary Islands the same day without tacking. These islands are placed much too far to the westward in Mr. Norie's chart, in Capt. Horsburgh's they are correct, that is, they there agree with the longitude given to other points hereabouts.

Matthias Island,—*New Ireland, &c.*

We have also received the following useful information from Captain Hunter, of the ship Marshall Bennett, which contains ample proof of the very imperfect state of our charts of the part of the world on which it treats.

Ship Marshall Bennett, Strait of Mindoro, March 12th, 1841.

Sir.—I have again written out a few observations on some of the islands, &c., which have come under my notice in the devious track of a South-sea voyage. Two years having elapsed since leaving England. I may briefly remark, that I have endeavoured to be as accurate as possible in all I have advanced, invariably preferring a measured distance by chronometer, from any point or points of coincidence to lunars or other available observations. Our opportunities of sending home being few and far between, (in general, merely speaking a ship, and putting a letter on board,) I have written this in anticipation. Wishing your publication all the success which it deserves,

I remain, &c.,

To the Editor, &c. Robt. L. Hunter.

Having cruized near these islands several times, and for lengthened periods a few remarks on their situations, appearances, &c., may be serviceable to some of the readers of the *Nautical*. Beginning then with Matthias Island, which agrees pretty nearly with the situation assigned to it, but differs very much in shape, being triangular and trending to the south-east instead of the south-west. Near the south side

of it are several small detached low islets, within which there is every appearance of being a harbour, well inhabited, from the smoke at all times seen issuing from different parts. Yet, although I have been cruizing here a fortnight at a time, I have never seen a canoe, which is remarkable, the natives hereabouts being generally very adventurous in that way.

About ten miles to the eastward of the south-east part of Matthias Island, with apparently a clear passage between them, but through which I have not passed, (giving this opinion merely from a masthead view,) there is a low island about twelve miles in length, with two slightly undulating hills, that is not inserted in any chart I have seen. This is not one of the mere coral islands, but of some bulk, and higher than they are. I have sighted it three times, and on different voyages have never seen smoke or other signs of inhabitants. Still, I feel positive of there being plenty, through the contiguity to Matthias Island, and being of that description which is most fertile in these regions. I should place the middle of it in latitude 1° 41′ south, and longitude 149° 52′ east.

Still further eastward is situated a small and low island, perhaps about four miles in circumference, and of the flat coral description, covered with wood, and I think without inhabitants, which agrees very nearly with the situation of Squally Island, in Mr. Norie's book. In the chart, two islands are marked here, which is an error, there being but one and that small as stated. When fifteen or eighteen miles to the westward of it, the low island last mentioned and Matthias Island, were distinctly in sight at the same time.

Off New Hanover I have not cruized much, but have passed between it and the Portland Islands, (which are small and low, encircled with a reef,) and found the passage quite clear about twelve miles in width. Small and low islands of the same kind lie off New Hanover, from the coast to the north-east point, which is also encircled with reefs;—these however are pretty close in. New Hanover itself is of good height, visible sixty miles. In longitude it agrees with Matthias Island, Cape Denis, &c.

The strait between New Hanover and New Ireland seems to be well named as Intricate Strait. From the southward it appears filled up with islands,—this must undergo the survey of a vessel fitted for that purpose, before it can be thoroughly known.

We come next to New Ireland, the northern point of which is low and level, in latitude 2° 36′ south, and longitude 150° 46′ east. From hence it trends generally to the S.E.b.E., there being however small indentations. The whole of the north side of this island is delineated on the chart fifteen, and in some places twenty miles too far to the northward. At the north-eastern part the configuration is incorrect, the north-east point being in about 3° 56′ south, and 152° 56′ east, and Cape St. Mary, which is the eastern point of the island, in 4° 2′ south, and 153° 2′ east.

For a general description of the north side of this island, it is bold to approach all along, (of which there can be no more certain sign than that sperm whales are always found making their passage along this shore close in,) with a clear passage between it and the islands in the

offing, decidedly preferable to the passage on the outside of these islands, unless you keep very near to the equator, as some of them are low, the Feads for instance, with surrounding reefs, and not well explored; whereas ships have been habitually cruizing off the north side of New Ireland during the last sixteen or eighteen years. I have cruized here three months at a time. In aspect, the north point is low and flat, having almost the appearance of the coral islands, with cocoa-nut trees. This description maintains about ten miles to the eastward, or until in longitude 150° 55′ east; it then changes in character, and rises into bold land which continues undulating, but still increasing in height as you proceed eastward, until in about 152° 8′ east it has reached 2,500 feet, from hence it again lowers in two places remarkably, but still maintaining the character of bold land, until you approach the north-east point, and Cape St. Mary, where it is elevated into high and towering peaks of about 7,000 feet, this being the only part having the appearance of any bulk, or in which you can see one hill rising over another, the more western being, I am convinced, a mere narrow strip of land. From Cape St. Mary to Cape St. George, the same high and rugged hills continue. The only sign of anything like a harbour along the north side of New Ireland, is to the eastward of a low point, which is that next to the westward from the north-east point, the blue water appearing in this place of some extent within the reef. In two or three other places, low land juts out about a mile from the steep cliffs, which probably might afford anchorage close in, but altogether very exposed. The coral flat which surrounds the island (and I believe all the tropical islands in the Pacific are so surrounded,) in some places extends out a quarter of a mile or rather more, with good depths inside, and forming excellent boat harbours. In the offing, Gardners Island is the next to the eastward from Squally Island, called in Norie's chart Gardners or Sugaret Island, with Fishers, or, as the chart has it Vischers Island, near the north-west end of it. These islands are also very incorrectly laid down. I make Gardners Island to extend from 151° 52′ east, to 152° 4′ east, and from 2° 34′ south, to 3° 00′ south, which is considerably to the southward of the situation as inserted. Fishers Island is placed to the north-westward of the west point of Gardners Island; it is not so when the west points of these islands are in one from the southward,—their bearing is N.N.E. by compass. With the ship's head north, I made the variation by azimuth 5° 8′ east.

Fishers Island is small, the middle of it in 2° 32′ south, and 151° 55′ east, with a very narrow strait or gut between it and Gardners Island, through which I have been told the Vigilant of London passed. Due west by compass, distant about four miles from the middle of Fishers Island there is a shoal, having only four and three-quarters fathoms at the outer part, and perhaps less in some spots. As we were driven on this shoal by a current and heavy swell from the north-west during a calm, on the 28th of July, 1840, a more minute account may be acceptable, others being liable to be placed in the same predicament. 6h. A.M. wind died away,—ship driving to the south-east with a strong current and heavy swell from the north-west. Fishers Island about four miles off to the E.S.E. 7h. A.M. green water reported

ahead, (from the mast-head,) about three-quarters of a mile off which could be immediately seen to be a shoal. Sent a boat away to sound it,—she returned, and reported four and three-quarters fathoms, with some spots apparently shoaler. Finding the ship was driving to the eastward of this part, the boats being of no use in towing, through the violence of the swell, sent one away again to sound the part we appeared driving towards, reported sixteen fathoms,—got soundings from the ship nineteen fathoms and let go the anchor,—veered fifty fathoms, current and swell setting about two knots an hour towards Gardners Island. Dispatched a boat to sound the passage between the latter and Fishers Island. Bearings of nearest land as we laid at anchor, north-west end of Fishers Island N.E.b.E. $\frac{5}{4}$ E., two and a half miles, south-west end of same island S.E.b.E. $\frac{3}{4}$ E., two and a half miles. Passage between the islands S.E.b.E. $\frac{1}{4}$ E.; north point of Gardners Island S.E. $\frac{1}{4}$ E., three and a half miles; western point of the same island south, six miles. The shoal patch on which we first sounded, N.W.b.W. a quarter of a mile, and another patch having seven fathoms, bearing S.E.b.E. half a mile, with soundings from the ship to it, depths seventeen to nineteen fathoms, and probably much less in some places. A strong squall soon afterwards took us from the northward. Hove up and made sail, leaving the boat to follow;—she had therefore not time to examine the whole of the passage, but reported it without soundings as far as they could see, and about a quarter of a mile in width.

Gardners Island is narrow, high, and rugged, forming something in shape like the south-west quadrant of the compass or rather more, as the north point is not the western point, and having in the concavity on the eastern side several small and low islands, possibly affording a harbour. It is about 2,000 feet high, and may be seen about a degree from the mast-head; a narrow strip of green water extends about a mile to the eastward of the south-east point, in all other parts it appeared from our masthead to be steep to.

Fishers Island is of moderate elevation and level appearance. Still further eastward we approach Du Bouchage of Norie's chart, or Days Island, as no other Days Island exists here, the chart having one too many. The middle of this is in about 152° 34′ east, and 3° 4′ south, and extending to 3° 10′ south. This is the highest of the islands lying off the north side of New Ireland, (about 3,200 feet,) and of very rugged and uneven appearance, in shape triangular, and having a fine stream on the north-eastern part, at which several ships have watered. It is steep to I believe all around, with a passage of about a quarter of a mile clear between it and the southernmost of the three small islands, which lie to the northward, through which I have passed. There appeared also to be safe passages between these three islands; this opinion, however, is given from a mast-head view of some distance. The outer or northernmost, called Garret Denis, is nearly due north from Days or Du Bouchage, distant about twelve miles of level aspect, small, and slightly elevated. The same description applies to the others.

The only other islands to be seen in making stretches of twenty-five or thirty miles from New Ireland, are Oraisons and Bournand, or St. Johns Island, both of good height. I have not cruized near enough to

enter into any particulars concerning them, they appear to be laid down pretty well relatively from the others, and to be with them placed considerably too far to the eastward. The inhabitants of all these islands are *woolly*, and I mention this attribute as being the only one which holds good invariably. In complexion, they vary from dark copper-colour to the glossy African black, of tolerable stature, and well formed aloft, but badly shaped about the legs, and with these placed in the middle of the foot. They wear no description of clothing whatever, even the women, never doing more in a few of the younger ones than rigging a leaf in the presence of strangers. The men paint themselves in a variety of ways, according to their fancy, white and red being the favourite colours about the head; others, however, preferring charcoal and grease. From what could be seen of them, in a very frequent intercourse with the canoes, I should not estimate their intellectual capacities very highly. They appear, indeed, in levity and childish manners, to resemble their woolly brethren of Africa. The canoes, generally, are small and tolerably well formed, with out-riggers on the larboard side, carrying from one to ten men, paddles only being used. There is no such thing as a sail at present amongst them, although at the Admiralty Islands, which are contiguous, every canoe has one. In decorating the heads and sterns of the canoes, considerable difference is to be seen in localities. From abreast of Days Island to the westward, they sport a finely carved figure-head, and a figure astern also. Again, eastward of that island, they are rounded up like a Malay proa. There is still another kind of canoe of great beam, and short, built of soft white wood, without out-riggers, flat bottomed, and in model out of water like a proa. These will carry forty or fifty men,—I have seen but two of them, which were coming across from the direction of Bournand Island, and loaded with baskets covered up, which they had a great disinclination to our seeing. Nothing could prevail on them to come alongside.

The intercourse which ships have had with these natives has been generally through the canoes. It is usual also, if a good supply of yams be required, to send the boats in. I have done so repeatedly, but armed, and with orders not to land. It is somewhat difficult in these cases to keep the crews from landing, through the number of enticing signals thrown out by the softer sex. There have been others who have landed, and at times altercations have ensued, ending in slinging stones, throwing spears, and firing muskets. I may mention an affair that took place in 1836, as it will partly shew the disposition of the natives. Two boats from the Kingsdown, of London, pulled in, and while busily trading, (keeping afloat,) a native stole a cutlass from one of the boats, with which he dived and swam towards the shore, followed by one of the crew who observed him. Just as he broke water the man caught him, and seized the cutlass. Then standing in shoal water, the natives immediately pointed their spears, perhaps about 150 of them. On seeing this, two muskets were fired amongst the crowd, which wounded two and made all lay aside the spears: the most singular part of the affair is, that these wounded men came to the boats to get their wounds dressed, and the trading went on afterwards as if nothing had happened. Other occurrences of a similar kind, some of

which I have been witness to, might be mentioned; but enough has been said to show that these islanders have little of that treacherous and revengeful disposition, so common to the natives of many islands in the Pacific. Still they will steal, and the endeavour to recover will occasionally cause a quarrel. After a pretty long acquaintance with the natives of all parts of the Pacific, I should say, the less you put yourselves in their power the better, and the appearance of being prepared and determined to resent insult, by far the most effectual way of preventing it. Should aggression on their part not be followed by atonement of some kind, it will very soon be repeated. The productions brought off to ships for barter are yams, tarra, plantain, cocoa-nuts, and at the north-east point pumkins, and occasionally a most miserable and lean pig, for which they always demand an axe. The others may be obtained for iron hoop, cut in small pieces, knives and handkerchiefs.

The island also abounds with wood. Indeed, it is a continued forest of fine timber, fit for any purpose. For fighting gear, spears are used, very neatly made of bamboo and cocoa-nut wood;—also clubs and slings for throwing stones. There are no bows and arrows at New Ireland, yet at New Georgia, Bougainville Island, &c., they have the finest in the Pacific. From their own statements they are Cannibals, at this and all the adjacent islands, but aver that only those killed in war are eaten. No doubt can be entertained of the fact, having asked the question of many, most of whom I am persuaded understood me perfectly, and none had any hesitation in avowing it. A continual warfare is kept up by the different tribes. Of the forms of government I am unable to say much; the chiefs appear to possess a good deal of authority, with very little form or etiquette. I think they become so through skill and determination in fighting, but in some cases it appears hereditary. Very little attention seems to be paid by them to private dissensions or depredations, as you will frequently see a canoe with five men steal the hoop from another with one, in the same canoe. They generally wish to obtain payment for articles themselves, and are averse to trusting the man who sits by their side. Their language is soft, and I think easily pronounced by Europeans,—numerals nearly the same as the Malay; but generally it must differ very much from that of the Society or Sandwich Islands, as three natives of these islands whom I shipped in Gowers Harbour, and who had been ashore about a month, held all communications in broken English, the New Irelanders having got hold of a few words through intercourse with ships. As to amusements, masks, pandean reeds, and bamboo jews' harps, were brought alongside, but I am unacquainted with their games or dances.

LIST OF LIGHT-HOUSES ON THE COASTS OF PORTUGAL, *and of those ordered to be built.*

1841.	Names of Light-houses.	Lat. & Long. (West) Merid. of Greenwich.	Particulars.	Condition.	Remarks.
Existing.	Oporto, (right side) Senhora da Luz.	Lat. 41° 8′ 9″ Long. 8 33 58	Revolving; light eclipsed every six minutes.	Good.	Built according to the modern system in 1834, by order of the Regent Don Pedro, by G. Fontana.—Natural light.
do.	Aveiro.	Lat. 40 38 6 Long. 8 39 56	do.	do.	Two stone pyramids 100 feet square, and 71½ feet high, can be seen at the distance of nine miles.
do.	Cape Carvoeiro, (Peniche.)	Lat. 39 21 8 Long. 9 21 4	Fixed.	Old system.	Built on the summit of the Cape. It is about to be improved upon the modern system.—Natural light.
do.	Cabo da Roca, Rock of Lisbon.	Lat. 38 46 5 Long. 9 26 9	do.	do.	About to be improved as above.—Natural light.
do.	Senhora da Guia.	Lat. 38 41 5 Long. 9 24 0	do.	Do. improved.	As above,—(an excellent light-house.)—Natural light.
do.	St. Julian.	Lat. 38 40 0 Long. 9 16 45	do.	do.	As above.—Natural light.
do.	Bugio.	Lat. 38 39 0 Long. 9 14 35	Revolving, eclipsed every 11 m., greatest flash lasts 3 m.	Good.	Built in 1836 according to the modern system.—Natural light.
do.	Cape Espichel.	Lat. 38 24 9 Long. 9 9 9	Fixed.	Old system improved.	The same as Cabo da Roca,—(an excellent light-house.)—Natural light.
do.	Setubal, (St. Ubes.)	Lat. 38 31 0 Long. 8 50 55	do.	Old system.	Do. do. do.
Ordered to be built.	Vianna, (Monte Dor.)	Lat. 41 41 30 Long. 8 38 25	do.	do.	Ordered to be built by a decree of 12th of December, 1836, and contracted for by government with G. Fontana.
do.	Cape Mondego.	Lat. 40 11 9 Long. 8 50 56	do.	do.	The same as Vianna, (Monte Dor.)
do.	Berlenga Grande, Great Berling.	Lat. 39 25 0 Long. 9 27 5	Eclipsed; every 2 minutes—natural light.	Modern system.	As above.—The tower was completed in November 1840, and the machinery (revolving,) is in course of being placed in it. It is to be called "Duque de Braganca," and to be lighted next winter, of which notice will be given 1 month before.
do.	Cape St. Vincent.	Lat. 37 2 9 Long. 9 13 9	do.	do.	Nearly ready.
do.	Cape St. Mary.	Lat. 36 55 6 Long. 7 46 0	do.	do.	The same as Vianna, (Monte Dor.

Australian Navigation.—*Remarks of Capt. Drinkwater Bethune, R.N.*

From Port Jackson to Broken Bay, Port Stephens, and Hunter River.

Broken Bay which receives the river Hawkesbury lies from Port Jackson light-house nearly N. 8°. E. true, seventeen miles.

A ship driven to leeward of Port Jackson in a south-west gale may there find excellent shelter.

About half way betwixt Port Jackson and Broken Bay there is said to be a rocky bank extending some distance off shore. To clear it the mark is said to be Port Jackson light-house kept in sight.

The entrance to Broken Bay can be easily distinguished, as just to the northward of it, the coast stretches considerably to the eastward. Elliot Island also in the Bay is high and remarkable.

The distance between the North and South Heads is about 1¾ mile, and perfectly free from danger. To avoid a southerly gale you can anchor well within the South Head one-third of a mile off shore in five or six fathoms. W 22° N. (W.b.N.) one-sixth of a mile from South Head, and one-third of a mile off shore lies a patch of 16 feet. To pass up the bay to the southward of this patch, keep from one to two cables' length from the south shore, where you will not have less than 3½, observing that so long as the North Head is open of Elliotts Island you are to the eastward or southward of the patch.

When the land falls away to the south-west keep it close on board without fear, to avoid the middle grounds which lie half a mile off shore.

When the eastern shore of the north-west arm is open, you are past them and may anchor where you please.

When choosing a berth keep Elliotts Island shut in by the southern land as much as possible, to avoid the swell that sets in with easterly winds.

I will here remark that the directions for this bay in the Australian Directory, vol. 1, page 213, and the plan annexed to sheet 1, East Coast of Australia, require remodelling from the latitude, printed erroneously 33° 44′ throughout.

At present there is not the slightest appearance of a bar. And the entrance to Pitt Water has only two fathoms, rendering it quite useless but for small vessels. If the bar did exist in 1788, has it been since washed into Pitt Water and farther up the bay to form the patch of sixteen feet, which Captain Hunter has not noticed? Elliott Island certainly *may* be passed on either side, but no one would think of passing inside of it.

Water is not plentiful. The only run I noticed was in a small cove called Little Pitt Water, situated on the south side, in the prolongation of the east side of the north-west arm. Here small craft frequently anchor, when bound out, if weather be bad. Wood may be had for the cutting. Fish may occasionally be had in quantity, among them many sting-rays. Plenty of turtle were seen in the bay, but I do not think they land. Boats from Port Jackson come to catch cray fish.

North, 44° east, (N.E.b.N.,) seventy-eight miles from Port Jackson light-house lies Point Stephens, and north 22° west, (N.W.b.N.,) two and a quarter miles from Point Stephens, lies the entrance to Port Stephens.

Port Stephens consists of two large basins, joined by a narrow deep strait, in which is a small island. The following remarks apply only to the outer basin.

A ship of 400 tons has however been in the inner one, and taken in a cargo. On the inner basin is situated Carrington, head-quarters of the Australian Agricultural Company. The principal part of the establishment has been removed farther up the country to Stroud, that district being more central and better adapted for agriculture.

The nearest distance between the north and south heads, forming the entrance to Port Stephens is half a mile, half of which is occupied by a bank running from the South Head or Tomarce,—this is said to shift.

When the South Head was in one with the highest part of Point Stephens, and the largest and most northerly of three islets off the entrance, just shut in by the North Head, I was half a cable north of the pitch of the bank.

Steer for the western part of the North Head or Yacaba, which is bold, and just before you shut in the above-mentioned islet with the North Head, steer west by compass. When the highest part of Point Stephens is on with the South Head, steer for the next point you see on the larboard hand, called Nelson Head; it is bold and may be passed close.

Half a mile beyond Nelson Head is little Salamander Bay, where you may anchor in six fathoms, hauling inshore a little to keep out of the stream of tide.

To proceed further up, keep North Head just open of Nelson Head, which will carry you just to the northward of a patch of twelve feet, which lies one and one-third of a mile from Nelsons Head. By keeping the North Head too far open, I ran on shore on another bank, a long quarter of a mile north of the patch.

When the eastern part of a long sandy beach bears south by compass, steer for Soldiers Point, the southern point of the strait joining the two basins. Continue about one mile on this course, or till the eastern rocky point of Great Salamander Bay bears S.S.W. by compass, then haul inshore and anchor in the bay. This is the best berth, as you are clear of the stream of tide almost entirely.

The tides occasionally run very strong, and must be attended to when mooring

The remarks of Mr. W. Johns, Australian Directory, vol. 1, page 216, appear generally correct, they however, go to prove that the banks shift; at present the bank only extends half across the entrance, instead of two-thirds, and there is no necessity to haul in shore after passing the patch. The red spot in the cliff also is no longer red, and not easily distinguishable by a stranger.

Wood plentiful for the cutting. Water is not easily procured. Supplies of mutton and some few vegetables may be obtained at Carrington, some of the buildings of which are visible from the anchorage.

Anxious to visit Hunters River, but doubtful about taking the ship in, I sent round from Port Stephens to examine it.

Nobbys Island off the entrance lies from Port Jackson light-house N. 26° E. true, sixty-three miles.

The port of Newcastle, though useful for coasting trade or steamers, cannot be recommended for large ships; vessels of 300 or 400 tons, however use it during the season. It should not be attempted without a pilot: the danger lies in probably losing the wind under Nobby, and being carried by the tide on the oyster banks. It is however, proposed to cut Nobby down and join it to the main by a breakwater, about 420 yards of which are complete. Vessels in consquence will not be becalmed, and it is hoped that the new direction given to the stream may widen the present channel.

East from Nobby three-eights of a mile lies a rocky patch of eleven feet called the Old Man. A coal fire beacon is lighted at night on the Semaphore hill.

From Port Jackson to Port Philip and Hobartown, and return to Port Jackson.

Sailed from Port Jackson the 7th of April, got a breeze from north-east, which in latitude 35° 8′, longitude 151° 2′, shifted suddenly to west; then hauled to north-west and north, and blew a moderate breeze for twelve hours, then fell light. In 38° 6′ and 149° 8′ a good breeze from south-west for twenty-four hours, then calm light winds. In latitude 39° 2′, and longitude 149° 1′, a fresh breeze from E.N.E. This carried us rapidly to the westward close to the southward of the Moneur Islands and Rodondo up to Cape Schank, when it hauled to the northward about midnight, and died away towards 4 A.M. After daylight it freshened up from the north, blew strong, hauling to westward, and died away at noon. At 2 P.M. on the 13th, off the entrance of Port Philip a breeze came in from the southward, which carried us in, and up to Hobsons Bay. (See Capt. Hobson's chart.)

The entrance lies betwixt Point Nepean on the starboard, and Point Lonsdale on the larboard hand, off each point there is a reef extending perhaps half a mile; besides these there is no danger, though from the strength of the tide and unevenness of the bottom there is often a complete race in the channel, which might prove dangerous to a small craft. The chart appears to be correct, so far as I had opportunity of proving it. We stood in for Shortland Bluff, then kept to the eastward, keeping Point Lonsdale open until Point Nepean bore S.W.b. S., then steered N.N.E., and when past Swan Point kept Point Nepean just open. The eastern edge of the bank in the Western Channel is quite visible.

A buoy on the Popes Eye, another at the Western Point of the North end of the West Channel, a mark on Point Nepean to be kept on with a beacon off Swan Point, would render the channel perfectly secure. As it is, common attention would always take a ship through.

These buoys—four for the South Channel, and one for Prince George Bank, would render the navigation of the port quite secure.

It is a noble sheet of water with anchorage throughout in not more than fifteen fathoms. We anchored with Point Gellibrand bearing S. ½ W.; entrance to river N.W. ½ W.; store at Williams town W.S.W. Off the southermost part of the Point there is said to be a shoal which

deserves attention coming from the westward. This is probably nothing more than the spit which runs off, and is marked in the chart.

The town of Melbourne established in 1836, is situated about five miles up the river Yarra Yarra, on the right bank, just below a fall of a few feet, which preserves the water above it fresh. Here the river has scooped out a small basin, which will prove convenient. The country is undulating and slightly timbered, deserving the term of park-like. Small vessels may reach the town and lie alongside the banks.

Melbourne will probably be the centre from which a large extent of pastoral country receives supplies. Williams town was, I believe, laid out to be an emporium for Melbourne: it labours under the disadvantage of having no water. In my opinion it will not succeed, as Melbourne as it increases will work down in a direct line to the sea. At a small expense water for the shipping may be conveyed in the same direction. We experienced a very strong breeze while lying there.

Sailed from Hobsons Bay on the 19th, but the wind coming strong from the westward I did not like to attempt the passage, as it is more difficult to take from the northward, the land being low, anchored off Indented Head, in eight fathoms. The North Red Cliff W.S.W., Swan Point S.b.W. ½ W., Station Peak W.N.W.

The next day ran out under low sail with a northerly wind. Wind hauling more to westward passed to eastward of Kings Island, betwixt it and Reids Rocks. Bore up round Reids Rocks, which appear correctly placed in the Admiralty chart, and immediately after observed breakers ahead, probably Bells Rock; though my position is a little to the south-west of that on the chart; the Black Pyramid should be placed four miles more to the northward.

Ran to the southward, wind strong north-west: at 3 P.M. next day rounded the Cape, I imagine the latitude should be 7′ more northerly than marked on the chart. At 6h. 30m. observed the light on Cape Bruny (revolving), and at 10h. 15m. hauled up in Storm Bay, and shut it in: at 2 A.M. opened the Iron Pot light, and at daylight was close up with Betsy Island. Wind baffling anchored off Hobartown at 1h. 30m. P.M., after a sharp beat; very squally wind from north-west.

Twelve fathoms	Fort Mulgrave	S.W. ½ S.
	Government house	N.W. ¼ W.

Being too far out shifted into

Eight fathoms	Fort Mulgrave	S. ¼ E.
	Government house	W. ¼ N.

Hobartown.—In Storm Bay it is better to keep up on the western shore. There is no danger in the Derwent till near the town, when you must avoid Sandy Point, which runs out shoal some distance. There is not much room in Sullivan Cove, but in the stream of the Derwent, any number of ships may lie. The squalls come down very heavy round Mount Wellington.

During the winter it will appear quite fine at the town, and yet be blowing very hard down at Recherche Bay. The stream of the river generally runs out, but its strength depends on the freshes above.

Port Arthur.—Situated between Cape Raoul and Cape Pillar. The anchorage lies about two miles from the entrance, in a basin formed by Point Puer, and is very snug.

Eight fathoms	Church . . .	W.b.N. ½ N.
	Brick kiln . .	South.
	Point Puer } Flag-staff } . .	E.S.E.

Port Arthur is the penal settlement of Van Diemen Land. It affords many advantages for a naval establishment; capacious, well sheltered, easily defensible, and plenty of water. It is rather awkward at the entrance, for the constant heavy swell in light winds, might get a vessel into a scrape.

ON THE WESTERN SHORES OF THE BRITISH ISLANDS.—*By Capt. Vidal, R.N.*

HAVING in my search for the Aitkins Rock during the summer of 1830, been enabled to trace a small portion of the Great Bank of Soundings, which extends from the British Channel to the north of Shetland, I was directed to investigate the whole extent and general character of it; and for this purpose was assigned the command of his Majesty's schooner Pike, a vessel of 250 tons, with a crew of sixty persons. Having landed her ordnance, and obtained a few additional stores required by the particular nature of the service, we put to sea on the evening of the 26th May, touched at Plymouth and Cork on the passage out; and commenced our labours in the latitude of the Skellig Rocks on the afternoon of the 2d of June. This latitude was the northern limit of Capt. White's survey of the approaches to the British Channel, and I may add, of any authentic soundings on the western bank of Great Britain, except indeed the few obtained last year. In the run across St. Georges Channel no current whatever was experienced; the dead-reckoning and observations were, I may say, in almost extraordinary agreement.

The weather at this time was fine, and we proceeded from the Skelligs over the bank, sounding every half hour on lines, traversing in such manner, that the extent of it from the coast of Ireland was determined, together with its inclination and quality.

On the 9th we had advanced as far north as Urrishead when our progress was arrested by a change of weather which now became clouded, squally, and unsettled. The soundings on the traverses I have mentioned, were laid down on the chart by the noon latitudes; frequent observations during the day for the longitudes by chronometer, and the latitude by stars when practicable; and this was the method adopted in the projection of the work, throughout the entire voyage. This change of weather therefore, obliging us to discontinue sounding, we bore up for Lough Swilley to rate the chronometers, and to complete water. The advancing season had made every day important, and as I could not spare sufficient time at Portsmouth to examine their performance, there had been no opportunity of doing so, since their removal from the Royal Observatory at Greenwich on the 20th of May.

The rates were, therefore, settled at Buncrana by corresponding alti-

tudes of the sun, between the 12th and 19th of June, and were found to have deviated but little from those given at the Observatory.

The meridian distance between Greenwich and the station at Buncrana stands thus in an interval of twenty-three days:—

Molyneux (No. 971)	7° 24′ 14·3″ W.	7° 24′ 43·2′ W.
W. & E. Frodsham (2)	7 24 48·9	
Jas. Murray, (640)	7 25 06·6	+18 to Buncrana Church.
Buncrana church west of Greenwich		7 25 01·2

The magnetic variation by theodolite 28° 28′ W.—The magnetic dip 72° 18′.

While here the vessel was swung at her anchorage in the Lough to determine her local attraction. We put to sea from Buncrana on the morning of the 20th, to renew the trace of the bank, and experienced several days of boisterous weather, which considerably impeded our work, and prevented our reaching St. Kilda before the 28th, on the afternoon of which day we effected a landing there, and were politely received by the minister, Mr. McKenzie, a missionary of the Scotch Church, who is placed and maintained on the island, by the Society for the Propagation of Christian Knowledge in Scotland. The account given of St. Kilda by Dr. McCulloch in his "Description of the Western Isles of Scotland," renders any observations of mine upon the subject unnecessary; but I am happy, in the measured sketch we were enabled to make, to offer some information which he complains was so much needed.

It was some time before I could reconcile myself to the only mode of landing adopted by the inhabitants, but as upon trial, I found it the least objectionable, we submitted to their guidance, and the whole village having turned out, the moment the boat touched the rocks they dashed into the water, seized her by both gunwales, and being careful to preserve her on an even keel, ran her up the bed of tolerably flat rocks into security from the surf. So soon as we had explained to Mr. McCulloch, and he to his people, who we were, and what was the object of our visit, I proceeded with Mr. Church to the summit of Conochan, the highest peak of the islands, accompanied by several of the inhabitants who volunteered themselves as guides, and were civil enough to carry our instruments. Here we placed our theodolite, and obtained the angles between all the rocks and islets of the group, but there was too much haze to see the Hebrides or Flannan Islands, and both sun and stars being obscured by clouds, we were unable to determine the true bearings or the magnetic variation. The following day was devoted to observations at the little chapel, close to the minister's house. Their result places it in latitude 57° 48′ 32″ north, determined from altitudes of the sun on either side of, and very near to the meridian,—and the meridian distance of the same place from our station at Buncrana, by corresponding altitudes of the sun.

To the peak	1° 07′ 18·6″ W. + 17	by chronometers (971)	1° 6′ 52·2″
		" (2)	1 7 29
		" (640)	1 7 37
		" (6144)	1 7 19·2
Peak of St. Kilda W.	1 7 35·6		
Ditto	latitude 57° 49′ 02″ N.		

The magnetic variation of the same place 28° 07′ west, and the magnetic dip 71° 45′. It would seem, however, that the variation must have been influenced by the high lands, as several observations in the offing made it 30° 30′ west. The same cause would operate on the dip, and this circumstance should be borne in mind if drawing any conclusions from that specified. The plan of St. Kilda is constructed from a base, measured by the vessel's run, in combination with the angles taken by theodolite, on the summit of Conochan, and the little detail there is from sketches on that peak, and at some of our stations when sailing about them. From some of the best positions the latter furnished, we deduced the altitude of Conochan to be 1,220 feet, of Soa 1,031 feet, and of Boura 1,072 feet.

Mr. McKenzie informed me, that these islands are now the property of a Mr. McLeod, of Skye, whose father purchased them some years since of a McLeod, of Skye and Harris, for 1,300*l.* sterling; he further informed me that the taxman rented them of McLeod for 80*l* per annum, and made out of the inhabitants at an average 150*l.*, the rent being paid entirely in kind. The population consists of 103 individuals, some of whom understood English, with the exception of the minister, and one of their leading men. From the time of low water by the shore at this period, we make it high water on full and change at 5h. 30m., but I could learn nothing on the tides from the inhabitants or Mr. Mc Kenzie. From our own observations, the tide of flood sets from the N.N.E.

Having effected the principal object of our landing, we re-embarked on the afternoon of the 29th of June, and proceeded to the northward, sounding as before. On the 2nd of July we passed the islands of Sulisker and Rona, but under circumstances of weather which prevented our fixing their geographic position, and continuing our work to the north-east, passed the Shetland Islands on the 6th. On the 9th having traced the bank to the latitude of 62° 20′ north, and longitude 1° 45′ east, I did not consider my instructions authorized me to proceed further, and returned to the southward, traversing and sounding as before. On the 12th we put into Balta Sound. Balta Sound being a principal station of the Ordnance Survey, appeared to me a most desirable point, from which to measure the meridian distance to the Feroe Islands, and also for rating the chronometers prior to my proceeding to the southward. With this view, we repaired to the station in Balta, and there obtained corresponding altitudes of the sun for time. The latitude by altitudes on either side of, and near to noon,—the magnetic variation and the dip.

On the 15th we sailed for Feroe, and arrived at an anchorage under Naalsoe on the night of the 18th, having been considerably delayed by calms off the eastern side of Shetland. On the morning of the 19th, we weighed and ran across to Thorshavn, where I landed with Mr. Church, and on a hill close to the north side of the fort we made the same observations for latitude, time, variation, and dip, as at Balta. The day was calm and particularly beautiful.

The result of these gives the station at Thorshavn in 62° 00′ 40″ north.

Meridian distance from Balta by	971	in five days.	5°	58′	20·4″
"	2	"	5	58	17·7
"	610	"	5	58	21·3
Thorshavn, west of Balta		Mean	5	58	19·8 W.

The magnetic variation 29° 22′ west, the dip 74° 42′.

In the valley, west of this hill, the dip was 75° 08′, and in that opposite the anchorage, the magnetic variation was 31° 38′, but with respect to all the magnetic observations, it must be noticed that the rocks in the vicinity of Thorshavn, (and most probably over all the islands,) are strongly magnetic, and at our station so much so as to invert the poles on approaching the compass close to them.

The commerce of the Feroe Islands being a monopoly of the crown of Denmark, no foreign vessels are permitted to trade there. A small brig of about 200 tons is chartered by the government,—she performs three voyages from Copenhagen to them, in the favourable season of the year, and this vessel is equal to conduct the little trade they have.

Travellers wishing to visit these islands, would find their only method of doing so to be by this channel, unless indeed, they hired a vessel expressly for themselves, which was done by some Edinburgh and Shetland gentlemen a few weeks prior to my visit.

It was my intention to have made a plan of the bay of Thorshavn, but I was informed, any attempt to do so would give offence, and as it came on to blow strong from the southward on the evening of the 20th, I was glad to get safe out of so exposed an anchorage. The object of our run to these islands, was to obtain their meridian distance from Balta, and this being accomplished so soon as we were clear of the channel between Naalsoe and Osteroe, we steered to the southward to examine the position of the Monk Rock, off the south extremity of Suderoe, sounding the whole way from Thorshavn to the Monk. From the bearings and angles taken in the vicinity of this rock, Capt. Borns appears to have placed it half a mile south, and half a mile west of its true place, with respect to the land at the south of Suderoe, as published in Capt. Borns' chart by Faden, in August 1808. But in addition to this, our observations make it in latitude 61° 20′ 20″ north, and the meridian distance four miles east of Thorshavn. The chart referred to, has it in latitude 61° 23′ 10″, and meridian distance from Thorshavn 2·5 miles west. Our observations both for latitude and time, were taken on board the vessel with natural horizon, but the former is the result of six altitudes on each side of, and very near the meridian, in the parallel of the rock, together with altitudes north and south, when 1′ 25″ to the south of it, and the latter of altitudes in the morning and afternoon on both occasions hove to in its meridian. The day prior to our arrival, the wind had been blowing strong from the southward, and the weather continuing squally and unsettled, with rapid tides. The sea was too agitated to land on it with instruments, or to attempt it in safety.

We took our departure from these islands on the afternoon of the 24th, having previously ran through the channel between the main land of Suderoe and the Monk, in which the least water we found was

thirteen fathoms. The moon was at the full,—the wind rather fresh from the westward, making against the tide, which was running upwards of six miles per hour, and the high sea occasioned by this opposition, rendered it difficult to steer the vessel, and obliged us to press her with canvas to avoid being pooped. There were several patches, which from their appearance, indicated less water than we found, and when we arrived at thirteen fathoms, I began to entertain the idea that my curiosity had been too much for my prudence. I have not often observed the deepening water with greater satisfaction than on this occasion. On our passage from Shetland to Feroe, we occasionally tried for soundings with more than 400 fathoms of line, without finding bottom; but about two-thirds the distance from Shetland we struck ground in 466 fathoms, and had thence soundings along the remaining distance.

Returning from Suderoe to the British Bank, I resolved, if possible, to ascertain the depth along the whole run, and succeeded in doing so, the greatest being 683 fathoms. We arrived at Balta on the evening of the 26th, but in consequence of unfavourable weather, could make no good observations until the 30th, when we had corresponding altitudes of the sun. These observations, with those at the same place on the 14th of the month, determined the rates of the chronometers in this interval, and from them the meridian distance between Balta and Thorshavn already mentioned. While at anchor in Balta Sound, the vessel was twice swung on every point of the compass, to determine her local attraction, and a table was formed by which all the observations for variation were corrected. The dip of the needle was obtained at the station A on Balta Island, and found to be 72° 22′,—the magnetic variation at the same spot 26° 34′ west. In Mr. Edmonstone's garden, at Buness, the dip was 74° 04′, and the magnetic variation 28° 57′ west. These islands, therefore, like those of Feroe, have magnetic attractions peculiar to themselves. It was at Mr. Edmonstone's on Unst, that Monsieur Biot and Captain Kater made experiments on the pendulum. We were received and entertained by that gentleman with the greatest politeness and hospitality, and I had to regret my time did not permit me to see more of him, and the simplicity which surrounds him.

In his garden we found the following record of the visits of Monsieur Biot and Captain Kater.

To this stone
were attached the clock and
pendulum employed by the
celebrated French philosopher
Biot,

And on the one on which it rests,
stood his repeating circle.

The distinguished English
philosopher
Kater,
placed his
repeating circle
on this stone also.

The former was sent by the
institute of France, in the summer
of 1817, and the latter by the Royal Society
of London, in the summer of 1818,
To determine by their experiments and observations
the figure of the earth.

These memorials remain as pleasing
and lasting remembrances of the
splendid talents, great worth, and amiable
manners of these eminent men, by their friend
THOS. EDMONSTONE.

Quitting Balta on the afternoon of the 30th of July, we proceeded to the southward along the Western Bank, sounding on lines which passed as much as practicable over the spaces which had been left unexamined when we were sailing northward, so as to render the declination more full and complete. The weather during this time was squally and fogs frequent.

On the 14th of August we arrived at the islands Sulisker and Rona. Finding them erroneously placed in our charts and geographic tables, I felt it my duty to determine their position, the more so, as they are in the track of all vessels going to the westward from the Pentland Firth, and the north of the Hebrides, and of course, of those bound homewards by these routes. In the evening we anchored on the eastern side of Rona, and the next morning Mr. Church and I landed on it. On the south-east point of the island is the highest hill, by our measurement elevated 360 feet above the sea. To this we conveyed our instruments, and during the day, which was very fine, though a little hazy, we obtained the latitude by the sun, from altitudes close to noon, which gave 59° 07′ 02″ N.; the time from corresponding altitudes of the sun, made its meridian distance 5° 01′ 27″ west of Balta. The magnetic variation 29° 33′ west, and the dip of the needle 73° 50′. There did not appear any attraction in these rocks, and therefore the observations are valuable. While I was thus occupied, Mr. Church walked over the island; sketched its coast, and obtained many elements for the construction of the plan. The boats also took some some soundings. The true bearings of Sulisker, and angles to its extremes, and the small rock to the south of it, were taken by the theodolite on this eminence, and also angles to all the points of Rona itself which were visible from it. The distance of the schooner at anchor was determined by the masthead angle, and was adopted as the base in the projection of the island. The evening becoming cloudy, we returned on board for the night, and early next morning, weighed and ran to Sulisker. On this rock I also landed, obtained the latitude by similar observations to those on Rona, giving the highest hill at its south end in 59° 05′ 24″ north, the meridian distance from Rona, by corresponding altitudes 20′ 25″ west, and the magnetic variation by theodolite 29° 45′ west. There are some rocks on the north-west side of Sulisker, which should not be approached until more perfectly examined, particularly the outer one which lies half a mile N. 40° W. true, from the high bold point at its south extreme: between this point and the south rock I saw no breakers when blowing fresh from the westward, and I believe the passage safe.

To the north of Rona and Sulisker is a rocky patch of uneven ground, on which we found thirty fathoms, the plan of the islands was extended to this, for the purpose of exhibiting it in relation to them. During our stay at these islands the weather was hazy, which prevented our seeing either Scotland or the Hebrides. Rona has one family on it—a man, his wife, their mother, and two children. Sulisker is without soil, a mere rock, the resort of numerous sea-fowl, particularly the gannet, and at the period of our landing we met a party of Highlanders from Lewis with a boat of about five tons which was nearly laden with the young of these birds. The hill on Rona where we observed, was equally the favorite retreat of the *procellaria pelagica*. One of the boys of the island brought to us the parent birds, young ones of all ages, and many eggs; much trouble was taken to rear them, but without success, though I kept one young bird alive for fourteen days, none of the old ones outlived the fifth day of their captivity. It would have been desirable to have added to the soundings in this part, but I had scarcely returned on board, when there came on blowing weather from the north, we, therefore, resumed our traversing southward. On the afternoon of the 17th, we passed the Flannan Isles: from our run they appear to be several miles to the northward of their position on the chart, but boisterous clouded weather, did not allow me to obtain observations sufficiently good to decide upon this. On the morning of the 18th we made St. Kilda, with a view to land for further observations, particularly on the magnetic variation and dip, on the summit of Conochan, and also to improve our little plan by further detail. On the 19th, the northerly gales increasing with a high sea, and no appearance of change to better, we were compelled to abandon our work, and bore up for Loch Swilley to meet our supply of provisions, of which we were now in need. When running past the St. Kilda group, at a steady rate of eight miles and a half per hour, we had a good opportunity to prove the accuracy of our former work, which we did not fail to do. The plan is only a measured sketch, but I believe it will be found quite sufficient for the purposes of general navigation, and was certainly much wanted. We anchored off Buncrana in Loch Swilley, on the 20th, and found there Lord Edward Russell, in the Savage, awaiting us with the expected supplies. Corresponding altitudes of the sun were observed on the 22d and 27th, and from them the meridian distance from Balta here, re-measured, stands thus in an interval of twenty-three days:—

Mean of four	6° 39′ 21·2″	(971)	6° 39′ 21·2″
		(2)	6 40 02·9
		(640)	6 36 58·0
		(6144)	6 40 01·7

As the season was now advancing my next object was, to determine the exact position of Rockall with the danger near it, and to explore the bank on which they stand. For this purpose, having obtained some excellent corresponding altitudes of the sun on the 27th, we put to sea that evening, and proceeded northward, sounding every half hour along our course, until we arrived in the parallel of latitude of St. Kilda, when we made to the west against adverse winds and boisterous weather. In our progress some attempts were made to fathom the

channel between St. Kilda and Rockall, but no bottom was found with 860 fathoms of line.

On the afternoon of the 2d we reached Rockall Bank, and had 230 fathoms near its northern extremity, but the wind blowing strong from the W.S.W., we did not get sight of the rock until the afternoon of the 5th. The sea was then breaking heavily upon the sunken rock named in Purdy's Memoirs, "The Helens Reef." On the 6th, a raft with a flag on it was moored to the southward of Rockall: the 7th was stormy and we could only take a few soundings in the vessel. On the 8th near the eastern edge of the bank we fell in with the wreck of a fine vessel bottom up, apparantly of about 250 tons, quite new, and of American build. The sea broke over it so continually, that it was not practicable to remain on it, only a few feet of the keel and stern-post being above water; we were unable to ascertain the nature of the injury she had sustained. On the 9th, a second raft and flag was put down on the east side of Helens Reef, in a line of bearing with the reef and Rockall; the boats we sent to sound all round the reef, and I had hoped to bring this work to a speedy close, but it was soon discovered that the raft had lifted its moorings and gradually drifted a considerable distance from its position, and all the work depending on it consequently rendered useless. It was taken up on the 10th, and the weather being unfavorable we stood to the eastward to trace the north-east limits of the bank. On the afternoon of the 13th, the third raft and flag was laid down and secured by all the grapnels of the vessel backed by chains, but the following morning this also was found adrift, having been cut by the rocks, Finding it impracticable with the limited means we possessed, and opposed by frequent bad weather, and high seas, effectually to secure a beacon of sufficient magnitude to be useful, we were compelled to use the rock and the south raft, and Helens breakers when they could be seen. On the 15th however, having a tolerable favorable morning we anchored the schooner between Rockall and Helens Reef in fifty-one fathoms.

I despatched Mr. Church to sound round the reef, while I was occupied with various observations on board, as it was not possible to land, I was obliged to use the natural horizon observations with two sextants, using twenty altitudes on either side of and near to the meridian gave the latitude of Rockall 57° 36′ 20″ north, the meridian distance from Buncrana by morning and afternoon altitudes of the sun 6° 14′ 17″ west. The magnetic variation at our anchorage, and on other occasions when very near Rockall, was so great as to induce the opinion that it must possess great magnetic attraction.

So soon as these observations were made I next proceeded to determine the distance of Helens Reef from the Rock. For this purpose a base was obtained by anchoring my gig first to the northward, and then to the southward of the schooner, her distance on each occasion being deduced from the masthead angle. The angles subtended by the three objects being simultaneously taken from these data, Helens Reef bears from Rockall north 73° 28′ east, distant 1,710 fathoms.

The generally agitated state of the ocean prevented our determining the rise of tide, but from the appearance of the rock, at high and low water, I have estimated it at twelve feet. On one favourable day,

when our boat was sounding round Helens Reef, its top was just visible at low water on the retreat of the wave, and at high water of the same day, the least water that could be found on it was eighteen feet. The actual danger does not exceed forty or fifty feet, but the ground around it is rocky and irregular, and in stormy weather occasions the most awful breakers I ever witnessed. In fine weather, with the wind from the eastward, it only breaks at considerable intervals, and under such circumstances, with neap tides, may probably give no such indication of its existence. Its greatest dimensions are north and south. It is high water at Rockall on full and change, at 3h. 30m., the flood setting about W.b.S. ½ S., true. North of Rockall, distant from it eighty-three fathoms, lies a rock usually uncovered, on which the sea continually breaks. I was sorry I had not an opportunity of sounding between them, or of examining more fully the space to the north-west, north, and north-east of them; but having been in sight of those parts in very bad weather, without seeing breakers, I am satisfied there is no breakers there. I have frequently watched for a considerable time from the schooner's masthead. While we lay at anchor, the wind had been gradually increasing ever since noon, and made me anxious to have the vessel again under sail from such a place. So soon as practicable, therefore, we weighed. It was half-past six in the evening, and in the nine hours we were riding here, our cable though buoyed and double-rounded, was nearly chafed through at the clinch. On the morning of the 16th, we again approached the rock, with intention to ascertain the depth between it and the north one, and to sound the northern parts above-mentioned, but on closing, our southern raft which had been anchored with the kedge, was discovered to be adrift, and when hoisted in, the three and a half-inch hawser that secured it was found cut through some fathoms from the anchor, though this too had been buoyed. The raft was scarcely alongside when the weather became foggy, with strong breezes and a rising sea, which obliged us to keep an offing from the rock, and stormy weather continuing from this time with little intermission, we bore up for Loch Swilley on the 20th, and arrived there on the afternoon of the 22rd, with a loss of a jib-boom, and some half-ports stove in by the sea. The winter had evidently commenced, and no good observations for the chronometers were obtained until the 28th. The rates were then determined from them, and the observations at the same place on the 27th of August, and employed in measuring the meridian distance from Buncrana to Rockall, as already given, and for all the work done during the interval.

On the afternoon of the 28th we again left Loch Swilley to resume the delineation of the Rockall Bank, but before proceeding westward, one more attempt was made at further examination of the St. Kilda and Flannan Isles, which I was very anxious to give you complete; but in spite of every exertion the weather continued so decidedly opposed to my design, that I was finally compelled to relinquish it, on the 4th of October, our time and provisions not admitting further delay.

We left the western bank in the parallel of St. Kilda, near noon of of that day, and made Rockall on the morning of the 6th; we endeavoured, as before, to find bottom in the passage over, but were again

unsuccessful, with 960 fathoms of line. The weather had moderated during the last two days, and seemed to promise the opportunity I so desired, to perfect this work; but we had scarcely arrived in anchoring ground when a gale came on from the E.S.E., attended by rain; and with the exception of some intervals of a few hours, continued stormy with a high sea throughout the remainder of the voyage—the gales coming from all points of the compass. As it was quite hopeless to attempt anything further in the vicinity of the Rock, the actual extent of the bank was now my consideration, and after struggling against the weather, I have described, we succeeded by the 19th in giving its outline, perhaps enough for the general purposes of navigation, though not exactly what I desired to present to you. The southern and western parts of this bank descend rather slowly to a great depth, and its western extremity is identical with the Lions Bank, on which Lieut. Pickersgill sounded in 1776. The deep water soundings exhibit generally a fine light brown sand, mixed with black specks, and shells reduced to powder: in ninety and eighty fathoms, and under, the sand is of coarser quality. Gravel and pebbles are also of frequent occurrences, and in the immediate neighbourhood of Rockall, the bottom is generally rocky,—some sand does occur, and occasionally large beds of decayed shells and fish bones. We returned to Loch Swilley on the 21st of October again, with the loss of a jib-boom and a few half-ports. Having completed the vessel in water,—repaired her sails, and in some degree refitted her rigging, we sailed for England on the 26th,—the last observations for our chronometers were taken on the 24th. South-west gales had been blowing with considerable violence while at the anchorage, and similar weather continued with little variation in direction, until our arrival in Plymouth Sound, on the morning of the 6th of November. On the 7th, by order of the Lords of the Admiralty, I resigned the command of the Pike to Lieut. Wigley.

There were very few opportunities of making any useful observations on the tides, from the necessity of rapid movement, the great depth of water, and generally troubled state of that ocean; but we anchored once, north of the Hebrides, during a spring tide, which was found to be very regular in its flow and ebb,—its greatest velocity was one mile per hour, which may be taken as the general rate of the springs near the margin of the bank. At another anchorage, west of Arranmore, in the offing on a neap tide, its velocity was half a mile per hour, the flood making to the N.N.E., except where there are openings between islands, when it flows towards them. The currents we experienced seem due to the prevailing winds; all the month of July, and half of August, the winds were from the west, and south, and south-east, and we found during that period, a current moving from N.N.E. to E.N.E., from six to twenty miles per day. Along the bank, west of Shetland, it was N.E.b.N., true, and north of Shetland it inclined more easterly, to E.N.E. for the coast of Norway. In the middle of July, crossing from Shetland to Feroe, it was north 31° east, ten miles in twenty-four hours, and returning from Feroe to Shetland, N. 34° E., 8·8 miles in the same interval of time; and the winds varied in that period from S.S.W. quite round the compass for a few days.

From every information I could obtain, the south-west winds are

those which raise the waters along our western shores, from the south of Ireland to the north of Shetland, and easterly winds produce the contrary effect.

Our soundings, throughout the voyage, were taken by Burt's buoy and nipper; for as we were obliged to keep the lead going, day and night, I considered it much the most simple in execution, and least liable to error and to injury, add to which the Massey's Sounding Machines supplied to us at Portsmouth were defective.

The examination of such an extent of sea, in one season, must necessarily be considered only an approximation to truth; but there has been great care bestowed upon it, and sure I am, the charts it furnishes may be used with great advantage to our commerce, during the long dark nights of winter, in the fogs and storms so prevalent on the coasts it comprehends, while they cannot fail to be a source of ease and comfort to those, who under such circumstances will be at the trouble to use them.

In giving the longitudes of the few places on which we landed, or at which we anchored, I have been careful to mention their meridian distances. Rockall, St. Kilda, and all the work south of them is placed on the charts with reference to the meridian of Buncrana in Loch Swilley.

Thorshavn, Rona, and all the work north of St. Kilda, with reference to the meridian of Balta, both these points being stations in the Ordnance Survey.

Buncrana ⊙ at Millfield, was given me in	7°	28′	10″ W.
Ditto Church . . .	7	28	28 "
Balta Island station (Shetland) . .	0	46	58·7 "

On our return to Plymouth the chronometers were delivered to Mr. Cox, and on comparison with his clock on the 8th of November, their errors on Greenwich time were found

971 fast	0h.	48m.	53·5s.
2 slow	0	00	50
640 fast	0	00	25 5

On the 24th of October their errors on mean time at Buncrana were determined with their rates, and the meridian distance measured back in this interval of fifteen days, stand thus:—

By 971	7°	24′	32·4″				
2	7	24	01·6	Mean	7°	24′	38·9″ W.
640	7	25	22·6				
							7° 24′ 41″
On the passage out in twenty-three days				7	24	43·2 W.	
In 1830 going out in nine days, four chronometers				7	24	28·7	

The near agreement of these Meridian distances, seems sufficient to induce the belief that they are worthy of Colonel Colby's consideration, if I have the position of Buncrana correct.

Buncrana to Balta in twenty-five days, meridian distance	6°	39′	21·3″
Balta to Buncrana in twenty-three days "	6	39	5·9
	6	39	13·6
	7	44	41
Longitude ⊙ on Balta by our chronometers . .	0	45	27·4

The Rev. Mr. Zandt, in his Description of the Feroe Islands states				
The town of Thorshavn to be . .	19°	15′	15″	west,
Of Copenhagen which is east of Greenwich	12	35	6	
Leaving Thorshavn from Greenwich .	6	40	09	W.
Capt. Born's chart, by Faden, 1806 .	0	64	30	
Pike's longitude, Thorshavn from Balta .	6	55	18	

Orkney Isles.

[We have received the following from the master of her Majesty's ship Mastiff, employed surveying the Orkney Islands, and will readily attend to any further such useful suggestions, which the experience of Mr. Wells may enable him to offer.—Ed.]

Sir.—During a long period of service in these islands it has frequently occurred to me, that an invaluable benefit would be conferred on shipping visiting them, if *beacons* were erected on the different *half-tide rocks*, and *buoys* placed on the *shoal patches*; both of which evils, generally exist in the vicinity of the best harbours.

I feel convinced, abounding as they do, in excellent anchorages, sheltered from all winds, many vessels would in bad weather, gladly seek refuge here, which are now withheld from so doing, in consequence of these blind dangers, not having such distinguishing marks.

Kirkwall harbour would be easy of access, the entrance leading thereto, between the Moul head, and Shapinsha, being clear and distinct, but on rounding Thieves Holm, and hauling in to the anchorage, one of these evils (with only nine feet on it,) lies one-third distance from the starboard shore off Savorock House. This, if provided with a buoy, would enable strangers to run in with perfect safety.

Quanterness Skerry, extending nearly a mile from the point, (Quanterness,) shewing only at *half-tide*, if indicated by a beacon, would render the bay of Firth available as an excellent roadstead, with any depth from eight to four fathoms.

In the Pentland Firth, the *Loather*, a very dangerous *half-tide rock*, stretching off about a mile form the shore of South Ronaldsha, and which the tide sets directly over, if so distinguished, would be of great advantage to the navigation of the eastern side.

Several other places are much in need of buoys, and which, if with the above, were so pointed out, would I feel certain be appreciated as a great boon, by seamen generally.

Should you think these suggestions worthy of insertion in your valuable *Magazine*, (and which I trust may be the means of calling the attention of the Northern Light Company to the same,) you are at perfect liberty to make use of them; and by so doing you will oblige

Your's, &c.

J. S. Wells,
Acting-Master H.M.S. Mastiff.

To the Editor, &c.

The Chinese.—*Marriage Ceremonies.*

It is no uncommon thing in China, to contract matrimonial alliances for children before they are born, as follows. Two women mutually promise to marry their expected offspring, provided they be of different sexes; and to render the promise more obligatory, pledges are given; as for instance, a ring and bracelet for her who shall be the mother of a daughter, and two fans of the same shape and colour, for the one who shall give birth to a son. When this agreement is entered into, it is almost impossible to withdraw from it. The mutual promise is afterwards written in a book with gilt leaves, consisting of a single sheet of paper. After the birth of the daughter, her name is recorded upon this document, together with those of her father and mother, and the place of her birth. As a matter of etiquette, the book is then sent to the parents of the boy, who receive it, and on their part return a similar one to the other party. These formalities being finished, it is impossible to draw back, and the marriage must take place, except in case one of the children becomes a leper. We see then, that the affair of marriage is not a question of consent between the affianced parties, since it is concluded by the parents, long before the children are of an age to give it. This is the reason why there are so many unhappy women who find no end to their domestic troubles, but in suicide. Ordinarily, the parents take the first steps towards concluding a matrimonial contract, but there are persons in the country, men and women, intrusted with the business of match-making. These people make it their profession, get their livelihood by it, and generally follow no other. Marriage is a sort of trade, of which these go-betweens are the monopolists!

It is dishonourable to a girl ten years of age not to have been betrothed, and after that period, the saying is, "the market is dull." At the age of fourteen or fifteen years, a girl can no longer go out of the house, though she may be pardoned if curiosity has led her now and then to peep out at the door. But when strangers enter the house she is obliged to hide herself in the most retired apartment. Every thing being ready for the espousals, the parents of the lad inform those of the girl, that they may fix the day. At the time appointed, the go-between, attended by two men and as many women, goes to the house of the future spouse with the usual presents in baskets. In one are found the two gilt books, mentioned above, around which are arranged divers kinds of fruits, according to etiquette; and in the four corners are coins ranged in piles. Another contains a small fresh ham, the foot of which must be sent back to the intended father-in-law. A third basket has vermicelli in it. On the arrival of the bearers of the presents, crackers are fired to proclaim the news to the neighbours, and two red tapers are lighted in the hall of entrance. Afterwards, the betrothed apportions the ham to those present, but the number is often so great, that there is scarcely a morsel for each. She also sends the little book, containing the promise of marriage, to her intended husband; and her parents send him as many baskets containing articles of the same value as those presented to her. They are, however, of a

different kind, and consist of various fruits, of which they made six separate parcels, each having a certain flower, set upon red paper, fastened to its four corners.

The affianced boy likewise receives from his mother-in-law (that is to be) some small tokens of trifling value, which he immediately distributes to those who may be present. The seed of the gourd, dried in the sun, forms one of the latter. After these ceremonies, the youth cannot upon any account see his espoused; he has never seen her yet, nor will he till the day of their nuptials. If he has not done it already, the father of the girl is not tardy to demand her price, about 32 dollars being the most moderate sum for a wife. More commonly it is from 66 to 80 taels. In all cases, the young man cannot have his bride till the stipulated price has been paid, and he is furthermore obliged to pay the additional expenses incurred when she quits the paternal roof, and goes to live with her husband.

At length, when the money is paid, and the time for the marriage comes, the guests resort to the house of the bridegroom, to celebrate it. The courier, who acts as guide to the chair-bearers, accompanied by a person appointed to direct the movements of the bride, takes the lead; yet, before starting, they consult an astrologer, to ascertain whether the day is propitious or unfavorable. In the latter case, they take care to provide themselves with a large piece of pork, so that the demon, which in the form of a tiger, may be likely to oppose them, being wholly occupied in devouring the meat, may leave them unmolested. Meantime the maiden, rising before dawn, makes her toilet in the *haut ton* of elegance, dressing herself with her richest jewels and apparel. The best garments are concealed by others less beautiful worn over them, and the whole is covered by a bridal dress, which is simply a large mantle that completely envelopes her. She is also muffled up in an enormous hat, resembling a flat wide basket, and descends to the shoulders and covers the whole figure. Thus attired she takes her seat in a red (and gilt) sedan, borne by four men. All who meet her upon the road are obliged to yield the path, even though it be the viceroy of the province that passes by. The sedan is entirely closed, that she can neither see nor be seen. At a little distance from it, one or more chests of the same colour as the sedan, containing the apparel of the bride, are borne in state. Most commonly they contain nothing but old petticoats and small linen, the sport of all sorts of vermin. Custom requires that during the time of the procession, all those who form the train should weep and cry, and until they arrive at the bridegroom's house, no music is heard but that of wails. (!) If, however, the distance is great they make a pause, and only resume their lamentations when near the end of the journey.

At last, the courier, who is in advance of the train some minutes, arrives at the house all panting for breath, knocks loudly at the door, and cries out with vehemence, "There she is!" and at once a multitude of crackers, to the noise of which are added the discordant sounds of many instruments of music, announce to the neighbourhood the arrival of the bride. As she stops at the door, the bridegroom hastens to conceal himself in the most retired part of the house, and there closets himself, now and then putting his eye to the key-hole to

see what is transpiring without. The go-between, who accompanies the spouse, then takes a little child, if there be one in the house, and makes him salute the young bride, after which she also enters the chamber of the intended husband, to inform him of his bride's arrival. He at first affects indifference to all that is going on around him, and seems occupied in other matters; however he goes out with the go-between, advancing with a grave step, and approaching the sedan, opens the door with an air of agitation and trembling, the bride steps out, and they both go forward together to the ancestral tablet, which they salute with three genuflections, and then seat themselves at table opposite to each other face to face. The go-between serves them, and the bridegroom eats and drinks, but the bride merely makes a pretence of it, for the large hat, which all the time screens her and conceals her figure, prevents her from raising anything to her mouth. The repast being finished, the now wedded pair enter their chamber.

All the guests have a lively curiosity to know the result of this first interview, for it is then only that the husband removes the mask from his wife's head, and for the first time in his life beholds her features. Whether pretty or ugly, blind, blear-eyed, or deformed, he must make up his mind to have her for his lawful wife, and whatever may be his disappointment, he must disguise it, and outwardly appear content with his lot. After he has considered his wife for some time, the guests, parents and friends, men and women, all enter the apartment to do the same, and view her at their leisure. Every one is allowed to express his opinion aloud, but the criticisms of the women are most severe. They closely scrutinize the newly married lady, and make every little natural defect which they observe, the subject of remark and malicious exaggeration. They are the most severe in their censures, from the recollection that they themselves have been ill-treated in like circumstances, and find great pleasure in having an opportunity to be avenged. This cruel examination, during which she who is the object of it, must keep silence, and cannot in any manner complain of the severe remarks that are made upon her person, being finished, she is at first introduced to her father-in-law and mother-in-law, who respectively salute her according to etiquette, and afterwards into the presence of her own father and mother.

It should be observed that neither of the parents of the bride appear at that wedding. Neither of them can be invited on the occasion, that matter belonging entirely to the bridegroom, who invites his parents and friends a fortnight beforehand.

The cards of invitation are peculiar in their form. They consist of a large red sheet of paper folded into two small ones, in the form of letters, but on which there is nothing written. Only those who have received these cards in due form can be present at the nuptials. The bridegroom is always the bearer of them, and in delivering them to the guests, he at the same time makes to each a present of two cakes made of rice flour, cooked in water, and coloured red. The persons invited must, a few days before the fête, send him a sum of money equal to and even greater than the expenses they will be considered as occasioning. The least sum is eighty cash for a child,

and a hundred and forty or more for an adult. This contribution serves not only to cover the cost of the bridal feast, but the additional expenses.

The second day of the wedding, the husband carries to the same guests, another card of invitation like the first, and with the same formalities, and everything passes off as on the preceding day. On the second day, the bride goes to present her respects to the ladies who have honoured the nuptials by their presence, and makes a genuflection to each. They, in return, each make her a present of a ring, or something else, of indeterminate value. The smallest they can give, however, must be worth at least forty cash. The young gentlemen, invited to the wedding, unite together after the feast, and make the bridegroom a present of two Chinese lanterns. In the course of the night the guests in concert get up a hurly-burly to the wedded pair. In the midst of the uproar, and when the latter are supposed to be asleep, the former try to break into their apartment, either by forcing the door, or by making a hole in the wall, in order to carry off some of the garments, or other things belonging to the married couple. If they succeed, the husband is obliged to repurchase the stolen articles.

In the ceremonies that accompany marriage entertainments, the gravity of Chinese manners does not allow of those animated signs of mirth, which we often see among us under similar circumstances, but on the other hand they indulge in many indecencies which our morals forbid. Throughout the whole of the fête, music is incessant, and the scene closes with a comedy, performed by professional actors, whose theatrical pieces are in as bad taste as those of the merry-andrews that go about our country to amuse people with their farces. Before the guests retire, they make an image of paper, or something else, representing a little child, which they carry to the bridal bed to secure a son for the first-born. The comedians receive a handful of cash for their services, Should the father and mother of one of the betrothed happen to die, the marriage is postponed during the season of mourning. An interdict to the same effect is laid upon the whole empire when the emperor dies.

Marriage among the poor is more simple. They often purchase for a small sum, a little girl whom they train up to be their son's wife, when he is of a suitable age, and in that case the expenses are very much reduced. On the other hand, poor parents, who have a daughter already affianced, whom they find it difficult to maintain, send her with ceremony to the parents of her intended husband, who are obliged to receive and support her.

The 12th, 13th, and 14th days of the Chinese moon, are holidays, consecrated to the worship of the genii or spirits, to whom the people address themselves, praying for health and riches, the only blessings, alas! which these poor idolaters know or desire. At these times, in villages, where there are persons that have been married in the course of the year, the inhabitants, men and women, join together on one of these days, and go by night to visit the new wife, who, shut up in the house from which she cannot go out, as yet knows nobody in the place of her confinement.

The young woman receives her visitors standing by her bed, with her husband at her side. The men enter first, and carefully scrutinize her, but no one can say a word. She too is silent, but her husband being the speaker on the occasion, makes a pompous panegyric upon his wife, especially upon her external perfections, calling their attention to her pretty little feet, her beautiful hands, &c. Meantime they are going and coming incessantly, and from their eager appearance, one might take them for people going to see rare beasts shut up in a menagerie. As fast as they retire, they are regaled with a cup of tea and a pipe of tobacco. After the men have satisfied their curiosity, then comes the women's turn. The husband withdraws, and leaves them the open field with his young wife. They notice her person with the closest scrutiny from head to foot, and afterwards every article of her apparel. She must take good heed not to be abashed, and to be very discreet in her words, for her person, her conversation, her carriage, everything about her is noticed, remembered, and very soon divulged and maliciously exaggerated. Every defect which they can discover becomes the common topic of conversation for a long time, among those of her sex, so that we may say that her reputation for life turns upon her discretion at that time, and besides, however grave and reserved may be her manner, however wise her words, however accomplished her person, the tongues of jealous women will always find matter for their censures. The poor creature, well knowing that she cannot please everybody, sometimes resolves to say nothing, and remains motionless as a statue, with an elongated visage, her eyes half-shut and fixed upon the ground, making no reply to an address, and suffering herself to be examined without uttering a word.

After the wedding is over, the son-in-law will not enter the house of his father-in-law, and vice versâ, unless they are mutually anticipated by a formal invitation to a feast, in which no point of etiquette can be dispensed with. When this duty has been performed they can visit each other at pleasure.

As the husband's father is considered as having purchased his daughter-in-law, she belongs to him, and he has the right to dispose of her. Hence it is, that many sell their son's widow to other persons, and often at a low price. If she has had children by her first marriage, they appertain by right to the father-in-law, and she cannot take them away with her. Henceforth these children have no relation to her, and no longer regard her as their mother.

In China, no account is made of relationship on the mother's side, and therefore the children of sisters may lawfully marry each other; but on the side of fathers and brothers it has no end, and relatives by the male line, though of the hundredth generation from the common stock, can in no case intermarry. The laws severely forbid it, and such a marriage would be null.

A woman cannot visit her parents for at least a year after her nuptials, unless the most urgent circumstances, such as the death of one of her parents, oblige her to do so. Before she pays them a visit, they must call upon her. After that she is at liberty to go, accompanied by her husband, carrying presents with her, in great formality,

with a sedan, music, &c., and returns to her home only when her father-in-law recalls her in state, after having repeated her presents anew.

Magnetic Phenomena.

[For Declination read Variation.]

On the 25th of September of the present year, a most extraordinary disturbance of the magnetic instruments was observed at the Magnetic Observatory attached to the Royal Observatory of Greenwich. The disturbed state of all the instruments attracted the attention of Mr. Glaisher (chief assistant in the magnetic department), at an early hour of that day, and he immediately commenced a series of observations on all the instruments, at short intervals. After a time, the disturbance became so small that the extraordinary observations were discontinued; but it again increased, and observations were again immediately made with all the instruments, and repeated as rapidly as it was possible for one observer to do so. But for the promptitude and judgment displayed by Mr. Glaisher on this occasion, the record of this disturbance, unprecedented in this magnetic latitude, would probably have been lost. The following statement will give an idea of the magnitude of the disturbance: that within eight minutes of time the declination needle changed its position *more than* $2\frac{1}{4}°$ (having passed in both directions the range of the observing telescope, which includes that angle): that the vertical force was increased by *more than* 1-40th of its whole value, the instrument having then reached the extremity of its range: and that the horizontal force was increased about 1-30th of its whole value.

The following more detailed account is taken principally from the abstract furnished by Mr. Glaisher. It is to be remarked, that the time throughout is Gottingen Mean Solar Time, civil reckoning: that the readings of the theodolite for the Declination Needle increase as the North end of the needle moves towards the East, and that the reading for the Astronomical Meridian is 269° 51′ 45″ nearly: that the increasing readings of the Vertical Force Magnetometer imply increasing Vertical Force, one division being equal to 0·000471 of the whole Vertical Force: and that the increasing readings of the Horizontal Force Magnetometer imply increasing Horizontal Force, one division being equal to 0·002214 of the whole Horizontal Force.

Early in the morning of Sept. 25th, the needles were in an agitated state. During the appearance of an Aurora, additional observations were taken and the declination needle in less than three hours traversed an arc of 34′. After this, the needles were in a tolerably quiet state, and extraordinary observations were discontinued.

The observations at 10^h A.M., showing a change of 17′ of arc from the previous reading, at 8^h A.M., extra observations were again resumed, and continued till 11^h A.M.; nothing remarkable appearing during this time, they were again discontinued.

At 2^h P.M., Gottingen Mean Time, it was evident that all the needles were affected by some unusual cause of disturbance, and incessant observations were at once commenced, the instruments being observed

successively, as quickly as one observer could take them. At 3h 53m Mr. *Hind* joined, and subsequently Messrs. Dunkin and Paul. From this time to the discontinuance of the observations two persons were constantly engaged, one taking the observations with the Vertical Force Magnetometer, the other, those of the Declination Needle and of the Horizontal Force Magnetometer. About 2h 40m P.M., the motion of the needles became very peculiar; the vibrations of the Declination Needle and of the Vertical Force Magnetometer being quite destroyed; and those of the Horizontal Force Magnetometer being reduced to a continuous succession of jerks or starts. It will perhaps contribute to clearness if the motions of the three instruments are now separately described.

Declination Needle.

Every change in this instrument from one position to another was by sudden impulses; after each of those it was stationary, for intervals varying from 5s to 20s; then it was forced again to another position, and was again stationary without the slightest motion; and so on successively.

At 3h 30m the changes from one position to another became very decided, but the motions still partook of the same character; absolute rest and jerking motion followed alternately; in 2s or 3s the needle frequently moved through many minutes of arc, and then suddenly became stationary again.

At 3h 36m 20s P.M., a bold sweep carried the north end of the needle towards the west 56′ of arc, in one minute of time; at 3h 36m 20s the theodolite read 245° 22′—; and for two minutes after this time the cross carried by the needle was out of range of the telescope,* being in a position, in which, if the telescope had been exactly directed to it, the theodolite whould have read less than 245° 22′. At 3h 40m 20s P.M., Gottingen Mean Time, the needle had moved back 25′; at 3h 43m 50s the Theodolite read 246° 19′; at 3h 44m 20s the needle had moved so far (North end towards the East), that the Theodolite reading was 247° 38′+, and the cross carried by the needle was out of range of the telescope on the opposite side.

This extraordinary magnetic stride of more than 2¼°, was traversed in about 8m, the extremes being only separated by that interval of time.

At both extremities the needle was without swing, all momentum from such a wide sweep being quite destroyed. After remaining at this place for more than two minutes, the needle slowly returned, and at 3h 45m 54s the Theodolite read 246° 27′; at 3h 53m 21s it read 246° 37′. Within 5s after this, another bold sweep carried the cross out of the range of the telescope; when found, at 3h 54m 40s, the theo-

* This arose from the great inclination of the axis of the collimator, (carried by the magnet,) to the magnetic meridian; in consequence of which, the pencil of rays passing through the object-glass of the collimator, was thrown entirely on one side of the object-glass of the theodolite. In ordinary cases, the change of angle has been sufficiently slow to allow the observer to shift the suspension of the magnet; but the rapid changes on September the 25th, did not allow the observer to leave his place. Observations with the mirror in Gauss's manner are free from this inconvenience.

dolite read 245° 31′±; instantaneously it rushed back, with a violently agitated motion, across and out of the field on the other side; the circle-reading, at 3ʰ 55ᵐ 0ˢ, was 246° 43′±, and therefore this arc of 1° 12′± was passed over in 20ˢ of time.

This was the last very great excursion; the needle was incessantly watched for 9ʰ longer, during which time it was much agitated. The most remarkable changes are the following:—

h.	m.	s.			°	′
At 4	25	36	PM.,	Gottingen Mean time, Theodolite read	246	8
	31	36		" "		34
	49	36		" "		8
4	55	36		" "		21
5	46	37		" "		10
	50	37		" "		30
6	0	30		" "		8
6	33	37		" "		26
6	46	36		" "		32
7	16	38		" "		25
7	31	38		" "		46
7	56	38		" "		37
8	53	38		" "		28
9	18	38		" "		43
9	38	38		" "		51
10	10	39		" "		53
10	41	39		" "		39
10	46	39		" "		46
11	45	40		" "		30
12	52	40		" "		47

It is to be remembered, that increasing readings denote that the North end of the needle moves towards the East.

Vertical Force Magnetometer.

The Vertical Force Magnetometer was as much affected as the Declination Instrument. The disturbances of its vibrations were very similar, except that it was frequently much longer in the stationary state, its times of rest varying from 5ˢ to 2ᵐ; at the end of each of these it jumped on, then was again still, and so on.

This instrument had been much affected early in the morning; the extent of its excursions being between 37ᵈ.9, and 44ᵈ.1 on the scale. The following are scale-readings, commencing with noon:—

h.	m.	s.			d.
At 0	0	0	(noon),	Gottingen Mean Time, Scale-reading	44·0
1	47	30	P.M.	" "	47·8
1	57	30		" "	48·1
2	7	30		" "	50·0
3	15	21		" "	65·0
3	16	21		" "	55·9
3	21	26		" "	57·9
3	22	21		" "	58·3
3	22	51		" "	59·0
3	23	21		" "	60·3
3	23	51		" "	60.3
3	24	21		" "	60·4

	h.	m.	s.				d.
At	3	26	21	P.M.,	Gottingen	Mean Time, Scale-reading	63·0
	3	27	51		"	"	63·2
	3	31	21		"	"	67·0
	3	32	21		"	"	69·5
	3	32	51		"	"	71·2
	3	34	21		"	"	81·3
	3	34	51		"	"	95·0

3 35 21, the marked end of the needle (which is towards the east, the needle being transverse to the magnetic meridian,) was resting on the eastern Y, or apparatus intended for guarding the needle, dipping as much as the frame permitted it, and held there apparently by a great power; in this situation it remained for ten minutes, till $3^h\ 45^m$.

	h.	m.	s.				d.
At	3	45	42	P.M.,	Gottingen	Mean Time, Scale read	73·1
	3	46	23		"	"	68·9
	3	50	31		"	"	63·4
	3	57	38		"	"	57·7
	3	58	58		"	"	55·6
	4	13	36		"	"	62·9
	4	29	26		"	"	66·9
	5	21	37		"	"	55·6
	5	44	37		"	"	60·6
	5	55	37		"	"	53·2
	6	19	7		"	"	68·3
	7	17	8		"	"	53·8
	7	35	8		"	"	50·3
	9	22	9		"	"	45·6
Sept. 25,	11	0	39		"	"	40·9
Sept. 26,	0	58	25	A.M.	"	"	33·7
	1	3	25		"	"	36·1

About $6^h\ 19^m$ P.M., the needle assumed a steadier appearance, having a motion something like vibration, but exceedingly irregular.

Horizontal Force Magnetometer.

The Horizontal Force Magnetometer was not less affected than the other two instruments. The effect on its vibrations was, however, peculiar to itself: in the midst of its swings it was suddenly checked; and held in that place for a second or two, then hurried backwards, again suddenly stopped, and then forced back in the contrary direction, these checks were sometimes at 5', sometimes at 10' after arriving at its limit. They were most striking. From experience with this instrument we are accustomed to look for an almost imperceptible motion at the extremities of the vibrations, then to see it move slowly in the opposite direction, quickly in the centre of swing, slowly towards the end, then return, and so; but to see it, almost in the same instant, moving rapidly and absolutely motionless, was very striking and strange to the observers.

This instrument was less affected in the early part of the day than either of the others. About noon it showed signs of being under the influence of some disturbing cause: the scale then read $55^d.8$; at $1^h\ 50^m$ the reading increased to $58^d.6$; at $2^h\ 0^m$ to $59^d.3$; at $2^h\ 10^m$ to $60^d.1$; it then oscillated between 59^d and 61^d, till $3^h\ 11^m$, the scale then read-

59d.7. The disturbances now became as surprising as those with the other needles; a steady and rapid increase of scale-reading took place, with a strange jerking motion.

h.	m.	s.			d.
At 3	14	48	PM., Gottingen Mean Time,	the Scale read	61·4
3	21	3	"	"	61·2
3	27	26	"	"	64·2
3	28	6	"	"	64·4
3	28	46	"	"	64·8
3	38	16	"	"	73·6
3	38	56	"	"	73·2

Then there was a remarkable start to 78d.0; and here it remained stationary from 3h 39m to 3h 43m, when it started back.

At 3	47	41	PM., Gottingen Mean Time,	the Scale read	69·9
3	56	31	"	"	65·6
4	0	51	"	"	63·7
4	8	55	"	"	63·1
4	15	11	"	"	64·6
4	47	41	"	"	61·4

Then the reading increased a little, and then gradually decreased, till 5h 53m 12s P.M., Gottingen Mean Time, when it read 57d.8; it then increased to 6h 16m 12s, when the scale read 62d.1.

It then oscillated between 58d and 60d, until 7h 25m 13s, when a sharp diminution to 53d.9 took place. The readings alternately increased and decreased for the next six hours, oscillating all the time between 53d and 57d.

From the preceding account it will be seen, that the Magnetometers were more affected on this day than ever before, and that the great disturbance affected the three instruments at the same time.

The most abrupt and violent fluctuations of the Meridian Needle occurred between 3h 36m and 3h 46m. At 3h 35m 21s the Vertical Force Magnet went beyond the scale; at 3h 45m it again came on. The Horizontal Force Needle began its great deflexion before 3h 38m 16s; it was over at 3h 48m; and, probably, had there been an observer at each instrument, it would have been found that the effects on all were simultaneous. Such was Mr. Glaisher's impression while observing; but, as he remarks, the startling and bewildering effect of so great changes was such, that all that he could do was to make such observations as seemed practicable, with a view of discovering the *extent* of such extraordinary disturbances.

After this great disturbance the irregularities were still very great; the Horizontal Force and Vertical Force Magnetometers partook of similar disturbances throughout. With a few trifling exceptions, an increase of force in one was accompanied with an increase of force in the other, and so also with respect to the decrease of force.

The Declination Magnet has certainly, however, one great deflexion, in which the others have no share; that which occurred between 3h 54m 40s and 3h 55m 0s, where an arc of 1° 12′ was described in 20s. Nothing similar, at this time, is shewn by either of the other needles.

In addition to the observations contained in this account, ample and abundant observations were taken to obtain every variation of the Vertical Force, and also observations of the Declination and Horizontal Force Magnetometer, sufficient to show every great change, and nearly all the small ones, until Sep. 26^{d} 1^{h} A.M., when the observations were discontinued.

At 4^{h} 40^{m} an observation of the Dip was taken: giving a result greater than ordinary.

The day (Sept. 25th,) was cloudy throughout: about 9^{h} P.M., a few bright streamers were seen through the clouds, then nothing more till 11^{h} P.M., when an auroral arch, about 24° high, was visible for a short time.

It is desirable that accounts of corresponding observations of this disturbance should be collected. I invite observers who may have made observations on the same day, to send to me abstracts of their observations, or to communicate them, in the way which they think best to the public, or to the persons who are interested in magnetical phenomena.

G. B. AIRY.

Royal Observatory, Greenwich, 26th Oct. 1841.

NOTICES OF JAPAN.—No. I.

WHILST English travellers are constantly supplying information concerning the least interesting regions of the globe, there is an extensive, populous, and highly, though singularly civilized empire, which remains as much a *terra incognita* now, as it was a century ago. Japan has for nearly two centuries, since the simultaneous expulsion of Christianity and the Portuguese, A.D. 1640, been hermetically closed against foreigners of all climes, Asiatics as well as Europeans, with the exception of one Chinese and one Dutch factory, both established, and in fact imprisoned, in one seaport town; and of these exceptions, the limited numbers of the Dutch factory, of which alone we know anything, have been gradually reduced, whilst their visits to the capital have been in like manner restricted. During this long period, no intelligence respecting this insular empire has been attainable, save when some scientific physician, visiting the Dutch factory as its allowed medical attendant, gleaned such scanty facts as his Japanese acquaintance ventured to impart, in violation of their solemn obligation to reveal nothing, which stimulated rather than appeased the appetite of those Europeans who desired to be acquainted with a country so remarkable for the originality of its political institutions, the peculiar character of its people, and a form of civilization neither European nor Asiatic, and apparently altogether indigenous.

Of late, however, through the endeavours to open a trade with Japan, to which the spirit of commercial enterprise has given birth in other nations, Russia, America, and England, the spirit of authorship has inspired members of the Dutch counting-house at Dezima. The consequence has been, that three several Dutch works upon Japan have appeared, by two chiefs, and one warehouse-keeper of the factory; and

they would be allowed to resume their station. How [illegible] it might be, amongst their countrymen; [illegible] of a distant voyage would have inevitably incurred the absolute forfeiture of all their rights as native of the empire.

Upon approaching the land [illegible] the excitement of those about to set foot for the first time upon the [illegible] shores of Japan is raised to the highest pitch, and they are in the first place gratified by the appearance of the country, which is said to be very beautiful.

"Hills covered with fresh green," says Siebold, "cultivated to the very summit, [illegible] the foreground, behind which arose blue mountain peaks in many [illegible]. Dark rocks here and there break the glassy surface of the sea, and the precipitous walls of the adjacent coast glittered with ever-changing hues in the bright beams of the morning sun. The mountain sides of the nearest island, cultivated in terraces! tall [illegible] amongst which white houses shone, and isolated temple-roofs [illegible] magnificently out, with numerous dwellings and huts bordering the strand and the shores of the bay, afforded a really attractive sight. We [illegible] not the opportunity of obtaining explanations from our Japanese guests, and learned with surprise that the pretty white houses, which we had taken for the mansions of the grandees, were nothing more than storehouses, the walls of which are coated as a precaution against fire, with mortar prepared from sea-shells. Sailing-vessels and fishing-boats enlivened the mouth of the bay. At the call of our Japanese guests, many fishermen approached, and offered us their fish, with a liberality and [illegible] astonishing in their rank of life. They were most friendly, and evidently enjoyed [illegible] to us and their [illegible] countrymen the [illegible] of their [illegible]. They refused gold and gifts of value, but begged some empty wine-bottles. Common green glass bottles are much prized in Japan. The fishermen were as nearly naked as was compatible with decency."

It is here, without the mouth of Nagasaki bay, that the annoyances resulting from Japanese law and Japanese suspicion begin. Guards, stationed on the coast, keep a constant look out for ships, and as soon as the approach of one is reported at Nagasaki, a boat is despatched thence to demand her name, country, equipage, and every other necessary particular. This is accomplished without the exchange of a word or any personal intercourse, the papers [illegible] from the boat, and returned after [illegible] the proper answers. This done, the ship must wait further orders where she is, on pain of being considered and treated as an enemy, and the interval is employed in packing up bibles, prayer-books, pictures, or prints representing sacred subjects, should any such be on board, or [illegible] connected with Christianity, in a chest, which is [illegible] and sealed.

When the governor of Nagasaki has received these answers, a boat is again sent to demand hostages, and when these have been delivered and [illegible], a Japanese deputation, [illegible] by a [illegible] of the highest rank, called a gobanyosi, and [illegible] of the governor of Nagasaki, [illegible] the Dutch factory visits the ship, in order [illegible] that she is one of the [illegible] annual merchant-[illegible]. Should she in any stage of the proceedings prove to be an inter-

loper, she is at once ordered to depart; if in distress of any kind, is supplied with whatever she may need, and that gratuitously, the more strongly to mark the determination to suffer no trade; but she is not permitted to enter the bay, or to hold any communication with the shore, beyond asking for, and receiving the necessaries of which she is in want. If the investigation proves satisfactory, the Dutchmen return home, the *gobanyosi* takes possession of the guns, arms of all kinds, ammunition, &c, which together with the chest containing religious objects, he removes to an appointed place on shore, where they remain in deposit during the vessel's stay, to be restored at her departure.

Of course, the result was satisfactory upon the occasion of Siebold's arrival, although some difficulties interrupted the smooth course of the established proceedings. In the first place, Dr. Siebold avers that the Japanese interpreters spoke better Dutch than himself, and they immediately declared their disbelief of his being a native of Holland.* Luckily, however, various accents and dialects prevail in the different districts of Japan; and, in consequence, his assertion that he was a *yama Horanda*, or Dutch mountaineer, proved fully satisfactory. Similar mistrust had been excited in the last century, by the accent of the Swede Thunberg. In the second place, the shipwrecked Japanese sailors had to undergo a long and careful examination, to justify the suspicious and illegal step of going on board a foreign ship. This also proved satisfactory, and the vessel, rendered spiritually and physically innoxious, by the removal of her bibles and her guns, was towed by Japanese boats into the inner harbour, and conducted to her regular anchorage.

"The bay," Dr. Von Siebold says, "becomes more animated as we approach the town, and offers on both sides the most delightful variety of objects. How inviting are the shores, with their cheerful dwellings! What fruitful hills, what majestic temple-groves! How picturesque those green mountain-tops, with their volcanic formation! How luxuriantly do those evergreen oaks, cedars, and laurels clothe the declivity! What activity, what industry, does nature, thus tamed, as it were, by the hand of man, proclaim! As witness those precipitous walls of rock, at whose feet corn-fields and cabbage-gardens are sown in terraces from the steep; witness the coast, where Cyclopean bulwarks set bounds to the arbitrary caprice of a hostile element!"

A superior police officer is now stationed at Dezima (the Dutch residence adjoining Nagasaki,) to watch the unloading, and subsequent loading of the vessel, towards which not a step may be taken except under his immediate superintendence. Nay, not a soul is permitted to land without undergoing a personal search in this officer's presence; a

* The statement of the Dutch writers, that the Dutch of the interpreters is so Japanese in idiom, grammar, and construction, as to be scarcely intelligible to a new-comer, seems somewhat contradictory to the German's assertion. They may perhaps, be reconciled, by supposing that the startling panegyric of the latter refers solely to pronunciation; though even with respect to this, it is generally agreed that Japanese organs can perceive no difference between the sounds of L and R, or of F and H. [The sound of R in Japanese is, at the beginning of words very much like *dr*, being a kind of rolling sound; in the middle of a word, it is like the English R, but the Japanese do not appear to be able to discriminate between the L and R. The sounds of F and H are easily distinguished by them, but the different use of these two letters forms one of the features of dialects.]

they could be allowed to resume their station, low as it might be, amongst ther countrymen; whilst anything of a distant voyage would have inevitably incurred the absolute forfeiture of all their rights as native of the empire.

Upon approaching the desired port, the excitement of those about to set foot for the first time upon the prohibited shores of Japan is raised to the highest pitch; and they are, in the first place, gratified by the appearance of the country, which is said to be very beautiful.

"Hills clothed with fresh green," says Siebold, "cultivated to the very summit, adorn the foreground, behind which arise blue mountain peaks in sharp outlines. Dark rocks here and there break the glassy surface of the sea, and the precipitous wall of the adjacent coast glittered with ever-changing hues in the bright beams of the morning sun. The mountain sides of the nearest island, cultivated in terraces! tall cedars, amongst which white houses shone, and insulated temple-roofs jutted magnificently out, with numerous dwellings and huts bordering the strand and the shores of the bay, afforded a really attractive sight. We neglected not the opportunity of obtaining explanations from our Japanese guests, and learned with surprise that the pretty white houses, which we had taken for the mansions of the grandees, were nothing more than storehouses, the walls of which are coated as a precaution against fire, with mortar prepared from shell-chalk. Sailing-vessels and fishing-boats enlivened the month of the bay. At the call of our Japanese guests, many fishermen approached, and offered us their fish, with a liberality and affability astonishing in their rank of life. They were most friendly, and evidently enjoyed presenting to us and their rescued countrymen the fruit of their toil. They refused gold and gifts of value, but begged some empty wine-bottles. Common green glass bottles are much prized in Japan. The fishermen were as nearly naked as was compatable with decency."

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When the governor of Nagasaki has received these answers, a boat is again sent to demand hostages, and when these have been delivered and conveyed to their destined temporary abode, a Japanese deputation, headed by a police-officer of the highest rank called a *gobanyosi*, and accompanied always at the express request of the governor of Nagasaki, by one or two members of the Dutch factory, visits the ship, in order finally to ascertain that she is one of the two lawful, annual merchantmen. Should she, at any stage of the proceedings, prove to be an inter-

loper, she is at once ordered to depart; if in distress of any kind, is supplied with whatever she may need, and that gratuitously, the more strongly to mark the determination to suffer no trade; but she is not permitted to enter the bay, or to hold any communication with the shore, beyond asking for, and receiving the necessaries of which she is in want. If the investigation proves satisfactory, the Dutchmen return home, the *gobanyosi* takes possession of the guns, arms of all kinds, ammunition, &c, which together with the chest containing religious objects, he removes to an appointed place on shore, where they remain in deposit during the vessel's stay, to be restored at her departure.

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new chief *(opperhoofd)* of the factory being the only individual exempt from this annoyance.

The offensive custom originated, probably, in the stratagem long employed, to facilitate the immoderate smuggling carried on. We are told that formerly, every captain of the annual ships was wont, whilst the bibles, &c, were in process of packing, to clothe himself in loose attire, which was made to fit him, in external appearance, by internal waddings. Thus enlarged, he presented himself to the visiting Japanese officer. When about to land, he exchanged his waddings for the contraband articles intended to be introduced, wore his waddings during his stay, and repeated the former operation prior to re-embarking for departure. This practice has been rendered impossible; but it should seem, that in spite of Japanese suspicion and vigilance, other modes of introducing and extracting prohibited goods have been adopted in its stead, inasmuch as all the members of the factory agree that such prohibited goods are brought on shore, and secretly sold or bartered for such Japanese wares as the Dutch wish, but are forbidden to acquire. Of these last, many specimens are even now extant, in proof of the fact that they can still be exported as well purchased, in the Royal Museum at the Hague; whilst the possibility of introducing prohibited articles into Dezima, at least, further appears from president Doeff's statement, that the factory have bibles and psalm-books, the possession of which, president Meylan observes, is now connived at. It may, perhaps, be inferred, that the Japanese dread of Christianity has very much subsided during the long period that has elapsed since the last missionary endeavours to convert the empire.

But to return to the annoyances connected with landing. The indispensable necessity of searching the persons of new comers, as well as the inexorable rigidity of the Japanese system of exclusion, may be illustrated by an incident that could hardly have occurred elsewhere. It appears that, in the year 1817, Doeff's successor in the presidentship of the factory, Heer Blomhoff, threw the whole town of Nagasaki, population, government and all, into consternation, by bringing with him, not an armed force, but his young wife, their new-born babe, and a Javanese nurse: a contravention of Japanese law, the heinousness of which was enhanced by its having been imitated by the mate of the ship, who had likewise brought his wife with him, less criminally, indeed than Heer Blomhoff, the mate intending to take his family away again when the vessel sailed, whilst the new head of the factory meditated the atrocious offence of obtruding his wife upon Nagasaki, or at least upon Dezima, during all the years of his presidentship. The governor at once objected to the lady's even landing. Heer Doeff, kindly desirous to procure for his successor, perhaps for all future *opperhoofds* and the whole factory, the solace of virtuous female and domestic society, entered into a negociation upon the subject, the course and issue of which he thus narrates:—

"I appealed to the precedent of 1662, when the Chinese pirate Koxinga, having taken Formosa from the Dutch, as many women and children as fled thence to Japan were admitted into Dezima; and I solicited the self-same favor now. The governor replied, that the cases were not alike; that, on the occasion cited, the women had come

through necessity as fugitives, but now *by choice*. In the first case, the Japanese could not refuse an asylum to a friendly nation; the second was altogether different. He promised, however, to submit my request to the court at Yedo, and to allege the precedent in question in its support. Meanwhile, Mevrouw Blomhoff was allowed provisionally to land at Dezima, with her child and servant, awaiting the answer thereto. Still, a great difficulty remained. No one who sets foot in Japan is exempt from an examination of his whole person, the *opperhoofd* alone excepted; the governor himself has no power to dispense with this search. I took it upon myself, nevertheless, to arrange this affair in regard to the women, as well with the superintending *gobanyosi* on board, as on shore at Dezima; and although the examination could not be omitted, it was managed with the utmost forbearance and decency. After an interval of two months, the answer to Heer Blomhoff's petition, for leave to keep his wife and child with him, came; it was a refusal. Mynheer was naturally much dissatisfied and dejected, but all our efforts to soften this decision were vain; against the presumed mandate of the emperor, the governor durst not offer any fresh remonstrance or representation. The severity of exclusion was not directed expressly against Hollanders, or even foreign *women*, but against all persons who are not positively necessary to the trade. The general principle of the Japanese is, that no one must enter their country without cause, so that not even to a Dutchman is access allowed, unless he belongs to the ship's crew, or to the counting-house. Thus when, in 1804, Capt. Van Pabst, a military officer, accompanied his friend, Capt. Musquetier, of the Gesina Antoinetta, from Batavia to Japan, being entered on the ship's muster roll as 'passenger,' we were obliged, in spite of all I could say against it, to enter him on *our* muster-roll as 'clerk,' or 'mate,' I forget which, before he could come ashore. The amiable character of Heer Van Pabst caused his presence to be winked at; yet might he not bear the name of a 'passenger.' It may easily be imagined how affecting was the parting of the wedded pair, now condemned to a long separation. On the 2d of December, Heer Blomhoff conducted his wife, child, and nursemaid, on board the good ship Vrow Agatha, in which I was to return with them to Batavia."

We may now give a brief sketch of the appearance of the people whom the voyager has come so far to visit, as they first meet his eye; some, before he even sets foot on Japanese ground; others, standing with the head of the Dutch factory, all in full dress, to receive him as he lands. And first of their persons. The Japanese have all the organic characteristics of Mongol conformation, the oblique position of the eye included, but they seem to be the least uncomely of that ugly race. Klaproth considers their Chinese nature to be happily modified by greater energy, muscular, and intellectual. They are generally described as strong, alert, and fresh-coloured; the young of both sexes as smooth-faced, rosy, and graced with abundance of fine black hair. The Dutch writers, indeed, dilate complacently upon the beauty of the young women, of which a specimen is given in a portrait in Siebold's work. The gait of both sexes is allowed to be awkward, and the women's the

worst, in consequence of their bandaging their hips so tightly as to turn their feet inwards.

The ordinary dress of both sexes, and all ranks, is in form very similar, differing chiefly in the colours, delicacy, and value of the materials. It consists of a number of loose, wide gowns, worn over each other—those of the lower orders made of linen or calico, those of the higher generally of silk, with the family arms woven or worked into the back and breast of the outer robe, and all fastened at the waist by a girdle. The sleeves are enormous in width and length, and the portion that hangs below the arm is closed at the end, to answer the purpose of a pocket, subsidiary, however, to the capacious bosoms of the gowns, and to the girdles, where more valuable articles are deposited; amongst others, whilst clean, the neat squares of white paper, which are the Japanese substitutes for pocket handkerchiefs, and, when used, are dropt into the sleeve, until an opportunity offers of throwing them away, without soiling the house.* This description applies to both sexes, but the ladies usually wear brighter colours than the men, and border their robes with gay embroidery or gold. Gentlemen wear a scarf over the shoulders; its length is regulated by the rank of the wearer, and serves in turn to regulate the bow with which they greet each other, inasmuch as it is indispensable to bow to a superior until the ends of the scarf touch the ground.

To this, upon occasions of full dress, is superadded what is called the garb of ceremony. It consists of a cloak, of a specific form, thrown over the other clothes. With the cloak is worn, by the higher classes, a very peculiar sort of trowsers, called hakama, which appears, both from the description given, and from the appearance of the article, so far as can be distinguished in the glass cases of the Hague Museum, to be formed of an immensely full-plaited petticoat, sewed up between the legs, and left sufficiently open on the outside to admit of free locomotion. The difference of rank signalized by these petticoat-trowsers is only apparent upon occasions of ceremony: the constant criterion turns upon the wearing of swords. The higher orders wear two swords—on the same side, it should seem, and one above the other. The next in rank wear one; and, whether two or more, these are never, by any chance, laid aside. To the lower orders, a sword is strictly prohibited.†

* The width of the sleeve causes it to hang down and appear longer than it really is, for the cuff does not usually reach beyond the wrist, where it is contracted, and forms the mouth of the pocket; the hand is drawn through this opening to take out the things in the pocket. The use of the sleeves, however, to carry articles depends very much upon a person's own fancy, the bosom and girdle being the usual repositories for whatever he wishes to carry. The family arms are also worked or dyed into the sleeves, making in all five places (viz each arm at the elbow, each breast, and the back,) where they are worn. These insignia are always worn on occasions of ceremony or etiquette, but are often omitted in garments for everyday wear.

† The whole of this ceremonial dress is called *kamishimo*. The *kami* or cloak is so made that when worn, the edges (for it has no sleeves) project beyond the shoulders so as to give them a very square form, as if the wearer had on a pair of stiff epaulettes. This dress is also worn by the common people on occasions of weddings, funerals, and the like.—How low are those orders which are prohibited from wearing a single sword does not appear to be determined. We are informed that mechanics, shopmen, artisans, &c., wear a wagi-zashi, or short sword whenever

Within doors, socks are the only covering of the feet. Abroad, shoes are worn, but of the most inconceivably inconvenient kind. They are represented as little more than soles of straw, mat, or wood, mainly kept on by an upright pin, held between the two principal toes, which, for this purpose, project through an appropriate aperture in the socks. The impossibility of lifting a foot thus shod in walking, may amply account for the awkward gait ascribed to the Japanese. Upon entering any house, these shoes are taken off.*

The head-dress constitutes the chief difference in point of costume, between the sexes. The men shave the whole crown and front of the head; the rest of the hair growing from the temples and the back of the head, is carefully gathered together, drawn upwards and forwards, and so tied as to form a sort of tuft on the bald skull. Some professions, however, deviate from this general fashion. Buddhist priests and physicians shave off all the hair, while surgeons retain all theirs, gathered into a knot at the top of the head.

The abundant hair of the women is arranged into the form of a turban, and stuck full of pieces of fine tortoiseshell, fifteen inches long, of the thickness of a man's finger, highly wrought, and polished to look like gold. They are said to be extremely costly; and the more of them project from a lady's hair, the better she is dressed. They wear no jewellery or other trinkets. The face is painted red and white, to the utter destruction of the complexion; the lips purple, with a golden glow; in addition to this, the teeth of a Japanese married lady are blackened, and her eyebrows extirpated.

Neither men nor women wear hats, except as a protection against rain; the fan is deemed a sufficient guard from the sun; and, perhaps, nothing will more strike the newly-arrived European than this fan, which he will behold in the hand or the girdle of every human being. Soldiers and priests are no more to be seen without their fans than fine ladies, who make of theirs the use to which fans are put in other countries. In Japan, visitors receive the dainties offered them upon their fans; the beggar, imploring charity, holds out his fan for the alms his prayers may have obtained. The fan serves the dandy in lieu of a whalebone switch; the pedagogue instead of a ferula for the offending schoolboy's knuckles; and, not to dwell too long upon the subject, a fan presented upon a peculiar kind of salver to the high-born criminal, is said to be the form of announcing his death-doom: his head is struck off at the same moment he stretches it towards the fan.

Having fairly landed the new member of the Dutch factory at De-

they wish to be in full dress. The sumptuary regulations regarding the use of this touchstone of Japanese honour probably differ in the various principalities. In Higo, two swords are allowed to all grades of rank; the *cho nin*, or *ignobile vulgus*, as a body, are restricted to one.

* The shoe most commonly worn is a sort of sandal; it is a sole kept on the foot by a strap passing over the instep, and fastened to a pin, which passes between the first and second toes. To accommodate this pin, the stocking is made like a mitten, with a division for the great toe. Shoes fitting close to the ancles, low boots, pattens, slippers, and sandals, are all made in Japan, but are not much worn; some are ceremonial garments, others form part of the priestly garb. They are made of straw, (woven edgewise,) wood, bark, and leather, and are sometimes shod with iron on the heels.

zima, we must now take a survey of the spot in which he is, in most cases, to be immured for the next few years of his life. Like everything in Japan, it is original, being an artificial, or rather, perhaps, a fictitious island, built in the bay, after the manner of a pier or breakwater. The very object of its construction was to serve as a place of confinement, although not for the Dutch.

When the Japanese government began to entertain jealousy and dislike of foreigners, the first measure taken, at the instigation of those feelings, was so to situate them that they could conveniently be watched. For this purpose, the Europeans and their commerce were restricted to the two ports of Nagasaki and Firado (or Hirado), at which last place the Dutch factory was then established. The next step was to confine the Portuguese more closely still; with this view was their abode projected, and the island of Dezima directed to be built from the bottom of the sea. The emperor's pleasure being asked as to the form of the future island, he unfolded the ever-actively employed fan; and, accordingly, in the shape a fan without sticks upon which a fan is mounted, was the island constructed. When the Portuguese were finally expelled, the Dutch were transferred from Firado to their prison-house. Dezima is about 600 feet in length by 240 across, and is situated a few yards only from the shore, close upon which stands the town of Nagasaki. The island and town are connected by a stone bridge, but a high wall prevents the dwellers in either from seeing those in the other. The view of the bay, teeming with life and bustle, seems, indeed, to be open to the factory, secluded as they are; but the view is a distant one only, no Japanese boat being permitted to approach the island within a certain prescribed distance, marked by a stockade. The bridge is closed by a gate and guard-house, constantly occupied by police and soldiers, who, alike prevent the Dutch from quitting their island without permission, and debar the access of Japanese visitors, save and except the appointed individuals, and those at the appointed hours. Neither Dutch nor Japanese may pass the gate without being searched. The sea-gate is similarly watched, though with a police force only when opened, which it never is, except for intercourse with the Dutch ships, whilst in the harbour. The name given to the island implies "Fore Island," or "Ante Island;" the word *zima* meaning island, and *de*, fore or ante.

The number of European residents in this singular island is now limited to eleven. They consist of the opperhoofd, head or president of the factory, called by the Japanese *Holanda*, or *Horanda capitan*; a warehouse-master, a secretary, (or in plain mercantile English, a book-keeper,) a physician, five clerks,* and two warehousemen. Foreign domestics they are not allowed, such being evidently unnecessary, as they can be waited upon by Japanese; and, after a fashion, so they are, that is to say, whilst the sun is above the horizon. But the attendance to

* Some discrepancy as to numbers exists between Doeff and Fischer; and as the former wrote only from recollection, while the latter had all his Dezima papers before him, the warehouse-master's authority has been preferred. It may be said, once for all, that in such trifling disagreements in statements or orthography, the writer who appears best informed, and especially Dr. Von Siebold, has always been followed.

which Europeans are accustomed, especially in Asiatic colonies, is of course but very imperfectly supplied by men who can scarcely be termed domestics, since so little are they domesticated with their masters, as not to be suffered to sleep in those masters' houses. The Japanese servants of the factory must leave the island at sunset, and prove that they do so, by presenting themselves at the appointed time to the proper authorities at the bridge watch-house; nor, it is said, can any emergency, not the most dangerous illness of a Dutch master, excuse the violation of this rule.

The utter destitution of attendance, in which every member of the factory is thus left, during half his time, "without the means of even getting the tea-kettle boiled for his evening tea," is pathetically and earnestly dwelt upon by one of the recent writers, in apology for the immoral connexions which his countrymen are, he avers, actually compelled to form in Japan; and the singularity of everything appertaining or relating to this very extraordinary country must excuse the bringing forward an offensive topic.

(To be continued.)

A Parting Word with the Bonetta Rock.

In the concluding part of our reasoning on the supposed danger called the Bonetta Rock, in our last number, we observed, after assigning to it the position of the Hartwell Reef, that it would be desirable, as a matter of curiosity even to know where the Hartwell considered herself by her reckoning, when she was lost. The desire we expressed has been promptly satisfied by Capt. Harris* of the Hon. E. I. Company's service, who has obligingly forwarded us the following letter, from which it appears there was the same disregard of the *chronometer* as in the case of the Charlotte. Indeed the reckoning of the Hartwell seems to be singularly incorrect, being, however, to the westward of the chronometer, instead of to the eastward, as in the case of the Charlotte. It must prove to the satisfaction of our readers, how little reckonings are to be depended on, in fixing the position of sunken dangers, for in this case had there been no island to keep the Hartwell's own reef in its proper place, it would have displayed, no doubt, the same roaming disposition which the Bonetta Rock has done. The following is the letter alluded to.

Jerusalem Coffee-House, Dec. 10th, 1841.

Sir.—I have been led by the suggestion contained in the last number of your useful *Magazine*, to seek for information respecting the loss of the Hartwell East Indiaman. To those of your readers who have taken an interest in the discussion, as to the existence of the Bonetta Rock, and the loss of the Charlotte, an abstract from the Hartwell's log may not prove uninteresting.

* We beg this gentleman's pardon for having inadvertantly called him "Hains," in our discussion.—Ed.

I have been enabled to obtain a copy of the captain's journal, terminating on the 23rd of May, the day previous to her loss, and the only remaining record in the India House of this unfortunate ship.

I am, &c.,

H. HARRIS,

To the Editor, &c. *Captain Hon. E. I. Company's Service.*

The Hartwell, a new ship of 937 tons, having a large quantity of treasure on board, sailed from the Downs on the 13th of April, 1787, bound to China direct; and made the Island of Madeira on the 13th of May, when we find the following entry in her log:—

"NB.—From the bearings at noon, found an error in my longitude by account, of 1° 20′, and 50′ in the timekeeper, which is equal to 3m. 20s. of time."

This error in her longitude by account does not appear to have been subsequently corrected, and which, as will be hereafter seen, probably led to the loss of the ship. The error in her timekeeper I find was rectified on the following day by the bearings of the land.

"May 14th at noon.—The body of Madeira bearing N.b.E., the southernmost Desertas N.E.b.E.; latitude by observation 32° 00′ N., longitude by timekeeper 16° 52′ W."

This longitude closely agrees with the above bearings, and therefore from this point we have a fresh departure.

I may here observe that fifty-seven years ago, the mode of navigating a ship by carrying on the dead-reckoning, without reference to the chronometer, was more general than now, partly, perhaps, from prejudice, and partly from a want of confidence in the timekeeper, that valuable instrument not having then attained its present perfection. It was not, therefore, unusual in working a ship's log to a distant port to find the longitude by account some three or four degrees inland. In fact, it is on record that an American ship bound to Calcutta, found herself at the entrance of Bombay harbour during the south-west monsoon, when by her dead-reckoning she was off Point Palmyras in the Bay of Bengal.

On the 20th of May, a serious mutiny broke out amongst the crew, for the purpose, it was said, of possessing themselves of the immense treasure she had on board, but the mutineers were brought to obedience by the resolute conduct of the captain and his officers: it was, however, thought advisable for the preservation of the ship, and the large property at stake to proceed forthwith to the nearest port to land the ringleaders.

At noon on the 22d, the latitude observed was 20° 15′ N., longitude by timekeeper 22° 25′ W., and longitude by account 24° 26′ W., or 2° to the westward of chronometer, St. Antonio bearing S.b.W. 68 leagues, and Porto Praya, bearing S. 4° E., 107 leagues. We have then the following entry in the log.

"Shaped my course for Porto Praya in St. Jago, that island being inhabited, and having a governor."

Prior to this resolution it was evidently the intention of the commander of the Hartwell to have passed to the westward of all the Cape

Verde Islands, as he had been previously steering a south-west course; and daily calculating his bearing and distance from the Island of St. Antonio.

From noon of the 22d to that of the 23d, the day previous to her loss, the course steered was S. 2° E.; but owing to a current of half a knot an hour, setting to the south-west, the course really made good was but S. 4° W.; she observed on the 23d of May in latitude 17° 38′ N., longitude by timekeeper 22° 30′ W., from which position Porto Praya bore S.b.W. ⅝ W., and the reefs of Bonavista S. ⅝ W., or S. 7° W., eighty-seven miles.

The longitude by account on this day entered in the log, was 24° 20′ W., or one degree and fifty miles to the westward of her timekeeper, and the bearing of Porto Praya S. 6° E., fifty-five leagues. From this it is obvious that the bearing of Porto Praya is taken from the position of the ship by *account*, and course shaped accordingly, which course, with the slight current of the previous day, assuming that the longitude, as shewn by her timekeeper was correct, during the short run of nine days from Madeira, would necessarily prove fatal to the ship on the reefs of Bonavista.

In perusing the Hartwell's journal it appears that during the four days previous to her loss, she experienced the same degree of current, (about twelve miles per diem,) as that mentioned by Capt. Vidal and others, which added to the disregard of the timekeeper, precipitated her fate.

We shall now conclude with the following letter of Capt. Forrester to the hydrographer of the Admiralty, which so innocently confirms the statement of "*the island*," (Bonavista it must have been,) bearing north-west from the boats the morning after the Charlotte was lost.

Alloa, Aug. 14th, 1841.

Sir.—I received your letter of the 26th ult., through Mr. Macfarlane, in which you request a few particulars concerning the reef on which the Charlotte was wrecked.

The latitude by good observation at noon same day the Charlotte struck, was 17° 4′ N., and by distance sailed till 8 P.M., 16° 17′. The longitude was ascertained till noon same day by chronometers, and till 8 P.M. by account, 22° 21.′ W.

The night was not dark at the time the ship struck, and the soundings were two or two and a half fathoms. The island next morning bore from the boats north-west, distance from twenty-five to thirty miles. So far as I saw any break of sea, it did not exceed 200 feet.

I am, Sir,
Your obedient servant,
ARCHIBALD FORRESTER.

To Capt. Beaufort, R.N., Admiralty.

We have now only to add that Capt. Forrester has most effectually proved himself wrong, and that seamen need be under no apprehension of losing their ships on the Bonetta Rock, in any of the places which

have been assigned to it, excepting as one of the outlying reefs of Bonavista.

We also perceive by the last edition* of Mr. Purdy's excellent "Memoir of the Atlantic Ocean," which he has obligingly forwarded to us, that this rock with several others of the same parentage and locality has been rejected on the authority of the chart of the Etna's track, which we published in 1839, confirmed by the American surveying expedition of Capt. Wilkes in 1838. Shipowners may now make up their minds in the event of any more of their vessels being lost like the Charlotte and Madeline, that they have got on the reefs off the north-east point of Bonavista.

Texas.

Sir.—The infant republic of Texas is rising rapidly in importance to the commercial community, but more especially to that of Great Britain, who no doubt ere long will partake of a large share of its commerce; for I am informed by a letter dated 10th of May, 1841, from a gentleman in Texas, that "at least eight vessels have cleared the last spring for Liverpool, with full cargoes of cotton." Without alluding to the valuable ship timber which that country produces, the article of cotton alone, which is generally equal to the Sea Island cotton, and is also annually increasing in quantity must ensure a great trade with England.

It is, therefore, but reasonable to suppose that any information, (however trifling,) respecting the bays, harbours, &c., of that state must be acceptable to mariners, which has induced me to forward to you a copy of a survey of Matagorda Bay,† which I procured last year in Texas from an English gentleman who had resided in that neighbourhood, and assured me the soundings were very correct, particularly those of the channels at the entrance; a pilot can be obtained by throwing out the usual signal.

Should you consider this worthy of a place in your most valuable Magazine, I will thank you to give it publicity. I add underneath the position, &c., of two of the principal anchorages on the northern coast, by the late master of the Pilot.

I remain, &c.

J. Hamilton,
Commander R.N.

To the Editor, &c.

Galveston Island, (east end,) latitude 29° 18′ north, longitude 94° 48′ west, variation 9° east. High water F and C, 8 A.M., three feet rise and fall,—good anchorage.

Galveston flag-staff W.b.S., five or six miles,—extreme south end of bar west, one mile, in five fathoms mud and good holding ground.

Rio Brazos, latitude 28° 54′ north, longitude 95° 18′ west, variation 9° east. High water F and C, 9 A.M., three feet rise and fall.—Good anchorage two miles S.E. ½ S. of entrance of river, in five fathoms red mud,—current generally sets south-west, from one to two and a half knots per hour.

* Eighth Edition of 1848, published by Laurie, Fleet Street.

† We could not publish it, as it has *no scale*.—Ed.

(cs crew saved—D drowned—L lost.)

VESSELS.		BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.	
Achilles	1	———	Redman	London	Dantzic	Niding R	Oct. 27	cs
Amanda		———	Davis	Limerick	Quebec	Metis Pt.	Sep. 26	
Atlas		———	Roberts	Honfleur	abandond	off Lydd	Nov. 18	cs
Britannia		———	Leith	Calcutta	Ma'ritius	Hooghly		cs
Briton	5	Rochester	———	Petrsbrg'	———	Gothland	Sep.	
Brothers		Newcastle	Davison	Newcastl	———	Bras d'Or	Oct. 24	
Canning		Malmoe	Poulson	Newcastl	———	Belt	Nov. 10	cs
Cassandra		———	———	Shields	Constple	St. G. Ch.	Nov. 22	cs
Catherine		Sunderland	Stopford	Sundrlnd	London	Gunfleet	Nov. 26	cs
Ceres	10	Griefswald	———	Dublin	———	Shabost	Oct. 21	
City of Edinboro'		———	———	Quebec	London	abandond	Nov. 9	c
Clarence		abandoned	run foul	of about	lat. 58°	long. 21°	Sept. 19	cs
Columbus		———	———	Hartlpool	Carl'cona	Cattegat	Oct. 19	cs
Condor		———	Boyes	London	Naples	G Naples	Oct. 30	cs
Dee	15	———	Reid	timber	laden St.	Geo. Bay	Sep. 30	cs
Dido		Hull	Bell	Hull	Riga	Baltic	Nov. 8	cs
Eliza Williams		———	White	Watrford	London	Rundlstn	Oct. 30	cs
Elizabeth		Newcastle	condemn	ed & sold	———	Shipigan	pr. to Oct.	3
Equity		———	Thomson	Sligo	London	C. Holnd	Nov. 11	cs
Flora	20	———	———	London	Petrsbrg	Falknbrg	Oct.	cs
Forester		Shields	Atkinson	———	———	Scroby S.	Nov. 28	cs
Friendship		———	———	———	———	Havre	Nov. 21	cs
Good Intent		Troon	Guthrie	Troon	Dublin	at sea	Nov. 21	fnrd
Guardian		———	Potter	London	Memel	Kioge B.	Nov. 9	
Helen	25	———	Stuart	Quebec	Limerick	Crane I.	Sept. 28	
Industry		S. Shields	after part	washed	on shore	at Lamvig	Oct. 26	
Isabella		London	MAuslnd	Sydney	Manila	Carolin I	Jan. 30	cs
James Cook		Limerick	———	Limerick	Glasgow	C. Irelnd	Nov. 24	10L
Jane		Wisbeach	———	———	off	Skegness	Nov. 14	cs
Kent	30	———	———	Liverpool	Petrsbrg	Gotland	Nov. 13	cs
Lady Elphinstone		———	M Kenzie	Glasgow	Roterd'm	W. Plaat	Nov. 21	cs
Lavinia		Irvine	Kelso	Halifax	Mirmichi	Darnle C	Oct. 7	cs
Margaret		———	Gregg	Leith	Petrsbrg	Falknbrg	Oct. 27	cs
Maria		———	Dix	London	Gotenbrg	Arindahl	Nov 16	
Mariners	35	Rye	———	———	———	Folkston	Nov. 15	
Mary		foundered	Bond	Leghorn	Liverpool	off Brest	Nov. 16	
Mersey		———	Griffiths	N. Scotia	Liverpool	Sable I.	Oct. 6	2L
Nancy		———	Huchison	Glouc'str	Andrews	abandond	Oct. 30	
Newbury		Aberdeen	Burgess	Dantzic	Perth	C. Holnd	Nov. 21	cs
Ocean	40	Dundee	Webster	London	Petrsbrg	Halsnbrg	Oct. 14	cs
Prince Rupert		———	Ramage	London	N. Zeln'd	Table B.	Sept. 5	cs
Renown		Perth	Hill	Liverpool	Ancona	run foul	Nov. 18	cs
Respect		———	Grant	Sundrlnd	Calais	at sea	Nov. 6	aban
Splendid		———	Laird	Jamaica	———	Cuba	Aug. 7	cs
Sultana	45	by lightning	Page	Singapor	China	C Palawn	Jan. 4	
Susanna		Stockton	Watson	Midlboro	———	Tees M.	———	
Thistle		Dumbarton	Duncan'n	———	———	Banff	Oct. 26	
Three Sisters		Sunderland	———	———	———	———	Nov. 15	
Unicorn		Chester	Robinson	Dublin	R. ——	Pwhelli	Nov. 16	cs
Union	50	———	———	———	———	Snk.sand	———	
Unknown		seen to	founder	in 36° S.	18° E. by	Wndrmr'	in Sep.	
Unknown		brig seen to	foundr off	Copeland	Islands	Ireland	Nov. 21	
Unknown		a large load	ed brig	seen to	founder	Brdlngtn	Nov. 14	all L
Vere		Newcastle	with coals	———	———	Havre	Nov. 14	cs
Vestal		Boness	———	Oporto	———	Dundee	Oct.	cs
Vibilia	56	———	Terrey	Newcastl	Odin off	Mayota	Aug. 9	cs

(To be Continued.)

The Variation of the Compass.

(Continued from p. 765.)

Royal Observatory, Dec. 22nd, 1841,
Magnetical and Meteorological Department.

Mean Magnetic Variation for October—23° 12′ 18″.

Mean Magnetic Dip for October.

At 9 A.M.	At 3 P.M.
—68° 43′	68° 35′

Mean Magnetic Variation for November—23° 17′ 7″

Mean Magnetic Dip for November

At 9 A.M.	At 3 P.M.
68° 25′	68° 37′

G. B. Airy, *Astronomer-Royal.*

Records of Wrecks.

There is one part of our duty, as journalists which by an over pressure of other matter we have rather lost sight of latterly. It is true there is a painful sameness in performing it, of human suffering to an extent scarcely credible, sickening to the heart. The subject of wrecks of British shipping, the destruction of British lives and capital, all have full often been forced before the public, and with the harrowing tales of misery told by its victims have left an impression without producing more, save in one particular branch of maritime adventure—the timber trade to Canada. Mr. Palmer is entitled to the gratitude of his countrymen for having succeeded in checking to a considerable degree the enormities which were perpetrated in the North American timber trade; but still the annual number of the wrecks of British ships continue much the same as ever, as our own tables will show for the last ten years; and the wholesome power of legislation has unhappily not yet reached the sources of this evil. We shall, however, return to this subject occasionally, in the hopes that on some future day, we shall see the evil cured, deep-rooted even as it is.

If we cast a glance over our tables, it will appear that there is as much variety in closing the career of a merchant ship, as there is in terminating that of a man; and even the various verdicts of coroners' inquests are no less applicable to those frail vessels which roam about the ocean, as to those frail bodies which are tenanted by spirits, and form the human species, not excepting, alas! even the act itself of *felo-de-se*. Substituting "the visitation of man," for "the visitation of God." let us take as the first case that of "sudden death."

The following is common enough—"The ..... sprung a leak at sea, and foundered." The verdict in this case would be, decidedly, "died by the visitation of man;" for what business has a ship to spring a leak, but from being badly built by man. Again, the recent cases, (without looking into annals of suicide of a remoter period) of the Wallaces afford undeniable instances of *felo-de-se*. The Dryad, the Isabel, and the Lucy, are the most recent cases of this nature brought to light, and the former fairly investigated.

Then we have lingering deaths from sickness and various causes,

carrying off mortal man, and we have enough of protracted suffering before the ocean barque finally disappears, as "a thing of life. If we refer to the long list of *fatal* accidents on shore, accident is a prolific cause of destruction to ships (merchant ships we mean,) at sea. A man loses a leg, and the accident causes his death. A ship loses her masts in a gale, she becomes eventually a prey to the waves, and sinks with all her crew, to rise no more. A vehicle on wheels is capsized, some serious fractures of limbs, perhaps death occurs; that other vehicle called a ship, (we are alluding to merchant ships,) capsizes from too much sail, serious suffering ensues, caused by half-starving, whole-starving, and drowning, to say nothing of broken limbs, originally produced by the accident. Again, a vehicle on wheels comes in contact with another at full speed, the weakest here goes to the wall in earnest, and broken limbs and death generally ensue:—a ship runs foul of another, (how frequent has this been of late,) frequently one of them sinks from the injury she has sustained; indeed, if there be a great disparity in point of size, the lesser one vanishes, she obeys her summons to lower regions; but, in most cases, loss of life is the consequence. Then again, the vehicle on wheels wanders from the proper road, and gets into mazes of difficulties, if not lost in quagmires, or, thrown into ditches; the vehicle afloat, how does she not wander from her course, and perils her safety amidst shoals and narrow channels, and in many cases is finally lost.

But we have not done even yet:—How often does the vehicle on shore, with valuable lives in it dash itself against some obstruction by the roadside in the shape of a stone, or post, or gate, sacrificing those lives: and how often does that vehicle afloat, the merchant ship, run against those terrors to seamen, called rocks above water, and rocks under water; and as if there were not enough of rocks for ships to run against, they must run against something, and, therefore, icebergs answer the purpose equally as well! All these would perhaps fall under the head of "accidental death."

But we spoke of sickness producing death, that scourge of the human race, and who shall say that it does not equally shew itself as the scourge of our race of merchant shipping. In both cases it is either constitutional (inherent, we mean,) in the system of the individual, or else the effect of some immediate cause, such as exposure, &c. Now there cannot be a more decided proof of constitutional sickness in a ship than bad construction, and timbers being too few and badly put together, fastenings insufficient, treenail holes left open, or only covered to hide the deficiency; a kind of parsimonious system arising from certain causes, is adopted to crown all in fitting; a deficiency of spars, small anchors, short cables, no changes of sails, bad cordage, all tending to make a bad ship worse. What is the consequence? She is as unfit to encounter the storms of the ocean, as the sickly individual is to encounter the vicissitudes of life, and a short-lived miserable existence is passed till she meets her untimely end. The coroner would not be called in here, this would be considered as the course of nature. But why, we should like to know, may not the coroner be called in all cases of the wreck of a merchant ship, where the crew and captain are saved. In other words, why should not an inquiry into the cause of the

loss of every merchant ship take place as with the ships of the Royal Navy, and the payment of the insurance withheld until the causes of her loss are fairly stated. The causes thus ascertained would themselves point out their own remedy.

But we shall now turn to our "Records." The following on the loss of the Prince Rupert, No. 41, of our present table, are from a Cape paper; they are made on the spot where the loss took place, and with knowledge of the circumstances, it would appear, under which it occurred.

"Saturday last, the Prince Rupert, from England with passengers and cargo for New Zeeland, on entering Table Bay, about 9 o'clock in the evening, ran aground on Mouille Point, stuck fast and will be a total wreck.

"We do not intend to add to any man's misfortunes, indirectly charging the master of this vessel with carelessness or incapacity. The night was dark, and this particular point of land lies so much in the way of ships entering Table Bay, that the Juliana, not very long ago, ran upon it in broad daylight, the air being clear and transparent, the sea smooth, and the wind blowing sweetly *off the land.* But the master of the Prince Rupert was the second-mate of the Juliana, and might, therefore, have remembered the spot where he had suffered shipwreck under such extraordinary circumstances before. In the present case, he was near the land the whole of the preceding day, and must have known precisely where he was. Nor, so far as it appears, was he under any necessity to enter the bay during the night, a venture always accompanied with danger, unless to seamen familiar with the nocturnal appearances of the coast. The Prince Rupert has not hitherto been in a hurry. She has been about *five months* from England. A few hours' delay, therefore, where so much property, and the lives of so many people were at stake, could scarcely have been called a culpable addition to the five months. And if this ship, like the Juliana, was predestinated to destruction on this particular point, she might have taken daylight for the operation, as her predecessor did, and thus diminished the danger to life if not to property.

"We offer these remarks in the mildest words, to avoid a positive prejudging of the case. The master has a right to a fair and even a kind construction of the circumstances, as he is apparently unfortunate, and may possibly be innocent. But other people have their rights also. Here are about 160 persons, not only cut off from the purposes of their voyage, but thrown destitute on the shores of a strange country, equally distant from their native home and the place of their destination. The wretchedness and suffering that may arise from this are incalculable. A great number of them intending to settle in the new colony of New Zeeland, had embarked the whole of their property on board of this vessel, and will probably lose it all. From a state of independence and hope they are thus plunged into poverty and despair.

"There is another thing to be considered. This is only one of many *emigrant* ships that have within the last few years run aground on the shores of our *wide, well-defined,* and *deep* bay. *And although these ships were crowded with passengers, in scarcely a single instance have any lives been lost—though the vessels and the cargoes were made to tell heavily on the Underwriters.*

"The perils of the sea, therefore, were no guarantee for the fidelity of the masters of such vessels. They knew that in this respect, Table Bay was one of the most eligible spots in the world for a commodious shipwreck.

"It appears, also, that there are as few perils on shore. No authority seems to exist by which such men, if guilty, can be brought to condign punishment; —no naval coroner to determine whether ships perish by the visitation of God, or commit suicide, in a bay that to skill and caution is as safe as St. Katherine's dock.

"The master of this vessel is more emphatically called upon for an explana-

tion of this occurrence, as the trial and conviction of the *Wallaces* have recently shown that wilful and premeditated shipwrecks have been made matters of speculation and trade; and it appears from the confession of one of these villians, that a vessel bound for some port to the eastward of the Cape, and which had left England sometime *previous to May last*, was intended and prepared for shipwreck.

"Suspicion, therefore, naturally and *properly* attached to the master of the Prince Rupert. And it will be for his advantage, if he is innocent, to draw up and publish such a statement as he may think most likely to remove this suspicion.

"We have spoken our mind freely on this subject, and perhaps with some degree of asperity, as we have something further to mention respecting it, of a more melancholy character than even the loss of property or the ruin of so many people:—

"When the Prince Rupert struck, about 15 minutes past 9 o'clock, she was, on firing a gun, observed from the Bucephalus, Indiaman, at anchor about two miles from the point, within the bay, and a boat under the orders of the chief officer, Mr. John R. Merewether, put off to render assistance. Mr. Merewether succeeded during the night in making three trips between the wreck and the Bucephalus, bringing off thirty of the people, besides others that he put on board the boats that were near him at different periods of the night.

"About five o'clock, fancying that some person still remained on board the Prince Rupert, Mr. Merewether proceeded to the wreck a fourth time with a crew of seven men, the surgeon of the Prince Rupert, and Mr. Frood, a passenger whom he had previously brought on board the Bucephalus. When they came under the stern of the wreck, a short sea broke over the boat, and nearly filled it, and the succeeding wave upset her, and this gallant and humane young officer, with three of his crew, and Mr. Frood, perished in the surf among the rocks.

"It is impossible to express the grief which the untimely fate of this excellent young man has caused on board the Bucephalus, where his talents, his many accomplishments, and his most noble and generous disposition had made him the object of universal respect and affection. Of him and of Mr. Fulcher, the commander, the numerous and most respectable company of passengers by the Bucephalus, speak in the highest terms of esteem; and Mr. Fulcher laments the loss of his first officer and friend, as the severest calamity that could possibly have befallen him.

"Mr. Merewether was in his 25th year. He was the son of Mr. Sergeant Merewether, Whitehall Place, London.

"His body was found in the course of Sunday, and buried on Monday last, being attended to the grave by a large number of the inhabitants of Cape Town, as well as by his companions and friends of the Bucephalus.

"His friends in England, will have the consolation of learning that Mr. Merewether met his fate in the discharge of a humane and gallant attempt to save human life, and to mitigate human suffering.

"And we would take the liberty of suggesting, that as a tribute to virtue and gallantry, a monument should mark his final resting place.

"Subscriptions for this purpose we have no doubt would instantly be filled up.

"*Mechanics and Labourers.*—By the wreck of the Prince Rupert, a considerable number of gardeners, carpenters, cabinet-makers, blacksmiths, and labourers, have been landed here, and it does not appear that any provision has been made, or will be made, for transmitting them soon to their destination in New Zeeland. They can show, we understand, certificates of character, and are represented as being a respectable class of emigrants.

"This is a favourable opportunity, therefore, for testing the solidity of the statements so often put forth, of late, respecting the great demand for, and liberal encouragement held out to mechanics and labourers at the Cape.

"The Honourable Mr. Porter, her Majesty's attorney-general, has handsomely offered to assist the emigrants with his advice in making contracts of service, &c.; and, of course, all are free to make such bargains, or to enter into such engagements as they may think fit.

"There are, we learn, about seventy-two or seventy-three persons ready to enter into engagements for labour, in their several professions or callings."

Leaving the foregoing for the comment of our readers, we turn to an amusing instance of a good look-out which appeared under the title of "Nautical Somnambulism."

"*Nautical Somnambulism.*—Our readers have no doubt heard of sleepwalking, but we are going to relate to them a tale of nautical somnambulism, which to us would be almost incredible. We are, therefore, our readers may be assured, relating it upon the best authority:—'Her Majesty's ship Calliope arrived off town on Tuesday morning, but during the night between Monday and Tuesday, being then at anchor off Rajgange, the watch on board saw a ship drifting down upon them. The helm was put over, and Her Majesty's ship sheered so as to allow the drifting vessel just room enough to get clear of her; but in the heavy strain of the sheer the Calliope parted and went on shore, fortunately upon a bank of soft mud, and nearly at low water, so that she got off without trouble or danger upon the flood tide. The pilot sent a row-boat on board the drifting vessel, and anchored her, when, to the surprise of every one, it was found that she was the Hannah (or Anna), which, being off the Mint Ghaut, had parted, and strange to say, drifted down during the night through the crowded tiers of shipping in the river, to Melancholy Point, having only an officer and five Batta Lascars on board—all, of course fast asleep, and only wakened from their slumbers by the firing of four of the Calliope's 32-pounders.' We call this nautical somnambulism, but we trust if any more of the "sacred ships" mean to practice in this way, they will not do so when Government has 2,500,000*l*. of treasure afloat, seeing that in the freshes of our "Golden Gunga" a vessel takes the ground, capsizes, and is buried topmast deep in 48 hours, which would be mighty inconvenient to the public service just now.—*Calcutta Star.*"

But the most amusing instance of a vessel taking care of herself is the following, which we have just met with in the *Shipping Gazette*.

"*Boulogne-Sur-Mer, Dec. 15th.*—The John, of Glasgow, from Cork for London, (reported yesterday,) in making the harbour last evening, near low water, took the ground on the outer bank. The captain and crew took to the boats, and came on shore, leaving the vessel with her fore-topsail and jib set; and on the tide making, *she came into the harbour without a soul on board.* She will be hauled on the Gridiron next tide to be examined; at present, the damage appears very trifling."

So ready are the crews, and in most cases the captains of the vessels endangered to forsake them. No doubt they have their reasons.

A correspondent has furnished us with a list of vessels abandoned at sea in the space of about three months of the latter end of last year, which as it affords ample matter for reflection we shall here insert, leaving the reader to determine whether they would severally fall under the verdict of "sudden death," "accidental death," or "old age."

1 *Bridgewater, Sept.* 18.—The Mary, Brunel, from Newport to this port foundered at the west end of the Gore Sands, with all hands, on the 16th instant.

2 *Warren Point, Sept.* 20.—The Horatio, Rae, from —— to Waterford, was abandoned in a sinking state yesterday, off Carlingford Bar.

3 *Liverpool, Sept.* 23.—The Elizabeth and Jane, hence to Londonderry, sprung a leak on the 14th inst., and sunk in Cushenden Bay; one man and a boy saved.

4 The James and Theresa, Knight, from Newcastle was abandoned on the 16th inst., in latitude 51° 00′ N., longitude 2° 00′ E.; crew saved by the Pioneer, Wrougling, arrived at Helvoet.

5 The Frederic, schooner, of Riga was seen to founder on the 17th inst., in latitude 52° N., longitude 4° E., by the Virginia, Krudop, arrived at Helvoet.

6 *Strangford, Sept.* 21.—The sloop Mary and Janet, Lowry, from hence to Ardrossan, foundered on the 15th; crew saved.

7 The sloop Sisters, of Bristol, foundered off St. Ives, Sept. 18, in a gale. —*Gardeners' Gazette*, Oct. 3, 1840.

8 The Victory, of St. Mary, Scilly, went down off Portlock; all hands lost.

9 The Scotsman, Skeene, of Aberdeen, coal laden, sunk at the entrance of Sunderland harbour, Oct. 5th.

10 *Montrose, Oct.* 3.—The swift, Mason, from Sunderland to Gourdon, was abandoned at sea, in a sinking state; crew saved by the Ann, arrived at this port from Riga.

11 *Weymouth, Oct.* 27.—The Delight, Butcher, from Poole to Liverpool, foundered in Portland Race yesterday; crew saved.

12 *Swanage, Oct.* 27.—The Good Intent, Lurton, from Jersey to Portsmouth, sprung a leak off this port this morning and sunk; crew saved.

13 *Amsterdam, Oct.* 27.—The Margaretha Susanna, Harkens, from Sunderland to Hamburgh, sunk nine miles north of the Texel, 20th instant; crew saved.

14 *Cardiff, Nov.* 14.—The Doncaster, Youle, while lying on the mud, *started a butt* under the main chains—was obliged to repair before she could proceed on her voyage.

15 The Harmony, of Newcastle, abandoned by her crew November the 14th, when Cromer bore south-west thirty miles; crew picked up by the Spring, Clare, and landed at Yarmouth.

16 *Mumbles, Nov.* 14.—The Alert, Gregson, from Hayle to Shields, foundered yesterday, about seven leagues E.b.S. off Lundy Island; only one of the crew saved.

17 *Plymouth, Nov.* 16.—The Schooner Comet, Groves, sunk inside the Breakwater on the 14th; crew drowned.

18 *Leith, Nov.* 20.—The Hesperia, Hooper, from Malaga to this port, was abandoned in the North Sea on the 25th ult.; crew saved.

19 *Shields, Nov.* 14.—The Robur, Sawyer, from Whitby to this port, foundered off Tynemouth yesterday; crew drowned.

20. *Grimsby, Dec.* 19.—The Bristol, from Hartlepool to London, was abandoned at sea yesterday morning, with eight feet water in her hold, and soon after went down; crew saved by the Francis Ann,—arrived here.

21 *Riga, Dec.* 10.—The Harmony, Robin, abandoned in a sinking state.

22 *Gibraltar, Dec.* 10.—The Blucher, Nixon, of Newport, Wales, was abandoned in the Bay of Biscay the 30th ult., and foundered soon afterwards; crew saved by the Felix,—arrived off Gibraltar.

23 *Yarmouth, Dec.* 31.—The Active, of Brixham, having been abandoned by her crew, sunk on the Cross Sand at anchor early this morning.

24 The Odessa, of London, has been abandoned on Hasborough Sand, with nine feet water in her hold.

25 *Yarmouth, Dec.* 31.—A vessel abandoned and dismasted, was seen on the Cross Sand this morning, but drifted off to the southward.

26 *Deal, Jan.* 1.—The Lady Middleton, Martin, of Ipswich, was wrecked on the Cross Sand; three of the crew drowned.

27 *Deal, Dec.* 3.—The steam-tug William Symington, Hurst, from Hull to London, foundered at sea on the 29th; crew saved by the Mary Richards,—arrived here.

28 *Mumbles, Jan.* 16.—The sloop Eliza, Trick, of Bideford, sunk at anchor last night; crew saved.

29 *Sunderland, Jan.* 14.—The brig Edward, of this port, which was the oldest vessel belonging to it, having been built in 1763, and precisely the age of her venerable owner, Edward Aiskell, Esq., of Sunderland, was lost near the Humber, on the 10th inst.; crew saved.

N.B. This is what becomes of the old merchant vessels, in answer to the "Old Tar."

30 The George, trader between this port, Sunderland and Hull, with goods, foundered near the Tees on the 12th inst.; the crew consisting of four persons, all perished,—part of the materials washed on shore.

31 *Scilly, Jan.* 5.—The Dolphin, of Cork, was abandoned at sea on the 10th ult., in a sinking state; crew saved by the Xenophon, Tate, arrived in the river.

32 *Helstone, Jan.* 19.—The John and Mary, Sambrook, from St. Maws, with copper-ore, is reported to have foundered off the Lizard on the 10th inst.

33 *Yarmouth, Jan.* 20.—The Mars, Wilson, from Sunderland to London, was abandoned in a sinking state the 17th inst.,—Tynemouth W.N.W. twenty-five miles; crew saved.

34 *Grimsby, Jan.* 27.—The sloop Allen, of Hull, sunk off Lowestoff on the 24th inst.: crew saved.

35 *Eyemouth, Jan.* 18.—The Hythe, Cookson, from Stockton to Chatham, in running for Leith Roads, foundered off St. Abbs Head yesterday; crew saved.

36 *Harwich, Jan.* 24.—The Star, Stephens, from Yarmouth to Sunderland, was abandoned off Southwold this morning in a sinking state; crew saved.

37 *Maryport, Jan.* 25.—The sloop Sarah and Jane, Oliphant, sailed hence the 22nd inst., and was seen to go down near Salterness light-house; crew supposed to be drowned.

38 *Wivenhoe, Jan.* 27.—The smack Enterprise, of this port, Collins, sunk near the Black-tail beacon the 22nd inst.; crew saved.

39 *Yarmouth, Jan.* 28.—The Eden, Cogle, of Sunderland, sprung a leak on the 23rd inst., forty miles east of Aberdeen, and foundered; crew saved.

40 *Aberdeen.*—The sloop Jenny, McDonnald, from Eden to Newcastle, was abandoned off St. Abbs Head on the 25th inst., being very leaky; crew saved.

We have treated this subject seriously long ago; indeed, we may say, until we have become tired and sick of it; so we shall now throw aside our gravity, and until it be determined that a proper inquiry shall take place in all cases of the wrecks of our merchant shipping, we shall have recourse to our own court, and record its judgment along with each case of the departure of a vessel as "a thing of life" from the wide ocean, along with the particulars of that departure as nearly as we can obtain them.

We shall now turn to the records of a more modern date. The *Renown*, No. 42, of our table in this number, and a vessel unknown, ran foul of each other as related in the following extract:—

"On Monday evening the Mary Jane, Captain Stokes, arrived at Dublin from Oporto, with a cargo of wines, having on board Captain Hill, of the brig Renown, of Perth, and crew, consisting of ten other persons, whom he picked up at sea in the boat of the Renown, which sank in consequence of being in collision with a vessel unknown. The Renown was on her passage from Liverpool,

for Ancona. The vessel which ran foul of the Renown was a brig of about 300 tons register. Immediately after the collision the vessels dropped clear of each other. The long-boat of the Renown was cleared with all possible despatch, but the vessel filled so rapidly that the persons on board had barely time to save themselves by jumping into the boat before she went down. They then looked out for the other vessel, which had shown a light after the collision, and pulled in her direction, but before they could come up with her the light disappeared, and it is Captain Hill's opinion that the brig went down with all on board. The collision took place on Thursday, the 18th inst., at 3 A.M., during a tremenduous squall, accompanied with rain, in latitude 47° N., longitude 9° 40′ W. Five hours afterwards Captain Hill and his crew were rescued from their perilous situation by the Mary Jane, on board of which vessel they experienced every kindness and attention that their destitute condition required, and which could be afforded on board a vessel of only 63 tons register. Captain Hill and crew had no time to save an article of clothing; and as he (Captain Hill) was getting out the long-boat he ordered the mate to bring up his desk from the cabin, but which the mate found impossible to accomplish, in consequence of the sinking state of the vessel, and her register and all other vouchers went to the bottom.

Decision "Accidental Death," accompanied by the remark, that a better *look-out* should have been kept. Some one present naively observed, "What the song says is not true—

"Don't you see the world's wide,
There's room for us all."

The *Good Intent*, No. 23, with the very best intention to take care of herself, struck on the South Rock, at 10h. 30m. P.M.—Soon waterlogged and unmanageable—deserted—seen to founder.

"*Donaghadee*, Nov. 22.—The brig Good Intent, Captain Guthrie, of and from Troon, for Dublin, in ballast, struck on the South Rock at half past 10 o'clock on Saturday night, and having soon afterwards become waterlogged and unmanageable, she was deserted by the crew, and seen to go down by her Majesty's mail packet Pike. The crew reached Lighthouse Island in safety."

Decision—"Accidental Death."

Respect brig, No. 43.—Coal laden; had wandered among shoals; become leaky; crew taken out by steam packet Dover, and landed at Calais.

"The brig Respect, Grant, from Sunderland for Calais, with a cargo of coals, was abandoned on the 6th inst. by the captain, mate, and crew, Calais bearing S. ¼ W. distant 10 miles; she had been on shore on the shoals on the French coast, on the 6th inst., and was very leaky. The crew were taken out by H.M. steam packet Dover, and the whole landed in safety at Ostend, at 4 P.M., the same day.

"I have just learnt by the French packet from Calais, that the brig sunk off Gravelines, and that a Calais pilot-boat was close to her at the time."

Decision—"Found Drowned."

Sultana, No. 45.—The following particulars from the *Bombay Gazette*, concerning this vessel were read to the court.

"Loss of the ship Sultana, of Bombay; landed at Borneo per long-boat—Captain J. Page. G. H. W. Gill, chief officer; A. Young, second officer, gunner, five seacunnies, two carpenters, 23 lascars and servants, Nacodah and

Reranny passengers, Mr. and Miss D. Souza, Mrs. Anderson, and one ayah—in all 42 souls; the remainder reported to have landed on the Coast Island of Serassan off Taljong Daltoo, supposed to be one of the South Natunas, July 26, 1841.

(Signed) "G. H. W. GILL,
"*Late chief officer, ship Sultana.*"

"Dear Sir,—In the event of the non-arrival of the Prow, I send this by another which sails in company, and trust you will let our friends know, also the authorities at Singapore; so that the above-mentioned 42 British subjects may be released from their present uncomfortable condition. I dare not say more.

"Your obedient servant,
(Signed) "G. H. W. GILL."

"In the event of my not reaching Singapore, this is to certify, that the ship Sultana, of Bombay, bound to Manila, was totally destroyed by lightning, on the night of the 4th of January, 1841, at 4 P.M., thirty miles north-east of the Bombay Shoal, coast of Palawan. Part of the crew, forty-two in number, succeeded in reaching Borneo on the 11th of January, in a state of starvation, having only saved a small cask of water and a few biscuits, and are now detained there by the Sultan, excepting myself, Mr. and Miss De Souza, and three servants, whom he has permitted to proceed to Singapore, in one of his prows, first obliging us to large sums of money, on the payment of which the remainder of our companions are to be allowed to leave; should I succeed in procuring a ship, to release them from their now most unpleasant situation, which I fear none but one of her Majesty's ships, will be able to effect.

"The above-mentioned left Borneo on the 24th of May, but falling in with bad weather off this place, put back the second time dismasted on the 20th of June, and have been detained here by a large fleet of piratical prows, which blockaded the island for about twenty days; they have now left, but are supposed to be cruizing between this and Pontiana, and have expressed a wish to take us if possible. Our prow is in a very bad condition, and we fear will not reach, but be obliged to put back here or perhaps Mocha or Rhio.

"Macodah Abdulrahman, by whose prow I send this, will be able to give the latest news of our proceedings, should we be obliged to put back. All the European part of our crew at Borneo were in a sickly state when I left; Mr. and Miss De Souza are very unwell also—so that I trust no time will be lost. I cannot say more, being still in the hands of the Philistines. Island of Serassan, off Taljong, Daltoo, 20th July, 1841."

So soon as Messrs. Zechariah received the note, (Mr. Gill's) apprizing them of the fate of the passengers, they addressed the following letter to the governor, and the P. S. informs us of the promptitude with which the request was attended to:—

"*Singapore, 7th Aug.*, 1841.

"SIR.—At a late hour yesterday evening, a letter was put into my possession from Mr. G. H. W. Gill, late chief officer of the ship Sultana, of the port of Bombay, a true copy of which I herein enclose for your perusal,—from the nature of the said writing, you will observe that forty-two British subjects were and are now on a land where none but a number of savages reside. I therefore beg you will have the goodness to use such means as may be most actually necessary, so as to render to poor unprotected sufferers some personal assistance. The original letter from Mr. Gill is in my possession, the same being written on so small a piece of paper, as to induce me to preserve it very carefully. I shall most pleasurably send it over, should you require to have it particularly.

I am, &c.,

"*To the Hon. S. G. Bonham, Governor of P. W. Island, Singapore and Malacca.*" (Signed) "J. ZECHARIAH."

After maturely and deliberately considering the above the court unanimously decided that "Accidental Death" should be recorded. It was asked by one of the court "whether the Sultana was fitted with lightning conductors, and if so, of what kind?" This was not known; but it was stated that Harris's are not so expensive as represented, and that careful owners should use them

Mary, No. 36.—The following extract from the *Shipping Gazette* was then read:—

"*Cardiff*, Dec. 1: Nov 30.—The Hope, Robertson, from Brest (reported yesterday) had on board eight persons; the crew of the brig Mary, Bond, from Leghorn for Liverpool, picked up on the morning of the 16th, between Brest and Ushant; the latter vessel having sprung a leak and foundered the night before, leaving barely sufficient time for the crew to escape in their boat."

In this case the court unhesitatingly pronounced, "Died by the Visitation of Man."

Condor, No. 14.—The judge-advocate hastily read the following particulars of this case:—"Cargo; sugar, indigo, &c., value 18,000*l.*, anchored off the harbour of Naples, wind foul, unable to enter: night, gale increasing; fearful sea, three anchors down, reward offered for steamer not taken; two cables gone; vessel run ashore; crew saved." "Justifiable Navicide" was immediately recorded; the captain's conduct being highly eulogised by the members of the court.

The judge-advocate then read the following piece of intelligence from a recent number of the *Shipping Gazette*:—

"*Milford*, Dec. 2.—The John Taylor, for Africa, which sailed for Liverpool yesterday, was obliged to return to this port, in consequence of a second crew refusing to proceed on the voyage, on the plea that she was not seaworthy."

This produced much sensation both in and out of court; but after some discussion it was decided by the president, that until the John Taylor, with her crew and cargo disappeared from the ocean, as a "thing of life," either by foundering or one of the numerous well-known methods of making her exit, no notice of her could be taken in that court. She would then fall under the consideration of the court, as she would be entitled to none elsewhere, unless insured. Some one enquired how that could save the lives of the captain and the crew who might risk themselves in her, and was answered, "Oh! they are of no consequence." But it was supposed with reference to that court, "a thing of life" did not apply to human life. The proceedings were then resumed; and in the case of

The *Atlas*, No. 3 of our table, it appeared that all that was known of her was that the crew had been taken out of her when she had seven feet water in her hold, by the St. Leonard, and landed at Lydd. In the absence of any further information, the president merely observed, that such a case was of very common occurrence with British merchant ships, when the judge-advocate read the following extracts from the Shipping Gazette, respecting the wreck of the

Susanna, of Stockton, No. 46, of the table.

"We have received the following particulars of the loss of this vessel, belonging to a Stockton Commercial Shipping Company, and her crew, consisting of nine persons, from Redcar. It appears that on Sunday last, at half-past 8 A.M., a vessel was seen in the offing, though at a considerable distance, with a flag of distress flying, and appearing to drift towards the Tees. The unfortunate vessel being coal-laden, and in a sinking state, struck in very deep water, with her unfortunate crew hanging in her rigging, not being able to remain on deck; and in this position they were plainly seen from the shore, where numbers were collected awaiting the awful catastrophe. As the vessel neared, the danger became more apparent, the life-boat was launched by her gallant crew into a tremendous surf, through which she made her way in a most masterly style. Unfortunately the tide was setting strong in, with the wind dead on shore, so that the boat was carried, in spite of every exertion, so much to the leeward, that she could never make up her lost way. Still the life-boat lingered amidst the foaming surges, in the vain hope of meeting some of the poor sufferers, dead or alive: but alas! without success; and the boat's crew were reluctantly compelled to return in a state of complete exhaustion. One of the sufferers was a Redcar man, highly respected, of a worthy industrious family. The mate was from Guisborough, and has left a widow and four children to lament their loss. The master of the Susanna is, we are informed, Mr. Watson. Twelve vessels are on shore at Hartlepool.—*Northern Times.*

"*Alleged Shameful Mismanagement.*—Our correspondent at Stockton, referring to the late loss of the brig Susanna, Watson, and her crew of nine hands, off Coatham, at the entrance to the river Tees, imputes the grossest negligence, and we may add indifference to human life, to the owners of the ill-fated vessel, or their managing agent. It is stated, that not only was she "a very old vessel"; but "that her yards and tackling had been for some time condemned." Moreover, it is alleged that the captain "had reported her yards and tackling as unseaworthy"; but that the reply he received was "that he must try to make them serve this voyage!" That voyage, unhappily, was destined to be her last. 'It appears,' says our correspondent, 'to have been the general impression of the sailors, and all who knew the Susanna, that she was unseaworthy; for none of the sailors resident in Stockton would sail in her: consequently, eight out of the nine persons who have perished were strangers.' We will not add a word of comment. If the facts be as stated, the conduct of the parties alluded to carries with it its own condemnation.—Our correspondent censures the looseness with which the business of insurance is transacted. While such craft as this wretched vessel can be insured, we may expect to hear of many similar calamities. It would be some protection to the lives and property of others, if the insurance clubs were to exercise greater circumspection. It is to be hoped that this deplorable case may excite proper attention to the subject."

The court were proceeding to give their decision in this case, when a letter was put into the hands of the judge-advocate, and directed by the president to be read.

SIR—I present you with yet another awful proof of the necessity for the immediate formation of the refuge harbour at Redcar; but I will comment solely on the loss of life, as it is possible, that of the dozen vessels which were driven ashore on the 15th, in the vicinity of Redcar, some were, at all events, no loss to their owners, and possibly more than one may have long borne the name of an "old coffin."

The Susanna, of Stockton, left the Tees, coal laden on Saturday night's tide with a light wind from the N. N. W.; She passed Redcar on her course to the south, other vessels left the Tees and Hartlepool under the same circumstances, and had got a few miles to the southward when the gale headed them from the south of east, and consequently drove them back.

The Susanna, early on Sunday morning, repassed Redcar, into which she could have sailed with a flowing sheet, but for the opposition of those ship-owners of Stockton, Sunderland, and Shields, who made the preservation of human life secondary to the consideration of the payment of the paltry amount of dues required to make the refuge harbour at Redcar. Her signals of distress were observed about 9 A.M.; the gales being got round to the north-east, and the two Redcar life-boats were immediately manned by their gallant crews of hardy fishermen and pilots; but after a vain struggle with the wind and waves, for above an hour, they were unable to reach her. The vessel was, during this time in a tremendous surf, having struck on the sands near the mouth of the Tees, and the seas making a complete breach over her. The crew were seen clinging to the rigging of the mizen-mast until at the expiration of an hour from the time she grounded, when the masts broke away, and the Susanna almost immediately went to pieces.

The whole of the crew consisting of eleven, now add to the long list of lives which might have been spared, but for the disgraceful interested opposition which has been so long arrayed against the proposed refuge harbour at Redcar, from the dread of its becoming also a good coal port, and therefore a serious rival to the neighbouring coal ports.

On the same morning the following vessels were also driven on shore in the Tees Bay, several of which are already total wrecks. The brigs Exchange of Lynn, Shannon of Sunderland, Ariel of Sunderland, Elizabeth of Boston, Reindeer of Hartlepool, Albion of Rochester, Hertford of Weymouth, Albatros of Hartlepool, Garland of Sunderland, schooner William of Berwick, and the sloop Lowchiel of Inverness; making with the Susanna, a dozen vessels wrecked in a single gale in the immediate vicinity of the proposed Refuge Harbour at Redcar, which is already more than three-fourths made by nature, and having a depth of thirty feet at low water, would have allowed a ready access, which was denied by the bars of Hartlepool and the Tees.

I am &c.,

W. A. Brooks.

Stockton on Tees, 17th Nov, 1841. *Mem Inst. C. E.*

The court decided that there was sufficient to show that the Susanna was incapable even of carrying coals, and was inclined to the opinion that she had proved her right to the name of an "old coffin," as stated in Mr. Brooks' letter, as she had performed the duty of those articles in general, by having borne her crew to their common grave. That with respect to Mr. Brooks' harbour of refuge at Redcar, the court had nothing to do with it. The president observed "It is well known that refuge harbours are unfavorable to insurance generally, although favorable to the saving of lives and property, as those total losses would not be so common, which are the life and soul of sea-insurance. But with human lives and souls sea-insurance had nothing to do; it was quite a mistake to imagine it had: the tendency of it was altogether of an opposite nature. The crew of the Susanna might or might not have been saved by Mr. Brooks' refuge harbour; but that was of no consequence; and, if between the Thames and the Forth, there was only the Humber, a dangerous river to enter, and no refuge harbour that would receive a vessel under all circumstances, with an enormous passing trade, the fact was for the advantage of sea-insurance, and those who profited by it at the expense of lives and property." The president after this digression on mercantile maritime affairs, gave the opinion of the court in this case, which decided that the loss of the Susanna amounted to

"*Felo-de-se*," occasioned by parties on shore; and held the captain and crew to have been unknowingly accessary to the fact.

The proceedings of the day here terminated.

Steam Navigation.

Steam power is undoubtedly *the* feature of the nineteenth century, and steam navigation is by far the most important aspect of that feature. The extension of steam navigation with different parts of the world will, in all probability, accomplish greater good for humanity than any invention, or the application of any power since the days of Guttemberg or Caxton. Business, commerce, health, pleasure, social intercourse, international peace, enterprise, civilization, and Christianity, are alike interested in this extension.

Extended markets for our manufactures, quicker sales and returns, smaller profits and greater consumption; new countries for tourists and travellers; the rapid communication of news, and the greater consolidation of national interests; the decreased distance between the seat of imperial and central authority, and the trans-marine possessions of the United Kingdom; the enjoyment of more frequent intercourse, personal as well as written, between friends and relatives; a surer identity of taste in literature, fashion, and ideas in every part of the empire; the more rapid diffusion of the arts and sciences; the more general application of useful discoveries and inventions, and increased personal comforts therefrom; the more gradual spread of civilization, and the more complete subjection of mankind in all quarters of the world to a sound and enlightened public opinion, and the quicker conversion of savage and ignorant people to the Gospel, are all, more or less, involved in the extension of steam navigation. Already are British travellers turning from the well-beaten paths of continential tours; crossing the Atlantic, they seek new scenes of delight and instruction, and acquaintance with other, but not less interesting manners in the provinces of British North America, and in the states of the great American republic. In a few years India will be crowded by our tourists; the West Indies become a favorite winter residence, and Australasia and New Zeeland be the scenes of extended travel. Merchants hereafter will become personally acquainted with the colonies and the countries with which they are connected in business; England will be selected by Indian invalids when seeking restoration of health; Indian natives, finding the difficulties of travelling removed, will gradually throw off the restrictions of caste; and deputations of the India House will proceed to their possessions to investigate with their own eyes the state of their affairs.

Already has steam navigation with Bombay—by this time extended to Calcutta, Madras, and Ceylon—accomplished much for India. Indian news and letters are now anticipated with as much anxiety and certainty as New York advices; a strong public opinion on Indian affairs and policy is gradually springing up, which in the end will be corrective of misgovernment; the principle of joint-stock association is already in

application to extend Indian cultivation, to increase Indian exports, and to give to India greater monetary facilities; month by month the wars and hostile progresses of Indian armies are closely watched, their worthless results are contrasted with their heavy cost; the slow advancement of India in material prosperity, and in native happiness and comfort, is painfully compared with the knocking down of this defenceless prince and setting up of that foolish and despicable puppet; the facility with which countries are overrun, blood spilt, property destroyed, and the people demoralised, is vividly seen; but the progress of the peaceful arts, the extension of cultivation, the advancement of knowledge, the accomplishment of great public works, are scarcely observable, though anxiously sought after. The monthly regularity with which these conflicting results are presented to the public consideration by each Indian mail is sowing the seeds of future Indian prosperity; the British people now sympathise with, because they know Indian wrong; they take no pleasure in victories over semi-barbarous and really unoffending princes; they see in India a poor misruled country; paying millions annually without return to this country; they feel that India is wronged, and in that feeling is involved the future prosperity of that dependency of the British crown. Henceforth steam navigation with India has rendered the governor-general amenable to public opinion at home, and though the Board of Control may hereafter preserve that profound silence which has so long characterised its intercourse with the legislature, the monthly mails will counteract its noiseless policy by showing its disastrous consequences. India will hereafter be well governed, and for good government she will be chiefly indebted to steam navigation.

The wonderfully increased intercourse between the United States and England, and the limitation of the distance between them, place the two countries in the condition of doing the utmost good or the greatest amount of injury to each other. It is but a few years ago in the world's history, that European vessels left their ports in the spring of one year, sailing only during day, and lying-to during night, and on reaching New York laid up for the winter, and on the following summer made their homeward as slowly as their outward voyage. Now, the space between the Old and New World ceases to be calculated by miles and leagues; days and hours measure the distance. Liverpool and Halifax are brought within ten days. Liverpool and Boston within twelve, and Liverpool and New York within fourteen days of each other. Under the old packet system between Falmouth and Halifax, by gun-brigs, the expense to government, exclusive of the deplorable loss by foundering of nearly all these dangerous vessels, with their passengers and crews, was annually about 40,000l. more than the receipts of postage. By the line of Cunard's steam-ships already large balances have been placed to the credit side of the Atlantic mails. But this, in a national point of view, is the smallest advantage derived from them; they form a rapid and the natural line of communication between the whole of Europe and all North America.

In the last batch of papers received from the West Indies, we perceive that the colonial organs of public opinion in more than one island, inquired what had become of the project for establishing steam navigation

between England and that Archipelago. Four noble steam-ships, now riding in Southampton Docks, will reply to the inquiry. By means of one line of these fine vessels the vision of Columbus seems likely to be practically realised in the best spirit of British enterprise, the trans-atlantic terminus of one line in Chagres, on the Atlantic side of the Isthmus of Panama. This terminus decides the question of improving the route across the Isthmus to Panama, a distance only of thirty miles. There are several routes across, all of which, though very indifferent, are even in their present unimproved state, quite passable. Whether an improved communication shall be effected by canal or railroad, or conjointly, is for practical engineers to decide; but the first steam-ship that touches at Chagres practically decides the question that an improvement shall be at once effected. Steam-ships established by British capital, already ply between Panama, on the Pacific side, which contains a population of upwards of 10,000, and Lima, and and from thence to Valparaiso. Arrangements have been some months in progress to establish a regular monthly communication between Valparaiso, or some other Chilian port, and New Zeeland, in connection with the Valparaiso and Panama steam line, and thence across the Isthmus with West Indian and English steam-ships; thus bringing the newest British colony within eighty day's sail of the mother country. In this communication with New Zeeland is of course involved an extension by steam power with all the other Australian colonies. Australian steam navigation will again, on the one hand, communicate with India and the Red Sea and the Mediterranean; and, on the other, in the lapse of not many years, will, doubtless, from its northern shores, extend the British power and commerce amongst the fifteen millions of the human race who people the rich and fertile islands of the Indian Archipelago. We cannot doubt that hereafter, lines of steam navigation will be established between Singapore and the northern coast of Australia, or some island off it. Steam will thence rapidly extend its progress to the Phillippines, will range along the coasts of China, pass through the Straits of Corea into the Japanese waters, and through the Gulf of Tartary, reach the Asiatic confines of the unwieldy empire of the Czar.

The early supercession of the expensive and uncertain sailing packets between Falmouth and South America is an occurrence, on the certainty of which it is also allowable to speculate. The Brazilian government has already granted facilities and commercial immunities for the establishment of a steam line between England and Rio; and the execution of the plan projected will connect Madeira, the Canaries, Cape de Verdes, the western coast of Africa, and the coast of South America, from the Amazons to La Plata, with this country. The opening up of the great rivers of South America, as yet but little known beyond their mouth to European commerce, and the colonization and settlement of the rich and fertile valleys of that portion of the new world, its salvation from those internecine wars, which impede the developement of its inexhaustible resources and demoralize mankind, must follow in due course the establishment of steam navigation between Europe and Brazil. Neither is it impossible that by means of another line meeting these southern Atlantic steam-ships, steam navigation may

yet double the Cape of Good Hope, coast along the shores of Eastern Africa, drive the slave trade from the channel of Mozambique, give an impetus to civilization in Madagascar, and to commerce in Zanzibar, and touching at the Mauritius, and the Seychelles, unite itself at Aden with the Indian lines, and so return to Europe.

Such is a hasty glance at what steam navigation has been doing and is about accomplishing—to belt the world in various courses. That the result will be great is undeniable; perhaps its ulterior magnitude is even as yet hid from the limited conception of the various projectors and undertakers.

New Books.

Narrative of a recent Imprisonment in China, *after the wreck of the Kite, by John Lee Scott.*—W. H. Dalton, Cockspur Street, 1841.

This unpretending little volume, consisting of a few pages, gives a short account of the loss of the Kite, a merchant vessel hired at Madras by government, to carry stores to the British fleet in China. She was wrecked off the island of Ningpo, and the crew being captured by the Chinese were most inhumanly treated. Among the unfortunate sufferers was poor Mrs. Noble, the wife of the master of the vessel, who was drowned, and whose capture occasioned so much sympathy in England. These unfortunate sufferers were carried through the island, fettered, and in cages. "They put irons on my hands and feet," says Mr. Scott, "those on my ancles being connected by a chain of five or six links, and an iron collar round my neck, with a stick fast to it, which was also made fast by a padlock to my handcuffs." The following passage so revolting to human nature, forcibly illustrates the savage barbarity of the Chinese character. "The corporal of marines who was seriously ill of the dysentry, was lying on his back in the bottom of his cage, whilst his legs were raised up in the air, and his heels resting on the upper ledge, the lid being thrown back. He had entirely lost his senses, and was evidently dying fast; the maggots were crawling about him, and the smell that came from him was dreadful. Fettered as we were, we could afford him no assistance, and the Chinese merely looked at him, and then walked off, holding their noses." The survivors after five months captivity, were released, and reaching Chusan were received on board our ships, where, it is needless to say, they met with the greatest kindness and attention.

The above is a fac-simile of the cage alluded to.

JOURNALS of TWO EXPEDITIONS OF DISCOVERY IN NORTH-WEST AND WESTERN AUSTRALIA, IN THE YEARS 1837-8-9.—*By George Grey, Esq., Governor of South Australia, (late Captain of the 83d Regt.)* 2 *vols.* 8*vo.*—London, T. W. Boone.

It will be fresh in the recollection of many of our readers that Captains Grey and Lushington embarked in H.M.S. Beagle in the year 1837, to proceed on an expedition countenanced by the Geographical Society, and Her Majesty's government, which had for its object the gaining of information "as to the resources of North Western Australia, and to ascertain the course and direction of its rivers, and mountain ranges; to familiarize the natives with the British name, and character; to search for information regarding the natural productions of the country, and all details that might bear upon its capabilities for colonization or the reverse, and to collect specimens of its natural history." These were the main objects of the Expedition: It was accompanied by Mr. Walker, surgeon and naturalist, and by two Corporals of the Sappers and Miners, who had volunteered their services. It was afterwards joined by Mr. Frederick Smith, eldest son of Octavius Smith, Esq., of Thames Bank, who had gone out from England expressly for the purpose of joining Captain Grey, "led solely by the spirit of enterprise and not with any view of settling." Of the sad and untimely fate of this young man, we shall presently give account. The party who had embarked from England were landed at the Cape, where Captain Grey hired a small Schooner, and having increased his numbers by a few hands, they set sail and towards the close of the year arrived off Hanover Bay, on the north-west coast of Australia.

To follow the exploring parties on the two journeys through all their difficulties, would occupy far more space than our pages will admit; from the moment of their landing they seem to have been beset with trials and difficulties, and with dangers and privations, such as have rarely been recorded, and which nothing but the cool determination, perseverance, and undaunted bravery of Captain Grey and his party could possibly have enabled them to overcome. No sooner had they set foot on shore and proceeded towards the interior, than they became exhausted from heat and thirst, and losing their way, with the greatest difficulty retraced their steps to the beach. Having accomplished this however, Captain Grey and Corporal Coles left the party and pushed forward for the purpose of hailing the Schooner. They had not proceeded far along the beach before their progress was arrested by an arm of the sea about 500 yards across, from which the tide was running out "with fearful rapidity," Coles could not swim, but Grey plunged in, and at the imminent peril of his life, succeeded in gaining the rocks on the opposite side; he was picked up a short distance off, in a state of great exhaustion by the Schooner's boat, which had already taken up the remainder of the party, having seen the flash of their guns on the beach after dark.

This was at the very outset, but the firm and manly bearing of Captain Grey was indeed conspicuous throughout, and particularly so on the occasion of his being attacked by the Natives, when he was severely wounded by their spears.

We regret that the limit of our space prevents the possibility of giving the details of this attack; or indeed any details of the extraordinary, and as we have said, almost unexampled trials to which the party were subjected on both expeditions.

The first of these extended from Hanover Bay, as far to the southward as the Stephen Range, lying at a short distance beyond the Glenelg, a noble river discovered by Captain Grey, stated to be 250 yards wide at the spot he saw it; and back to Hanover Bay, including besides numerous and extensive detours. The second expedition was conducted in three Whale Boats, till they were all wrecked and dashed to pieces, one after another.

The Ship in which the party embarked for this latter expedition at Swan River,

took them to Sharks Bay, thence they proceeded in their boats to Gantheaume Bay; and from this spot by land to Perth,

The account of this second journey is painful in the extreme, and it was on this occasion that poor Smith, to whom we have alluded, met with an untimely grave. It appears that the party separated, Grey and some of his men pushing on by long marches to Perth, while others, in spite of all Captain Grey's remonstrance, insisted on proceeding slowly, and by degrees.

They were for some days almost without food, and could procure no water, walking under the intense heat of the sun. At length Grey arrived at Perth, and instantly dispatched a party to render assistance to those who had remained behind. They fell in with three of the missing party, and learnt from them that Mr. Smith unable to proceed further, had remained behind in a dying state four days ago.

"Touched by this distressing intelligence, the party eagerly pursued their search. Warrup, a Native, who accompanied them, observed the traces of feet in the sand on the beach. Following them up, the party observed a bare sand hill to the height of twelve or fourteen feet, and turning short to the left found the unfortunate object of their search extended on his back, lifeless, in the midst of a thick bush, where he appeared to have laid himself down to sleep, half enveloped in his blanket. The poor fellow's last bed seemed to have been selected by himself; and at the distance of three or four yards from him lay all the trifling articles which had constituted his travelling equipage: these were his wooden canteen, his brown felt hat and haversack, containing his journal, shoes, tinder, steel, gun-screw, a few small canvas bags, which he used for carrying shell-fish, and a bag with thread, needles, and buttons. Life seemed to have been extinct rather more than two days; and from the position of the head, which had fallen considerably below the level of the body, we were led to conclude that a rush of blood into the brain had caused his death, and at last without much suffering. With the help of the soldier and Warrup, we made a grave with our hands, and buried poor Smith deep in a sand-hill near the shore, about seventy-six miles to the north of Swan River. Even Warrup, notwithstanding the general apathy of the native character, wept like a child over the untimely fate of this young man, from whom he had formerly received kindness. Smoothing over his solitary bed, and placing at the head of his grave a piece of wood found upon the beach, we pursued our melancholy way." "He was," says Capt. Grey, "the most youthful of the party, being only eighteen years of age, and thence was less capable than any others of bearing up against long continued want and fatigue; and the excessive heat of the climate, under which he gradually wasted away until death terminated his sufferings. When aroused by dangers, or stimulated by a sense of duty, he was as bold as a lion, whilst his manner to me was ever gentleness itself, as indeed it was to all."

We cannot too strongly recommend the perusal of these interesting volumes.

Notice to Chronometer Makers.

Hydrographic-Office, November 26th, 1841.

The Lords Commissioners of the Admiralty having had under consideration the results of the various Annual Trials of Chronometers which have been made at the Royal Observatory of Greenwich; and also the recent improvement by which the ill effects of extreme temperatures are to a certain degree obviated, are pleased to give notice, that—

At the approaching Annual Trial, in the beginning of 1842, no change will be made in the mode hitherto adopted of rating them, but at the next trial, in the beginning of 1843, and at all subsequent trials, they will be rated at the discretion of the of the Astronomer Royal through a variety of temperatures, from the lowest that can be obtained without artificial means, up to that of 100° Fahrenheit.

Their Lordships give notice likewise, that they reserve to themselves the right of publishing the rates of all Chronometers which shall henceforth be sent on trial to the Royal Observatory.

Admiralty Orders.

Admiralty, Nov 15th, 1841.

Referring to the Memorandum, dated the 12th of September, 1839, which provides among other things that "Whenever the captain shall, in his discretion direct that the whole or any part of the allowance of spirits, wine, or strong beer, due to any of the crew shall be withheld in the way of punishment stoppages for misconduct, a strict account of the particulars shall be kept; and at the end of every quarter the amount of all such stoppages calculated at the savings prices shall be paid to the sick mess fund, under the existing regulations;" my Lords Commissioners of the Admiralty are pleased to direct, that this portion of their said order not being in accordance with the regulations for her Majesty's service at sea, established by order in council, dated the 1st of January, 1833, shall be annulled.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, 17th December, 1841.

The mates of the royal navy taking rank on the Navy list according to their first warrants as such; the Lords commissioners of the Admiralty are pleased to direct, that in cases of a midshipman having completed the required time to entitle him to pass for a lieutenancy, when the ship to which he belongs shall happen to be detached so as to prevent his obtaining at the moment an examination according to the established regulations, the captain or commander of the said ship or vessel in which such midshipman may be serving, with the senior lieutenant or second officer, and the master or second master, (according to the class of ship and the rank of officers on board of her) assisted by the naval instructor, if there be one on board, may proceed to examine such midshipman as to his qualifications to perform the duties of a lieutenant of her Majesty's navy, and if they find him to be in their opinions duly qualified, they are to give him a certificate to that effect, dated on the day of such examination, and the captain may forthwith give him an acting order as mate, and if on the first opportunity that shall afterwards offer for his being re-examined according to the established regulations, he passes successfully, his rank as mate shall be enrolled according to the date of his first provisional certificate above ordered.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, 21st December, 1841.

With reference to the memorandum of the 23d of Nov. 1837, directing that the first class engineers of her Majesty's steam vessels shall wear the same uniform as the gunners, boatswains, and carpenters of her Majesty's fleet, the Lords Commissioners of the Admiralty are pleased to direct, that the uniform to be worn by the first class engineers, in order to distinguish them from other classes of officers, shall in future be as follows, viz.—

Coat—Blue cloth, double breasted, with a button having a steam engine with a crown above embossed on it, to be placed four and four, and a larger button of the same kind upon the collar.

Waistcoat—With buttons similar to those on coat.

Trousers —Plain blue cloth.

Cap—With a narrow gold lace band

By command of their lordships,
SIDNEY HERBERT.

[We understand that patterns of these buttons may be seen at the Admiralty, and at Mr. Gillott's, Strand, as well as at the Admirals' offices at the Ports, and at the Packet Stations.]

Promotions and Appointments.

(From the Naval and Military Gazette.)

*Admiralty, Oct.*14.—The Queen has been pleased to nominate and appoint Captains E. Belcher, W. Warren, H. Eyres, and C. A. Barlow of the Royal Navy to be Companions of the Most Honorable Military Order of the Bath.

Admiralty, Nov. 30.—Her Majesty has been graciously pleased to appoint the four officers undernamed to be Naval Aides-de-camp to Her Majesty.—Capt. Sir C. Napier. KCB.; Capt. Sir N. J. Willoughby, CB., KCH.; Capt. Sir T. Fellowes, CB.; and Capt. E. H. A'Court, v. Capt. the Hon. G. Poulett; Capt. the Hon. Sir A. Maitland, CB., KCM., and G.; Capt. Sir E. T. Troubridge, bart.; and Capt. the Right Hon. Lord Radstock, CB., promoted to the rank of Rear-admirals.

Admiralty, Nov. 27.—Errata in the supplement to the *London Gazette* of Nov. 23d, page 3016, col. 2, line 25:—in the list of Mates to be Lieutenants, *for* Mr. W. H. J. Lome, *read* Mr. W. H. J. Lowe. And line 39, *for* Mr. C. F. Callett, *read* Mr. C. F. Collett.

PROMOTIONS.

CAPTAIN—H. Stroud.

COMMANDER—J. Steane.

LIEUTENANTS—H. M. Kinsman, J. Cashman.

MASTERS—Pascoe, Garner, J. Tucker, W. Mills, H. B. Harris, H. Davis, Wells, and J. Pritchard.

SURGEONS—R. M'Lean, G. W. Pritchett, A. G. G Tucker, — Page, Carroll, Stevenson, H. D. Shea, and J. Macbean.

APPOINTMENTS.

VICE-ADMIRAL—Sir E. Brace, KCB., to be commander-in-chief at the Nore; Rear-admi. the Hon. J. Percy to be commander in-chief at the Cape of Good Hope.

CAPTAINS—F. Brace (1827) to *Camperdown*—P. Hornby, CB, (1810) to be Comptroller-general of the Coast-guard; Sir F. Collier, Knt. (1808) to be Capt. Superintendent of Woolwich dockyard—Lord G. Paulett (1838) to *Carysfort*—P. Fisher (1814) to be Capt. Superintendent of Sheerness dockyard—Sir W. Pell, (1813) to be Capt. Superintendent of Pembroke dockyard—J. Carter (1815) to be Superintendent of the Royal Clarence victualling-yard, Portsmouth, and the Royal Hospital, Haslar, v. Sir E. Chetham, promoted—M. Quin (1837) to *Minden*—Sir F A. Collier, Knt., KCH. (1839) Superintendent of Pembroke yard.

COMMANDERS—J. G. Gordon (1815) to *Devastation*, v. Henry, sick—C. H. M. Buckle (1836) to *Growler*—J. Halloes (1837) to *St. Vincent*—J. B. P. Hay (1839) to *Queen*—W. Nevill to *Serpent*—W. Worsfold to *Caledonia*—G. Goldsmith (1841) late *Druid* to *Hyacinth*—Willis to *Jaseur*.

LIEUTENANTS—G. R. Halliday (1841,) and W. H. Bridge (1841) to *Alfred*—J. W. Dorville (1841), T. Crofton (1841), W. Bailey (1841), J. Elliott (1840), and H. J. Julian (1840) to *Minden*—J. Borlase (1841) to *Cornwallis*—R. Moorman to *Excellent*—W. S. Sanders to *Growler*—H. M. Kinsman (1841), and J. C. Johnston (1827) to *Warspite*—J. T. Nott (1810) to command *Partridge*—G. E. Patey (1813) to *Caledonia*—R. K. Jenkins (1839) to *Ferret*—G. L. Norcock to *North Star* v. Phillips, commission cancelled—E. C. Earle to *Rapid*—G. W. Wilkinson (1841), H. St. George (1838), and F. Blair (1830) to *St. Vincent*—S. Brown (1836) to *Serpent*—W. Howat (1826) to *Vanguard*—J. Indus to *Victory*—H. J. Robins (1840) to *Apollo*—John Cheere (1836) to *St. Vincent*—C. J. Featherstone (1825) to command *Volcano*—C. F. Chadwell (1838) to *Fly*—O. Cumberland (1841) to *Madagascar*—Hon. J. W. Spencer (1841) to *Isis*—C. J. Hoffmeister (1841) to *Belleisle*—W. K. Hall to *Indus*—W. Tottenham (1841) to *Dido*.

MASTERS—Bradley to *Belleisle* W. Mills (acting) to *Minden*—F. J. Olvans (acting) to *Fly*—W. S. Stole to *Apollo*—T. Hancorn (1841) act. to *Minden*—J. Tucker to *Growler*.

MATES—T. J. Smyth (1836), E. J. Voules, R. W. Clark, and F. L. Tremlet to *Caledonia*—T. Chetham, A. C. Gordon, G. H. Greathead, and C. J. F. Ewart to *Queen*—M. B. Cockraft to *Bonetta*—J. K. Hancock and C. Hoblyn to *Belleisle*—E. Hardy to *Aigle*—T. C. Gill to *Fly*—H. Craven to *Syren*—W. H. Wardrop and C. Compton to *North Star*—C. M. James to *Apollo*—R. Chambers to *Malabar*—R. Foote to *Madagascar*.

SECOND-MASTERS—J. Milton to *Sapphire*—D. Welch to *Thunderer*—H. Hunter to *Athol*—G. H. Bower to *Lightning*—W. H. Mallard and T. Pitt to *Rhadamanthus*—G. Fox to *Royal George*—J. M. Partridge to *Pique*—G. Filmer (act.) to *Illustrious*—F. H. May and J. Belam to *Caledonia*.

SURGEONS—A. Muirehead, MD. (1838) to *Fly*—J. Stewart, *b* (1814) add. to *Cornwallis*—J. Read (1840) to *Iris*—A. Nisbett to Greenwich Hospital, v. Willson, appointed to *Minden*, as Deputy-Inspector of Hospitals in China—J. Wilson, *b* to *Caledonia*—J. Plimsoll (1840) to *Childers*—R. Galain, (act.) to *Iris*—A. Tucker (1841) to the *Minden* hospital-ship for China.

MASTERS-ASSISTANTS—C. Puller to *Isis*—J. Loane to *Driver*—G. Giles to *Belleisle*—N. F. Child to *Viper* J. Studwell to *Victory* for *Alban* steamer.

MIDSHIPMEN—G. Whale to *Excellent*—E. A. Porcher to *Queen*—Hon. R. S. M. Byng, and F. Egerton to *Belvidera*—G. Winthorpe to *St. Vincent*.

VOLUNTEERS 1ST CLASS—B. G. W. Nicolas to *Vindictive*—G. Parker from *Powerful* to *Pique*—W. Leader to *Madagascar*—G. H. C. L. Tregear to *Howe*—C. Curme to *Revenge*.

ASSISTANT-SURGEONS—R. D. Pritchard, J. Patrick, R. Beith, and E. D'Auvergne to *Cornwallis*—A. J. Little to *Queen*—W. Brice to *Apollo*—Dr. J. Mitchell to *Athol*—J. Campbell, *c* (1836) to be Assistant-surgeon of Greenwich Hospital, v. Page, promoted—S. Burnard to *Caledonia*—E. Heath to *Belleisle*—D. B. Whipple (1840) to *Minden*—W Maitland to *St. Vincent*—A. Adams to Haslar Hospital—Burn to *Royal George* yacht—D. Thompson, *c* MD., (1832,) and J. Henderson, (add. act.) to *Caledonia*—Archibald, MD., (add. act.) to *Fly*.

PURSERS—J. Milner (1839) to *Growler*—E. Owen (1830) to *Volcano*—G. Thorn (1801) to *Ganges*, v. Tuckfield, invalided—J. H. Cook (1814) to *Minden*.

CHAPLAINS—Rev. E. O. Morgan to *Vindictive*—Rev. E. S. Phelps (1836) to *Belleisle*.

NAVAL INSTRUCTOR—W. S. Harvey to *Malabar*.

CLERKS—J. Hayward to *St. Vincent* —C. Jones to *Warspite*—W. H. Bateman to *Pantaloon*—K. Chamberlain to *Alfred*—C. N. Wright to *Royal George*. —J. Doyle to *Apollo*—F. Munday, (in charge) to *Ferret*.

T. W. Woodman, Esq to be secretary to Vice-adml. Sir E. Brace, KCB., at the Nore.

COAST GUARD.

To be Chief Officers—Lieut. R. Goodridge (1819)—Lieut. J. R. R. Lilburn, (1829.)

Removals—Mr. J. F. Wordsworth has been ordered to remove from Howstrand to Penarth, (South Wales)—Lieut. Macnamara from the Cockbush to the Lancing Station, v. J. Hills, promoted.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ACHERON, (st. v.) Lieut.-Com. A. Kenedy, Dec. 11th arr. at Woolwich from Malta, to be paid off.

AIGLE, 24, Capt. Lord C. Paget, 9th Dec. sailed for Mediterranean.

BELLEISLE, 72, Capt. J. Kingcome, 5th Dec. moved into Plymouth Sound.

BELVIDERA, Dec. 14th left Portsmouth for Plymouth to complete, 15th put back.

CAMBRIAN, 36, Capt. H. D. Chads, 8th Nov. left Plymouth for Bombay with Lord Ellenborough, Governor-general of India.

ESPOIR, 10, Lieut.-Com. J. T. Paulson, Dec. 11th arr. at Plymouth, 15th gone up the harbour to be paid off.

GROWLER, (st. v.) Commissioned at Limehouse by Com. Buckle.

HARLEQUIN, 16, Com. Hon. G. Hastings, Dec. 16th left Plymouth for China.

HEROINE, 10, Lieut. Stewart, Dec. 11th sailed from Woolwich for Plymouth.

ILLUSTRIOUS, 72, Capt. J. Erskine, 22nd Nov. left Falmouth for Halifax, with Sir C. Bagot, Governor of Canada.

LUCIFER, Capt. F. W. Beechey, 11th Dec. at Holyhead from Liverpool.

MADAGASCAR, Capt. J. Foote, 16th Dec. put into Falmouth, 18th sailed on way to Mediterranean.

MALABAR, Capt. Sir G. Sartorius, 19th Dec. left Plymouth for Mediterranean, Dec. 13th put back.

NORTH STAR, Capt. Sir J. E Home, Bart., 16th Dec. left Plymouth for China.

ORESTES, 18, Com. P. S. Hambly, 12th Nov. paid off at Portsmouth.

PIQUE, 36, Capt. E. Boxer, 9th Dec. left Plymouth for Halifax.

POWERFUL, 84, 19th Dec. arr. at Plymouth from Mediterranean, with flag of Rear-adml. Ommaney.

SERINGAPATAM, 42, Capt. J. Johnson, 19th Nov. paid off at Sheerness.

SERPENT, 16, Com W. Neville, 11th Dec. arr. at Portsmouth, 14th sailed for Plymouth to complete.

SNAKE, 16, Com. Hon. W. Devereux, 16th Dec. at Sheerness.

TYNE, 26, Capt. J. Townsend, Nov. paid off at Portsmouth.

VIPER, 6, Lieut. J. Curtis, 4th Dec. sailed for Rio.

AT PORTSMOUTH.—*In Harbour*.—St. Vincent, Queen, Victory, Excellent, Royal George yacht, Warspite, Vindictive, Hazard, Rapid, Pantaloon, Athol; Belvidera at St. Helens.

AT PLYMOUTH.—*In Hamoaze*.—San Josef, Caledonia, Minden, Isis, Ferret, Fly, Espoir, Bramble, Alban.—*In the Sound*.—Malabar, Belleisle, Apollo, Spy, Somersetshire, (convict-ship,) and Diligence, N. T.

ABROAD.

ANDROMACHE, 26, Capt. R. L. Baynes, CB., 7th September at the Cape.

ATHOL, (troop ship,) Master-Com. C. P. Bellamy, 17th Nov. arr. at Spithead from Nassau.

BITTERN, Com. Hon. G. B. Lary, 15th Oct. arr. at Rio from England.

CALCUTTA, 84, Capt Sir J. Roberts, CB., 15th Nov. left Malta with sealed orders.

DUBLIN, 50, Capt. J. J. Tucker, 20th Oct. left Rio for Valparaiso.

EREBUS, Capt. J. C. Ross, 9th July to leave Hobart Town for Sydney and New Zeeland.

FAWN, Lieut.-Com. J. Foote, 15th Oct. sailed from Rio.

GRECIAN, 16, Com. W. Smyth, 7th Sept. at Cape.

HASTINGS, 72, Capt. J. Lawrence, 15th Nov. at Gibraltar.

INDUS, 84, Capt. Sir J. Stirling, 15th Nov. left Malta with sealed orders.

MONARCH, 84, Capt. S. Chambers, 11th Nov. left Gibraltar for Malta.

PERSIAN, 18, Oct. at Ascension.

POWERFUL, 84, Capt. C. Napier, CB., 11th Nov. left Malta for England, 4th Dec. at Gibraltar.

THUNDER, (s. v.) Com. E. Barnett

13th Nov. arr. at Madeira, 16th sailed for West Indies.

VERNON, 50, Capt. W. Walpole, 20th Nov. left Corfu for Malta.

AT MALTA.—The Ceylon, 6, bearing the flag of Rear-adml. Sir J. Louis, bart. Howe, 120, bearing the flag of Rear-adml. Sir F. Mason, KCB. Impregnable, 104; Monarch, 84; Ganges, 84; Vanguard, 72; frigate Vernon, brig Savage, steamers Hecate, Prometheus, Alecto, Locust; yacht cutter Stork; French Government steamers Lycurgue and Scamandre.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Leamington, the lady of the Hon. Capt. Somerville, RN., of a daughter.

On the 16th Nov. at Stoke, Plymouth, the lady of Capt. T. Nicolas, CB., of H. M.S. Vindictive, of a son.

Marriages.

At Richmond, Hobart town, 6th July, R. J. Wallace Dunlop, RN., Acting-commander of H.M.S. Favorite, eldest son of Capt. R. J. W. Dunlop, RN., to Eulalia Hayes, second daughter of the late J. Ross, Esq., Light Infantry Depot.

At Zante, Lieut. W. Edmonstone, RN. commander H.M.S. Weazle, second son of the late Sir C. Edmonstone, Bart., to Mary, daughter of Major Parsons, resident of that Island.

At Tor, Com. L. Maitland, RN., to Henrietta, widow of W. Northage, Esq., and second daughter of the late Sir John H. Newbolt, chief justice of Madras.

On the 23d Nov., G. K. Bell, Esq., Bombay Artillery, to Matilda Elizabeth, daughter of Capt. Whipple, RN.

At Oare, Sussex, Mr. H. Tiffen, to Caroline, daughter of Capt. M. White.

At Wrentham, Suffolk, the 25th Nov., Com. C. Rayley, RN., to Mrs. Robinson, of Southwold.

Deaths.

At Belmore, near Cuckfield, Sussex, on Nov. 19th, aged 78 years, Adml. Sir John Wells, GCB.

On Dec. 4th, at Skreens, the lady of the late Adml. Sir E. Harvey, aged 84.

At Queen Charlotte row, New-road, London, aged 70, Capt. F. Newcombe, RN., CB.

On the 11th of Dec., at the Naval Hospital, Stonehouse, Mr. D. Sullivan, purser RN. (1806) late of her Majesty's ship Hastings, leaving seven orphans to deplore their loss.

At Bath, on the 18th Dec., aged 25, Georgina Favell, daughter of Vice-admiral Sir R. L. Fitzgerald, KCH.

At Braywick Grove, near Maidenhead, Lady Phillimore, relict of Sir J. Phillimore, CB.

At Malta, the 10th Dec., Mrs. Shippard, widow of Rear-admiral Shippard.

On 26th Aug., Mrs. S. Williamson Heming, relict of the late Lieut. Heming, RN.

At Belfast, on the 24th of Nov., R. B. Lash, third son of N. B. Lash, Esq., purser RN., aged eleven months.

At Plymouth, Mrs. M. Featherstone, relict of the late S. Feathertone, Esq, commander RN., aged 87 years.

At Plymouth, 26th Nov., Com. W. Styles, RN., aged 80 years.

Lately, at Southsea, Mr. J. T. Crout, master RN., (1808).

At Brussels, Com. R. Crosbie, RN.

Lately, at Plymouth, aged 82 years, H. Dawe, Esq,, retired commander RN.

At Hamburg, the wife of Lieut. N. Ratsey, RN.

In the Military Hospital, at Quebec, the 7th Nov., Mr. J. Gaslon, of H.M. troop-ship Sapphire, from the effects of a fall on the night of the 9th of October, by which his leg was broken, and other injuries sustained He was interred in the ground attached to the hospital with military honours.

On the 4th Dec., at Woolwich, Mr. C. Fisher, late Clerk-in-charge, H.M.S. Griffon.

On 9th Nov., at Portsea, Mrs. Mary Wood, aged 77 years, the wife of Mr. J. Wood, formerlv master in her Majesty's Naval Transport Service.

At Brockhurst, near Gosport, on the 22d Nov.. Lieut. H. Hopkins, RN., aged 52 years.

At sea, on the 6th Nov., of yellow fever, a few hours after leaving St. Thomas, Lieut. R. Morgan, commander of H.M. packet Sheldrake, after an illness of five days.

At sea, in the West Indies, on the 8th of Oct., of yellow fever, Lieut. H. C. Goldsmith, RN. of H.M. steamer Mægera. The deceased was the second son of the late H. Goldsmith, Esq., of the 54th regt. who died in Canada whilst assistant-commissary General there, and was the senior lieutenant employed on foreign service.

The Mess Table.—In our last volume we recommended to the especial attention of our readers the recent invention of Messrs. Edwards, consisting of a preparation of that useful vegetable the potato, by which it is preserved fresh during long voyages to distant parts of the world. Our recommendation is amply borne out by an advertisement in our present number, and we may further assure the officers of those messes which take a good stock of it to sea with them, that they will be thankful to us many a day for recommending it to them.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of November to the 20th of December, 1841.

Month Day	Week Day.	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9 AM	3-PM	Min.	Max	AM.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Su.	29 38	29·34	46	53	41	54	S	S	4	8	gor (1)(2)	qor (3)
22	M..	29·21	29·20	54	54	53	57	S	SW	4	7	gor (2)	bop (3)
23	Tu.	29·64	29·63	35	43	34	47	SW	SE	3	3	b	o
24	W.	29·85	29·89	33	42	32	43	W	NW	2	3	b	bc
25	Th.	29·77	29·81	31	38	29	39	SE	NW	1	3	bcm	b
26	F.	29·84	29·80	28	38	27	39	E	SE	1	1	bcf	bc
27	S.	29·66	29 63	44	49	36	50	S	SW	2	2	or (1) (2	od (3)
28	Su.	29·61	29·56	45	48	44	50	SW	SW	2	4	bcp (2)	bcr 4)
29	M.	29·19	29·14	51	52	43	57	S	S	8	6	qor (1)(2)	qbcp (3) (4)
30	Tu.	28·92	28 98	53	53	50	54	SW	SW	10	9	qor(1)(2)	qop (3)
1	W.	29·34	29·30	44	48	42	52	SE	S	4	4	bcm	or (3)
2	Th.	29·45	29 43	45	49	42	50	S	SW	4	4	bc	o
3	F.	28·96	29 06	50	49	45	51	SE	SW	7	5	qor (1)(2)	bc
4	S.	29·23	29·34	45	47	41	48	SW	W	5	6	bc	qor (3)
5	Su	29·91	29·98	42	46	40	48	NW	NW	5	3	qo	bc
6	M.	29·80	29·60	48	47	40	51	SW	NW	6	4	qor (1)(2)	gor (3) (4)
7	Tu.	29·85	29·85	38	46	35	47	W	W	3	3	b	bcd (4)
8	W.	29·47	29·35	50	50	45	52	SW	W	5	4	gor (1)(2)	bc
9	Th.	29·85	29·87	37	41	36	42	NW	NW	3	3	bm	bcr 4)
10	F.	29·36	29·36	50	47	39	53	SW	NW	4	6	gor (1) (2	qbc
11	S.	29·83	29·87	38	43	35	45	W	NW	3	4	bm	b
12	Su	29·65	29·57	47	50	37	51	SW	SW	5	5	or (1) (2)	qor (3) (4)
13	M.	29·37	29·25	51	47	49	52	SW	SW	6	4	qop (2)	qbcp (3)
14	Tu.	29·44	29·74	41	39	40	41	NW	N	6	6	qop (2	qo
15	W.	29 87	29·67	39	46	29	47	S	S	4	5	o	qod 3) (4
16	Th.	29·36	29·29	39	41	36	43	SW	SW	3	2	bc	bc
17	F.	29·44	29·50	30	36	29	37	W	W	2	2	bm	bm
18	S.	29·53	29·46	23	30	22	32	SE	SE	1	1	bm	b
19	Su.	29·23	29 16	28	33	21	34	NE	E	1	1	bc	bcps (4)
20	M.	29·18	29·25	29	31	28	32	NE	E	2	1	bcps 1)	bc

November—Mean height of barometer = 29·737 inches; mean temperature = 42·1 degrees; depth of rain fallen = 4·02 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

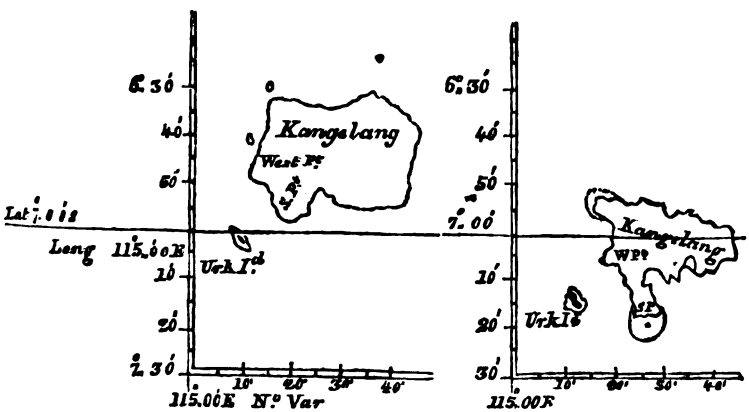
The length to which most of our articles are extended has obliged us to reserve several communications.

Old John Hamilton Moore, "yes."—Apply at 21, Poultry, for an Errata.

Position of Kangelang Island.—*Moluccas.*—*By Capt. John Vine Hall, of the barque Black Nymph.*

Having on my passage from Sydney through Torres Strait, and Strait of Allass, towards Sincapóor, found the Island of Kangelang very inaccurately laid down, I have thought a notice in your valuable Magazine of its true position, might be of service to my nautical brethren, particularly as the passage by it is the fairway for the numerous ships which now pass from Sydney, &c., towards Malacca Straits, Sincapoor, Calcutta, &c. Horsburgh* has a long and very vague account of its situation, and as my charts were the most recent I could procure when I left London, I suppose its erroneous position has not been corrected. Immediately on making the island, I was surprised to find that I could take no bearings, to correspond with the chart, and was therefore particular in making correct observations for the latitude, longitude, with bearings followed up by sets of angles taken as we passed through between Urk and Kangelang. The following are the results which may be depended upon, for as much accuracy as observations at sea can be taken on a fine day, with good instruments.

I annex also a rough plan by observation, and the plan taken from the chart.



	Latitude.	Longitude.
Kangelang, west point	6° 47′ S.	115° 11′ E.
South Point	6 57 S.	115 18 E.
North Point about	6 32 S.	115 15 E.
Urk Island, centre	7 02	115 10 E.

I may observe, that when the horizon, (as it often happens in these seas) is very hazy, preventing low land being seen far, the peak of

* It is to be hoped that some experienced and qualified man may be found, to supply in some measure the loss of that celebrated navigator Mr. Horsburgh,—many might be the leaves spared,—inaccuracies corrected, and modern information in many places supplied. I hope you will bring the thing forward. It isalso rather surprising that in these piping times of peace and of improvement in science, that so many "doubtfuls" remain on the chart, together with things of no existence!—J.V. Hall.

Bally is generally visible, and bearing south 9° east, is a good mark for steering for this passage.

[The shoal mentioned in the latter part of his letter by Captain Hall, will be found in Capt. King's chart, published by the Admiralty. With respect to the Directory alluded to by Capt. Hall, he will find on his return, that the first volume has undergone great improvements, in the edition noticed in our number for September last,—and the second volume, we believe, is undergoing a similar revision.—Ed.]

Australian Navigation.—*Remarks of Capt. Drinkwater Bethune, R.N., H.M.S. Conway.*

(Continued from page 13.)

Port Jackson to the Bay of Islands.

On the 5th of July, at 11h. 30m. A.M., left Port Jackson with a breeze at west. Betwixt the heads it fell calm. On the point of anchoring, a breeze sprung up from N.N.E., with which we beat out. The wind, a fresh breeze, hauled gradually to north, north-west, to south, and south-east, at noon on the 7th. On the 8th, it fell calm for a short time, then sprung up again from southward and south-west, and S.S.E. Calm again in 33° 6′ and 166°, then westerly W.N.W., hauling to south-west, fresh 34° 5′, 172° 2′. At 10 A.M. on the 12th, observed Three Kings N.E.b.N.

CURRENTS.

Latitude.	Longitude.	Direction.	Distance.
34° 0′	157° 0′	N. 83° E.	41 Miles.
33 7	160 3	N. 17 E.	17 "
33 5	162 5	N. 56 E.	15 "
33 5	164 8	N. 89 E.	29 "
33 8	167 0	S. 62 E.	15 "
34 2	170 0	S. 49 E.	22 "

The above are the mean latitudes and longitudes of the two noons, the current being the difference between the observation and reckoning. I note nothing less than ten miles.

Bay of Islands. This bay is very extensive, and there is anchorage in several parts of it. That most generally used is off and above the village of Kororárika. Referring to the Admiralty chart of the bay, taken from Duperrey, 1824, this village is situated in the bay to the southward of the Three Points, of which Point Tapika is the most northerly.

There is anchorage throughout the outer part of the bay, taking care to avoid the Brampton Shoals, by not standing over to the westward farther than to bring Tiki Tiki on with the easternmost islet off Motu Roa, and avoiding the easterly swell by shutting in Cape Wiwika, (Point Pocock) by the westernmost of the three points above-mentioned.

There is anchorage for some distance at the Kana Kana, but a stranger in any large draught should not attempt it

The British resident lives on the west side of the bay, to the northward of the river Wai Tanghi. A rock, in the way of boats, lies off his house;—keep the flag-staff on with the south end of the house, which will lead to the southward into a little sandy bay, where you can land.

Water can be got to the eastward of the southernmost of the three points above-mentioned.

The importance of the Bay of Islands, as a place of refreshment for whalers, is daily increasing. Respectable persons have formed establishments, and repairs can be executed and provisions supplied. There are many bad characters, but I trust soon some measures will be taken to keep order among them. The British resident has no authority to act, and may be likened to a man-of-war without guns.

The cawrie is found in the neighbourhood, the parallel of 37° being the limit to the southward; beyond which it is said not to be found.

N.B. In my last remarks sent, I noticed a forest near Cloudy Bay, said to be of cawrie. I have since learnt, that it is a tree something resembling it, but not equal in value, the cawrie not being found south of 37° 0′ south.

The Church Missionary Society has a station at Paihia, one at Tepuna, and another up the river Kidi Kidi.

Bay of Islands to Toga. On the 19th of July, at 1 P.M, left the Bay of Islands,—wind south-west, steered direct for Toga. In latitude 28° 5′, longitude 179°, the wind came from north-east and baffling, and on the next day it blew uncommonly hard from north-east for six hours, then lulled for half an hour,—hauled round by north to south-west, and blew equally hard for other six hours. The gale then broke, and came from W.b.N., which carried us in sight of Toga on the 28th.

I steered to make Pylstarts Island, but not seeing it, concluded it lies to the westward of 184° 5′ east. The wind hanging to the westward, I rounded the west end of Toga, and hove to for the night. I know no plan of the anchorage at Toga but that in Perouse's atlas.

Referring to it, though it is not perfectly accurate, having rounded the west end of the island, avoiding some reefs of it, all of which I believe are visible, we ran to the E.N.E., until past the island of Atalá. The passage I entered is to the northward of a circular reef, the middle reef lying north-east from Atalá. It is about half a mile wide, having another reef not shewn in the plan, about that distance north from the circular one. Having entered betwixt these two, keep to the south-east for about one mile and a half, to avoid some stones that lie off the middle reef, and then haul up south by compass for Nukualofa, to be distinguished by the church, a building on the only rising ground near. I anchored in fourteen fathoms, the small reef north, church south, Panghai Motu E.b.N., just shutting in the distant land of the main. With the prevailing winds south-east, the usual course in is betwixt the east end of Toga and Eua Island, as shewn in the plan, and the anchorage is snugger under Panghai Motu. In this case, the north passage is used to go out through. There is another passage, west of Atalá, but it is narrow and intricate, and should not be attempted without a leading wind.

I imagine that there is an error in that part of the track laid down between the island of Atalá and the reef. It ought to extend more to the southward than shewn, leaving only a narrow passage close to the Island.

I think it possible that the circular reef marked × is meant for the one I have added: if this be so, it must be removed farther to the northward, and the middle reef be added.

Nukualofa is the principal christian town, and the residence of the missionaries. The population of the island is 5,000, of which 1,000 are christians. The principal heathen settlements are Bea, about five miles from Nukualofa, and Mua about the same distance up the creek, round Panghai Motu. The water is bad, and not plentiful. Pigs, yams, &c., may be obtained. The landing is awkward, as a reef quite shallow extends a quarter of a mile from the shore; but just to the eastward of the church a cut has been made, which admits of a boat approaching the shore at high water.—King Josias promised me he would build a wharf out to deep water. A pilot will come off on a signal being made.

I subjoin the names from Perouse, and what I believe to be more correct.

Perouse.	*Native.*	*Perouse.*	*Native.*
Toque Toque	Toke' Toke'	Velitoha hife	Felitoa hifo
Attata	Atata'	——— habaque	——— habaque
Touffaco	Tufa'ca	Monouofe	Manuafe
Alakipeao	Alikipeau'	Magotonou	Mogatu
Bolea	Boloa	Onevay	Onevai
Fafa	Fafa	Madon ta pou	Mo'tu Tabu
Panghai Mouhi	Panghai Motu	Fou Egue	Nugu
Magaha	Mang ha ha'	Fouhave	East of that a reef, not an island.
Maninea	Ma'ninea		
Onneata	Oneata	Atta'a	Ataha'
Nougou Nougou	Nugu Nugu	Eoua Equi	Eua Eke, (small)
Malinoa	Malinoa		

Toga to Habai and Vavau. Left Toga at 1h. 20m. on the 3rd of August, and the regular breeze blowing, ran out by the northern passage. At 7h. 30m. having run north 51° east true, twenty-nine miles, perceived two small islands and tacked off.

At daylight made the land and ran round Haáno, the north-east island of the Habai group,—found we had been set north fifteen miles; attempted to pick up an anchorage under it, but not liking the appearance stood off.

These islands are very low. The reefs do not extend more than a quarter of a mile on the eastern side of the northernmost island. In rounding Haáno, give the north-west point a berth of half a mile, to avoid a reef off it. North 41° east true, six miles from the point, lies a bank with only three fathoms on it; this does not appear to have been before noticed. I have not called it the Conway Bank, lest we should earn the discredit of having been aground on it.

Went up to Lifuka, the residence of the missionaries, in my boat, and during my stay got sights for time and latitude. While I was absent, the ship was employed making a rough survey of what she

could, and while standing off and on for the night, she hit upon the bank above-mentioned.

The Habai Islands are subject to King George of Vavau, and Lifuka is his favourite residence. The population is about 4,000 to 4,500,—three-quarters christians.

The only likely place for anchoring, is with the space betwixt Lifuka and Foa open, or upon the shoal patch marked in the plan. Nothing but a few yams or fowls to be procured.

Kao is a perfect pyramid, about 5,000 feet high.

Tofoa has an active volcano at the north end, and is about 2,800 feet high. A remarkable lake is spoken of on Tofoa; the islanders bring from it numbers of black small pebbles of igneous origin,—much in request to cover the graves of their friends. About thirty souls reside at Kao, and seventy at Tofoa.

Habai to Vavau. Vavau lies north-east, about sixty miles from Haáno. We ran in by the south-west passage, and during our stay, we corrected and added to our former plan; no directions are necessary, the water is very deep, and there is no hidden danger.

The finest yams in the universe are grown at Vavau. During my stay, King George acquainted me that he had chosen a flag for his dominions,—white, bordered with red, bearing a St. Andrew's cross of the same colour.

Should a ship require a refit, there may be found a snug berth under a small island on the south side of the harbour, bearing about south-west one mile and a quarter from the usual anchorage. A ship of 400 tons has been hove down on the beach opposite.

Vavau to Viji. Left Vavau at 6 A.M. on the 13th of August,—wind south-east. A S.W.b.W. course by compass from north-west entrance, will carry you three or four miles south of Lati. This island is about 1,600 feet high, and appears nearly barren. Made Turtle Island the next day at 9 o'clock A.M.—found we had been set north 73° west, thirty miles from noon to noon. Turtle Island appears to be 2 or 300 feet high, and may be seen from the deck (seventeen feet,) five or six leagues. Having made Turtle Island, keep to the north-west, and the islands of Anghasa will be perceived, two in number, and then further to the west Vulonga. Round this at the west side at two or three miles distance, and steer N.N.W. As you draw to the northward, you will near Namuka on your starboard bow, and the Table Islands on starboard beam. To port you will see Combaca, Fukafa, and a small round island, (name unknown.) Having made Olurna right ahead, if dusk, keep to port to avoid a reef lying between Olurna and Komo. If light enough, all dangers are visible. When round Olurna, N.b.W. will carry you up to Lakemba, looking out for the reefs off Yaiwa. There is no shelter on the south side of Lakemba for anything larger than ten or fifteen tons. In a fresh breeze, caution must be observed with boats, as the tides run strong in the passage.

I understood that anchorage might be found on the east side, known as Dillons anchorage, probably where the opening is marked on the chart, also on the north side of Yaiwa. There is anchorage for small vessels at Komo and Oneata. I tried this last, but found it was unsafe for seventeen feet.

There is a passage in from the ocean, south of Omata, which was described to me at Vavau as being safe. I do not recommend it to strangers, as we placed two reefs on it, and besides Omata is low.

At Lakemba a missionary resides. It is the first of the Viji Islands to which they came.

I must remark, that if a Toga pilot be on board, some of the names may be pronounced by him differently. For instance, as they cannot pronounce *r*, he would call Olorua Olulua.

From Lakemba, you may run W.b.N. 100 miles, which will place you in the fairway betwixt Nerai and Koro. We then hauled to the westward, looking out for the Kaumonu Reef, which is dangerous,—hauled round west of it and steered to clear Vateki.

I should recommend passing north of Nerai, and between it and Vateki, thus avoiding the Kaumonu; also the reefs off Wahaia, and keeping further to windward.

Kaumonu appears to be the name of a reef generally, not applying to the one particularly. Anchored in Rewa at 1h. 15m. P.M., having ran in by the eastern passage.

Rewa. The anchorage goes by this name, though the town of Rewa is five or six miles up the river.

There are two entrances to this anchorage, one the southern passage, leaving the two small islets on the starboard hand; the other the eastern passage, through the great opening in the reef more to the eastward, passing between the two islets, and hauling round the northern one.

The best anchorage is with the two islets in one, in about ten fathoms. Further to the eastward there are some awkward patches, not always visible.

For quitting the anchorage, the best passage is the southern one; you can however pass inside the reefs and get out through the eastern one, having taken the precaution of putting canoes on the bad spots.

A remarkable hummock to the westward, on with the north passage islet, leads into the eastern passage clear of a patch.

Among these reefs, a good look-out from the masthead is the surest guide. The flood tide appears to set to the westward within the reefs.

During the summer months, there is a breeze off the land in the morning. In August we thought we perceived that the trade was more easterly in the morning.

The southern passage possesses the advantage of the weather point of the reef, projecting more to sea than the lee one, thus preserving the water smooth in the passage.

To communicate with the town, if there be any surf on the bar of the river, which generally breaks, I recommend taking the channel west of the point.

To get water you must send as far as the town, occasionally farther, filling from the river. Attend to the tide about crossing the bar; once I got three turns in the day, usually only two. There is not much wood in the neighbourhood, the banks of the river being chiefly mangrove.

Rewa to Matoriki and Bau.

Left Rewa at daylight, and by making a short board inshore fetched

out without difficulty, stood to the southward; sighted Kandavu; very hazy. Weathered the island off Kamba point, Mambaulau, and entered the Matoriki channel. All dangers visible from the masthead; it being necessary to anchor for the night, hauled up round a sandy islet, that of the North Passage Island, and passing some very awkward looking spots, having one cast three fathoms, anchored in good shelter at 5 P.M.

On examining the anchorage the next day I was rather surprised at our having got in. I cannot recommend this to any vessel beyond 15 feet, and hardly for that: there appeared also some stones within, but time did not allow a larger examination. If necessary to anchor run on to what on the chart I call five fathom bank, which I apprehend will answer the purpose of stopping for a night.

Bau is a small island, the residence of one of the most powerful chiefs of the Viji. The anchorage is more correctly off Biva, a larger island. With the chart and a good look out from the masthead, a stranger may pick his way up; but if not in the habit of working among reefs, it would be better to have a pilot. With the usual wind, you can fetch up from the Matoriki passage, but I have seen the wind all ways.

Barata.—Here the anchorage is rather more intricate and confined than at Bau. Nothing is to be got at either of them, beyond the weapons and implements of the natives. Traders communicate to make arrangements with the chiefs for their cargoes.

Libuka.—North of the Matoriki passage ten miles lies the island of Onalau, with good anchorage inside the reefs, and a valuable supply of water. There are two openings in the reefs, the southern one, and that chiefly used for entering, lies six or seven miles from the south point of the island: it is about one-sixth of a mile wide. When about one mile north of a rock on the reef, which will be seen, if running down close to the reef, within the reef haul to the northward, and anchor off the village, in about fifteen fathoms. The village bearing about W.S.W. will admit your boats to sail to and from the watering place.

In the lee passage it runs off shoal from the north point of the south reef, and a patch lies one-third of the distance across, reducing the width to one-third of a mile. The south point is bold. There is a passage farther to leeward, which was not examined.

The water is got from a run just south of the village; it is said never to fail: after rain of course is a more eligible time to procure a quantity. When there, it was not in a very flourishing state, and we had to forecast a long distance.

Partial supplies of vegetables can be procured, but at present none of the places mentioned appear to produce more than enough for the subsistence of the population.

There are some white men residing at Libuka rather more respectable than the generality of those in similar situations. Some of them appear well acquainted with the islands.

[Some more of Capt. Bethune's useful remarks among the Pacific Islands, will be found in our volume for 1840.—ED.]

(To be continued.)

Tobacco.—No. I.—*Pipes, Cigars, Chewing, Snuff.*

That rank and pois'nous weed,
By Nicot brought from distant western lands
To steal away men's senses.—MS. Drama.

The appellation given to the vegetable substance which forms the subject of the present article is derived from *Tabasco* or *Tabaco*, the name of a province of Yucatan in Mexico, where this plant was first discovered by the Spanish invaders.

In the year 1560, little more than half a century after the discovery of the "New World," Jean Nicot, an eminent French statesman, and author of a work celebrated in those days under the title of "Traité de Marine," being then ambassador from Francis the First to the King of Portugal, received, on his way to Lisbon, some tobacco-plants from a merchant recently come from America. On his arrival at Lisbon, he showed them to the Grand Prior of that city, and afterwards, on his return to Paris, to Catharine de Medici. This princess encouraged the cultivation of tobacco in France, whence it was brought to England. Here also it was cultivated, and was consumed by Sir Walter Raleigh and his companions, who smoked it in pipes so early as 1584. It was two years subsequently to this period—namely, in 1586—that Sir Francis Drake, on his homeward-bound voyage from the Spanish Main, having touched at Virginia, brought home some unsuccessful and discouraged colonists, who imported into this country a quantity of Virginian tobacco. Hence the introduction of tobacco into England has falsely been ascribed to that celebrated naval commander.

As a compliment to the ambassador Nicot, the tobacco-plant was called by botanists *Nicotiana*. It is cultivated in almost every country in Europe except Great Britain. The tobacco that could be produced in the British Isles, like that grown in Europe generally, is of a milder, and much less injurious character, and of a more agreeable perfume, than that imported from America; yet in this country the cultivation of that plant is prohibited under very heavy penalties, and an inferior kind imported, for which a duty is paid equivalent to ten times the original cost of the article.

The duty on the tobacco imported produces a yearly revenue to the state amounting to four millions of pounds sterling. The average quantity of unmanufactured tobacco imported every year into Great Britain is more than fifty-two millions of pounds; that of snuff and manufactured tobacco exceeds a hundred and eighty thousand pounds.

The tobacco-plant, or Nicotiana, belongs to the botanical order of Solaneæ, a family of plants, many of which are deadly poisonous. Among these latter are the tobacco itself, the henbane, the stramonium, the mandrake, the deadly-nightshade, and several others. To this order of plants belong also the potato, the capsicum, the tschili or bird-pepper, and the calabash-tree.

To use the words of the veteran pharmaceutical chemist Gray, the green leaves of the tobacco-plant "are detersive, acrid, narcotic, and apophlegmatisant,"—this last formidable word signifying, according to

Quincy, "any remedy which causes an evacuation of humour." The truth is, that these leaves, besides being sufficiently irritating to blister the skin, if heated before they are applied, yield a very powerful narcotic poison, by an inordinate and excessive use of which an effect is produced upon the animal frame similar to that arising from opium, from ardent spirits, or from malt liquor drugged with either nux vomica or cocculus indicus.

Dr. John Armstrong, speaking of tobacco as a sedative medicine, observes that it "has the power sometimes of allaying irritation and pain very remarkably. Sailors on short allowance will live comparatively comfortable on a small quantity of food if they chew or smoke tobacco. The Indians, in long journeys, mix powdered shells with tobacco, and by it allay hunger for many days. I know a gentleman who chews two, three, or four grains of tobacco, and swallows the saliva till he feels sick, and finds that it allays the pain of gout."

Thus tobacco may be advantageously employed as a medicine; so may opium and deadly-nightshade, and that most rapidly fatal of poisons, prussic acid; but by continued use, and continued reaction after use, the brain and digestive organs are gradually deteriorated by the use of tobacco, till at length the animal frame sinks under the almost imperceptible attacks of the insidious poison, and death seizes its stricken victim.

Besides these effects described by Dr. Armstrong, others are obtained from tobacco in its medicinal character. Its infusion is applied as an enema in dangerous hernial cases; but it sometimes causes syncope and death. Dr. Armstrong recommends that it should never be administered strong in this form. The leaf is applied as a dressing to verminous sores, and may be used internally as a powerful emetic; but unless the system be gradually brought to receive it, like opium it is always a dangerous remedy in large doses,—that is, if more than from three to six grains be taken.

The proximate element from which arises the narcotic power of tobacco is an alkaline principle termed Nicotina, and by some chemists Nicotia. At thirteen degrees below the freezing-point, it appears as a slightly-tinged pulverulent matter. Above that temperature, it remains in the form of an almost colourless and transparent liquid, with a pricking and burning taste, which is so difficult to get rid of, that it is felt for hours. The nicotina gives out, besides, a nauseous and pungent odour. It combines with the acids, with each of which it forms a salt. With a wick it will burn like oil, diffusing a vivid light. It mixes readily with water in all proportions, and is soluble in alcohol, ether, and oil of almonds, but not in oil of turpentine. This principle of tobacco is so poisonous, that a single drop of it will destroy a large dog.

Besides its nicotina, tobacco contains ammonia, sugar, bitter extract, resin, albumen, potassa, nitric and muriatic acids, and some other principles, the whole forming different combinations. The free ammonia* appears a result of fermentation, and arises from the decomposition of hydrochlorate of ammonia, naturally residing in the plant.

* Ammonia, or spirit of hartshorn, is formed by the union of hydrogen and nitrogen.

The tobacco is prepared for use or exportation by suspending the leaves to dry during four or five weeks in a shed. From this they are moved in damp weather, to avoid their crumbling to pieces, which would be the case were they disturbed in a very dry air. They are then heaped in strata, covered, and left to ferment during a length of time proportionate to their quality or the state of the weather. During this period they must be examined often, exposed to the air, if necessary, by opening and turning the heaps, and means must be taken to prevent their heating too much; for were this allowed, they might either run into the putrefactive fermentation, or take fire. Much skill is required in conducting the process for preparing tobacco; and the talents of a negro who well understands this branch of the planter's art are very highly prized.

When the tobacco has sufficiently fermented, and sometimes without any fermentation at all, it is sent to market, where, prior to its sale, it undergoes the inspection of an officer who certifies, by a mark, its good quality when sound, and orders it to be burnt if bad.

The volatilising agent of the odoriferous principle of tobacco is free ammonia, one of the products liberated by fermentation. This appears from the following simple experiment:—If a green tobacco-leaf be crushed between the fingers, it gives out no other than the herbaceous odour common to all plants; but if the same leaf be triturated in a mortar, with a bit of quicklime, or a few drops of caustic solution of potassa, the liquor potassæ of the Pharmacopœia, it immediately yields the well-known odour of snuff. The reason of this is that the lime or the potassa decomposes the hydrochlorate of ammonia existing in the leaf, and liberates the ammonia; the hydrochloric acid flies to the lime or potassa * water, whilst the chlorine and the metal uniting, are converted into chloride of calcium, or chloride of potassium.

For the purposes of use and manufacture, the tobacconist spreads the fermented tobacco-leaves upon a stone pavement, and separates the bad from the good. This being done, the good leaves are watered, by successive layers one over the other, with a solution of common salt. They are then suffered to re-act upon each other during several days, according to their quality and the temperature to which they are exposed. At this period a new fermentation arises, and more strongly develops the odorous principle of the leaf. The salt added to the tobacco is supposed to keep the leaf moist, and to temper the fermentative action, which might otherwise run into excess. The maintenance of moisture, however, is best effected by sea-water, which contains other salts besides common salt, or chloride of sodium; some of which have still a greater tendency than this latter to deliquese, or assume a humid condition.

The leaves, after being thus prepared, are sorted and stripped of their middle stalk, when the larger are set by for making cigars, and the others, together with the stripped stalks, for the manufacture of smoking-tobacco, chewing-tobacco, and snuff.

"Most of the tobaccos on sale in our shops," observes Dr. Ure, "are

* Lime is an oxide of calcium, or the combination of oxygen with the metal calcium. Potassa is an oxide of potassium, or a union of oxygen with the metal potassium. Hydrochloric acid is chlorine combined with hydrogen.

mixtures of different growths: one kind of smoking-tobacco, for example, consists of seventy parts of Maryland, and thirty parts of meagre Virginia; and one kind of snuff consists of eighty parts of Virginia, and thirty parts of either Humesfort or Warwick. The Maryland is a very light tobacco, in thin yellow leaves; that of Virginia is in large brown leaves, unctuous and somewhat gluey on the surface, having a smell somewhat like the figs of Malaga: that of Havana is in brownish, light leaves, of an agreeable and rather spicy smell; it forms the best cigars. The Carolina tobacco is less unctuous than the Virginia; but in the United States it ranks next to the Maryland."

Beneficial as, in some cases, tobacco may prove in its character as a medicine, its use as a luxury, in any form, is as injurious as its intoxicating properties are lamentably demoralizing. Truly does it help to show the correctness of the adage:—

"Bacca, Tabacco, e Venere,
Reducono l'uomo in cenere."*

This weed is generally employed in three forms, one of which is selected by the individual using it, though some employ two of these forms, and a few, all three. At the commencement it causes, like opium, intoxication and sickness; but by continued use in moderation these unpleasant symptoms subside into a sort of fascinating, dreamy state of semi-intoxication, which insidiously attacks the health, making disease and disorganisation creep by silent and stealthy steps into the system, and drink up the spring of life until its fountain be drained. An immoderate use of tobacco produces furious intoxication, and often dangerous delirium, much increased by the strong drinks which its stimulating properties incite the tobacco consumer to take.

The three forms to which we have alluded, are the pipe and cigar, the quid, and snuff. We shall offer a few remarks upon each in succession.

We begin with *Smoking*. "Some seek in the inhalation of tobacco-smoke," observes Dr. Ure, "a pleasurable narcotism; others imagine it to be beneficial to their health; but, in general, smoking is merely a dreamy resource against ennui, which ere long becomes an indispensable stimulus. The filthiness of this habit, the offensive odour which persons under the influence emit from their mouth and clothes, the stupor it too often occasions, as well as the sallow complexion, black or carious teeth, and impaired digestion, all prove the great consumption of tobacco to be akin in evil influence upon mankind to the use of ardent spirits."

To this testimonial we must add another from No. 77 of that excellent periodical, the *London Saturday Journal*.

"Tobacco-smoking," says the editor, in reply to a correspondent, "is, on the whole, a mere idle and nasty habit, and, as it is generally practised, is too often associated with low and dissipated tastes. This opinion is given with reference to the strong and filthy stuff used as cigars in this country. But smoking, like bathing, is an Eastern luxury of which John Bull, with his beer-guzzling and cloudy tendencies, has but a dim idea. To persons whose minds are much exposed

* It may be thus freely translated into sober prose:—"The fumes of wine, the excitement of tobacco, and the wiles of woman, soon bring man to his grave."

to excitement, nothing can be more soothing and grateful than to inhale mild and fragrant tobacco; it is a tranquillizing sedative, and, to sedentary persons especially, frequently gently stimulates a languid stomach, and aids in quieting nervous irritation. But the tobacco used generally in Britain is a two-edged sword, acting as a stupifying narcotic, and creating unnatural excitement, by irritating the stomach and provoking thirst. The temperance and abstinence societies should direct their efforts as much against British tobacco as against British gin or whiskey."

Though there is much in this eloquent paragraph that meets our most cordial concurrence, still there is one point on which we most decidedly differ. We assert, smoking in *any* form, and with *any* kind of tobacco, to be injurious. It may, for a time, give ease to the solitary or the sedentary, most of whom are afflicted with dyspepsia. But by degrees it makes an inroad into the system which nothing can repair, and this, of necessity, by the very manner of its action. It corrodes and destroys the teeth; it maintains, even in its mildest form, the throat and its glands in a state of constant irritation, exciting unnatural thirst. By causing an excessive secretion of saliva, which is generally discharged, or in more polite language, expectorated, it deprives the stomach of a fluid necessary to the deglutition and digestion of food, and thereby the agents of digestion are robbed of a natural and necessary aid. By its effects on the brain, it produces loss of memory, and general deterioration of intellect. And lastly, by its general action on the nerves, it generates not only depression of mind, but great infirmity of temper. We may add that, though for a short time it may prove a stimulus to the workings of genius, like the potent alcohol, it excites but to destroy, and many a highly-gifted smoker has survived the loss of that mind which rendered him the delight and ornament of his age and country.

The fascinations of this deadly plant appear irresistible as the gaze of the basilisk, or the tuneful voice of the syren. He who has once acquired a taste for the excitement it occasions, can seldom, under the depression awakened by its re-active effect, resist again seeking relief from its stimulating power. Smoking tobacco is of all acquired habits the most difficult to get rid of: yet with what discomfort and uneasiness has it been attended ere it has caused pleasure! If some have become smokers of tobacco for a remedial purpose, many more have acquired the habit from mere bravado, when boys, to try to act as men by following bad examples; and it has been acquired by all who have adopted it at the expense of much sickness and disturbance, not only of the stomach, but of the whole system. We have known youths who have begun this filty and disgusting practice become imbecile ere their intellects had time for full expansive development. We ourselves well remember, after being persuaded once, in our boyhood, to smoke a pipe, the anguish we suffered at the time, and the distressing depression of spirits attendant upon it during several days after. And can such an effect, produced in persons of delicate and perhaps already over-excited constitution, be found wholesome? Assuredly not:—it will perhaps assuage pain for a moment, and the plant judiciously administered may do so in future paroxysms; but if taken every day, it soon shows

that it is death's magnet,—it draws man to his grave by as unyielding an attraction as that by which the loadstone draws iron to itself.

Nor are its evils confined to its own mere agency. By its effect on the throat and stomach, smoking tobacco excites a very distressing thirst, which nothing but stimulants will allay with satisfaction to the drinker. It therefore leads to the use of ardent spirits, as well as potent vinous liquids. But its commands are more imperious, more irresistible than these, and it converts into a drunkard one who has no other incentive to drink than that which the tobacco gives him. A very dear and highly-gifted friend of ours has lately taken to cigar-smoking. He is a man of strong mind, most honorable feelings, and first-rate professional talent; but the propensities of a tobacco-smoker seem to have crushed some of the nobler and more sensitive qualities of his mind. He began to smoke cigars for the sake of companionship, and it cost him much sickness and discomfort before the habit became pleasing. The tobacco is now a pleasurable stimulant, and even a necessity when his feeling is allowed to overcome his judgment. It excites great thirst; and, to avoid spirits, he deludes himself into the belief that he is incurring no evil by drinking, with his cigars, and after them, either cider or beer. After taking a glass of either liquid, he requires a second, then a third, then a fourth,—for he knows not where to stop; and so he continues to smoke cigar after cigar, and to swallow glass after glass, until he becomes reckless of the amount of his potations. Each morning, with its re-action, brings head-ach, depression of spirits,—and, what is more, repentance and disgust of himself. He rises uncomfortable, cross, peevish, and often unjust; and he vows and repeats that he will never smoke another cigar, nor drink anything stronger than tea. This pledge he makes voluntarily, and repeats over and over again. But how does he redeem it? No sooner is the family dinner over, at which he drinks nothing but toast-and-water, than he feels the want of a stimulus to raise his spirits: the narcotic agent of tobacco-smoke is resorted to, and the scene of yesterday played over again. At length all his family have lost confidence in his vows and promises, which he is heartily ashamed of having so repeatedly made and so repeatedly broken. Still he retains the vile propensity; but being ashamed to encounter the pitying smiles of his friends and the imploring looks of his amiable wife, he now sneaks into holes and corners, and low public-houses, there to enjoy, unseen by those who love him, the degrading and filthy indulgence that masters his reason. Meanwhile, he continues each day to utter, in the full sincerity of his heart, promises of amendment, which he never keeps. So horror-stricken is he, however, at his own weakness, that he has urged us to mention it in this article, in the hope that it may deter others from the commencement of a practice attended with so many evils, and assuming so despotic a power over the mind, as to deprive him of the faculty of will. He has no longer the courage to do that which he acknowledges to be right, at the sacrifice of a debasing indulgence; he has no longer the fortitude to give up a momentary gratification which he declares to be destructive of his bodily and mental health, and of his domestic comfort.—*From the Magazine of Domestic Economy.*

(To be continued.)

Port Essington.

The following short account of Port Essington is contained in a letter written from that place in February last, addressed to a gentleman, and may not prove uninteresting to our readers.

"From the accounts published in the Swan River papers, and afterwards in the Sydney press, by the officers of the Britomart, you will naturally form but an indifferent opinion of this country. I am happy to say, from ocular demonstration, I am enabled to contradict, nearly word for word, their disgraceful account. I should first tell you that these persons, although here several months, never, any one of them, walked or rode out so far as five miles from the settlement, and the greater proportion scarcely left their ship; and yet, these persons, from mere prejudice and other peculiar motives, attempt to give a description of a country, its advantages and disadvantages, its want of water, description of soil, &c., which they have never taken the trouble to walk out and see. They say the only good building in the settlement is the magazine. My arrival was not very long after their departure, and yet I could count many good buildings, and, be it remembered, most of these had been either re-built or repaired after the hurricane; since that time a number of stone buildings have been and are in course of erection, that would do credit to any town in Australia; they have, too, just commenced a few buildings of bricks made in the settlement.

"Again, they say there is a want of water, and that all is obtained from the wells: I had not been here a week when I was shown *four running streams*, and several springs, in the immediate vicinity of Victoria, and these, I remarked, *kept running the whole of the dry season;* and so far from the wells failing, it has been just the contrary, for all the water required these wells have supplied in abundance the whole eight months I have been here. So much for these parties attempts to throw discredit on the founders of the settlement for choosing a site, say they, that will in all probability be in want of water during the dry season.

"The want of good land, too, is another item in their abuse of this place. As I have been over nearly every part of the Peninsula, (having walked on the mainland a farther distance than any European had ever before done), I hope I may be allowed to offer an opinion—at all events, I can relate what I saw and observed, and I am happy to say I can speak quite to the contrary, as to there being a want of eligible spots for settlers. Perhaps, I shall surprise you, when I tell you that, in this much-abused place *I have seen a much greater proportion of good soil, and well-watered than in any other part of Australia I have yet visited.*

"My expedition to the interior was of ten days duration, and myself and party crossed on the average four small rivers a day, and but twelve miles was our day's walk; (four streams in twelve miles is pretty well,) the banks of nearly all these streams being either of a black loam, or a reddish brown colour. Several times we passed over some tracts of country where the grass was growing most luxuriantly: this

was *in August*, which is the *latter part* of the *dry season*; for it was evident to us, we could not go over the same part of the country during a rainy season, or immediately after, as the lagoons (at this time quite dry) must so run into each other as to effectually prevent horses travelling. It was in these luxuriant tracts that we started up numbers of *wild buffaloes* and *ponies*, all as fat as our cattle at home when driven to the market at Christmas.

"The town of Victoria is situated on a bold white cliff, commanding every part around, without being under the command of a single spot; thus far you will say the site is well chosen. The formation of the cliff is a kind of pipe-clay, but the ground on which the settlement stands is of ironstone pebble, or it might be termed rotten ironstone, with a very great mixture of dark loamy soil, of a brownish tinge. When dug up, and cleared a little of the stones, it forms very excellent garden ground, as a proof of which every marine, and the greater part of the Pelorus' crew, have their respective gardens attached to their huts, and very neatly fenced in. Every description of tropical plants grow here extremely well. There are, besides, two government gardens, and being well managed, yield water-melons, pumpkins, sweet potatoes, Indian corn, arrowroot, &c., in great quantities. The banana, pine-apple, and cocoa-nuts, are coming on extremely well—but is it not strange they cannot manage to rear the fig? The harbour, too, is almost as fine a one as any on the whole coast of Australia; it is about twenty miles in depth, and about fifteen miles from the entrance is the jetty (in length about 150 feet) running out from the townsite of Victoria. The anchorage is opposite this, completely landlocked, and about from four to seven fathoms water,—the bottom clay and mud.

"At the jetty, boats can discharge cargo at both high and low tide: the rise of tide here is very irregular, but as far as I can learn, it has not been known to rise more than ten feet, except at the time of the hurricane, and then they had the most extraordinary rise of nearly twenty feet. The highest degree of heat I have yet seen is 102, but the average has been about 94, with in general a range of from twelve to sixteen degrees, so that we have very pleasant and cool evenings. The climate must be considered as congenial to an European, for I understand no severe case of sickness originating here, has occurred since the formation of the settlement. The natives are on the most friendly terms; so much so, that I have constantly gone out with them in the bush without the slightest fear of molestation, or want of confidence in them. They are a much darker race than the natives of the south part of Australia, but much more savage-looking, and, generally speaking, more muscular and finer made men. Both sexes go about in a state of nudity at all times and seasons. As they live near the coast, they principally subsist on fish and oysters; the latter are very abundant, and extremely delicious. As far as I have seen them (the natives,) they do not appear to ever go far inland, and I firmly believe have no idea of catching or killing a kangaroo. They make no cloaks or dress of any description, and but mere apologies for huts to sleep in at night. They are very excellent swimmers, often swimming across the harbour, pushing before them a small raft with their little things on.

"The two nearest points of opposite side of the harbour cannot be less than two miles. They are very expert in killing the turtle; the hawksbill species they kill most frequently, the shell of which they save and exchange with the Malays for clothing, bamboo, rice, canoes, &c. These things taken in exchange from the Malays are carried into the interior, where they meet with another tribe, to whom they exchange them again for spears and throwing-sticks, &c.; for singular enough they do not even make the latter themselves.—I suppose from not finding the principal materials on the Peninsula, viz., quartz and slate-stone, and a species of very hard wood, with which their barbed and pronged spears are headed."—*South Australian.*

NOTES ON MAULMAIN, NICOBAR, PREPARIS, AND ANDAMAN ISLANDS.—*By Capt. J. H. Miller.*

THIS port* is beginning to attract attention at home, as a mart for teak timber, of which there are interminable forests, intersected by rivers and creeks all round it. Ship-building is also now carried on to a considerable extent, and perhaps there is no place in the world where cheaper or better ships can be built,—I mean as regards the hull and masts; but everything else, viz. copper, cables, anchors, rigging, sails, blocks, and stores of all kinds, must be brought from Calcutta, or from Europe. A ship from England bound to Maulmain, ought to reach the Bay of Bengal in the south-west monsoon, and in that season it would not be much out of her way to call at Bombay and Madras; the only inducement for going to Bombay, would be an outward freight, for nothing will be got from that port to Maulmain; but at Madras a ship stands a good chance of getting freight of Government stores or troops, as well as goods, and no time is lost nor expenses incurred, excepting a small charge of sixteen rupees for the light, if bulk is not broken. A ship taking this route, ought to leave Bombay not later than the 13th of September, and Madras the 5th of October, to ensure her passage across the bay with a fair wind; if later, the season may change, and it will be found a hard beat up to Maulmain, which lies in the "far north-east." During the early part of the north-east monsoon, from the middle of October to the middle of January, a ship bound to Maulmain should take the eastern side of the bay, and work up along the coast of Tenasserim; but after the middle of January, her best route is by the west side along the coasts of Coromandel and Orixa, as far as False Point, stretching from thence over to the Arracan coast, and so on round Cape Negrais, never getting far away from the land. In addition to the directions given in Horsburgh, for making Maulmain or Amherst, it may be as well to state, that the pilots *do not* come off to ships in the flood tide, and on the ebb tide will reach a vessel at

* Maulmain is a free port, and provisions are cheap; the only expense incurred is for pilotage, for which see the accompanying regulations. I would recommend seeking ships to remain at Amherst, until the state of the markets and freights are ascertained, which can be best done by the captain proceeding to Maulmain in a good pulling boat.

anchor one mile and a half south-west of the buoy, sooner than close to it. A vessel need not, however, anchor at all outside, but run in past the buoy by observing the following directions.

On approaching the buoy, which may be seen four miles off, and it lies to appearance full two miles from the point, do not bring it to the northward of north-east, on account of a small patch of rocks, *always under water*, which lie a considerable distance out from the main ledge, and at present are not marked. Round the buoy close on its north side, on leaving it on your starboard hand, and steer up E.N.E., until it is brought to bear S.W.b.W., and anchor with it on that bearing about one mile and a half above it, when you will be sheltered from the swell, and your pilot *may then* come on board on a flood tide. Observe that the tide sets right across the channel, to the northward past the buoy, which must be looked to as it runs strong. The channel is about half a mile wide, with nine and ten fathoms near the buoy, and on the north side five fathoms.

No directions are requisite for making Amherst during the north-east monsoon; but in the south-west monsoon want of observations render caution necessary—the principal thing to guard against is the strong tides. Should a ship miss Amherst, and get to the northward, within the influence of the tides of Sittang River, her loss would be almost certain. It is therefore prudent to make the land well to the southward,—say about Callagouk, where should you not have time to run into the river before dark, you can anchor or keep to windward under sail until morning. I have always adopted the latter plan except once, when I ran inside of the island and anchored for the sake of seeing the place. The anchorage is very safe and good, and easy of access. A ship coming from the westward, and being abreast of Burrague Point, (which she will not see,) should in thick weather not come under ten fathoms water, and this will carry her well to the southward of Amherst, and when you make the land, so long as you have hilly land near the sea, you may be certain that you are to the southward. There are high mountains inland, but none of them are sufficient to point out any part of the coast.

Regulations.

Much delay and inconvenience being experienced by vessels in this river, consequent on the desertion of Lascars, and on the inducement which exists for these men to leave one vessel in order to obtain higher wages in another:—

It is hereby ordered, that no port clearances will be granted from the Master Attendant's Office unless the commander of the vessel applying, produces a certificate from the police magistrate that a list of his crew has been furnished, particularly stating the names of such Lascars as may have been shipped during the vessel's stay in the river.

All Lascars who may come to this port in search of employ, or who may be discharged at this port, shall register themselves at the police office, and all Lascars who may not have so registered themselves and obtained a ticket of registry, will be taken up and confined as vagabonds.

All such registered Lascars, shall, on obtaining employ, return their registry tickets to the police office.

Any commander of a vessel in this port, or other person engaging Lascars

who may not have registered themselves at the police office, will be fined the sum of 50 rupees for each unregistered man.

A reward of ten rupees will be given for every Lascar that may be apprehended without having been registered as above directed.

The attention of commanders of vessels is urgently requested to the above orders, as, without their cordial assistance and concurrence, it will be impossible to remedy an evil that has encreased and is encreasing with the importance of the port.

E. A. BLUNDELL, *Commissioner.*

Maulmain, September 15th, 1837.

PILOTAGE AND OTHER REGULATIONS FOR THE MAULMAIN RIVER.

Passed by the Commissioner in the Tenasserim Province.

1. As soon as a ship or vessel shall anchor off the town of Amherst, the Master Attendant shall send his boat on board of her with his report book, and the blanks therein shall be filled up by the commander.

2. All commanders of ships or vessels arriving off Amherst shall deliver without delay, all post-office or other public packets and letters to the officer or other person who brings the Master Attendant's report book, —or to any other person duly authorised to receive such packets or letters.

3. All commanders of ships or other vessels arriving at Maulmain, shall report themselves at the Master-Attendant's office, and shall give twenty-four hours previous notice of their intended departure at the same office, from whence they will receive their port clearance.

4. All commanders of ships or other vessels, shall before quitting the harbour and receiving the port clearance, render a list of their crew and passengers at the police office.

5. The above rules, 3 and 4, equally apply to vessels going into Amherst, and not intending to proceed up to Maulmain.

6. The commander of any ship or vessel throwing ballast in the harbour, or in any place within two miles of the outer buoy off Amherst, shall on conviction thereof be fined a sum not exceeding 200 rupees.

7. The following scale of pilotage, and buoy and beacon duty, is laid down for the Maulmain River.

Vessels taking a Pilot.

1. All vessels requiring a pilot will be charged the following rates:

Draught of water.	*Co.'s Rs.*	*Draught of water.*	*Co.'s Rs.*
Under 10 feet .	35	Under 14 feet .	70
" 11 " .	40	" 15 " .	80
" 12 " .	50	" 16 " .	90
" 13 " .	60	" 17 " .	100

No vessels drawing more than fifteen feet six inches will be taken down the river between the 1st of May and 31st of October.

Vessels requiring row-boats will be charged for the same at the rate of sixteen rupees per day whilst so employed.

Vessels not taking a pilot.

2. Vessels of every description drawing seven feet and upwards will be charged on entering and quitting this port, half the amount they would have paid had they taken a pilot.

3. Vessels of every description, drawing less than seven feet, but measuring upwards of 35 tons registry or 1,200 baskets of rice, shall pay on clearing out of this port, the sum of ten rupees.

4. Vessels of every description measuring between 35 and 20 tons registry, (both inclusive) or between 1,200 and 700 baskets of rice (both inclusive,) shall pay on clearing out of this port the sum of five rupees.

5. Vessels of every description measuring less than 20 tons registry or 700 baskets of rice, shall pay on clearing out of this port, a sum of one rupee.

6. This scale to apply equally in every respect to the Port of Maulmain or to any other station on the river as to the Port of Amherst.

7. Vessels that have been piloted into Amherst or to any other station on the river, subsequently requiring a pilot to move them higher up the river to Maulmain or some other station, will be charged for such further movement half the amount of pilotage above laid down.

By order,

C. S. Dromgoole, *Master-Attendant.*

Master-Attendant's Office, Sept. 15th, 1837.

N.B. Pilots are not required to move vessels in the river beyond the draft noted below, but it is discretionary with them to do so, subject to the expressed desire of the commanders of vessels acting on the part of the owners and underwriters, without unloading part of the cargo to bring the vessel within the draft in question.

With the aid of competent steamers at all times up and down	18ft.
Without steam coming up	18
Without steam going down	16

Pilots are peremptorily prohibited from seeking, directly or indirectly, any pecuniary donations, which are entirely discretionary on the part of commanders of vessels.

Capt. Drinkwater Bethune, R.N., makes the following remarks on this navigation.

Maulmain and Amherst.—Amherst situated at the mouth of the Salneew, on its left bank, was the original settlement in the Tenasserim provinces when ceded to the British. It may be considered as an appendage to Maulmain, where the principal settlement has been removed, a few huts and bungaloes only remaining. The least water in the harbour is four fathoms; and although the tide runs strong in the vicinity, I was informed it possesses the peculiarity of remaining for a period at one depth, with little stream through it.

The entrance is round a reef extending from Pagoda Point, and is at present marked by a buoy. A pilot is maintained by the Hon. East India Company.

Maulmain is twenty-eight miles higher up the river on the same side as Amherst, opposite the site of the Old Burmese town of Martaban. Vessels drawing sixteen feet may go up; but some little difficulty occurs in bringing them down. Maulmain was founded in 1824-5, and is at present in a thriving state, having 18,000 inhabitants. An European and native regiment are quartered there. It is pleasantly situated, and the climate, by report, delightful and highly salubrious. The British and Burmese sides of the river form a pleasing contrast, but the disadvantages of a river boundary are shown by the continual depredations committed either by Burmese from their own side, or by those who instantly cross the river, and are clear of pursuit. Iron and lime are found, and it is thought coal. Pine timber fit for masting is found in the hill country, not very distant; but the communication difficult. Teak and other timber in abundance; so long as teak can

be procured, no other is looked at in the market: the consequence is, that it is disappearing rapidly. Five thousand tons of shipping, large and small, on the stocks. Poultry, fruit, and vegetables to be procured. The water at Amherst is got with difficulty.

Nicobar Islands.

Country ships bound to Burmah, and in ballast, generally call at these islands, and fill up with cocoa-nuts, for which there is a steady demand, as food for gods and men. Chowry, Terressa, Bompoka, and Nicobar, are the principal islands at which they may be procured, and if a ship of 300 or 400 tons burthen can get loaded in ten days, it will be worth while to do so. Proper articles for barter can be procured at Madras, but sovereigns and half sovereigns, silver, table desert, and tea-spoons, and desert forks,—say a dozen of each, and the more carved and massy the better, and all bright and new, will always insure a cargo; inferior articles will not answer, and any person attempting to palm counterfeit articles on them, may, whenever he is detected, (which he will certainly be,) leave the place at once. In dealing with them, the practice is to open shop on board, when each person takes what articles he chooses, you entering his name in your book for so many pairs of nuts, and this lasts for two days or more, by which time most have supplied themselves with all they want, then they generally take one day more for a jolification, when they set to work in good earnest and soon load the ship. You are perfectly safe in trusting them, the only thing required is to visit them occasionally and keep them to their time. I have frequently engaged more nuts than I could take, or perhaps would not wait for them, which have always been punctually paid on a future voyage. An acquaintance of twenty years with these islanders, enables me to speak very favourably of them. Their government is patriarchal, they have no chief higher than the head of a family. What their religion may be, I do not know, but their morals appear excellent,—the men are honest, and the women are chaste. I have been many voyages among these islands and know of no hidden dangers; the tides in some places run pretty strong in different directions. As they lie within the monsoon, it is proper to anchor always on the lee side of the island, and at some of them you must stand pretty close in for anchorage. There are several villages on each island, and it is best to anchor at some place within convenient reach of two in those villages.

Preparis, Great and Little Cocos, and West Coast of Andaman.

The Preparis has anchorage on both the east and west sides, but the extensive and dangerous reef off its south end, makes it unpleasant to approach near it, although the anchorage is very good, and water can be got very conveniently. Timber, fit for firewood, grows on it. but not for any other purpose. The Great Coco has timber of a large size growing on it, and a ship getting disabled in beating down the bay, in the south-west monsoon, may take shelter under this island, and

procure sufficient spars to enable her to proceed on her voyage, or may caulk any open butts or seams. She may then, if bound across the equator, pursue her course to the southward, inside of the Andaman and Nicobar Island, and round Acheen Head, without loss of time. This, I think, would in many cases be better than *putting back*, when it often happens that the expense incurred for *necessary* repairs, is but a fraction of the "tottle."

The islands along the west coast of the Andaman are free of hidden dangers,—the coral reefs surrounding them are sufficient warning by day or night. I have made many traverses over the great coral bank off the Andaman, and not found less than seven fathoms. The bottom is plainly seen, as is the case over all coral, which renders it unpleasant to a stranger. On all these islands, turtle may frequently be found, and, at a future period, I hope also goats, pigs, &c., for I have at different times landed these animals on them, as well as on several of the islands fronting the Tenasserim coast. On the 10th of October, 1839, I landed the following list of animals on the Great Coco, viz.—one goat in kid, four pigs, eight ducks, and six fowls,—male and female after their kind, and on a subsequent voyage I landed pigeons and rabbits.

The islands on the west side of the Andaman are frequented during the fine season, from December to April, by a mixed and mongrel race of Malays, Chinese, and Burmese fishermen, from Beche de Mer and the edible Birds Nests, who are of very doubtful honesty; and it is necessary to take a few muskets or cutlasses, just to shew them that you are prepared for mischief in case of need. These fellows are also "fishers of men," and to their evil deeds may much of the hostility of the Andamanians be attributed; they carry off children, for which they find a ready market, as slaves in the neighbouring countries. I have been told, that formerly they were friendly, and assisted these fishermen, until a large party was invited on board of a junk or prow, (the Chinese get the blame of it,) and after being intoxicated, were carried off and sold at Acheen; and the practice is still carried on by these fellows, who land and carry them off whenever they can catch them. The Andamanians have retaliated fearfully whenever any foreigner has fallen into their power, and who can blame them?

NOTICES OF JAPAN.—No. II.

(Continued from p. 45.)

IT appears that the only individual Japanese exempt from the necessity of quitting Dezima at sunset, are women who have forfeited the first claim of their sex to respect or esteem, whilst no female of good character is at any time permitted to set foot in the island, as is announced in the plainest and coarsest terms by a public proclamation, near the bridge-gate. From this unhappy and degraded class alone, therefore, can the Dutch procure either female servants or constant attendance. The consequences, in their irksome situation, deprived for years of all

family society, need not be told. The progeny of the Dutch by these women are considered as altogether Japanese. As such, they must not be born in Dezima; and it is probably to guard against illegal births, that the women are bound to present themselves, once in every twenty-four hours, to the police-officer in command at the bridge. An incidental mention, by Doeff, of the women and children, shows that the mothers are permitted to nurse their infants in the houses of the fathers; but at a very early age, these half-caste children are subjected to restrictions in their intercourse with their fathers, similar to those imposed upon the intercourse of all natives with foreigners; and the only indulgence granted to the paternal feelings of the Dutch consists in the permission to receive a few specified visits from their offspring at certain intervals, (whether this permission extends to their daughters is not stated,) and to provide for their education and support through life. The fathers are frequently allowed, if not required, to purchase for their adult Japanese sons some office under government, at Nagasaki or elsewhere.

As no Japanese may be born in Dezima, so may none die there; although how this is avoided in cases of sudden death is not explained. It may be conjectured, however, that the remedy is sought in the underhand course termed naibon by the Japanese (which means the professed concealment of something generally known), and of the strange and incessant use of which much will have to be said hereafter. Thus appearances may, perhaps, be saved by concealing the death, and removing the deceased, as though still alive, to the place where he may lawfully die. This would be merely absurd; but it is a more revolting idea, that such precipitate transportation may occasionally take place ere the vital spark be quite extinct, and the time which, judiciously employed, would have saved life, be wasted in conveying the sufferer to a legal death-bed. But the loss or preservation of life are trifles in Japanese estimation.

The dwellings in this singular species of prison are not given to the prisoners by government, nor even the use of the ground, whereon to erect habitations at their pleasure. The houses appear to have been built by citizens of Nagasaki, upon speculation, and the Dutch pay for them an exorbitant rent fixed by authority. They are, however, permitted to furnish them according to their own taste, and either to procure furniture, in the European style from Java; or to have it made by their own direction in Japan; and so dexterous, ingenious, and patiently persevering are the Japanese handicraftsmen, that they rarely fail to execute anything they undertake, how different soever from the articles they are accustomed to produce. They are said, however, occasionally to require from their customers patience similar to their own, as no money will induce them to encroach upon the hours allotted to meals, rest, or recreation.

But the artificers they are to employ, or the tradesmen with whom they are to deal, the members of the factory are not permitted to choose for themselves. Purveyors are officially appointed in some departments, and the prices at which they are to serve the factory with their several wares are fixed by government, fifty per cent. above the regular market price; a rate of charge avowedly intended in part to defray the expense

incident to the safe custody of the strangers. For other departments there is an appointed purchaser (still called by the Portuguese name of Comprador), who buys every unprohibited article that the Dutch may desire to possess; and these purchases, when made, they have no money to pay for. Whether as a preventive of bribery, or for what other motive this restriction be imposed, appears not; but to the Dutch, all money transactions, and even the possession of money, are prohibited. The cargoes of the Dutch ships, when landed, are delivered to Japanese authorities, who sell the imported merchandize, employ the price in paying for the goods to be exported, and give in their unchecked accounts to the Dutch president. Even the private adventures allowed to the members of the factory, in compensation for their inadequate salaries, are thus disposed of, and the returns procured. The remaining accounts of the purveyors and compradors, against every individual member, are settled out of the proceeds of these annual sales. The purveyors, the comprador, a Japanese physician, (appointed provisionally to act in case of the Dutch physician's illness, death, or absence), a professor of the Japanese remedy of acupuncture, and the known servants are respectively furnished with seals, or passes, that authorize their ingress and egress to and from Demiza, at the lawful hours. But all these persons are obliged, prior to entering upon their offices, to sign, with their blood, an oath, binding them to contract no friendship with any of the Dutch; to afford them no information respecting the language, laws, manners, religion, or history of Japan; in short, to hold no communication with them, except in their several recognized functions. No individual except those abovementioned, and the officers and interpreters employed by government, can enter Dezima without an express permission from the governor of Nagasaki: but it is said, that any Japanese visitor, who wishes to obtain admittance without this formality, can usually succeed by bribery, passing as the servant of some one of the sanctioned or official visitors.

The due observance of all these regulations and restrictions is enforced and watched over by the municipal officers and police of Nagasaki, a certain number of whom, with a proportionate allowance of interpreters, are always upon the island. Houses are there assigned them, but there appears to be little occasion for more than a station-house or guard-room, the whole being relieved every twenty-four hours.

The interpreters constitute one of the regular corporations, or guilds, of Nagasaki, and receive salaries from the siogoun, or emperor. From sixty to seventy of the body, reckoning superior and inferior, are formally appointed Dutch interpreters; and a yet larger number are assigned to the Chinese factory, which, like the Dutch, is confined to a spot adjoining Nagasaki. But even these appointed Dutch interpreters are forbidden to communicate freely with the factory; they must not visit the president, or any of his inferior countrymen, unless accompanied by a municipal officer, or, according to Fischer, by a spy. But although the whole administration of Japan seems to be a system of *espionage*, as will appear hereafter, it is hardly to be supposed that the spies, upon whose relations this cautious government depends for information, can be so publicly known as to be in official attendance.

It is far more likely, that some of the menial servants of the factory act in the secondary capacity of spies, reporting the conduct of municipal officers and interpreters, as well as of their masters. This conjecture is confirmed by the information, that all these servants understand Dutch, which does not seem to be the case with the police or municipal officers.

Whilst the Dutch vessels remain in the bay, and the business of unloading, procuring a cargo, reloading, and all thereunto appertaining is going on, a good deal of consequent negociation and intercourse takes place betwixt the president and the governor and his subordinates; and some diversity of opinion exists between the Dutch and the German writers, as to the degree of politeness which, upon this and other formal occasions, marks the behaviour of the Japanese. Dr. Von Siebold avers, that the Dutch *opperhoofd* still submits to very humiliating insults and contemptuous treatment; attributing such submission, however, to a patriotic anxiety for the preservation to Holland of a very profitable trade, not to any individual lucre or gain; whilst most of the Dutchmen, on the other hand, affirm, that they receive every mark of consideration and respect that could reasonably be expected or desired, and hold the trade to be of little value. The accounts given by the Dutch presidents of their intercourse with, and treatment by, the different Japanese placemen with whom they came in contact, will enable the reader to judge between these opposite views. One preliminary observation may, however, afford a key to the conduct of this haughty, but not conceited nation. The Japanese nobles and placemen, even of secondary rank, entertain a sovereign contempt for traffic; whence it may be inferred, that the head or director of a commercial establishment cannot expect to be treated by them as their equal. And that this is the light in which they, not unjustly, regard the Dutch opperhoofd is proved by the adaptation to that gentleman of their sumptuary law respecting swords. This mark of dignity is strictly prohibited to all Japanese traders: and the wealthiest can in no otherwise free himself from this degradation, imposed by these sumptuary laws, of appearing unarmed, than by prevailing upon some indigent noble, whose necessities his purse has relieved, to enter his (the merchant's) name, upon the list of his (the nobleman's) servants; when the titular domestic is permitted, in his servile capacity, to wear a single sword. Now of the whole Dutch factory, the president alone is permitted to wear a sword, and even he is allowed but one, and that one to be worn only on state occasions; all of which, be it remembered, has no reference either to nation or to person, but is absolutely and solely the test and mark of station, or rather perhaps of class:—can the man who may only wear a sword at all upon particular specified occasions, expect to be placed on a footing of equality with him who wears two, or even with him who wears one at his own pleasure, that is to say, always?

There is, however, one very important point in the treatment of the Dutch in Japan, respecting which all the late writers agree in correcting the mistaken impression prevalent in Europe. This point is their religion, which, if they are not allowed openly to profess by practising its rites—because these are acts prohibited by irrevocable Japanese law—they are not, now at least, required to deny and insult, by trampling

upon a picture of the Virgin and infant Saviour. That they ever did sully the Christian name by submitting to the sacrilegious humiliation, to which thousands of Japanese martyrs preferred death, rests solely upon the authority of their expelled commercial rivals, the Portuguese, and that of the hostile Jesuits; corroborated, indeed, by the contempt which the Dutch, at the period of their obtaining their first charter, A.D. 1611, in the midst of the persecution of the native Christians and the missionaries, appear to have incurred from the Japanese, by a supple compliance with every requisition. The question thus limited can be of little interest to any but Dutch feelings; still, what is known of the history of this singular ceremony of abjuration, and of the treatment of the Dutch relative to religion, both of yore and at present, is too characteristic of Japanese nature to be omitted.

From the first visits of the Portuguese to Japan, up to the latter end of the sixteenth century, Christianity, and the missionary labors of the Jesuits enjoyed there a toleration so complete as to be almost unaccountable in a country in which the authority of the nominal autocrat sovereign, the *mikado*, essentially rests upon its religion; the mikado reigning solely as the acknowledged descendant and representative of the gods. In consequence of this toleration, the missionaries were so successful, that, according to the reports made by the Jesuits to their superiors at Rome, there were in Japan, prior to the breaking out of civil wars that produced the prohibition of Christianity, 200,000 native Christians, amongst whom were found princes, generals, and the flower of the nobility. Nay, a few years later, the heir of the siogounship is said to have been half a convert; whilst the numbers of the Jesuits' flock increased rapidly, even by hundreds of thousands, during the whole of those civil wars, and the early period of the persecution.

A legal persecution, modified by much connivance—according to the Japanese naibon system—lasted for years, until in 1637, a rebellion broke out in the principality of Arima, the population of which was chiefly christian. The cause and character of this rebellion are variously represented by the Dutch and Portuguese* authorities. According to the latter, it originated in the persecutions of his Christian subjects by a newly-appointed heathen prince; whilst the Dutch represent it as provoked solely by the tyranny and extortion of that new prince, and altogether unconnected with religious differences; and Siebold, who may be considered as neutral, without saying anything as to its origin, calls it "the unsuccessful insurrection of the Christians;" and assuredly the probability is, that religion was the impelling cause of the insurrection in question. Persecution of native Christians, with the penalty of death denounced against all who refused the test of trampling upon the effigy of the Virgin and the infant Redeemer, was the law of the land, and would naturally afford both the pretext and

* The mutual recriminations of the Dutch and Portuguese, who impute to each other the exclusion of foreigners from Japan, are not worth investigating. It is likely enough that the progress of the Jesuits, and the acknowledgment of the pope's authority by their converts, should have alarmed the government, and the Dutch should have fomented any ill-will towards commercial rivals, who, being then united to Spain, were their political as well as their religious enemies, if such contradictory ideas may be combined.

the means of a newly-appointed heathen ruler's tyranny and extortion. Be this as it may, after a long struggle, the prince drove the insurgents into the peninsula of Simabara, and finding himself unable there to subdue them, he, with the full sanction of the *siogoun*, called upon the Dutch to bring their armed vessels and artillery to his assistance. Kockebekker was at that time the head of the Dutch factory then established at Firado, and most prosperous amidst the great privileges granted by the original charter, and the liberty enjoyed under the protection of the kindly-disposed prince of Firado. Kockebekker obeyed the summons with the single man-of-war at his disposal, and the Dutch artillery decided the fate of the unfortunate christian insurgents at Simabara. This civil war is said to have cost forty thousand lives; and the prince's triumph was followed by the rigid enforcement, throughout the empire, of the laws against Christians, the vanquished rebels being the first victims.

This compliance with a Japanese requisition to act as auxiliaries against their fellow-Christians, the Dutch writers vindicate upon the plea of the civil war not having been a religious war, although they do not deny the Christianity of the unhappy rebels shut up in Simabara. The real apology, however, probably lies in their not irrational dread that their own lives might pay the forfeit of disobedience, to a mandate sanctioned by the emperor. It is not improbable that this very compliance, by satisfying the government of the truth of the assertion, that though the Dutch were Christians, their Christianity was not the Christianity of the Portuguese, won their exemption from the general exclusion. They were, however, then removed from Firado and liberty to the vacated Portuguese prison at Dezima.

But this subject of the persecution must not be dismissed without a tribute of admiration to the heroic constancy with which the Japanese converts adhered, under every trial, to the faith they had adopted. Every native Christian was now put to the test of trampling on the image of his Redeemer; and the Jesuits assert that no instance of apostacy occurred, whilst incredible numbers voluntarily embraced martyrdom, as inflicted with a refinement of barbarity not unfrequent in Japanese executions, and often reminding the reader of that rivalry in infliction and endurance between the torturor and the tortured, so common amongst the red men of North America. When the Japanese were weary of torturing and slaughtering—and such weariness seems to belong as little to the national idosyncrasy as mercy—the remaining multitudes were locked up in prisons, there kept at hard work upon wretched fare, and annually offered wealth and freedom as the price of abjuring Christianity in the prescribed form. The offer was annually rejected, until the last Japanese Christian had died off.

Even to the present day, every native Japanese, or according to Doeff, only every native of Nagasaki and the adjoining principalities, is required thus to prove his non-christianity. The trampling ceremony is performed annually upon a certain festival-day of the national religion, to wit, the fourth after their new-year's day; and so universal is it, and must it be, that bedridden invalids, and even infants in arms, are made to touch the picture with their feet. But the regular ceremony is now confined to natives, and upon other occasions the trampling

appears to be only used as a test to ascertain the religion, or rather the non-christianity, of strangers.*

So far from any member of the Dutch factory being required to participate in this revolting ceremony, we are positively assured that those among them who felt curious to witness an abjuration of Christianity, concerning which they had heard so much, have been unable to gratify their wishes; and all that is told upon the subject in the recent publications is given purely on the authority of Japanese acquaintance. In addition to these statements, an anecdote is told relative to this matter, which occurred soon after Doeff's arrival, and is highly illustrative of the kindly feeling now entertained by the Japanese towards their Dutch guests, as well as of their habitual forbearance with respect to religion, and of their general politeness.

"In November, 1801, whilst Heer Wardenaar was opperhoofd, and I warehouse-master," says Doeff, "a small brig was wrecked upon the Goto islands, and brought to Nagasaki for examination.† The governor of the city requested the opperhoofd, together with the secretaries, M. Mak and D. H. Libake, to attend the examination in the government-house. The brig's crew consisted of a Malay man and wife, a young boy, and two maid-servants of the same nation, a black Papuan, a Chinese, and a Cochin-Chinese. The brig was evidently Portuguese, and the crew unanimously declared that she had sailed from Portuguese Timor, bound for Amboyna; but that the captain and all the officers having died upon the voyage, they, the survivors, had found themselves so unable to manage the vessel, that they could only let her drive, trusting to Providence; and had thus, in the end, run upon the Goto islands. Hereupon the governor requested all the Hollanders who were present to withdraw for a moment. They thought this strange; but soon learned from the chief interpreter, that the governor, not knowing these people, was bound by his orders to make them trample upon the images; but to avoid giving the Hollanders offence, had wished that this should not be done in their presence. This ceremony over, the Hollanders were invited to return. Hence it is mani-

* The time for performing this ceremony appears to vary in different parts of the country. In Simabara and Amakusa, which now form a portion of the principality of Fisen, but anciently of Arima, the ceremony commences on the fourth of the first month, and is continued through the month on any day according to the wish of the magistrate; in Figo, the principality adjoining to Fisen, it is usually performed in the third month. In Simabara and the other last refuges of the persecuted christians, the custom is said to keep up with the utmost strictness; in Satzuma, and the principalities of Nippon, the custom is not, according to our informants, observed with so much severity. Traces of catholicism still remain in the popular legends of the inhabitants of Kiusiu, some of them being connected with the last struggle in Simabara. There is, according to one of these traditions, a set of people called *gedo*, who are supposed to worship the images of the *kirisitano*, or christians, and refuse to trample on the picture or cross; by this means, they acquire great influence with spirits, who furnish them with money, succour them in danger, and otherwise befriend them. They keep their images concealed in the walls of houses, and perform their ceremonies in the privacy of the night; if they consent to trample, or fail in their rites, the aid of the spirits is withheld.

† Every wrecked vessel, or, if it is incapable of floating, its crew, must be brought to Nagasaki, however distant the scene of its misfortune. This is carried so far, that even the vessels of Japanese dependencies, as of the Lewchew Islands, and Corea, are conveyed thither for examination, and there detained until they can be sent home.

fest that the Japanese know and respect our religious opinions. Further, that they no longer practice such overstrained severity towards others as they did in times past, appears from the sequel. Although it was clear that the brig's crew were Roman Catholics, the governor, out of compassion for the shipwrecked wretches, sent the Malays and Papuan to us in Dezima, confining them, however, in an old house, inclosed with bamboos, and watched by a Japanese guard; whilst the Chinese and Cochin-Chinese were similarly confined in the island inhabited by the Chinese factory, there to wait until, according to the commands from court, the latter could be conveyed to China by the junks, and the former in our ship Matilda Maria, to Batavia (1802.) It there appeared but too certain, that the brig had sailed from Timor for Macao, and that the above-named crew had murdered the captain and other officers, in order to possess themselves of the vessel, which they proved unable to manage. They were thereupon sent to Macao, where they suffered the punishment of their crime."

Having thus imparted all the information that recent authors afford upon the important point, turn we to the forms flattering or offensive, observed in the official intercourse that takes place between the Dutch and Japanese authorities; citing them from the Dutch writers. President Meylan, who was last in Japan of any of the late writers, and who seems the least confident of his countrymen as to the honors paid him, considers it as a prodigious privilege, that the chief police-officer and the burgomaster of Nagasaki, when they have business with the head of the factory, repair to his house, instead of summoning him to their tribunal in the island; and he proceeds thus to describe this official visit.

"Upon such occasions, the president is bound, in expectation of their arrival, to spread a carpet, to provide liqueurs and sweatmeats to be offered at the proper time, to await the dignitary* at his own door; and, when the said high dignitary has seated himself, in Japanese fashion, on his heels on the carpet, to squat himself down in like manner, bowing his head two or three times to the ground, and thus making his compliment, as it is termed here. In all this I should see nothing, it being the usual mode in which Japanese grandees receive and salute each other; but here, in my mind, lies the offence, that between Japanese this compliment is reciprocated, whilst, at an interview between a Netherlander and a Japanese grandee of the rank of a gobanyosi the compliment of the former is not returned by the latter, he being esteemed an exceedingly friendly burgomaster or gobanyosi, who even nods his head to the Netherlander in token of approval. All this is the more striking to the Netherlander newly landed at Dezima, and not yet used to the custom, because he observes the Japanese to be amongst themselves full of ceremony and demonstrations of politeness, in which the nation yields to no other, not even to the French. Another custom is worth observing. It is, that a Japanese grandee, from the rank of a gobanyosi upwards, never speaks directly to a Netherlander, but always through the medium of an interpreter. This might be sup-

* Dr. Von Siebold avers, and his statement appears to be consonant with probability and analogy, that a *gobanyosi*, or superior police-officer, is by no means a high dignitary in Japanese estimation.

posed an unavoidable inconvenience, the parties being unable otherwise to understand each other; but such cannot be the cause. There have been many presidents who, having themselves diligently studied the Japanese language, had acquired sufficient knowledge to express themselves intelligibly. There have even been some who, passing by the interpreters, have directly addressed the high Japanese dignitary in Japanese, but in vain. The man made as though he understood not, and referred him to the interpreter for what was to be said. I conclude hence, that this custom is a point of Japanese etiquette, not intended to do the highest honor to the Netherlanders; and I am confirmed in this suspicion by the increase in the number of intermediate speakers in the president's audiences of the governor. The governor speaks to his secretary, the secretary to the interpreter, the interpreter to the president: and, reversing the order, the president to the interpreter, the interpreter to the secretary, and the secretary again to the governor.

"The opperhoofd (president) has two audiences every year of the governor of Nagasaki; the one on occasion of presenting the *fassak*, (acknowledgment or tribute,) which the Dutch government annually transmits to the Japanese rulers: the other on that of the sailing of the ships. This is the regulated dialogue always repeated on these occasions.

On offering the Fassak.

"*The President.*—It is in the highest degree gratifying to me to meet the lord-governor in perfect health, and I congratulate him thereon. I also owe thanks for the assistance which his lordship has again this year afforded the Netherlanders in matters of trade, and, therefore, in the name of the lord governor-general of Batavia, are the goods offered as a present to his lordship, which, according to old custom, are destined for his lordship, and enumerated in the list that I have already delivered.

"*The Governor.*—It is very agreeable to me to see the president well, on which, as well as on the happy dispatch of matters of trade, I congratulate him, and accept thankfully the present that according to old custom, is offered me in the name of the high government of Batavia. As the time for the departure of the ships is now at hand, the president will have to take care that they are speedily in readiness to sail, and as soon as they are so ready, make it known to the governor.

"*The President.*—It is an honor to me that the lord-governor has accepted the present offered him. I shall take care that the ships are speedily ready for their departure, and not neglect to make it known to the governor as soon as they are ready.

(The audience over, the president repairs to another room, and asks leave to pay a separate visit to the secretaries. The secretaries come, the usual compliment is paid, and the following short dialogue ensues.)

"*The President.*—It is gratifying to me to see Messrs., the secretaries well, and I thank them for the trouble they have been good enough to take about the trade.

"*The first Secretary, (in the name of both.)*—We also are glad to see the president well, and wish him so to continue."

At the audience of Departure.

" *The President.*—After having wished the lord-governor his health, I make known to his lordship, that the day after to-morrow, the 20th, the ships will remove to the Papenberg; they being, thanks to the assistance afforded by the lord-governor, ready to depart.

(In obedience to an imperial edict, the Dutch ships are bound to quit the harbour of Nagasaki, whether ready or not, on the 20th of the ninth Japanese month. They may, however, under colour of waiting for a fair wind, lie yet awhile at anchor under the Papenberg, and there take what is still wanting of their cargo. The audience of departure, therefore, always takes place on the 18th of the ninth Japanese month.)

" *The Governor.*—It is satisfactory to me that the ships are ready to sail, and the president is desired to let them depart on the coming 20th; I will now read what, according to the imperial commands, the president has to do further, and the president will listen.

" *The President.*—I thank the lord-governor for the leave granted to depart, and will listen to the imperial commands.

(The governor then reads in Japanese, and the interpreter in Dutch, a document, the purport of which is, that if the Dutch desire the continuance of their trade with Japan, they must neither bring Portuguese thither, nor hold intercourse with Portuguese, but make known to the governor of Nagasaki whatever they can learn respecting Portuguese hostile designs against Japan; and must respect such Chinese junks as are bound for Japan, as well as all vessels belonging to the Lew-chew islands, they being subject to Japan. This done, the dialogue is then resumed.)

" *The Governor.*—These imperial commands you will duly observe, and the president will moreover command the Netherlanders who remain behind to behave well.

" *The President.*—I shall duly observe the imperial commands made known to me, and communicate them to the high government at Batavia. Moreover, I will command the Netherlanders who remain behind to behave well.

" The present always consists of a vessel of *sake*, and of two trays, one of sea-fish, the other of seaweed."

This may complete the sketch of life at Dezima; and a few words only need be added touching death there, which is permitted to the Dutch, though not to the Japanese. The grounds belonging to one specific temple are assigned to the factory, as their place of sepulture. They pay a yearly sum to the temple, but rather in the form of a gratuitous offering than as the price of their privilege. The forms of burial are, of course, not christian; but the dead are treated with respect. The priests of the temple assigned to the Dutch perform the same rites at the funeral of the deceased stranger, and take the same care of his grave and monument, as though he had been their fellow-countryman and fellow-religionist.

(To be continued.)

The Haddock Family of Leigh.

Sir.—Perhaps many of your readers have, whilst sailing in and out of the Thames, observed the church of the small fishing town of Leigh, on the Essex side, which stands a conspicuous object on the hill above it. Perhaps they may direct a more kindly eye to this humble little place, and view it with some degree of interest, if I make it known that it has been the birth-place of a family of naval heroes, who, from father to son, in four successive generations, distinguished themselves in their country's service. To make this the better known, and thereby to add another local association to the many that belong to the banks of our queen of rivers, is my motive for sending this to you.

The following is taken from Charnock's "Biographia Navalis," who, as it seems, got much information from one of the descendants of this gallant family.

This was the family of the Haddocks, one of some centuries standing, and who were probably at the head of the mariners of the above-mentioned little town, in the church of which are some very ancient monumental brasses representing them in dresses which evidently show they were of some rank in their circumscribed society.

Richard Haddock, the first of our heroes, was resident in this town, and was a seaman, and received, in 1652, a reward of forty pounds from parliament for his public services, most probably performed in some merchant ship hired by government.

William, his son, seems to have been the first who stepped out of the common pursuits of his family; he became captain of a trading vessel to Spain, and was afterwards appointed to the command of the America, a ship-of-war fitted out by the parliament, on the 14th day of March, 1650. This ship he commanded with very conspicuous gallantry during the war with the Dutch, for which he was honoured by Cromwell, and his parliament, with a gold medal, of which an engraving is given in Charnock's third volume. It is still preserved in the family.

Sir Richard Haddock, his son, the flower of the family, passed very many years of a long life in the service of his country. Like most of the naval officers of the time, nothing is known of his early life. The first official information of his holding a naval command, is in the year 1666, when he was appointed by the joint commanders-in-chief, Prince Rupert and the Duke of Albemarle, captain of the Portland. He soon after commanded one of the companies at the attack of the islands of Ulie and Schelling; and retiring from the service for a time at the conclusion of the first Dutch war, held no command till the commencement of the second, when he was made captain of the Royal James, the ship on board which the brave and unfortunate Earl of Sandwich hoisted his flag as admiral of the Blue Squadron. This ship was in the battle of Solebay, on the 28th of May following, and was destroyed by a fire-ship. The admiral's fate is well known; Capt. Haddock, though wounded in the foot, was almost the only officer who survived the destruction of the ship; he committed himself to the sea, and was soon after taken up by a boat, and put on board one of the English ships without farther injury.

On his return to England King Charles the Second bestowed on him a very singular and whimsical mark of his royal favor, a satin cap, which he took from his own head and placed on Sir Richard's. It is still (Charnock, 1794,) preserved in the family with the following account pinned to it. "This satin cap was given by King Charles the Second, in the year 1672, to Sir Richard Haddock, after the English battle with the Dutch, when he had been captain of the Royal James, under the command of the Earl of Sandwich, which ship was burnt, and Sir Richard had been wounded: given him on his return to London."

Early in the following spring he was chosen by Prince Rupert, who held him in the highest esteem, to command the Royal Charles, the ship he had himself pitched upon to hoist his flag on board of. This ship received so much damage in the action, which took place with the Dutch on the 29th of May, 1673, that the Prince was obliged to remove into the Sovereign; and as a proof of the high estimation in which he held Capt. Haddock, caused him to accompany him. His gallantry in the preceding action, and that which took place a few days afterwards, seconded by the esteem and friendship of the Prince, under whom he served, procured him to be appointed on the 9th of July following, Commissioner of the navy. He continued to hold this station, through several commissions, to the time of the revolution. On the 3rd of July, 1675, the King being then on an excursion to Portsmouth, conferred on him the honour of knighthood. In the following year he was appointed first Commissioner of the victualling-office, an employment he continued to hold till the year 1690.

Such was his known integrity, that though he had continually distinguished himself as an avowed enemy to every system or scheme, militating in the smallest degree against protestantism, he was, nevertheless, always esteemed as a person high in favour with King James. No greater proof can be adduced in evidence of a man's honour than the favour of so great a personage, when known to differ from him so widely, both in his political as well as religious opinion. Soon after the accession of King James, Sir Richard was chosen representative in parliament for Shoreham. After the accession of King William, he was appointed Comptroller of the navy,* an office he held without intermission till the year 1714. After the battle off Beachy Head, and the consequent retirement of the Earl of Torrington, he was appointed joint Commander-in-chief of the fleet with Admiral Killigrew and Sir John Ashby, which force was sent to Ireland with the Earl of Marlborough, and five thousand land forces. They arrived off Cork on the 21st of Sept., the siege of which was terminated by its surrender on the 29th; and the season being now too far advanced to fear any attempt from the enemy's fleet, or to trust, with prudence, any longer so many ships on so dangerous a station, the admirals were

* Just before this time, a considerable murmur broke out relative to the fleet having been badly victualled. Sir Richard was of course, together with the other commissioners, examined before the House of Commons. But, after the strictest scrutiny, no censure was passed on him, and his new appointment sufficiently proves how innocent he was in the eyes of his Sovereign.

ordered to return, leaving behind them a small squadron, under the Duke of Grafton, to assist in the future operations of the army. The fleet anchored in the Downs on the 8th of October, and the commissioners resigning their command, which they had executed both safely and honestly, if not gloriously, were succeeded by Admiral Russel.

Sir Richard from this time went no more to sea; but having passed many years in a very honourable retirement, died in the month of January, 1714-5, in the 85th year of his age.

Sir Richard's eldest son, of the same name, rose to be a captain in the navy, but, as is probable, some disgust at a very unmerited ill treatment occasioned his retirement. But he was in 1734, appointed Comptroller of the navy, which office he held for fifteen years. But his third and youngest son was *Nicholas Haddock*, who rose to be a full admiral. This officer went very early to sea, and so distinguished himself, that on the 6th of April, 1707, being little more than twenty years of age, he was appointed captain of the Ludlow Castle. Here cruizing in the North Seas, he fell in with two Dunkirk privateers, whose force was much superior to his own, but he nevertheless captured one, which was taken in the night, the darkness of which favoured the escape of her comrade. In 1718 he accompanied Sir George Byng, under whom he had served the year before, to the Mediterranean in the Grafton of 70 guns, and distinguished himself very conspicuously in the well-known action with the Spanish fleet off Sicily. After having, for a considerable time engaged the Prince of Asturias, of 70 guns, in which ship was Rear-Admiral Chacon; disdaining to waste longer time in securing a ship so completely disabled, that it was very evident she must fall a very easy prey to the next assailant, Capt. Haddock left her a prey to the next ship that came up, and pursued a ship of 60 guns, which, during his preceding engagement with the Prince of Asturias, had kept up a very warm fire on his starboard bow. Mr. Corbet, in his account of the expedition to Sicily, concludes his relation of the above action in the following words:—"The ship that suffered most was the Grafton, which being a good sailor, her captain engaged several ships of the enemy, always pursuing the headmost, and leaving those ships he had disabled or damaged to those that followed him."

He continued in the Mediterranean during the remainder of the war, and in conjunction with Capt. Winder, in the Rochester, sunk a Spanish ship-of-war mounting 70 guns: they also drove another, mounting 60, ashore in the bay of Catania. Many other services did he perform, which not being active services, I will omit here; but in 1739, he was ordered out with a squadron to make reprisals on the Spaniards, in return for the many piratical insults they had put upon us in many distant parts of the world. In this species of warfare, which, even considered in a national point of view, affected them most seriously and sensibly, he was remarkably fortunate. Among his prizes were two ships from Caraccas, supposed to be worth two millions of dollars, besides several others of very great, though inferior value to the foregoing, and a considerable number of privateers. In short, it is remarked by many historians, that "no squadron had for many years been so successful." He continued on the same station, during

the year 1740, with an uninterrupted repetition of the same species of good fortune; whilst the Spaniards had no sufficient force to cope with ours.

In 1741, Mr. Haddock, who on the 11th of March was promoted to be Vice-admiral of the Blue, continued during the summer to blockade the port of Cadiz, and prevent the junction of the Spanish ships there with the Toulon squadron, and a large fleet of transports collected at Barcelona for the purpose of conveying a formidable army into Italy, intended for the attack of the Queen of Hungary's dominions. For his energetic conduct here, the Italian merchants, besides addressing the Admiralty in very warm expressions of acknowledment for the services rendered by Mr. Haddock's squadron, passed a very handsome vote of thanks to the admiral himself, presenting him, as a substantial proof of their esteem, with a very magnificent gold cup.

After this he performed no other signal service, but on the contrary, could get no opportunity of striking any blow which might eventually lead to the termination of the war. This, as is said, wrought such high chagrin in him, which was added to a severe indisposition, that it occasioned in him an extreme dejection of spirits. His sickness compelled him to yield up his command, and he returned to England, after which he never took upon himself any other command. Having obtained other steps, on the 19th of June, 1744, he was farther advanced to be Admiral of the Blue. He died the 21st of Sept., 1746, being then in the 60th year of his age, and was buried in the churchyard of Leigh, his native place.

"His death being lamented by all, his memory has been traduced by none."

Charnock has a very full memoir of the above brave officer, of which I have not been able to give much, as I fear I have dragged this letter to too great a length as it is, but I have gone through it with a wish to do justice to a humble place, that may challenge all others of its size to have produced so gallant a race of heroes.

A short time back I visited Leigh, in the church of which I saw the brass in good preservation. It has representations of Richard Haddock, his *three* wives, *ten* sons, and *eleven* daughters!

I remain, &c.

M.X.M.

To the Editor, &c.

Changes of the Wind,—*Temperature, &c.*

Sir.—In an article of the Penny Magazine for the 27th of November, "Anemometer or Wind Guage," we find the subject of the veering of the wind incidentally touched upon; and the notice given in your last number (December 1841,) by a "Clerk of the Weather-Office," corroborated.

It appears a little singular that, both statements, perfectly independent of each other, should have been published much about the same time, and on a particular action of wind, which, as far as I am aware of, has never before been noticed by any writer.

As the passage is brief, I extract it for the gratification of your numerous nautical readers; and with a hope of eliciting further information on a subject of some importance to navigation.

"M. Dove, of Berlin, has shown that when the wind changes, it generally does so from *right* to *left*, (*qy. left* to *right*,*) rather than from left to right, (right to left); that is, it appears to shift its quarters in the direction which the hands of a watch take."†

But he further remarked that this direction is changed in the southern hemisphere, being south, east, north, west; instead of south, west, north, east, as in the northern.

It is not meant to infer that in England for instance, which is in the northern hemisphere, a wind when it changes from south, *always* veers towards west; but that it has a tendency rather to do so than to veer towards east.

The manner in which these various winds affect the pressure, temperature, and humidity of the air, or are affected by them, is very little known; but M. Dove, from a long series of observations, has been led to the conclusions, that in the northern hemisphere, the *barometer* falls during E.S.E. and E. winds; passes from falling to rising during S.W.; rises with W.N.W. and N.; and has its maximum rise with N.E. wind.

The *thermometer* rises with E.S.E. and S. winds; has its maximum with S.W.; falls with W.N.W. and N.; and its minimum at N.E.

The *elasticity of vapour* increases with E.S.E. and S. winds; has its maximum at S.W.; and diminishes during the wind's progress by W., and N.W. to N.; at N.E. it has a minimum.

Time, which has so many offices to fill in dispelling doubts and developing truths, must decide whether these results of Dove's accord with those obtained, or to be obtained, from other quarters. We may confidently look to the British Association for valuable accessions to our knowledge on this important subject; and, indeed, the meeting recently held at Plymouth, furnished some very new and remarkable features, which will probably be given in the report.

I am, &c.

C. W. O.

To the Editor, &c.

The late Typhoon at Canton.

Sir.—I am desirous of directing your further attention to the account of the typhoon which occurred in the Canton river, on the 21st and 22d of May, 1841, as related by Commander Collinson.

It would appear by the account that the *north* wind which sprung up after the calm, was the precursor gale, and did not pertain to the wind of the circle, as we are told that the changes during the storm were from N.N.W. gradually round to E.S.E., twelve points.

If, therefore, these twelve shifts were all that occurred, you will per-

* The reader will perceive by the context that this is a transposition, and correct the mistake accordingly.

† Unquestionably from left to right.

ceive that this meteor must have been moving to the *south*-westward, and consequently, that, the inference that these storms do not invariably move to the northward of west is confirmed.

It is highly important to navigators in the China Sea, that this point should be clearly settled.

We are not likely in this case to be led into error in naming the progressive course, by the intervention of current, or even of tide, as we have the schooner's movement distinctly stated, and we know that she being on the southern shore of Lantao could not drift to the *northward*, so as to alter her point of exit. This consideration is material in drawing conclusions; and as the wind is stated to have veered gradually round through the *right hand* semi-circle, we are assured there were no deflections of the current of air, notwithstanding the presence of the high land of the abovenamed island, sufficient, at least, to create error in tracing the local route of the meteor. Had the crisis point been named, we should have had a good guide in determining the fact. Upon the presumption that the changes of wind as given by Commander Collinson are correct, it would appear extremely improbable, if not impossible that the meteor was moving to the northward of west; as, had it been so, the shifts would have pertained solely to the left-hand semi-circle, and of course the wind would have veered round to north-west, west, &c.

I do not presume to mistrust this account, because the narrator is in every way qualified for the task of describing accurately such an event; but it must be acknowledged that in the majority of cases, the writers seem more intent upon detailing the effects of the storm, and their own personal feelings and sufferings, then in recording the action of the wind, which alone is of value to those who may subsequently experience similar disasters.

I would beg leave to hold up the narrations of Capt. Barnett, R.N., Lieut. Smith, R.N., and "Mexicano," all to be found in the *Nautical*, as correct examples most worthy of imitation.

It appears in the China news, that a second typhoon was experienced on the third day after the first. Supposing their routes to have been different; one moving northerly and the other southerly of west, ships encountering these at sea might confound one with the other. The inference, therefore, that the Raleigh's typhoon, and that of Macao, might have been different meteors, does not seem to be altogether gratuitous, or improbable, as a fact likely to have occurred.

I may take this opportunity of stating as a caution to the Australian traders that, circular hurricanes are likely to cross their route from the meridian of Madagascar to that of the west coast of New Holland, from the months of December to March. The general route of these meteors in this part of the Southern Ocean seems to be to the westward, inclining southerly; but the latitudinal line pursued, varies from the 10th to the 50th degree south; and they probably curve towards the South Pole, returning easterly, as those of the northern hemisphere do towards the North Pole. It is remarkable that although the revolutions of the wind within the circle of these meteors is directly contrary in either hemisphere, yet, they at first pursue alike their progressive course to the west, contrary to the earth's rotation, and curve

respectively, the southern to the left, and the northern to the right. Expectation, on finding the difference in the rotary motion of the wind, might, not unreasonably have assigned to them an opposite line of progression.

The Hon. E. I. Company's ship, Bridgewater, between the Strait of Sunda and the Mauritius, experienced one of great severity and size; the lateral extent of which appears to have been equal to near ten degrees of latitude, and therefore, occupying a circle of about 1,806 miles! It commenced on the 4th of March, 1830, and ended on the 7th, the changes of wind, from east to north, and north-west. The progressive course appears to have been southerly of west.

The following year, 1831, on the 12th and 13th of January, another East India ship, the Reliance, encountered one of less extent, the height of the storm lasting twelve hours, in latitude 18° S., and longitude 85° E.; the barometer fell as low as 28·50.

With reference to the changes of wind the account is not particular. In the first part of the storm the wind was from the "eastward," about the middle of it, the wind "changed its direction to south-west, and the storm ended with it from the north-west.

It is probable in both cases there was a north-west current running, which would materially alter the points of exit.

The reader must bear in mind that in the meteors of the southern hemisphere, the wind goes round from left to right, contrary to what it does in the storms of the northern regions.

S. J.

Official Accounts of the Capture at Amoy.

Calcutta, Saturday Night, Nov. 20th, 1841.

The Right Hon. the Governor-general of India in council has the highest satisfaction in publishing, for general information, the annexed copies of dispatches from the military and naval commanders-in-chief of her Majesty's forces in China, reporting the capture on the 26th of August, of the town and fortification of Amoy.

By order of the Right Hon. the Governor-gen. of India in Council.

(Signed) J. H. Maddock,
Secretary to the Government in India.

Head-Quarters, ship Marion, Amoy harbour, September 5th, 1841.

My Lord.—I am happy to be enabled to report to your lordship the complete success of the operations against Amoy, with very trifling loss. My anticipations in regard to the preparations of the enemy have been fully realised, but I did not calculate on so feeble a resistance.

1. The expedition left Hong-kong harbour on Saturday, the 21st of August, but in consequence of light winds the fleet did not clear the Lemma passage until Monday, the 23rd, and on the evening of the 25th we arrived in the outward anchorage of Amoy, a few shots only having been fired as we were running through a chain of islands which form the mouth of this anchorage, and most of which the Chinese had fortified. As it was blowing very fresh, I could not get on board the flag-ship until the following morning, when I accompanied

their Excellencies Sir Henry Pottinger and Admiral Sir William Parker, in the Phlegethon steamer, to reconnoitre the defences, with the view to the commencement of immediate operations. The enemy allowed us to do so, without firing a shot, and the plan of attack was at once decided upon, a summons having been previously sent in, requiring the surrender of the town and island of Amoy to her Majesty's forces.

2. The enemy's defences were evidently of great strength, and the country by nature difficult of access. Every island, every projecting headland, from whence guns could bear upon the harbour, were occupied and strongly armed, commencing from the point of entrance into the inner harbour on the Amoy side, the principal sea line of defence, after a succession of batteries and bastions in front of the outer town, extending for upwards of a mile in one continuous battery of stone, with embrasures roofed by large slabs thickly covered with clods of earth, so as to form a sort of casement, and afford perfect shelter to the men in working their guns. Between some of the embrasures were embankments to protect the masonry, and 96 guns were mounted in this work, which terminated in a castellated wall, connecting it with a range of precipitous rocky heights, that run nearly parallel to the beach, at a distance varying from a quarter to half a mile. Several smaller works were apparent at intervals amid the rocks.

3. The entrance to the inner harbour is by a channel about 600 yards across between Amoy and the island of Koo-lang-soo, upon which several strong batteries were visible, and some of these flanked the sea-line and stone-battery. It appeared expedient, therefore, to make a simultaneous attack on these two prominent lines of defence.

4. It was proposed that the two line-of-battle ships, with the two large steamers, should attack the sea-defences on the island of Amoy nearest the town, and that some of the smaller vessels-of-war should open their fire to protect the landing of the troops, which was to be effected below the angle formed by the junction of the castellated wall with the sea-line, while the remaining vessels should engage several flanking-batteries that extended beyond these works.

5. At the same time the two heavy frigates and the Modeste were to run in, and open their fire upon the works of Koo-lang-soo, where I instructed Major Johnstone, with a company of artillery, and the three companies of the 26th Regiment, supported by 170 marines under Major Ellis, to land in a small bay to the left of the batteries, which they were to take in reverse.

6. About half-past one o'clock the attack commenced, the enemy having previously fired occasional shots at the ships as they proceeded to their stations. Sir W. Parker will, no doubt, communicate to your lordship the very conspicuous part taken by her Majesty's ships on this occasion. From the difficulty of getting the boats collected in tow of the steamers, the troops did not land quite so soon as I could have wished, notwithstanding the judicious arrangements of Capt. Gifford, of her Majesty's sloop Cruizer, who conducted the disembarkation. The 18th and 49th Regiments, however, landed about three o'clock, with very little opposition. The former regiment I directed to escalade the castellated wall, while the 49th were to move along the beach, and get over the sea face or through the embrasures. These two operations were performed to my entire satisfaction, and the greater part of the corps were soon in position within the works, and rapidly moved along the whole line of sea defence, the enemy flying before them. Upon reaching the outskirts of the outer town, they were joined by a party of marines and seamen, whom Sir W. Parker most judiciously landed in support, and whom I directed to occupy a rocky hill in our front, in the neighbourhood of which firing was still heard. This duty was promptly and ably performed by Capt. Fletcher, of her Majesty's ship Wellesley, and Capt. Whitcomb, of the Royal Marines.

7. While these operations were going on upon the Amoy side, the island of Koo-lang-soo was ably attacked by the frigates, and the troops landed. Major

Ellis, with some of the Marines and Cameronians, who first landed, climbed up the rocks to the left of the easternmost battery, and gallantly driving the enemy from the works on the heights, which were defended with some spirit, continued his progress to the north side of the island; while Major Johnstone, who closely followed up with the rest of the troops, proceeded across it and carried the remaining works, thus putting us in possession of this very important position. Major Johnstone reports that Brevet Capt. Gregg, had an opportunity of distinguishing himself in driving a large body of the enemy from a battery, upon which he came unexpectedly with a detachment of 12 men.

8. On Amoy, a chain of steep rocky hills running from the range already mentioned transversely to the beach, still intercepted our view of the city, though the outer town lay beneath my advanced post. The guns having been landed by the exertions of the artillery and sappers, and brought on far enough for support, had a strong force opposed our advance, I decided upon forcing the position in my front, which appeared extremely strong, and well calculated to be held during the night. Having made the necessary disposition, I directed the 18th Regiment to advance up a precipitous gorge, where the enemy had two small works, while the 49th were to pass through the outer town by the road to the same hills, extending their left, after gaining the pass, to the works above the beach, so as to open a communication with the shipping. This movement was also executed with spirit, the enemy merely firing off their guns and flying; and at dusk I found myself in a position close above the city, and perfectly commanding it.

9. Owing to the boisterous state of the weather, and the delay in the return of the steamers, the 55th Regiment had not yet landed, but this was effected at daylight the following morning, I regret to say not without loss, a boat having been swamped and five men unfortunately drowned. Thus reinforced, I pushed strong parties of the 18th and 49th Regiments down to the outskirts of the city, in the north-eastern quarter of which, upon irregularly rising ground, and closely surrounded by a dense mass of buildings, appeared the walled town or citadel. Having carefully reconnoitred the place, I satisfied myself that, although there was a concourse of people passing and repassing at the northern gate, the walls were not manned. I therefore thought it advisable to take advantage of the prevailing panic, and having sent a small party with Capt. Cotton, the commanding engineer, to reconnoitre the approach to the eastern gate, which he promptly effected, I directed, upon his return, the 18th to advance, having the 49th in support, and the 55th in reserve. The advanced party of the 18th escaladed the wall by the aid of ladders found on the spot, and opened the east gate, which was barred and barricaded from within by sacks filled with earth and stones. The remainder of the Regiment passed through it and manned the other gates, the enemy having previously abandoned the place, leaving it in possession of the mob, which had already begun to plunder the public establishments.

10. I occupied the citadel with the 18th and Sappers, placing the 49th Regiment in an extensive building without the public office of the Intendant of Circuit, from whence they could give protection to the northern suburb, and command the communication to the interior by the only road on this side the island. The artillery I placed in a commanding position upon the top of a pass between the city and the outer town, with the 55th in support, occupying a range of public buildings, in which the sub-prefect of Amoy held his court.

11. Amoy a principal third-class city of China, and, from its excellent harbour and situation, appears to be well calculated for commerce. The outer town is divided from the city by the chain of rocks I have mentioned, over which a paved road leads through a pass that has a covered gateway at its summit. The outer harbour skirts the outer town, while the city is bounded in nearly its whole length by the inner harbour and an estuary, which deeply indent the island. Including the outer town and the north-eastern suburb, the city cannot be much less than ten miles in circumference; and that of the

citadel, which entirely commands this suburb, and the inner town, though commanded itself by the hills within shot range, is nearly one mile. The walls are castellated, and vary, with the irregularity of the ground, from twenty to thirty feet in height; and there are four gates, having each, in an outwork, a second or exterior gate, at right angles to the inner gate. The citadel contained five arsenals, in which we found a large quantity of powder, with store of material for making it; gingals, wall-pieces, match-locks, and a variety of fire-arms of singular construction; military clothing, swords of all descriptions, shields, bows, and arrows, and spears, were also found in such quantity as to lead to the conclusion that these must have been the principal magazines of the province. Within the sea-defences first taken there was a foundry, with moulds, and materials for casting heavy ordnance.

12. All these have been destroyed, and so much occupied my time, considering, too, how much the troops were harassed by patrols to keep off Chinese plunderers, and by other duties incident to the peculiarity of our situation, that I abandoned my intention of visiting the interior of the island. These plunderers flocked into the city and suburbs, to the extent, as the Chinese themselves reported, of many thousands, and I regret to say that several gangs penetrated into the citadel, and committed much devastation. Indeed, with the prospect of leaving Amoy so soon, I doubt that our marching through the island might rather have frightened away the peaceable householders, and led to further plunder by the mob than have been of any advantage. Such indeed was the audacity of these miscreants, that I was in some cases obliged to fire in order to disperse them; but I am glad to say but little loss of life occurred.

13. I am most happy to be enabled to state that the conduct of the troops has been exemplary; some instances of mis-conduct have, no doubt, occurred; but when it is considered that they were in the midst of temptation, many of the houses being open, with valuable property strewed about, and many shops in every street deserted, but full of sam-shu, it is a matter of great satisfaction that these instances were so few.

14. During our stay upon the island, I did all in my power to prevail upon the respectable merchants and householders, who had so much at stake, to aid me in protecting property, which they readily promised; but their apprehension of appearing to be on friendly terms with us was so great, that I could obtain no effectual assistance from them, and was unable even to get a Chinese to remain with the guards at the gates, and point out the real owners of houses within the citadel, for the purpose of granting them free egress and ingress.

15. Our departure being determined upon, I could take no measures for permanent occupation; and as the wind was strong against us, we were kept on shore four days in a state of constant watchfulness, until yesterday at half-past 2 P.M., when the preconcerted signal for embarkation was given by the admiral. By half-past six o'clock every soldier and every follower had been embarked (without a single instance of inebriety occurring,) on board the steamer, which transferred the troops on board their respective transports during the night.

16. The three companies of the 26th Regiment have remained upon the island of Koo-lang-soo, which her Majesty's Plenipotentiary has determined to hold for the present; and I have strengthened Major Johnstone, who is in command, with a wing of the 18th Regiment, and a small detachment of artillery. This little force, amounting to 550 men, will, I trust, together with the ships-of-war also left behind, be sufficient to hold this small but important possession.

17. To the commanding officers of corps and detachments, Lieut.-Col. Craigie, 55th Regiment, Lieut.-Col. Morris, 49th Regiment, and Lieut.-Col. Adams, 18th Regiment, Major Johnstone, 26th Regiment, Major Ellis, Royal Marines, Capt. Knowles, Royal Artillery, Capt. Anstruther, Madras Artillery, and Capt. Cotton, commanding engineer, my best thanks are due; and I have received the most cordial and active support from the officers of the general

and my personal staff'; Lieut.-Col. Mountain, Deputy-Adjutant-General; Capt. Gough, Acting-Deputy-Quartermaster-General; Major Hawkins, Deputy-Commissary-General; Dr. French, Superintending Surgeon; and Lieut. Gobbett, my aide-de-camp.'

18. I cannot too strongly express to your lordship, in conclusion, my sense of obligation to his Excellency Rear-Admiral Sir Wm. Parker, for his ready support and judicious arrangements upon every occasion, as well as for having given me, at the disembarkation and embarkation, and during the whole period of our stay at Amoy, the able assistance of Capt. Gilfard, to whom my best thanks are due.

19. I have the honour to enclose a list of ordnance captured, and a return of the wounded on our side upon the 26th ult., and have no means of correctly estimating the killed and wounded of the enemy, but it must have been severe, and we know that several mandarins were amongst the former.

I have the honour, &c.,

(Signed) H. Gough, *Major-Genl. Commanding Expeditionary Force.*

To the Right Hon. the Earl of Auckland, G.C.B., Governor-General, &c.

Return of ordnance mounted on the defences at Amoy, when stormed and captured on the 26th of August, 1841.—Batteries on the island of Amoy, extending from the suburbs of Amoy, nearly opposite the east end of the island of Golong-soo, along the shore in a south-east direction.

The guns were all of Chinese manufacture, except sixteen English, which were old, but without any date.

Five iron guns had burst when fired by the Chinese.

One hundred and fifty-three iron guns, not mounted, were found, principally of small calibre, from three to six-pounders.

GENERAL ABSTRACT.

Island of Amoy . . .	211
Island of Golong-soo . . .	76
Batteries on south-west side of bay . .	41
Little Gonne . . .	15
Total	343
Guns not mounted . . .	157
Grand total	500

(Signed) J. Knowles, *Capt., Royal Artillery.*

N.B. Fifty pieces of ordnance, of small calibre, captured in the citadel, not included in the above.

(Signed) A. S. H. Mountain, *Lieut.-Col., D.A.G.*

EXPEDITIONARY FORCE.

Return of killed and wounded of the force under the command of Major-General Sir Hugh Gough, C.B., &c., on the 26th of August, 1841, at the capture of the batteries, heights, city, and citadel of Amoy:—

Head-Quarters, Amoy Castle, Sept. 1st, 1841.

18th Royal Irish Regiment, wounded . .	2
49th Regiment, wounded . . .	7
Total wounded	9

(Signed) A. S. H. Mountain, *Lieut.-Col.,*
Deputy-Adjt.-Genl., Expeditionary Force.

To Major-Gen. Sir H. Gough,
K.C.B., &c.

Wellesley, Bay of Amoy, Aug. 31st, 1841.

My Lord.—It is with much gratification that I have the honour of announcing to your lordship the capture of the city of Amoy, and the island of Golong-soo, (which forms the west side of the harbour,) together with their strong lines of batteries and sea defences, mounting above 228 guns, by the combined forces of her Majesty, after a short but vigorous attack, on the 26th instant, with very trifling loss on our part.

The expedition, comprising the ships-of-war hereinafter named, and twenty-one transports containing the land forces, military and victualling stores, &c., under the command of his Excellency Major-General Sir Hugh Gough, sailed from the anchorage of Hong-kong on the 21st, and fortunately arrived off the islands at the entrance of Amoy bay by sunset on the 25th. It was then beginning to blow strong, but favoured by a fair wind, and good moonlight, with the advantage of the local knowledge of Capt. Bourchier, of the Blonde, the fleet was pushed into the bay, and anchored in security for the night.

A few shots were discharged at her Majesty's ships as they passed between the fortified islands, but no mischief was done.

It blew too hard during the night to admit of any boats leaving the ships to sound or make observations; but no time was lost after daylight in reconnoitring the Chinese positions, in which the General and Sir Henry Pottinger did me the favour to accompany me, in the Phlegethon steam-vessel.

We found the batteries and works of defence on the entire sea face strengthened by every means that the art of these active people could devise; presenting a succession of batteries and outworks, from the extreme outward points of this extensive bay, until within about three-quarters of a mile of the entrance of the harbour, where a high barrier wall was constructed from the foot of a steep and rocky mountain, to a sandy beach on the sea; and from this latter point a strong casemated work of granite, faced with soil, and occasional small bastions with parapets of stone, to afford flanking defences, was continued to the very suburbs and entrance of the harbour, from whence were masked batteries with sand bags, until opposite the north-east point of Golong-soo Island, altogether 152 guns.

On the island of Golong-soo, which is the key of Amoy, strong batteries, mounting in all 76 guns, were also placed in every commanding position for flanking the approach to the harbour, (which is scarcely half a mile wide at the entrance,) and protecting the accessible points of landing.

As it was of the utmost importance, with a view to ulterior operations, and the advanced period of the present monsoon, that we should be delayed as short a time as possible at Amoy, it was determined that the batteries within the barrier wall, and on the island of Golong-soo, should be immediately attacked by the squadron, and the troops landed within the barrier as soon as it might be practicable, to take the batteries in the rear. For this object the Wellesley and Blenheim were ordered to anchor against the strongest batteries on Amoy, and as near the entrance of the harbour as possible, leaving the Cruizer, Pylades, Columbine, and Algerine, to engage the extreme point of the line, and cover the landing of the troops, flanked by the heavy guns of the Sesostris and Queen

steam-vessels, the Phlegethon and Nemesis being appointed to receive the troops, and tow in the boats for landing them.

The attack of the island of Golong-soo, where we had reason to apprehend the water was shoaler, was assigned to Capt. Bourchier, of the Blonde, with the Druid and Modeste, 150 marines under Capt. Ellis, and a detachment of the 26th Regiment, under Major Johnstone.

Pending the necessary preparations for disembarking the troops, and moving the ships into their appointed positions, a communication was received from the shore, requesting to know the object of our visit, to which the answer No. 1 was returned.

About a quarter past one, a steady and favourable breeze having set in, the squadron weighed, and proceeded to their stations. The Sesostris, being the most advanced, received a heavy fire before any return was made. She was soon joined by the Queen, and both commenced action with good effect.

The Wellesley and Blenheim, after ranging along the whole line of works on Amoy under a smart fire, were anchored by the stern about half-past 2 P.M., admirably placed by Captains Maitland and Herbert in ten fathoms water, within 400 yards of the principal battery, precisely in the position allotted them; and the Cruizer, Pylades, Columbine, and Algerine, took their stations with equal judgment.

The Blonde, Druid, and Modeste, reached their positions against the batteries on Golong-soo a few minutes earlier, but their captains found such difficulty, from the shallowness of the water, in placing them satisfactorily, that to effect this object they very spiritedly carried their ships into almost their own draft.

The Bentinck had been appointed to sound the channel ahead of the Wellesley as we ran in, which Lieut. Collinson very skilfully performed, and then gallantly anchored the brig within the entrance of the harbour, where she was joined by the Sesostris, which was placed by Capt. Ormsby in a very judicious situation for relieving her and the other ships from a flanking fire.

The fire of the Chinese soon slackened under the excellent gun practice of the squadron. At half-past 3 I had the satisfaction of seeing the Marines and the 26th Regiment land on the island of Golong-soo, and the British colours planted on the batteries. The Modeste and Blonde then weighed and stood into the inner harbour, and, after silencing, they passed the town batteries, which were out of our reach; they anchored completely inside, and abreast of the city, taking possession of 26 war-junks, with 128 guns on board, in a state of preparation for sea, deserted by their crews.

About the same time the first division of troops was landed under the able direction of Commander Giffard, of the Cruizer, and, headed by their gallant General Sir Hugh Gough, escaladed and took possession of the works at the barrier wall.

An outwork beyond this point (which had been previously silenced) was also entered, and the British colours hoisted by the crew of a boat from the Phlegethon; and the batteries immediately opposite the Wellesley and Blenheim being nearly demolished, a party of seamen and marines were landed from those ships, under the command of Commander Fletcher, and the officers undermentioned, by whom the Chinese, who had taken shelter in an adjoining building, were put to flight, after discharging their matchlocks, and possession taken of the works. Wellesly—Acting-lieut. Carmichael; Lieut. White, Royal Marines; Mates, Lord A. Beauclerk, S. S. L. Crofton, L. G. Halsted; Midshipman, W. F. F. Jackson. Blenheim—Capt. Whitcombe, Royal Marines; Mates, R. C. Revern, T. A. St. Leger.

The General having cleared the intermediate space of such Chinese as remained, pushed forward and occupied the heights immediately above the town for the night, every point being thus completely in our power.

In detailing this service to your lordship I have the highest satisfaction in reporting the gallantry, zeal, and energy which has been manifested by every officer and man of her Majesty's navy and Royal Marines, as well as those of

the Indian navy under my command. They have vied with each other in the desire to anticipate and meet every object for the public service, and are fully entitled to my best acknowledgments, and the favorable consideration of the Board of Admiralty and Indian Government. I have no less pleasure in witnessing the anxiety which pervades all ranks to go hand in hand with our gallant companions of the army.

His Excellency Sir Henry Pottinger and suite were with me on board the Wellesley during the operations of the 26th.

Captain Bouchier's own report (Enclosure No. 2,) will best describe the proceedings of the little squadron placed under his orders for the attack of Golong-soo, which was admirably executed; and I can only add my meed of praise on this additional instance of the gallantry of Capt. Ellis and the officers and men of the Royal Marines under his command, as well as of Major Johnstone, and the detachment of the 26th acting with them.

The accounts we have received of the force of the Chinese for the defence of Amoy vary from 5,600 to 10,000 troops; and it is with sincere pleasure I am enabled to transmit to your lordship so small a list of casualties amongst the crews, and masts, and rigging of the squadron. (Enclosure 3 and 4.) The resistance made by our opponents would have justified the apprehension of greater injury. Under the protection of their well-constructed casemated works, they stood on some points firmly to their guns. We have no knowledge of their actual loss. More than sixty dead bodies were, I believe, found in the batteries; but nearly all their wounded, and many of the slain, were carried off by their countrymen.

His Excellency the Commander of the Forces will probably give your lordship an account of the munitions of war, and government stores, which have fallen into our hands, including a large quantity of gunpowder, and a foundry for cannon, where some guns of very large calibre, newly cast, have been discovered.

We have been constantly employed in destroying the guns, and, as far as it has been practicable, the batteries taken on the 26th. The last two days Commander Flether, with a party of seamen and marines, has been also detached in the Nemesis, and, with very commendable zeal, has completely disabled the guns on every battery on the north-east and south-west sides of the bay, and the fortified islands at the entrance, of which your lordship will find official returns enclosed. (Enclosures Nos. 5 and 6.)

The superiority of the bay and inner harbour of Amoy has much exceeded our expectations. The anchorage in the former appears excellent; and the latter as far as our hasty surveys have gone, affords perfect security for ships of any class, and to a great extent, with a reasonable prospect of proving a healthy situation. Sir H. Gough and myself have, therefore, entirely concurred with his Excellency Sir Henry Pottinger in the expediency of retaining possession of the island of Golong-soo, which will at any time give us the command of Amoy, until your lordship's wishes or the pleasure of her Majesty's government is known. For this purpose a sufficient garrison will be placed on the island by the general, and I propose to leave Capt. Smith, of the Druid, with the Pylades and Algerine, for their support.

The wind is unfortunately at present adverse, but your lordship may be assured that the expedition will proceed to the northward the moment it is practicable, in the further execution of our instructions.

I have the honor, &c.

To Earl Auckland, &c. (Signed) W. Parker, *Rear-Admiral.*

(Enclosure No. 1.)

On board her Majesty's ship Wellesley, off Amoy, August 26th, 1841.

The undersigned, Sir Henry Pottinger, Bart., her Britannic Majesty's Pleni-

potentiary; Sir William Parker, commander-in-chief of the naval forces; and Sir Hugh Gough, commander-in-chief the land forces of the British nation in these parts

To his Excellency the Admiral commander-in-chief the naval forces of the Province of Fukicon.

There being certain differences subsisting between the two nations of Great Britain and China, which have not been cleared up, the undersigned plenipotentiary and the commanders-in-chief have received the instructions of their sovereign that, unless these be completely removed, and secure arrangements made, by accession to the demands last year presented at Ticatsin, they shall regard it as their duty to resort to hostile measures for the enforcement of those demands.

But the undersigned plenipotentiary and commanders-in-chief, moved by compassionate feelings, are averse to causing the death of so many officers and soldiers as must perish, and urgently request the admiral commander-in-chief, in this province, forthwith to deliver the town, and all the fortifications of Amoy into the hands of the British forces, to be held for the present by them. Upon his so doing, all the officers and troops therein will be allowed to retire with their personal arms and baggage, and the people shall receive no hurt; and whenever these difficulties shall be settled, and the demands of Great Britain fully granted, the whole shall be restored to the hands of the Chinese.

If these terms be acceded to, let a white flag be displayed from the fortifications.

(Signed) H. Pottinger, *her Majesty's Plenipotentiary.*
W. Parker, *Rear-Admiral.*
H. Gough, *Major-General.*

(Enclosure No. 2.)

H.M.S. Blonde, Inner Harbour of Amoy, August 27th, 1841.

Sir,—The operations of the force you did me the honor to place under my command for the attack of the island of Golong-soo, were so immediately under your observation that little remains to me beyond the agreeable duty of bringing to your Excellency's notice the admirable conduct of every officer and man I had the honour to command.

The squadron was led into action by Capt. Eyres, commanding her Majesty's sloop Modeste, with the most perfect skill and gallantry. The Blonde and Druid followed, and were placed as near as the shoalness of the water would admit to the three principal batteries, which they succeeded in silencing, after a fire of one hour and twenty minutes, when the marines, under the gallant Captain Ellis, were landed, and carried the heights with their accustomed bravery.

The distance of the transports prevented the 26th (Cameronian) Regiment from being sent on shore at the same moment with the marines, but they were promptly after them; and the detachment of that distinguished corps, under Major Johnstone, assisted in clearing the remaining batteries and dispersing the enemy.

From Capt. Smith, of her Majesty's ship Druid, I received the most able support. That ship was placed with excellent judgment, and her conduct such as was to be expected from her high state of discipline. This island being now completely in our possession, I left the Druid to protect it, and pushed the Modeste and Blonde into the inner harbour, silencing their war-junks and batteries on the opposite shore as we passed; and I have herewith the honour to enclose a return of the vessels captured and ordnance destroyed. The officers and crew of this ship merit the highest praise, as well as the party of Royal

Artillery serving on board under the command of Lieut. the Hon. R. E. Spencer. I should be wanting in justice, were I to close this letter without bringing to your notice the merits of Lieut. Sir Frederick Nicholson, first of this ship, to whose valuable assistance I am much indebted; and I must also beg to name to your Excellency the senior mates of this ship, Messrs. Walker, Rolland, and Anderson, young officers of much promise.

I have great pleasure in adding that this service was performed without loss of life on our part, although the ships have suffered considerably in their masts, sails, and rigging.

The captains of the Druid and Modeste speak in the highest terms of their officers and ships' companies. I enclose the report of Capt. Ellis, of the Royal Marines.

(Signed) T. Bourchier, *Captain.*

To Rear-Admi. Parker, &c.

(Enclosure in Captain Bourchier's letter.)

Military Quarters, Royal Marines, Island of Golong-soo, near Amoy, Aug. 27th, 1841.

Sir.—Having yesterday received your directions to land from her Majesty's ships Blonde and Druid, under your orders, the detachments of Royal Marines of the ships Wellesley, Blenheim, Blonde, Druid, and Modeste, and drive the enemy from the strong battery of Golong-soo you had previously engaged, I have the honour to acquaint you, for the information of Rear-Admiral Sir W. Parker, K.C.B., commander-in-chief, that, in furtherance of that object, I landed with them on a sandy beach to the right of the battery, and, after some difficulty in climbing rocks and other impediments, succeeded in gaining the ridge and the flank of the Chinese position.

The enemy, before we had gained the level, opposed us courageously, attacking us with matchlocks, spears, and stones; but we soon drove them before us, cleared the battery, and dispersed them, the garrison retreating to the rear, many of whom effected their escape by the boats on the beach of Amoy opposite. Several men were killed in and about the battery. In following the retreating party (some of whom also were wounded), I made a detour of this large and populous island, and discovered at its western extremity a sandbag battery of nine guns, and a few gingals; they were also loaded, but did not appear to have been recently discharged. No other armed party of the enemy was fallen in with. I am happy to add, that in these operations no casualty happened to the detachment I have the honor to command. Moreover, I have great pride in reporting to you that all the officers, non-commissioned officers, rank and file, throughout the day, conducted themselves, individually, as well as collectively, with a courage, zeal, and perseverance far beyond my power to express.

(Signed) J. B. Ellis, *Captain R.M.*

To Capt. Bouchier.

Field state of Battalion Royal Marines, Island of Golong-soo, harbour of Amoy, Aug. 27th, 1841.

	Sub.	Serg.	Fifer.	Rank and File.	Total.
Wellesley	1	1	0	42	44
Blenheim	2	1	0	31	34
Blonde	2	2	1	26	31
Druid	2	2	1	42	47
Modeste	0	1	0	15	16
	7	7	2	156	172

OFFICERS.

First-Lieutenant Hewill	Blonde.
First-Lieutenant Maxwell	Druid.
First-Lieutenant Ussher	Wellesley.
Lieutenant Whiting	Blenheim.
Lieutenant Harmar	Blenheim.
Lieutenant Pickard	Druid.
Lieutenant Polkinhorne	Blonde.
First-Lieutenant Maxwell	Algerine.
Assistant-Surgeon Smith	Wellesley.
Assistant-Surgeon Stanley	Blonde.

(Signed) S. B. ELLIS, *Captain R.M.*

(Enclosure No. 3.)

A return of killed and wounded on board her Majesty's ships and vessels, and the Hon. East India Company's steam vessels, under the command of Rear-Admiral Sir William Parker, KCB., in action with the batteries and defences of the islands of Amoy and Golong-soo, August 26th, 1841:—

Blenheim—Killed, W. Barlow.

Wellesley—Wounded; S. S. L. Crofton, mate, severely; John Duncan, severely; Henry Turner, boy first class, severely, since dead.

Modeste—Wounded; 1 slightly.

Bentinck—Wounded; Charles Johnstone, ordinary, dangerously.

Phlegethon, (s)—Wounded; W. H. Ryves, acting lieutenant India navy, severely.

Nemesis, steamer—Wounded; Henry Steer, armourer, slightly.

(Signed) W. PARKER, *Rear-Admiral.*

Her Majesty's ship Wellesley at Amoy, August 27th, 1841,
appointed by Commodore Sir J. J. G. Bremer.

(Enclosure No. 4.)

An account of damages sustained in the hulls, masts, &c., of the squadron under the command of Rear-Admiral Sir. W. Parker, KCB., in the attack of the defences and batteries of Amoy, August, 26th, 1841:—

Wellesley.—Four shots in ship's hull; mizen trisail badly wounded; flying ibstay, starboard foremast swifter, starboard foretop-mast backstay, fore sheet, main royal backstay, larboard fourth shroud of mizen rigging, mizen top bowline, and mizen topgallant brace shot away; jib three shot holes in it; main topsail two shot holes in it; driver four shot holes in it.

Blonde.—One sponge, with rammer head and wadhook; one 32-pounder gun struck; one foretop-mast shroud, one topgallant lift, one topsail buntline, lower studding hauls and span; back rope of spritsail gaff, main topgallant backstay, and main sheet shot away; ensign shot in two places; berthing of head shot away, the wasteboard of waste nettings blown away; foretop-mast very slightly struck.

Columbine.—One shot starboard quarter; one in the copper under the gangway; one or two shots about the flying jib-boom gear.

Druid.—Foremast wounded by a shot eighteen feet above the deck; foretop-mast to below the cap; foretop sail shot through in several places; the standing and running rigging much cut.

Sesostris.—One six-pounder in fore part of starboard sponson; foretop sail braces, main throat hould block, and fore trisail peak out haul cut through by shot.

Blenheim.—Cheeks of foremast starboard slightly wounded; cross jackyard larboard slightly splintered; main shroud, one shot away; various running rigging shot away.

(Signed) W. PARKER, *Rear-Admiral.*

(Enclosure No. 5.)

Number and dimensions of guns destroyed August 30th, 1841:—

Guns 42, lengths varying from 6 to 10 feet in length, and the diameters varying from 3 to 8 inches.

List of Chinese ordnance taken and destroyed on the island of Golongsoo:—

In No. 1 on the marine battery:—

86-pounders, iron	19 feet	10 inches	1 gun
18 do. do.	9	7	2
14 do. do.	8	4	7
12 do. do.	7	6	6
		Total	16 guns

In No. 2 battery, opposite the suburbs of Amoy:—

11-pounders, iron	7 feet	0 inches	3
9 do. do.	6	10	7
		Total	10 guns

In No. 3 battery, south side of the island:—

34-pounders, iron	9 feet	6 inches	1
12 do. do.	7	9	2
9 do. do.	7	4	1
8 do. do.	7	6	2
7 do. do.	6	9	2
Gingels, ½ to 1½ . . .			14
		Total	22 guns

Note.—In this battery a subterranean magazine was discovered, containing a vast quantity of powder, which was utterly destroyed, as well as that discovered in the other batteries, by being thrown into the sea.

(Signed) W. E. S. BAKER,
Lieutenant in charge of artillery on the Island.

In No. 4 battery, short way to the right of the above:—

8-pounders, iron	7 feet	4 inches	3 guns

In No. 5 battery, south-west extremity of the island, discovered on the 28th of August, 1841:—

8-pounders, iron	7 feet	6 inches	6
Gingels . . .			8
		Total	14 guns

In No. 6 battery, quite new, on the north-west angle of the island:—

12-pounders, iron	6 feet	0 inches	1
9 do. do.	7	3	2
8 do. do.	7	0	1
6 do. do.	6	6	7
		Total	14 guns

Grand total 76 guns.

Destroyed by the Modeste's boats on the town of Amoy side, two batteries containing eleven guns, making a total of 87.

Total number of guns destroyed by the light squadron on shore, in the batteries and in junks—198.

(Signed) THOMAS BOURCHIER, *Captain*.

(Enclosure No. 6.)

Number and dimensions of the guns destroyed, August 31st, 1841:—

Number of guns 77, lengths varying from 3 to 10 feet, and diameter from 4 to 10 inches.

Outer Island.—West Fort, and a small round fort, no guns; South West Fort, seven; South South-West Fort five; South Fort, five; East Fort, four.

Inner Island—South Fort eight; West Fort, six; East Fort, twelve; all quite new, but no guns.

A list of her Majesty's ships and vessels, and of the Hon. East India Company's steam vessels, in action with the batteries and defences of Amoy, August 26th, 1841:—

Wellesley (flag ship)	72 guns	Captain	Thomas Maitland.
Blenheim	72		Thomas Herbert.
Blonde	44		Thomas Bourchier.
Druid	44		H. Smith, CB.
Modeste	18		Harry Eyres.
Cruizer	16	Com.	H. W. Giffard.
Pylades	18		T. V. Anson.
Columbine	16		T. J. Clarke.
Bentinck	10	Lieut.	R. D. Collinson.
Algerine	10		J. H. Mason.
Rattlesnake (troop-ship)		Master	T. Sprent.

STEAM VESSELS.

Sesostris	4 guns	Acting Commander	Ormsby
Phlegethon	4	Lieut.	M'Cleverley, RN.
Nemesis	2	Master	W. H. Hall, RN.
Queen	2	Acting-Master	M'Wardon, RN.

(True Copies.)

(Signed) H. T. MADDOCK,

Secretary to the Government in India.

(CIRCULAR.)

To Her Majesty's Britannic Majesty's Subjects in China.

Her Majesty's Plenipotentiary, &c., has the highest degree of satisfaction in announcing to her Majesty's subjects, and others, who feel an interest in the question, that the city of Amoy, with its very extensive and formidable line of batteries and fleet of gun-boats and war-junks (the whole mounting 500 pieces of cannon), was taken possession of on the 26th inst., after a short but animated defence on the part of the Chinese, by her Majesty's naval and land forces, under the command of their Excellencies Rear-Admiral Sir W. Parker, KCB., and Major-General Sir H. Gough, KCB.

This brilliant achievement has been happily accomplished with a very trifling loss; and in addition to the works, all of which have been dismantled and

destroyed, and the guns spiked and broken, immense magazines full of munitions of war, have been either removed or rendered useless.

Arrangements are now in progress for leaving a detachment of troops on the small island of Koolangsee (which is separated from the town of Amoy by a channel of deep water), and some of her Majesty's ships will likewise remain at this port whilst the great body of the expedition advances to the northward; so that British or other ships, that may touch here during the ensuing season, will find ample protection, and be secure from any risk of molestation.

Her Majesty's Plenipotentiary deems it quite superfluous to say one word as to the manner in which this important service has been performed. The facts require no eulogium. The Chinese government vainly imagined they had rendered Amoy impregnable, but were undeceived in presence of the Viceroy of the provinces of Chekeang and Fokien (who, with a number of high officers, witnessed the attack from the heights above the town) in the short space of four hours from the firing of the first gun; and had the opposition been a hundred times greater than it was, the spirit and bearing of all employed showed that the result must have been the same.

God save the Queen.

HENRY POTTINGER,
Her Majesty's Plenipotentiary.

Dated this 31*st day of August*, 1841, *on board her Majesty's ship Blenheim, in Amoy harbour.*

THE PORT OF AMOY.

The news of the recent victories of British arms in China, invests Amoy (the principal scene of those successes) with much interest at the present moment. This celebrated part of the Celestial Empire is situate in the province of Fo-kien, and, in the Mandarin dialect, is called Heamun, which is pronounced by the native Ha-moy. It is stated by Davis to be "a fine shelter for any number of large ships;" and the town itself is represented to be the emporium of the commerce of the province. The province itself, however, is the most barren in all China, not only yielding nothing for exportation, but being dependent even for the necessaries of life on the neighbouring island of Formosa. Still the merchants of Amoy are characterised as among the most wealthy and enterprising in the empire, having formed connexions all along the coast, and established commercial houses in many portions of the Eastern Archipelago. Most of the Formosian colonists are emigrants from the district of Amoy, with capital supplied by its merchants; and in proportion as the island has flourished, so has Amoy increased in wealth and importance. The fort was resorted to formerly by Europeans, but was abandoned when foreign commerce was restricted to Canton. There are several temples in the place, particularly one of great celebrity, dedicated to the god Fo, or Budha, (who according to the homilies of the priests, exists "in forms as numerous as the sands of the Heng-ho.") This temple contains a statue of the god of colossal size. During the south-west monsoon the merchants of Amoy freight their vessels at Formosa with sugar, which they dispose of at different ports to the northward, returning home with cargoes of drugs. They maintain commercial relations with Manila,' Tonquin, Cochin-China, and Siam; and many of the junks annually go to Singapore to procure goods of British manufacture. The port has not always been closed

against European vessels; as, according to the records of the East India Company, we find that "the King of Tywan, on taking Amoy in 1675, issued a proclamation, inviting both Chinese and foreign merchants to trade thither, exempting them from the payment of all duties for three years. In consequence of this, numerous vessels went; but the exemtion was soon revoked. The town was then taken by the Tartars, six years afterwards; but the Europeans still resorted to it until 1734, when the exactions of the mandarins deterred them from continuing so unprofitable a trade. Since that time many attempts have been made by English ships to induce the Chinese to trade, but without success. The recent events will probably, produce more favorable results.

Lord Haddington's naval administration is winning golden opinions from all sorts of men, and deservedly so. We are little accustomed to flatter the authorities, military or naval; and shall not be suspected of a desire so to do, because we direct the attention of our readers to the just and liberal regulation recently promulgated by the Admiralty, which permits midshipmen, when they have served their six years, to have a certificate for a lieutenancy, if found competent by the captain, first lieutenant, and master. Thus, when they can get three captains or commanders together, they may be examined, and the passing certificate of seamanship may be dated from the first certificate. A lieutenant made late last year, after having passed 11 years before, lost twenty months' time in consequence of being in a frigate on service in Australia. The ship was wrecked, but ultimately got afloat and fitted. It was not, however, until he arrived in India that three captains could be got together to examine and pass him; so that for his lieutenant's commission he served six years proper time, twenty months overtime, and eleven years mates' time. Surely a regulation calculated to alleviate so great a hardship cannot but be gratefully received by the junior, and admired by the senior branches of the service.—*Naval and Military Gazette.*

Grant's Patent Fuel.—Insinuations having been thrown out to the detriment of Mr. Grant's Patent Fuel, that it was liable to spontaneous combustion, the Admiralty have submitted it to Professors Farraday and Brandt, who both report that it is impossible it can ignite of itself, whatever degree of heat, devoid of flame, or whatever degree of friction it may be subject to.

The Ship Sultana.

Mr. Gill, the chief mate of the Sultana, with Mr. and Miss Da Souza, arrived in the course of the week from Tringanu; where, it will be remembered, the prow in which they left Borneo had been compelled to put in for a supply of provisions, having been driven so far out of her course by contrary winds and currents. Mr. Gill has sent us the narrative of his voyage, from the time of his leaving Borneo, which we

publish below. We regret to learn that Mr. and Miss Da Souza arrived here, and still continue in a truly deplorable state. Mr. Gill's journal is as follows:—

April 28.—Took leave of Capt. Page and Borneo for Too-tong, where the boats were built and loading with my sea stock of provisions, consisting of a plentiful supply of rice, a little dry fish, and a few eggs, &c., Mr. and Miss Da Souza, with me in a separate boat, and arrived thirty hours afterwards. We found the boat far from being ready, so that we were detained until the 21st of May.

May 24.—Took our departure from the entrance of Too-tong river, prow Abduraman in company, winds from north to south-west during the day with a south-east land wind during the night, weather clear and pleasant, but making poor headway, as the prow cannot sail within eight points of the wind, so that half the time we were obliged to anchor.

June 2.—Fell in with twelve piratical prows, six large and six small; they declined attacking us, after taking a good look within gunshot. Great preparations were made to receive them, but they declined trying their strength, and made sail to the north-east with the sea breeze, and we to the south-west, and anchored off Mocha in the evening for wood and water; we procured three more guns, powder, and shot, as the pirates were reported in great force off Tanjong Dattoo.

June 4, p.m.—Sailed.

June 8.—Experienced a very heavy squall off Tanjong Dattoo, in which the prow was nearly going down, having six feet water in the hold; she could not have stood it half an hour longer, but fortunately it cleared up just in time to save us.

June 11.—Off Tanjong Apie. Strong southerly breeze. Put into Merandum for shelter. Increasing breeze drawing round to the south-west. Prow rolling dreadfully; expecting the masts to go every moment. Cut the cable. Anchored close to the lee of the island, after narrowly escaping on shore.

June 12.—Put back for the island of Serassan, or Flat Island, South Narunas, to repair damages done.

June 13.—Making towards the anchorage observed two piratical prows at anchor in the centre of the passage; but they did not offer to molest us. The natives drove them to sea, after exchanging a few shots, in the evening.

June 19.—Sailed from Serassan by the western passage. Winds south-easterly. Sunset equally from north-west. Midnight, squally, south-west, with a heavy rain, and a high sea getting up. Saw the island of Sambooloo, or West Island, close under our lee, and, finding we could not weather the shoals to the southward, wore round. Increasing breeze split all the sails, prow rolling dreadfully and taking in water on all sides, few only of the crew on deck, throwing cargo overboard, &c. About 1 a.m., the main and mizen masts went by the board. Anchored close to Sambooloo.

June 20.—Weighed and made what sail we could back to Serassan. Prow rolling awfully; expected the foremast to go, and carry with it part of upper works every moment; found the stern adrift, in fact the prow a perfect wreck fore and aft; at 5 succeeded in reaching our former anchorage, and found our consort there before us, having put back unhurt.

June 21.—Prow Abduraman hauled out ready to sail. I requested to be allowed to go in her, as our prow could not be got ready under a month, but they refused to allow me, demanding a sum of 300 Spanish dollars for a passage, and 500 for Mr. and Miss Da Souz, &c.

June 25.—A fleet of piratical prows made their appearance, and anchored under one of the islands to the south-west. Counted seventeen large, and as many small prows, which put a stop to the sailing of the prow; she, with ourselves, being glad to take up a berth close in shore, so that the natives might render assistance in case of attack.

June 28.—The pirates sent to say that they wished to purchase provisions, having nothing to eat, and that they had no wish to harm the Sultan of Boneo's prow; and the next day about 100 of them came on board us, and brought a great quantity of plunder, which they exchanged for sago, flour, &c. This continued for about seven days, and lightened the prow considerably. On their hearing that there were Europeans on board, they demanded us, saying their country had been taken from them by the white men, which of course was refused, we then living on shore, and they not seeing us, the people of the prow denying any but natives of India were on board.

July 8.—The pirates all made sail, but were seen cruising about, ready no doubt to intercept us on leaving.

July 29.—Sailed again after being detained several days by strong south winds. During my stay on shore I succeded in writing to Mr. Brooke, and sending several letters to Singapore, although the people of the prow did every thing they could to prevent my doing so.

July 31.—Made Merandum; observed four prows standing towards us, and nearing them, they anchored in a line, and on our passing hailed us; they proved to be pirates and had prepared to attack us, but at that time a schooner hove in sight to the eastward, on which they made sail towards Serassan.

August 5.—Saw Victory Island, bearing south ten miles, but from the crew neglecting to make sail, as required, fell to leeward; current running strong to the northward.

August 9.—Pulo Damar East, distance four miles. Saw Pulo Aor, and a frigate working to the southward; requested the Nakhodas to make signal for her, but they refused, and prevented my doing so.

August 12.—Made the land thirty miles above Pahang, anchored for the night; heavy swell, prow rolling very heavily.

August 13.—Made sail for Tringanu for rice and water, &c., which might have been procured at Kamaman.

Anchored at Tringanu on the 15th.—During my stay there the Rajah was very kind to me, and wished to send me in one of his prows, which make the passage in ten days, but the Nakhodas of the Borneo prow would not allow me to leave, which I should have done, had I known Captain Page, &c., was at Singapore. The Rajah kindly forwarded a letter for me on the 21st.

August 29.—Sailed, and were detained off Pulo Brala ten days by strong southerly winds, during which time we saw several vessels pass. A bark was close to us all the 10th of August, but they would not allow me to go on board, telling me I might go if I liked, but unfortunately I had no boat.

September 18.—Made the place we first fetched in standing across from Sambas.

September 20.—Anchored off Pahang.

September 23.—Pulo Tingy bearing south-east, observed a schooner standing towards us, which proved to be the gun-boat, from Singapore, looking for us. Capt. Steward boarded the prow, and informed the Nakhodas that he had come for us, by order of Mr. Bonham, on which they said they supposed we must be let go, and all hands were asked the question, to which the same answer was given, as they saw an ugly looking customer of a gun in the bow, and heard of the arrival of all at Singapore. They looked most disappointed all of them at our leaving, but did not offer to resist.

September 25.—Arrived at Singapore, and found that several of my letters had arrived safe from Serassan; also the one to Mr. Brooke, who so kindly sent the Royalist to Borneo for the survivors of the Sultana, but unfortunately did not succeed in releasing them.

On arrival here, I found that Capt. Page's narrative of the occurrences in Borneo was already before the public, and it therefore only remains for me to confirm the correctness of all his statements up to the time of the departure of myself and the Da Souzas from that inhospitable quarter.—*From the Singapore Free Press.*

[Continued from p. 49. cs crew saved—D drowned—L lost.]

VESSELS.		BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.	
Aboyne	57	———	———	Stockton	London	Hartlpo'l	Nov. 15	
Alicia		run foul of	———	Sligo	Grenock	P Trowrd	Dec. 5	cs
Amyntas		———	Hallett	Quebec	Topsham	Portlnd B	Dec. 9	4L
Appearance	60	———	———	Odessa	London	Off Galip	oli Nov. 27	
Black Joke		———	———	———	———	Macao	July 26	
Branches		———	Rea	Liverpool	Savana	Pwhlhely	Dec. 4	cs
Cambria		Exmouth	Bartlett	Stockton	Exmouth	Exmouth	Dec. 15	cs
Cato		Dundee	Ritchie	London	Newcastl	Souter P.	Dec. 9	
Cherub	65	———	———	Dundalk	Mirmichi	P. E. Isld	Oct. 21	cs
Commerce		———	———	London	Rottrd'm	Banjard	Nov. 12	cs
Concord		Plymouth	Lock	Quebec	Plymo'th	S. Belle I	Oct. 22	
Crescent		———	———	———	———	Brnthlm	Nov. 8	cs
Crystal		Sunderland	Dawson	———	———	abandond	———	
Defiance	70	Greenwich	run foul	off Cron	er	———	Dec. 10	
Eliza		Ipswich	run down	off Harw	ich	crew savd	Dec. 5	
Eliza		Ipswich	run down	by brig	Condor of	Stockton	Dec. 4	cs
Elizabeth		———	Brabble	Liverpool	Dalhouse	Miscow I.	Oct.	cs
Emma		Brighton	Smith	———	Shorham	Off Shorh	m Nov 26	cs
Euclid	75	Sunderland	Ethrint'n	———	founder'd	Off Good	win Dec.	cs
Flower		Liverpool	———	Liverpool	W Indies	Tyree	Dec. 10	cs
Glide		Sunderland	———	Dantzic	London	Falsterbo	Oct. 30	
Herald		Sunderland	Dickson	Liverpool	Mirmichi	P Escumi	nac Nov. 6	cs
Henry Brown		Sunderland	———	———	London	at sea	Nov. 18	cs
James Laing	80	———	———	———	———	Macao	July 26	
James Lewis		———	———	Riga	Newry	Domsn'ss	Nov.	cs
Joanna		London	———	———	London	HanklyR	Dec. 5	
John		Newcastle	College	Petrsbrg'	Hull	Gothland	Nov. 15	cs
Kate and Jane		———	———	Goole	London	Wainflet	Nov. 14	
Madeline	85	———	———	Sundrlnd	Nantes	Burrows	Nov. 14	cs
Malvina		portions	of wreck	wash'd on	shore at	Garli	est'n Dec. 3	
Margaret & William		Newburgh	Haraway	———	Sundrlnd	Souter P.	Dec. 9	cs
Maria		London	West	London	Gotenbrg	Tr'mlngs	Nov. 15	cs
Miriam		———	———	Portsmth	Sundrlnd	Whitby	Nov. 14	
Nancy	90	Yarmouth	Todd	run down	crew savd	by John	Dec. 5	cs
Perseverance		Caernarvon	Evans	Yarmoth	Dublin	Jack Snd.	Dec. 3	3L
Pr. George, Tr.		———	———	———	———	Macao	July 26	
Queen		Newcastle	———	London	Shields	run down	Dec. 11	cs
Regina		Sunderland	———	———	Shorham	Off Shorh	m Nov. 26	cs
Rose	95	———	———	———	———	Macao	July 26	
Runswick		———	Smith	———	———	Drago I.	Nov.	cs
Salacia		———	Morgan	Newport	———	St. Anns	Nov. 30	cs
Sarah		———	———	destoyed	by fire on	Labrador	Sept.	
Sarepta		Whitby	Jamieson	Petrsbrg'	Leith	Skagen B	Nov. 23	cs
Suir	100	———	Davies	Quebec	Llanelly	Burry R.	Dec. 15	cs
Superb		Whitby	———	Petrsbrg'	Leith	Skagen	———	
Susan		Kirkaldy	M Donald	London	Gambia	off Brdprt	Nov. 30	cs
Susanna		———	———	Buctouch	Tynemth	P. E. Isld	Nov. 9	
Thomas Ritchie		———	———	———	———	Bras d'Or	Oct. 6	cs
Unicorn	105	———	———	———	———	Seine	Dec. 10	cs
Union		N. Scotia	———	Liverpool	Maryport	abandond	Dec.	cs
Unity		Dundee	Betts	Stettin	Dundee	off Witby	Nov. 10	cs
Victoria		———	———	Quebec	Bathurst	Magdln I	Nov. 2	cs
Zebina	109	Aberdeen	Leslie	Dantzig	———	R. Skagn	Dec. 3	cs

(To be continued.)

Records of Wrecks.

The following result of an inquest arising from the wreck of the Susanna, alluded to in our last number was read in our court.

"One of the bodies of the unfortunate crew of the Susanna, having been washed ashore on the Coatham Sands, on Tuesday last, an inquest was held on the following day, at the Lobster Inn, Coatham, before John Page Sowerby, Esq., Coroner, when the following evidence was produced:—

"George Watson, of Middlesbro, ship-carpenter, being sworn, said that he was brother of Ralph Watson, the late Captain of the Susanna, of Stockton; that his brother sailed from Middlesbro', in the Susanna, on the 13th of Nov. last, and was wrecked off Coatham on the following morning; that the Susanna was an old vessel; that he had examined the fore-yard produced by Thwaites, and finds it in a very bad state—that it is not in a fit state to go to sea with; that the vessel would be in great danger in a gale of wind with such a yard; that it was so rotten as to render it unsafe for sea, as the safety of a vessel depends greatly upon the fore-yard.

"No other witnesses being called, the Jury immediately returned their verdict, that 'The deceased being one of the crew of the brig Susanna, came to his death by drowning, being washed from the above vessel, which was wrecked on the 14th of Nov. last, off Coatham.' And with the verdict presented to the Coroner the following:—'That the Jury cannot help expressing, in the strongest terms, *their unqualified indignation* at the conduct of the *Owners and Manager* of the brig Susanna, for allowing her to sail in a state so totally unseaworthy.'

"This statement was signed by the Foreman on behalf of the whole of the Jury."

Some desultory conversation ensued, in the course of which one of the members of the court, enquired of the president, whether it was true that the ship was too bad to be insured, and whether one of her crew had been advised not to go to sea in her by his father, owing to her well-known character; but who having been out of work all the summer went, and suffered with the rest of the crew? The enquirer was about to state something further respecting the captain, when the president interrupted him by observing "that such particulars were quite immaterial, it was acknowledged that total wrecks were desirable, and that, as to the captains, they might be whomsoever the owners pleased. He knew of a vessel about to sail from Liverpool to a distant part of the world, the master of which had been but one foreign voyage since he left the desk of a counting-house. What could he know of seamanship? and as to navigation, instances of the deficiency in this branch were as common as in the other. One which he would mention had just come within his own knowledge. This master had misapplied the declination in the course of a voyage to the Brazils, and persevering in his ignorance made the coast fourteen degrees of latitude south of his port. But the best of it was, that he had to man his boat and go on shore, and enquire where he was!!" (This caused considerable amusement in the court notwithstanding the solemnity with which the minutes of the inquest had been read.) "But," continued the president, "what was the consequence?—why, that a vessel sailed from the port to which he was bound, on the same day that he left Liverpool, arrived at Liverpool, discharged her cargo, took in another, sailed and arrived in the Brazilian port on the day he did!!!" The president considered it fell

within the province of the court to indulge in these digressions as illustrative of the curious features of the mercantile marine of this country, which was the largest in the world; and who should say after what he had stated, that it was not the *best* managed.

The judge-advocate then read the following statement concerning the loss of the Prince Rupert:—

"The commission of inquiry into the loss of the Prince Rupert, wrecked on the Mouille Point, had presented their report to the Governor of the Cape, a transcript of which is subjoined. It will be seen that although the commissioners judge the conduct of the captain culpable in some respects, they acquit him of the charge first promulgated of intentionally losing the vessel.

"We the undersigned, having been appointed by his excellency the governor as a commission to enquire into the causes which led to the loss of the 'Prince Rupert' on the night of the 4th of September, 1841, after carefully examining the officers and part of the crew of that vessel, and having maturely weighed the evidence adduced, are of opinion, that had the officer in charge of that vessel made more sail when the breeze sprang up (and became steady), instead of reducing sail, that he would have approached near enough to the port to have ascertained his exact position before dark, and would have thereby avoided the danger which led to the loss of the 'Prince Rupert.' We find by the captain's chart (which was produced in court) that there was no attention paid to the directions, which are very clearly laid down. We also find that when the anchor was let go and 45 fathoms of chain veered, that the ship struck on her heel, but that no attempt was made to shorten in cable previous to slipping, which, had it been done, we are fully of opinion the vessel would have been extricated from her dangerous position; had even an attempt been made to run out a stream anchor and cable, we think it would have been the means of saving her; or had a spring been clapped on the cable previous to slipping, it would have materially assisted in giving the vessel headway.

"The whole of the proceedings from the time of being abreast of Robben Island until the vessel was on shore at Green Point, we consider to be highly culpable; but we fully acquit Captain Ramage and his officers of intentionally losing the vessel.

"We avail ourselves of this opportunity of expressing our opinion, that had there been a good light on the Mouille Point, vessels might approach the anchorage in the night with perfect safety.

"Given under our hands, this 24th day of September, 1841.

"G. M. Pedder,
President and Acting Port Captain.
"G Ross, } *Master Mariners and*
"J. Smith, } *Commissions*"

At the conclusion of this report the president observed that, "this case was somewhat analogous to the Brazilian ship, seamanship only being substituted for navigation. The commander's conduct had been criticised, and pronounced upon by his fellow-commanders, and the owners were now informed of what they either knew, or did not know, very well before. A service had been done by the inquiry, which by the way, he must observe was quite new in the glorious annals of the wrecks of British shipping; and good results might or might not follow. It was clear however, if such inquiries always took place, his labours would be terminated, and he should have to say like many before him—

"Othello's occupation's gone."

"But in the present state of things, it was quite evident owners had a right to do what they pleased with their own property, and property was of more importance than human life, inasmuch that the law recognised cargoes of all kinds, except emigrants and crews; virtually, and no doubt wisely, implying there was no necessity to learn how people perish by sea, as it must be acknowledged they are all drowned, and never mind whether it arose from a crazy ship or a half-witted captain; while on shore people were not to be put off that way, and recourse was had at once to the coroner. He could not but admit, as had been stated out of doors, that a rotten and illmanaged ship was quite as capable of causing as much loss of life, as a faulty, or misdirected engine, and it was no less true, that 'travellers by land or water have an equal claim to the protection of laws;' but the truth of the theorem was certainly not yet acknowledged."

Harbour of Refuge.—*Goodwin Sands.*

Our present number is accompanied by the plan of a proposed harbour inside the Goodwin Sands, occupying the principal portion of Trinity Bay. This bay is left by nature nearly in the middle of the Sand, and from the depth of water in it, from three to nine fathoms, and the protection which the shoal affords, it is admirably calculated for the formation of a harbour of refuge, under stress of weather. The line of the proposed piers assimilates as far as possible with the general edge of the sand, and these being raised to a sufficient height to form an embankment against the sea, ample shelter and security will be obtained: for the sea, breaking over the Sands, as it does at present, to the extent of nearly two miles, is necessarily deprived of much of its full power, and will by such an embankment, allow of sufficient shelter for vessels to anchor in security in any weather. The distance across the mouth of the harbour will be about one mile and a half. The direction of the harbour will be about south-west. The present swatchway will be converted into a navigable channel, opening therefrom to the north and east, with a depth of water from four to five fathoms, and this channel will also render the harbour capable of approach, both from the northward and eastward, which will afford the same refuge for ships in the channel, adjacent to the French coast, which for the Downs it is the more immediate agent to supply.

The piers will be formed within, and by means of a series of caissons, upon the same principle as that upon which the light-house is proposed to be constructed. This light-house is a necessary adjunct to the harbour, and for which as well as for a generally improved principle of constructing foundations under water, Mr. Bush has taken out a patent. The piers themselves will be sufficiently high, and have sufficient depth of water to permit large vessels to lay alongside, and of course be provided with capstans, windlass, and every other power requisite, under any emergency, as with other harbours.

Life-boats at different stations will also be provided, to afford any assistance, which from this as a central point, will be available at any part of the Sands.

In another number we shall return to this interesting subject with an ample description of the process which Mr. Bush proposes to follow, accompanied by sections of his caisson and light-house, and his method of working. In the meantime, we sincerely wish him every possible success in his difficult, but important undertaking, in which we are glad to find he has been encouraged by the Admiralty.

It is a curious fact, that the Beacon erected by Capt. Bullock, as noticed in our volume for 1840, although standing on the Sand, has settled in a degree scarcely perceptible.

The Niger Expedition.

We have read with painful feelings the various accounts of this disastrous expedition, which, as might have been foreseen, has *ended in* nothing else but sickness and death. We were averse to prejudge the issue, but our suspicions have been amply verified. After concluding treaties with the fat king Obie of Eboe, and the powerful king Attah of Idda, (which treaties may be considered as no longer binding than the presence of the vessels would render them,) the expedition arrived at the Confluence of the Tchadda, with the Niger about 270 miles from the sea; and here the effects of the fever, which was to prove so fatal, first shewed themselves. It was intended that the Albert and Soudan should proceed up the Niger to Rabba, and the Wilberforce up the Tchadda; but the sickness which broke out obliged Capt. Trotter to dispatch the Soudan to the sea with forty-three cases of fever. She departed on the 19th Sep., in two days reached the mouth of the river, and there meeting H.M.S. Dolphin, Lieut. Littlehales, she took the sick to Ascension. The Soudan was no sooner gone than fever showed itself in the Wilberforce, which weakened her so effectually as to induce Capt. Trotter to send her to the sea immediately, and she was accordingly ordered to Ascension.

The Albert was yet considered efficient by Capt. Trotter, persevering in his intentions of effecting a treaty with the king of Rabba; on the 21st Sept. she left the Confluence to proceed thither; at the same time that the Wilberforce left for Ascension. By the 28th, having arrived off Egga,* the cases of fever had so fearfully increased that Capt. Trotter, Dr. McWilliam, and Mr. Willie, mate, were the only officers not attacked. Still Capt. Trotter did not abandon hopes of proceeding, as Dr. McWilliam was of opinion that the change even to the upper part of the river would produce a favorable result. Preparations therefore, went on in procuring wood, &c., till the 4th of October, when Capt. Trotter was seized with fever, and the next day Mr. Willie. But the attempt to proceed was now abandoned; and it was while he was in charge of the vessel that Mr. Willie was taken ill, the surgeon, Dr. McWilliam, not daring to communicate the fact to Capt. Trotter, fearful of the consequence on his mind. The only remaining engineer of the Albert was next attacked; and Dr. McWilliam found himself com-

* About half way between the Confluence and Rabba.

pelled to take charge of the vessel, with only one white seaman to assist him. At this critical moment, Dr. Stanger who accompanied the expedition as geologist, with a hint or two from the sick engineer, and a leaf of instruction out of Tregold, undertook to work the engine; and Dr. McWilliam steering, the vessel was thus safely navigated down the river, by the aid of commander Allen's survey, and the information of Mr. Brown, (a native of Africa,) clerk of the Albert. In this forlorn and dreadful condition, the Albert was providentially met by the Ethiope, Capt. Beecroft, who had come from Fernando Po to render any assistance. She was found in the Delta about a hundred miles from the sea, and taken charge of immediately by Capt. Beecroft. It would be scarcely possible to appreciate too highly the timely assistance thus rendered by Capt. Beecroft. The Albert thus disabled had reached the narrow navigation, and had she grounded with the falling stream, or had anything occurred to derange the engine, her detention in the river would have in all probability terminated the lives of all on board. Happily was this averted, and providentially Capt. Beecroft had arrived to rescue them from such a fearful condition, worse than their present one, bad as that was. The Albert was thus safely conveyed over the bar, and with the Ethiope, and the Soudan, which had also returned to the mouth of the river, proceeded to Fernando Po, arriving there on the 17th of October. But in the meantime the work of death was going on; one victim fell after another by the virulent effects of the fever caught in the river, a fever pronounced by the medical officers as quite new to them, and in its effects more violent than any other known. We give the following list, on which our readers may depend, without comment; but with a feeling of disgust that so much valuable life, so much worth and excellence as it includes, should have been thus idly wasted, and that the experience which Laird, Lander, and a host of travellers have taught us has been lost!

In the Albert.—F. D. Nightingale, Assistant-Surgeon; G. B. Harvey, Acting-Master; W. C. Willie, Mate; A. Lodge, Second-Engineer; and eight Petty Officers and Seamen.

In the Wilberforce.—Cyrus Wakeham, Purser; and three Petty Officers and Seamen.

In the Soudan.—Bird Allen, Commander; W. B. Marshall, Acting-Surgeon; H. Coleman, Assistant-Surgeon; N. Waters, Clerk-in-charge; and four Petty officers and Seamen.

The above does not include the twenty mentioned in the former dispatches, making in all forty-four lives, and these independent of those who were yet sick. And for what purpose? To civilize the African! To put down the slave trade! If so, how paralysed; how miserably foiled the vain attempt! Where are now the visionary schemes of theorists when thus their grand effort is baffled so fearfully; what the value of their specifics* against disease; what the value of the contracts with the native chiefs on the banks of the Niger? that river, to ascend which amounts almost to self-immolation! No, those who would see the slave-trade put down, and who does not! must not themselves go

* Our readers will no doubt remember the fumigating apparatus.

to the fountain-head; rather let them by the African liberate the African from his fallen state, by civilizing him in this country, and sending him to spread civilization in his own, and while this is going on draw yet faster the *cordon sanitaire* of watchful cruizers on the coast; there even, disease is prevalent enough, but our ships are in salt-water, and can run off to a healthier clime when sickness shows itself, which those less happy adventurers in the interior of the country cannot do.

A commencement, indeed, of this is partly made; the model farm has been left at the Confluence, and we are glad to say with no European, but in the charge of some native Africans, who accompanied the expedition.

It has been recommended by the medical officers of the expedition that those attacked by fever should not return to the Niger, and these include the whole, we believe, about six or seven. So that of the three vessels crews one might be made up of natives to return. We trust that we shall not hear of this, as some officers must in that case accompany them. We believe that Captain Trotter intends recruiting the vessels at Ascension, and we sincerely trust that we shall welcome him and his gallant fellows in England before long.

The Magnetic Disturbances.

Sir.—Those of your readers who have been interested by the account of the great magnetic disturbance observed at Greenwich, and recorded by the Astronomer-Royal, which appeared in your last number, will learn with satisfaction that the same disturbance was also observed at the same time, at the Magnetical Observatories at Toronto, in Canada, at Longwood, in St. Helena, at the Cape of Good Hope, and at Trevandrum, at the Observatory established by his Highness the Rajah of Travancore. At all these stations, differing so widely in geographical position as to embrace nearly a hemisphere of the globe, the disturbance was of such extraordinary amount as to cause the immediate institution of extra observations. The disturbances continued during the 24th and 25th of September; and their phases, allowing for the difference of longitude, were simultaneous at all the stations. Returns have not yet been received from other stations, but may early be expected from many, such as from Simlar in the Himalya, from Van Diemen Land, and from the Antarctic expedition under the command of Capt. Ross, &c. Independent of the great changes in the direction of the needle, the intensity of the magnetic power of the earth appears to have undergone, at all these stations, and at the same instant of time, fluctuations which may well be regarded as astonishing. The whole magnetic system of our planet seems to have been during those two days, so to speak, in a state of convulsion. Philosophy will, of course, be busy in speculating on the origin of phenomena so surprising; but we must not forget a tribute of praise to the zeal and diligence of the officers charged with the direction of these observations, and who have followed them up so efficiently, nor to the liberality of the British nation in working out on so magnificent a scale the recommendations of scientific men, in this, by far the greatest combined scientific operation the world has yet seen undertaken.

J. F. W. H.

CUMMINS'S PATENT SYMPIESOMETER.—Sir—In the *Nautical Magazine* for April, 1841, at p. 257, there is a letter from "Audax at sea," stating that the sympiesometer requires a correction for temperature besides the scale engraved on the instrument. I would, therefore, wish to inform him and the public that there is no necessity for a table when the instrument is made correct. The method of finding the error by the heat of a candle is very deceiving, as it will not give equal heat to the bulbs of the sympiesometer and thermometer tubes. If you would favor me by inserting this in your Magazine, it would greatly oblige

Your obedient servant, CHAS. CUMMINS.

KATER'S PRISM COMPASS.—An important improvement has been made in this useful little instrument by Mr. Gilbert,* whose azimuth compass has long been the favorite one used at sea. The improvement to which we allude consists in the prism being fixed to the vane furthest from the observer's eye carrying the hair line, instead of being next to it as in the old construction. The prism is also new, and shews the divisions on the card beneath it, with its *real* motion, so that the actual bearing is read off at the time of the observation. A source of error is thus avoided, which led to east and west being mistaken formerly for each other, and it is an improvement well worthy of attention.

Extract of a letter from Capt. Basil Hall—On Raper's Navigation.

"On the voyage to Malta from England, and since my arrival here, I have had ample means of examining the work above alluded to; and I feel it right to say,—and I hope you will communicate my testimony (such as it is worth) to the Astronomical Society, in favour of the book of my highly valued friend, their secretary,—I have gone over almost every part of the *Practice of Navigation*, and some of the parts a great many times, and I can say without qualification, that I am acquainted with no work so well adapted for the use of sailors, none so luminous and precise in its style, nor so simple in its use. The tables, too, are well arranged and of very ready application, in consequence not only of the distinctness of the precepts, but the good selection of illustrative examples. It is much to be desired that Lieut. Raper should publish his second volume, for such works contribute greatly to the improvement of practical navigation, not merely by the information they furnish, but by raising the standard of accuracy, and teaching that, even by moderate, but *well-directed* exertions, any ship may be navigated with far more certainty and speed than by the ordinary and loose methods still, unfortunately, too much in use afloat."—*Astronomical Society's Memoirs.*

[We are glad to find that directions have been given to supply her Majesty's ships in commission with this excellent work.—ED.]

NAUTICAL NOTICES.

CHANGE OF PILOT STATION FROM THE RIVER HOOGHLY.

East India House, Dec. 15, 1841.

Notice is hereby given, that referring to the impracticability, during the last south-west monsoon, owing to the increasing resort of shipping to the port of

* Formerly of Leadenhall Street, now of Fenchurch Street.

Calcutta, to supply Pilots at the distant Station off Point Palmyras, the following arrangements will be adopted for the next south-west monsoon :—

1.—A Pilot Vessel will be stationed off False Point, during the next south-west monsoon, say from the 15th of March to the 15th of September, 1842, bearing, according to circumstances, E.b.N. to S.E.b.S. from the light-house, and in from ten to fifteen fathoms depth of water.

2.—This vessel will exhibit by day, when any others are in sight, besides the usual Company's Ensign at her Peak, a large Danish Jack (Red with White Cross) at her main-topgallant-mast head, and at night a good light in the same situation, besides burning a blue light every hour, and beating a gong frequently in calm thick weather, to warn vessels coming from the southward of her near neighbourhood. She will not, however, have any Pilots on board, the main object of her intended station off False Point being to guard all inward-bound vessels from proceeding to the Old Station off Point Palmyras during the next season, and directing them to a new one in the South Channel, between the tails of the Eastern and Western Reefs, where Pilot Vessels will then be found in from sixteen to twenty fathoms water, and from six to eight miles south-west of the present South Channel Buoy, that buoy lying in latitude 20° 58′ 30″ N., longitude 88° 4′ E. of Greenwich, and in twelve fathoms water.

3.—For the purpose of more distinctly marking the new station, the commanding officer's vessel there, will always wear by day, when other vessels are in sight, a large St. George's Jack (White with Red Cross) at her main-topgallant-mast head, besides the usual company's colours at her peak, and at *night* be distinguished by a constant good masthead light, by blue lights, and maroons used alternately every half-hour, and also by guns fired every four hours, say at 8 P.M., midnight, and 4 A.M., with good rockets discharged at the same time.

4.—All vessels are recommended to be most careful in coming over from False Point to the new station, by constant attention to the lead, and thereby correcting their steerage as tides or currents may or may not set them out of their proper course; and they are also advised not to come under sixteen fathoms at night, especially till they reach the Pilot Station and get their proper pilots on board.

5.—All vessels are directed not to approach the Pilot Station at night without giving due warning; and not only by the exhibition of lights, say two vertical where best seen, but also by the discharge of a gun (if they have any on board), as soon as they descry the first Pilot Vessel near them. They are further recommended to be most careful not to come into collision with any of the Pilot Vessels at the Station, on their own account, no less than that of the public, as they will be held responsible for all damages, and called upon afterwards to pay for all that may have arisen from bad look out, inattention to duty, or carelessness of any kind whatever.

JAMES C. MELVILLE, *Secretary.*

THE AGGER CANAL.

THIS canal, on the Meersriff (Seariff,) has a depth of water of from eight to nine feet; on the middle ground seven to eight; and on the Fjord seven feet. Its entrance along Fleybusch (Flely understood,) used during the summer, is in the present season not navigable. The beacons which marked the inlet from the sea, having by the inundation of the 10th of November, been washed away, were temporarily substituted by two smaller ones. The pilot boat, usually stationed in the canal, is shortly to be removed to Nykiobing; but a good look out will be kept on both sides, that on a signal made, pilots may be ready to render every assistance required.—*Shipping Gazette.*

A plan of the Agger Canal will be found in our volume for 1838, in which the beacons alluded to will be seen.

Light-house, Bay of St. Joseph, East Florida.

The Netherland Minister of Marine and Colonies has notified that according to the latest observations, the light-house at the entrance of the bay of St. Joseph, East Florida, is situated at latitude 29° 52′ 37″ north, and longitude 85° 16′ 1″ west, of Greenwich; consequently thirty English sea miles farther eastward than generally laid down in the newest charts and books.

We extract the foregoing from the *Shipping Gazette*, as it may be useful to seamen with the information in our plan of Apalachicola, published in our volume for 1837, although it differs very much from the charts of the coast.

Wreck between Pullen and Rodsand.

The head pilot of Falster has published the following:—having this day been informed by the pilot of Nyested that a large piece of a wrecked vessel, on the stern of which is the name Desiderio, has been observed, fixed at the bottom of the channel, between Pullen and Rodsand, at the depth of three and a half fathoms water, bearings according to compass, the church of Nyested N.b.E.¼E., the one of Skjelbeye E. ¼ S., and the church of Vester Ulsley N.N.W.—Notice is given thereof to mariners, that they may be on their guard.

This may be the wreck of the Ocean,—No. 40 of our last number.

Bloom Rock, *Archipelago.*

While the survey of the Archipelago is progressing under that talented officer Commander Graves, rocks and dangers still keep coming to light, shewing the imperfect state of our charts. The following extract from the *Shipping Gazette* announces a shoal, which, until its position is examined by Commander Graves, seamen will do well to be guarded against.

"Report of the schooner Mary Stuart, Bloom, from Constantinople, after a passage of thirty-nine days, arrived at Stangate Creek, on the 27th instant,—all well.

"Exchanged colours on the 15th instant, with a barque, blue flag, No. 918, in latitude 37° 56′ longitude 11° 51′ west; had struck on a shoal which is not mentioned in my chart or directories, the island of Falconera bearing S.S.W., distant about three and a half miles; apparently hard ground, but passed over without any perceptible damage; as the pumps were immediately sounded, and the vessel was found to make no water—she was then running at the rate of seven knots, and draught of water twelve feet.

"John W. Bloom, *Master.*"

Her Majesty's ship Howe, in Malta harbour, Nov. 30th, 1841.—The black buoy on Cape Bianco shoal, off the south end of Corfu, which bore S.W.b.S., about one mile and a half from the red one, has disappeared, which buoy served as a guide of considerable importance to vessels for clearing the shoal, when passing to the northward of the island of Paxo, and steering for the south channel of Corfu.

(Signed) Francis Mason, *Rear-Admiral.*

Law Decisions.

The Vernon.—A collision occurred between this vessel and the Alsen, on the 13th of August last, a few miles from Dungeness, by which the latter was sunk. The court was assisted by Captain Stanley Clerk, and Captain Ellerby of the Trinity-house, who were of opinion that the accident arose solely from the

fault of the pilot on board the Vernon. The point of law as to the party on whom the responsibility rests, was reserved for discussion at the close of the day.

THE SCHIEDAM.—This also was a case of collision, which occurred between this vessel and the Jane, on the 7th of September last, in the river Thames. Another action was entered against the Schiedam by the Albion, but the evidence being the same in both cases, they were argued conjointly.

THE OCEAN QUEEN.—Dr. Addams moved the court to decree a warrant of arrest against this vessel, under the jurisdiction conferred upon it by the 3rd and 4th Victoria. The court rejected the motion.

THE SEDULOUS.—In this case the court pronounced at its last sitting for wages due to a mariner. The affidavit of two individuals was now brought in, who swore that the ship was in a perishable state. Dr. Robertson, therefore, moved the court to decree the ship, her tackle, and furniture to be sold;—the court granted the motion.

NEW BOOKS.

JOURNALS OF TWO EXPEDITIONS OF DISCOVERY IN NORTH-WEST AND WESTERN AUSTRALIA, IN THE YEARS 1837-8-9.—*By George Grey, Esq., Governor of South Australia, (late Capt. of the 83rd Regiment.) Two vols. octavo.*—T. and W. Boone.

We called the attention of our readers to the above volumes, in our last number, and we now proceed to give an extract of Captain Grey's *rencontre* with the natives, which we were unable to insert in our first notice, and which will be read with much interest. No one, we feel assured, ever led a more "forlorn hope," than that we are about to describe. Captain Grey and two of his men were suddenly surprised by the natives while absent some distance from the encampment. "It was the duty of the Cape man," says Capt. Grey, "to mark a tree every here and there by chipping the bark, so that the party might the next day easily recognize the route which they had to pursue; upon looking back I now perceived that he had neglected a very remarkable tree about twenty or thirty yards behind us, and which stood close to the spot where I had fired at a kangaro. I desired him to go back and chip it, and then to rejoin us; in the meantime I stood musing as to the best means of avoiding the little rocky ravine in our front.

"Finding that the man remained absent longer than I had expected, I called loudly to him, but received no answer, and therefore passed round some rocks which hid the tree from my view, to look after him. Suddenly I saw him close to me breathless, and speechless with terror, a native with his spear fixed in a throwing-stick, in full pursuit of him; immediately numbers of other natives burst upon my sight; each tree, each rock, seemed to give forth its black denizen, as if by enchantment.

"A moment before, the most solemn silence pervaded these woods, we deemed that not a human being moved within miles of us; and now they rang with savage and ferocious yells, and fierce armed men crowded round us on every side, bent on our destruction.

"There was something very terrible in so complete and sudden a surprise. Certain death appeared to stare us in the face; and from the determined and resolute air of our opponents, I immediately guessed that the man who had first seen them, instead of boldly standing his ground, and calling to Coles and myself for assistance, had at once run away; thus giving the natives confidence in themselves, and a contempt for us; and this conjecture I afterwards ascertained was perfectly true.

"We were now fairly engaged for our lives; escape was impossible, and surrender to such enemies out of the question.

"As soon as I saw the natives around me, I fired one barrel of my gun over the head of him who was pursuing my dismayed attendant, hoping the report would have checked his further career. He proved to be the tall man seen at the camp, painted with white. My shot stopped him not: he still closed on us, and his spear whistled by my head; but whilst he was fixing another in his throwing stick, a ball from my second barrel struck him in the arm, and it fell powerless by his side. He now retired behind a rock, but the others still pressed on.

"I made the two men retire behind some neighbouring rocks, which formed a kind of protecting parapet along our front and right flank, whilst I took post on the left. Both my barrels were now exhausted; and I desired the other two to fire separately, whilst I was re-loading; but to my horror, Coles, who was armed with my rifle, reported hurriedly that the cloth case with which he had covered it for protection against rain had become entangled. His services were thus lost at a most critical moment, whilst trying to tear off the lock cover, and the other man was so paralysed with fear, that he could do nothing but cry out, 'Oh, God! sir, look at them, look at them!'

"In the meantime, our opponents pressed more closely round; their spears kept whistling by us, and our fate seemed inevitable. The light coloured man, spoken of at the camp, now appeared to direct their movements. He sprang forward to a rock not more than thirty yards from us, and posting himself behind it, threw a spear with such deadly force and aim, that had I not drawn myself forward by a sudden jerk, it must have gone through my body, as it was it touched my back in flying by. Another well directed spear, from a different hand, would have pierced me in the breast, but, in the motion I made to avoid it, it struck upon the stock of my gun, of which it carried away a portion by its force.

"All this took place in a few seconds of time, and no shot had been fired, but by me. I now recognized in the light coloured man, an old enemy who had led on the former attack against me on the 22d of December. By his cries and gestures, he now appeared to be urging the others to surround and press on us, which they were rapidly doing. I saw but one thing could be done to save our lives, so I gave Coles my gun to complete the re-loading, and took the rifle which he had not yet disengaged from the cover. I tore it off, and stepping out from behind our parapet, advanced to the rock which covered my light-coloured opponent. I had not made two steps in advance when three spears struck me, nearly at the same moment, one of which was thrown by him. I felt severely wounded in the hip, but knew not exactly where the others had struck me. The force of all knocked me down, and made me very giddy and faint, but as I fell, I heard the savage yells of the natives delight and triumph; these recalled me to myself, and roused by momentary rage and indignation, I made a strong effort, rallied, and in a moment was on my legs; the spear was wrenched from my wound, and my havresack drawn closely over it, that neither my own party nor the natives might see it, and I advanced again steadily to the rock. The man became alarmed, and threatened me with his club, yelling most furiously; but as I neared the rock, behind which all but his head and arm was covered, he fled towards an adjoining one, dodging dexterously, according to the native manner of confusing an assailant and avoiding the cast of his spear; but he was scarcely uncovered in his flight, when my rifle ball pierced him through the back, between the shoulders, and he fell heavily on his face with a deep groan.

"The effect was electrical. The tumult of the combat had ceased: not another spear was thrown, not another yell was uttered. Native after native dropped away, and noiselessly disappeared. I stood alone with the wretched savage dying before me; and my two men close to me behind the rocks, in

the attitude of deep attention; and as I looked round upon the dark rocks and forest, now suddenly silent and lifeless, but for the sight of the unhappy being who lay on the ground before me, I could have thought that the whole affair had been a horrid dream.

"For a second or two I gazed on the scene, and then returned to my former position. I took my gun from Coles, which he had not yet finished loading, and gave him the rifle. I then went up to the other man, and gave him two balls to hold, but when I placed them in his hands they rolled to the earth; he could not hold them, for he was completely paralysed with terror, and they fell through his fingers; he was ghastly pale, and trembled from head to foot; his limbs refused their functions; his eyes were so fixed in the direction in which the natives had disappeared, that I could draw his attention to nothing else; and he still continued repeating 'Good God, Sir, look at them,—look at them!'

"The natives had all now concealed themselves, but they were not far off. Presently the wounded man made an effort to raise himself slowly from the ground. Some of them instantly came from behind the rocks and trees, without their spears, crowding round him with the greatest tenderness and solicitude; two passed their arms round him, his head drooped senselessly upon his chest, and with hurried steps the whole party wound their way through the forest, their black forms being scarcely distinguishable from the charred trunks of the trees, as they receded in the distance." . . . . . "I had now time to attend to my own state, and that of my men, and found that they were uninjured. I had been severely wounded in the hip; another spear had just cut my right arm, and a third had deeply indented my powder flask, whilst lying in a havresack immediately over my stomach."

Captain Grey's wounds being bound up as well as could be managed, the party endeavoured to regain the tents; but having severely strained his wounded hip in crossing a stream, Captain Grey could proceed no further, "Coles, with his usual courage and devotion to me, volunteered to go alone, and send assistance; the other man was to remain with me, and keep a look out for the natives."

We have already given fuller extracts from these volumes than our limited space will generally admit, but we cannot conclude our notice of this attack of the natives, without quoting the following passage,—so simply and yet so beautifully expressed; describing the painful interim, between Corporal Coles leaving Captain Grey in his wounded state, and assistance arriving from the tent,—which was "spent in meditations," arising naturally from his present circumstances. "I sat upon the rocky edge of a cool clear brook, supported by a small tree. The sun shone brightly, the dark forest was alive with birds and insects,—on such scenery I had loved to meditate when a boy, but now how changed I was;—wounded, fatigued, and wandering in an unknown land. In momentary expectation of being attacked, my finger was on the trigger, my gun ready to be raised, my eyes and ears busily engaged in detecting the slightest sounds, that I might defend a life which I at that moment believed was fast ebbing with my blood away. The loveliness of nature was around me, the sun rejoicing in his cloudless career, the birds were filling the woods with their songs, and my friends far away, unapprehensive of my condition,—whilst I felt that I was dying there.

"And in this way many explorers yearly die. One poor youth, my own friend and companion (Frederick Smith,) has thus fallen since the circumstances above described took place; others have to my knowledge perished lately in a similar way. A strange sun shines upon their lonely graves; the foot of the wild man yet roams over them; but let us hope, when civilization has spread so far, that their graves will be sacred spots,—that the future settlers will sometimes shed a tear over the first explorer, and tell their children how much they are indebted to the enthusiasm, perseverance, and courage of him who lies buried there."

NOTES OF A HALF-PAY, *in search of health;—or Russia, Circassia, and the Crimea, in* 1839-40.—*By Capt. Jesse. Two vols., octavo.*—Madden and Co., Leadenhall Street.

Captain Jesse is not "one of our cloth," (as the bright scarlet cover of his book at once announces,) but we gladly avail ourselves of some extracts from his work, respecting the docks at Sevastopol, which though from the pen of a *soldier*, convey information which a *sailor* may be glad to learn.

"I sallied forth," says Captain Jesse, "to see the dry docks erecting at Sevastopol under the superintendence of my countryman, Colonel Upton, and from his own plans; they are unique of their kind, and worthy of a detailed description.

"The docks, five in number, are placed on two sides of a quadrangular basin; the centre one in the rear is capable of receiving a first-rate of the largest size; two are for 74-gun ships, and the remaining two for frigates. As there is no tide, the lock principle has been adopted in the construction of these docks. The bottom of each is three feet above the level of the sea, and the ships are to be raised into the dock-basin by a series of three locks, each having a rise of ten feet; the surface of the waters, therefore, in the dock-basin is thirty feet above the level of the sea. Each dock can be laid dry by means of a subterranean drain, the sluice valve of which being opened, carries off the water into the sea; by this means each dock may be used separately, and a ship taken in or out without interfering with the others. The dock-basin is supplied with water by means of a canal from the Tcherney-Ruilka, (the Black River,) which commences at the village of Tchergana, at which point it has an elevation of about sixty-two feet above the level of the sea. This canal is about ten feet wide, and eighteen versts (twelve miles) long, with a fall of a foot and a half in each verst; it leads into a reservoir about eight miles from its commencement.

"Should the rivulet fail in the dry season, this reservoir contains a sufficient body of water to supply the dock-basin: but there is a much larger one constructing between the hills above the head of the canal. The line of the canal from the river to the docks runs over very difficult ground, chiefly by the sides of steep hills, and crosses many deep ravines. To remove these obstacles, and preserve a regular fall, it became necessary to construct an embankment, three aqueducts, and two tunnels. The tunnel at Inkerman, which I visited, is about 300 yards long, and cut through a mass of freestone. But the great difficulty was to obtain a foundation for the first, or sea-lock. When the coffer-dam was made, and the water pumped out, which was not more than seven feet deep, an excavation of twenty feet was necessary, as the foundation of the lock is nearly thirty feet below the level of the water in the bay; this ground of black mud and sand, when cleared out to about half the depth, was forced upwards by the pressure of the earth at the sides, so that what was dug out in the day was filled up again in the night. To overcome this difficulty, it was necessary to drive the piles intended for the foundation, over the whole surface of the lock, and the earth was taken out to the required depth across its whole breadth. This could only be done in the narrow portions of about eight or ten feet wide; the piles were then cut to the proper depth, the frame-work put on, and the masonry commenced; this was repeated by degrees, till the whole was finished. It would appear almost impossible to have accomplished this difficult point any other way. The materials employed in the construction of the docks are freestone and granite; the latter is used at the gates, for the blocks on which the ships will rest in the docks, the whole of the upper course of the locks, docks, and dock-basin, in short, wherever there is great pressure, or liability to receive heavy concussions. The masonry is beautifully fitted, and the whole of the capstans and machinery of the locks are of English manufacture. The filter for watering the shipping is supplied by the same canal which feeds the dock-basin, and the water passes through charcoal and sand. The building is neatly con-

structed, but is not yet in use. Col. Upton is a pupil of the great Telford, and these docks will redound as much to his credit as an engineer, as the Menai Bridge, or Canal of Gotha to his master's."

Biographical Memoirs.

Sir Josias Rowley, Bart., GCB., GCMG., Admiral of the White. (See Obituary.) The deceased commanded the Raisonable, which formed part of Sir Robert Calder's fleet in the action off Ferrol, in 1805; and at the latter end of the same year accompanied the expedition sent against the Cape of Good Hope, under Sir Home Popham and Sir David Baird; and after the reduction of that colony proceeded with the former commander to the Rio de la Plata, where he remained until the final evacuation of Spanish America by the British forces. The deceased then returned to the Cape of Good Hope, on which station he greatly distinguished himself. The harbour of St. Paul having long been the rendezvous of those French cruisers, and such of their prizes as had escaped the vigilance of the British men-of-war stationed off the Isle of France, and La Caroline having succeeded in entering that port with two homeward bound Indiamen richly laden, Captain Rowley, who commanded the blockade of the Isle of France and Bourbon, determined to attack the place, provided he could obtain the assistance of a detachment of troops from Roderiquez. Having communicated his plan to Lieut.-Colonel Keating, commanding the garrison there, that officer acceded to the measure, and the enterprize was undertaken. The result was the Hon. E. I. Company's ship's, Streatham and Europe, together with property to an immense amount, were rescued out of the hands of the enemy; all the defences of the only safe anchorage in the Island of St. Paul destroyed; and a frigate of 46 guns and 360 men, and three merchantmen captured; one ship burnt on the stocks and three other vessels destroyed. In the execution of this service, the total loss sustained by the British was 22 killed, 76 wounded, and 4 missing. This exploit was followed by the surrender of the Isle of Bourbon to the squadron under Capt. Rowley, and the troops under Col. Keating. Subsequently in a gallant attempt to obtain possession of two French frigates, a corvette, and a captured Indiaman, lying in the harbour of Sud-Est, the British experienced a reverse in the unavoidable destruction of the Sirius and Magicienne frigates, and the surrender to the enemy of the Iphigenia and Nereide, the latter after a glorious resistance, almost unparalleled even in the brilliant annals of the British Navy. A momentary superiority thus obtained by the enemy was promptly crushed by the skill and intrepidity of Capt. Rowley, who, in the Boadicea, almost alone and unsupported, in a few hours not only re-took two of the King's ships that had fallen into the hands of the enemy, but captured the largest frigate possessed by the French in the Indian Seas, and thus restored the British naval pre-eminence in that quarter. Some time after this affair Capt. Rowley, in the Boadicea, captured, after a short action, the Venus of 44 guns, with a complement of 380 men, victualled and stored for six months. The loss of the Boadicea was 9 men killed, and 15 wounded. Capt. Rowley returned to England with Vice-Admiral Bertie's despatches announcing the reduction of the Isle of France, in which most honorable mention was made of his long and arduous services. He, in the America, 74, subsequently commanded the squadron stationed on the coast of Sicily and Naples, and made a descent on the coast of Italy, under a hope of surprising Leghorn; but this gallant enterprise failed through the threatening state of the weather, and the inadequacy of his force. In 1812, Capt. Rowley was rewarded with a patent of Baronetcy, for his eminent services on the Cape Station. At the general promotion he was appointed Colonel of Marines. In 1814, he was advanced to the rank of Rear-Admiral, and in 1815 nominated to be a knight commander of the Bath. He subsequently hoisted his flag on board the Impregnable, and accompanied Lord Exmouth to the Mediterranean; and in 1818, was appointed Commander-in chief on the Irish station. In 1819, the Corporation of the City of Cork, presented him with its freedom in a silver box; and in 1821, he was chosen representative in parliament for Kinsale. In 1833, as Vice-Admiral, he was appointed Commander-in-chief in the Mediterranean, where he continued during the customary period of three years; in July 1840; he was created a knight Grand Cross of the Bath; and he ended his brilliant career as Admiral of the White.

VICE-ADMIRAL SIR GEORGE SCOTT, KCB.—(See Obituary.)—He was second son of Mr. John Scott, of Galor, Selkirkshire, and collaterally related to the Buccleugh family, was born in 1770, and married the 27th of October, 1810, the hon. Caroline Douglas, daughter of the late Lord Douglas and Lady Francis Scott, sister of Henry, second Duke of Buccleugh. He entered the navy at the early age of eleven years, and when Lieutenant of the Bellerophon, was present in Earl Howe's actions of the 28th and 29th of May, and the 1st of June, 1794, and actively distinguished himself in the following year when in the Niger at the destruction of a French convoy. During the mutiny at the Nore he was the means of rendering great service to the government, for which he received the thanks of a committee of merchants. When in the command of the Stately he superintended the landing of the left wing of the army under Sir Ralph Abercrombie, and for his services on that occasion he was presented with the gold medal of the order of the Crescent. When in the Horatio, in 1809, he was severely wounded in a gallant action with the Junon French frigate, of the largest class, which he captured, and for his conduct on that occasion has been in the receipt of a good service pension of £300. In the succeeding year, 1810, he captured the French frigate, La Necessite, bound to the Isle of France with stores. The gallant Admiral was nominated a knight commander of the Bath Sept. 13, 1831. His commission was dated as follows.—Lieutenant, Feb. 19, 1791; Commander, Sept. 19, 1796; Captain, June 15, 1798; Rear-Admiral, May 27, 1825; and Vice-Admiral, Jan. 10, 1837.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

BELVIDERA, 22d Dec. sailed for Mediterranean.

CARYSFORT, 26, Dec. 29th, Captain Lord G. Paulett, at Portsmouth.

CONWAY, 26, Capt. C. R. D. Bethune, 5th Jan. arrived at Portsmouth from China, with 2,500,000 dollars on board, part of the Chinese ransom, the remainder having been forwarded to Calcutta. She has had an exceeding long passage, being five months and twenty-two days from Macao; has had eighteen deaths amongst the invalids on the passage home. 15th paid off.

HAZARD, 18, Com. Hon. C. G. J. Elliott, 3d Jan. left Portsmouth for China.

HEROINE, 10, Lieut. Stewart, 2d Jan. left Plymouth for Africa.

ISIS, 44, Capt. Sir J. Marshall, Jan. 4, left Plymouth for South America.

MEGERA, (st. v.) Lieut. Goldsmith, 30th Oct. arrived at Plymouth from W. Indies.

NAUTILUS, 19, Commissioned by Lieut. Sydney Thomas.

PANTALOON, Lieut. Lapidge, 26th Dec. left Falmouth for Africa, put back, 30th Dec. left Plymouth for African station.

QUEEN, 110, 30th Dec. towed out of harbour by Vixen, with flag of Vice-adml. Sir E. Owen,—Capt G. F. Rich.

SERPENT, 16, Com. W. Nevill, 2d Jan. left Plymouth for China.

SNAKE, 16, Com. Hon. W. Devereux, 30th Dec. left Portsmouth for Mediterranean.

THALIA, 36, Capt. C. Hope, 5th Jan. left Portsmouth for China.

VOLAGE, 26, Capt. Sir W. Dickson, 2d Jan. sailed for West Indies.

WARSPITE, 50, Capt. Lord John Hay, attending the visit of the King of Prussia to this country.

AT PORTSMOUTH.—*In Harbour.*—St. Vincent, Victory, Excellent, Royal George, Vindictive, Carysfort, Conway, Rapid, Nautilus.

AT SPITHEAD.—Queen.

PLYMOUTH. — *In Hamoaze.* — San Josef, Caledonia, Minden, Fly, Pandora, Vixen, and Avon.—*In the Sound.*—Dido, Ferret.

ABROAD.

AIGLE, 24, Capt. Lord C. Paget, 23d Dec. at Gibraltar, 24th sailed.

ANDROMACHE, 26, Capt. R. L. Baynes, CB., 10th Nov. left St. Helena for Brazils.

CALCUTTA, 84, Capt. Sir T. Roberts, CB., 23d Dec. at Gibraltar.

CAMBRIAN, 36, Capt. H. D. Chads, 22d Nov. arrived at Santa Cruz, on voyage to India.

CAMBLION, 10, Lieut.-com. G. M. Hunter, 2d Sept. returned to Cape, having left for China.

CLEOPATRA, 26, Capt. Wyvill, 27th Nov. at Barbados.

DAPHNE, 18, Com. J. W. Dalling, 19th Dec. at Smyrna.

DEVASTATION, (st. v.) Com. Henry, 25th Dec. arrived at Malta.

FANTOME, 16, Com. E. H. Butterfield, 26th Oct. at St. Helena.

HASTINGS, 72, Capt. J. Lawrence, CB. 23d Dec. at Gibraltar.

IMPLACABLE, 74, Capt. E. Harvey, 11th Nov. at Gibraltar, 20th Dec. remaining.

INCONSTANT, 36, Capt. F. T. Michell, 2d Dec. arrived at Malta.

INDUS, 84, Capt. Sir J Stirling, 27th Dec. at Lisbon.

MALABAR, 74, Capt. Sir G. Sartorius, 24th Dec. arrived at Gibraltar.

MEDEA, (st. v.) Com. F. Warden, 9th Dec. arrived Malta.

PARTRIDGE, 10, Lieut.-com. W. Morris (a), 30th Oct. at Rio.

PEARL, 18, Com. C. C. Frankland, 30th Oct. at Rio.

PHOENIX, (st. v.) Com. R. Stopford, 28th Dec. arrived at Malta.

REVENGE, 76, Capt. Hon. W. Waldegrave, (a) 27th Dec. at Lisbon.

RODNEY, 92, Capt. R. Maunsell, 23d Dec. at Gibraltar.

ROSE, 16, Com. P. Christian, Oct. 11th, arrived at Bahia, 17th sailed for Rio.

SOUTHAMPTON, Capt. T. Ogle, 30th Oct. at Rio.

STYX, (st. v.) Capt. A. T. E. Vidal, Nov. at St. Michaels, Azores.

THUNDERER, 84, Capt. M. F. F. Berkeley, 23d Dec. arrived at Malta from Beyrout.

VERNON, 50, Capt. W. Walpole, 30th Dec. at Gibraltar from Malta.

WATERWITCH, 10, Lieut. Com. H. J. Matson, 8th Nov. left St. Helena for Africa.

WEASLE, 10, Com. J. Simpson, (a) 9th Dec. arrived at Malta from Zante.

PROMOTIONS AND APPOINTMENTS.

(From the Naval and Military Gazette.)

PROMOTIONS.

COMMANDERS—J. M. Langtry.
PURSER—B. W. Farrar.

APPOINTMENTS.

COMMANDERS—F. H. Stevens (1841) to *Rodney*—J. Russel *c* (1808) and F. B. Sleeman (1841) to *Geyser*—H. Berners (1824) to *Lightning*—G. Y. Patterson to *Excellent*—J. J. B. E. Frere (1838) and W. R. Smith (1841) to *Carysfort*—T. A. B. Spratt (1841) to *Beacon*—Lord E. Clinton (1841) to *Harlequin*—H. J. Nourse (1841), G. Johnston (1841), and R. H. Wharton (1841), add. to *Southampton*—B. Young (1841) to *Vanguard*—A. P. E. Wilmot (1841) and E. L. Hoblyn (1841) to *Wolverine*—E. W. Sanders (1840) to *Indus*—W. Bailey *a* (1841) to *Vixen*—G. H. Seymour (1838) to *William and Mary* yacht for service in the *Firebrand*—J. E. F. Risk (1840) to *Fly*—E. Little (1837) to *Powerful*.

MASTERS—G. Heather (1822) to *Geyser*—R. Wilson to *Ferret*—E. K. Calver (act.) to *Shearwater* v. Brehant to *Carysfort*—M. J. Burney (1841) to *Blossom*, for rank.

MATES—H. D. Blanckley (1839) to *Illustrious*—C. T. Leckie (1840) to *Thalia*—W. E. A. Gordon (1830) to *Firebrand*—R. Aldrich, (1830) and E. B. Rice to *Pelican*—F. Berry to *Serpent*—T. H. Foster (1839) to *Warspite*—F. H. Vyse to *Carysfort*.

SECOND-MASTERS—W. Pettigrew to *Rapid*.

SURGEONS—A. Allen, MD., (1828), to *Powerful*—Sir J. Hamett, MD., (1822) to *Vindictive*—G. A. Munro (1838) to *Carysfort*—R. McLean (1841) to *Geyser*—T. Corral (1841) to *Shearwater*.

MASTERS-ASSITANTS—J. Matthews to *Queen*—J. D. Milne to *Isis*.

MIDSHIDMEN—T. Andrews to *Fly*—T. J. Plomer to *Vindictive*—G. Digby, R. H. Mobray, and C. A. Sunder to *Thalia*—F. Short to *Excellent*.

VOLUNTEERS 1st Class—G. Tyler, J. Curtis, G. Dickens, and H. Sheriff to *Queen*—D. Spain to *Hazard*—T. D. Williams to *Cornwallis*—G. B. Tuke, H. Lister, E. S. Grove, and W. Charlton to *Illustrious*—G. Parker to *Carysfort*—St. John Coventry to *Powerful*

ASSISTANT-SURGEONS—R. Anderson to *Rapid*—T. Graham, MD, to *Warspite*—E. W. R. Sadler, (act.) to *Minden*—G. Mackay, MD., (1835) to *Queen*—J. B. Nicholson, MD., to *Thalia*—R. Douglas to *Calcutta*—W. Kerr, M.D., (1836) to *Ferret*.

PURSERS—C. Hillier to *Geyser*—T. Giles to *Carsfort*—P. O'Conner to *Growler*—F. Munday to *Ferret*.

NAVAL INSTRUCTOR—W. Kerr to *Alfred*.

CLERKS—W. Bateman to *San Josef*—J. Chapman (in charge) to *Pantaloon*—T. H. Molesworth to *Wolverine*—W. V. Miller to *Excellent*—C. H. Miblett) in charge) to *Rapid*.

COAST GUARD.

CAPTAIN—D. Marsh.
COMMANDER—G. Davis.
LIEUTENANT—J. S. W. Granby.

Removals—Com. J. Wheatley to Rottingdean—Com. C. Madden to *Ryde*—Lieut Richards to Tenby *v.* Bourne, dec. —Lieut. Goullet to *Pembroke*.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

Jan. 1, the lady of Com. Newton, RN., of a daughter.

At Carlingford, the lady of Lieut. Carroll, RN., of a daughter.

Marriages.

At Cheltenham, C. Monro, Esq., to Elizabeth, widow of Major Watkins, and daughter of the late Vice-admiral Lechmere.

At St. Leonard's, P. Dickinson, Esq., to Eleanor, daughter of Lieut. B. Sheppard, RN.

On 30th Dec. at Hillingdon, Capt. M. Allen, RN., second son of J. L. Allen, Esq. of Errol Park, NB., to Mary, daughter of the late J. Eversley, Esq.

At Cairy, Ireland, Capt. A. C. Duncan, RN., to Fanny daughter of T. Homan, Esq., of Colge, Sligo.

On the 19th of January, at the British Embassy, Florence, E P. Mainwaring, Esq., eldest son of Capt. R. Mainwaring, RN., of Whitmore Hall and Biddolph, Staffordshire, to Caroline, widow of the late D. Trant, Esq., and fourth daughter of P. L. Story, Esq.

At Portsmouth, on the 6th Jan. the Rev. I. P. Prescott, eldest son of Capt. Prescott, CB., RN., to Caroline Mary, eldest daughter of the late Capt. Parke, RN.

At St. Mary's, Bryanston-square, W. Archer, Esq. of Montague-street, Portman-square, to Emily, daughter of the late J. Ray, Esq., RN.

At Hoxton, on the 28th Dec., Mr. D. Craigie, RN., to Sophia H. Parton, neice of the late W. H. Maund, Esq., Sussex-place, Regent's-park.

At Fulham, the Rev. J. H. Malet, LLD., Chaplain of Bermuda dockyard, to Mary, daughter of the late C. Kyte, Esq. of Berhice.

Jan. 1st, at Plymouth, Dr. G Mackay, RN., to Charlotte Julia, fourth daughter of Lieut, J. Jeans, of the Royal Naval Hospital, Stonehouse.

Deaths.

At Mount Campbell, county of Leitrim, Admiral Sir Josias Rowley, Bart., GCB., GCMG.

At Petersham, Dec. 21st, Vice-Admi. Sir G. Scott, aged 72.

Recently at the Island of Fernando Po, Mr. Horatio Collman, surgeon of H.M. steamer Soudan.

Sept. 30th, at the same place, Mr. L. J. Wolfe, schoolmaster of one of the Niger exploring steamers, aged 21.

At Dumfries, in his 63d year. Capt. J. Ponsonby, RN., late of Springfield, Cumberland.

On the 22d Dec. in his 49th year, Capt. Hamilton Murray, RN.

At Kingston Cross, Dec. 31st, Charlotte Augusta, aged 23 years, wife of Capt. H. Worth, RN., and daughter of Capt. Searle, CB., RN.

Lately in the West Indies, Mr. Crosby, master-assistant of the Firefly steamer.

Lately in the West Indies, Mr. J. Mc Lear, assistant-surgeon of the Rover.

Also Mr. A. Scott. assistant-surgeon of the Fair Rosamond.

Dec. 31st at Gatcombe house, at the residence of her son-in-law Rear-admiral Curtis, Bart., Mary, the widow of Moses Greetham, Esq., in the 83d year of her age.

Jan. 2d, at Southsea, in her 23d year, Fanny Elizabeth, the wife of G. Jackson, Esq., BA., Caius College, Cambridge, and Naval Instructor, RN.

In Ayrshire, Mr. Wm. M'Quahae, eldest son of Capt. M'Quahae, RN., aged 35 years.

At Kingsand, on the 25th of Dec., Mr. J. Vallak, purser RN., (1804), in his 68th year.

At Exeter, in his 84th year, Com. W. Alder, RN.

At Youghall, aged 64, J. McCarthy, Esq., surgeon RN.

At Westfield, Com. J. Cheape, RN.

Jan. 7th, Lieut. J. Francis, RN., of Cowes. Isle of Wight, aged 62.

At Hoddesdon, on the 27th Dec. L. W. O'Brien, third surviving son of Capt. D. H. O' Brien, RN, in his fourth year.

Lately at Totness, S.W. Bundock, Esq. purser RN., (1791), aged 76 years.

At Brockhurst, Dec. 31st, William H. fourth son of Lieut. Welch, RN., in his eleventh year.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr W. Rogerson, of the Royal Observatory,

From the 21st of December, 1841, to the 20th of January, 1842.

Month Day	Week Day	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9 AM	3-PM	Min	Max	AM.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Tu.	29 59	29 59	27	31	25	32	N	SW	1	3	of	b
22	W.	29·71	29·76	28	33	27	34	NW	SW	3	2	bc	bc
23	Th.	29·79	29·76	38	43	33	34	S	SW	2	4	o	or(3)(4
24	F.	29·97	29·94	37	47	31	48	SW	SW	3	4	od2)	o
25	S.	29·75	29·62	43	43	42	44	SW	SW	4	4	or(2)	bcp3)
26	Su.	29·74	29·81	33	36	28	38	W	N	2	3	bcm	bc
27	M.	30·06	30·06	31	33	27	34	W	W	3	3	of	o
28	Tu.	30·04	30·04	37	40	30	42	W	NW	3	4	bcr(1	bcm
29	W.	30·06	30·01	39	41	37	42	NW	E	2	2	gfd(2)	ofd(3)
30	Th.	30 06	30·09	34	39	22	42	E	SE	1	1	bc	bc
31	F.	30·20	30·20	31	39	29	37	SE	S	2	1	b	bc
1	S.	30·16	30·15	34	38	31	39	SE	SE	1	1	bc	bc
2	S.	30·14	30·06	33	37	28	38	NE	NE	1	1	ops(2)	o
3	M.	30·06	30·06	31	30	29	32	NE	NE	2	4	bc	b
4	Tu.	29·89	29.94	28	31	23	32	NE	NE	4	5	ops2)	bcps(3
5	W.	29·97	29·98	31	34	29	35	NE	NE	2	2	o	bc
6	Th.	30·11	30·17	32	35	29	36	N	NE	4	4	ops(2)	bc
7	F.	30·41	30·40	24	32	23	33	NE	NE	3	3	b	bcps4)
8	S.	30·42	30·35	28	29	27	30	NE	NE	2	3	o	o
9	Su.	30·20	30·13	27	28	26	29	NE	NE	4	4	o	ops(3)
10	M.	30·08	30·04	27	30	26	31	W	W	1	1	o	o
11	Tu.	29·95	29 98	32	33	27	34	SW	S	2	4	osr(1	os4)
12	W.	30·03	30·01	31	34	30	36	S	SW	2	2	os(1)(2)	bc
13	Th.	29·85	29 79	32	32	28	33	SE	SE	4	6	os(2)	ogqs(3)(4
14	F.	29·50	29·56	35	34	28	36	SW	W	4	4	or(2)	o
15	S.	29·90	29·92	30	36	27	37	W	SW	3	3	bcm	bcm
16	Su.	29·77	29·77	36	41	26	43	S	SW	5	4	qod(1)(2)	bc
17	M.	30·00	30·14	34	40	30	42	W	NW	4	4	bc	b
18	Tu.	30·32	30·35	29	31	27	33	W	W	3	3	of	ogf
19	W.	30·41	30·35	31	31	30	32	W	S	2	2	of	of
20	Th.	30·12	30·04	29	33	26	54	E	NE	2	2	o	o

December—Mean height of barometer = 29·645 inches; mean temperature = 39·0 degrees; depth of rain fallen = 2·29 inches.

Errata in December Number.—Rain fallen in October, 1841; *for* 55·0 inches *read* 5·50 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

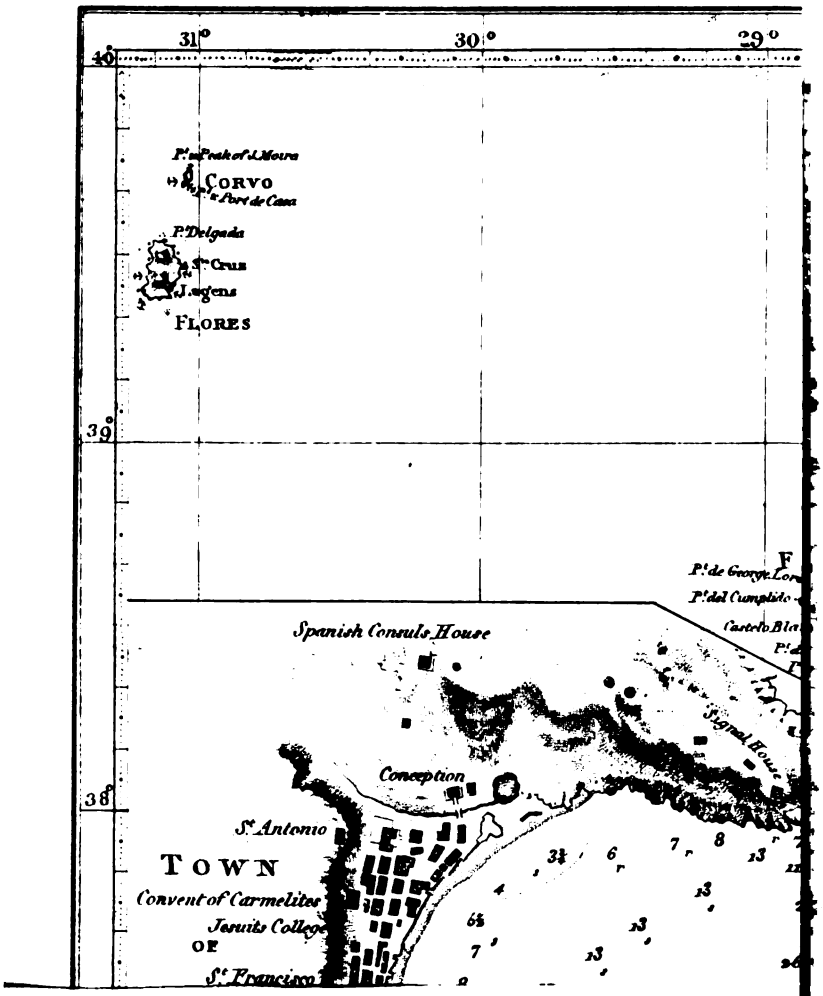
The greater part of our present number being printed before the arrival of the King of Prussia, on the 22nd inst., we are obliged to reserve an account of the interesting ceremonial proceedings on that occasion for our next.

We have received Mr. Robinson's communication, (Cyclops.) He will perceive that the subject has been already disposed of.

A West Country Coaster shall be heard in his turn.

Capt. V. Hall, and Capt. Miller, have our best thanks. We hope they will continue their useful communications.

Commander Sullivan's communication in our next.



COMMANDER SULLIVAN'S COMMUNICATION

Extract of a Letter from the British Consul at the Azores, relative to the courses of Gales of Wind at those Islands.

The regularity with which gales enter these seas in the north-west quarter, and after crossing them disappear at the south-east, is a circumstance the knowledge of which may be serviceable to the commanders of ships sailing across the Atlantic.

It seems highly probable, that if a ship were overtaken by a gale of wind in the current of the gulf stream, near the Azores, (for the storms appear to be guided by this current,) she could sooner be extricated from it by steering due north or south, than by any other course; that if she went to the eastward she would accompany the gale, and be overtaken by the greater violence of its centre, and that in steering to the westward, she would run through the whole gale and perhaps be immediately afterward caught in a new one.

Another suggestion occurs to me, which I offer with great diffidence, as it is founded on the observation of one set of instruments, without that confirmation which would be so desirable from the other islands, but which is deserving investigation. The centre of a gale in its approach, always effects a descent on the barometer, and a change in the fall of rain. In its actual passage over the instrument, the descent generally reaches 28·50, from which a rise of one-tenth appears to take place for every ten miles removal of the centre; so that the number of miles distance from the centre of an approaching gale, might perhaps be indicated by the number of hundredths shewn by the barometer over the extreme of 28·50.

The difference in the fall of rain also has its regularity, the approach of the centre bringing a temporary increase, and then a cessation of the rain, which is renewed, and in a reversed order diminished on the removal of the centre. According to the observations made at this office, there appears to be in every gale of wind, a zone of rain about 120 miles in breadth, heaviest on the inner edge, which is about sixty miles distant from the centre; that the fall decreases in proportion to the distance from this line, and that the fall on the inner edge being about twelve-hundredths of an inch per hour, the decrease is about one-hundredth for every ten miles of removal from that line.

The descent of the barometer, and the heaviness of the rain, would therefore give the commanders of ships pretty accurate indications of the proximity of the most dangerous part of the gale of wind.

The courses of storms having been traced by Colonel Reid, in his recent work on the subject from the tropics to the fortieth degree of north latitude, with their courses pointing towards the Azores, it was desirable to know, if those courses were not continued across the Atlantic, and if the frequency and violence of gales of wind in the Azores were not due to a tropical origin. With this view, regular daily tables of the direction and force of winds, have been kept by the British Vice-Consuls since the month of May, 1840, from which has been compiled the following table of the courses of twenty gales of wind, which have blown across the Azores since that time. An account has been kept of

other gales, but it has been impossible from their crossing and neutralising each other to trace them correctly, and they have, therefore, not been admitted into the present report.

The first gale which comes under consideration, is the minor one of the 4th and 5th of June, 1840. This gale was felt simultaneously at Flores and Terceira, but with less violence at the latter than the former place. It was not felt at St. Michaels until (4th, 19h,) 7 P.M. on the 4th, thirteen hours after its touching Terceira. The distance from the first known point of its course to Terceira, which is 300 miles, may therefore be considered half the diameter of its circle.

The second gale took a course so far to the northward of the islands, that little of it could be traced. On the 19th it did not reach St. Marys, although felt at St. Michaels, which would indicate that the half diameter of its circle was (as measured on the accompanying chart,) 400 miles.

The third gale took a course directly across the Azores. It ceased to be felt at Flores on the evening of the 5th, when it was blowing with great violence at St. Michaels, over which the centre passed that day. The half diameter of its circle would, therefore, be about the distance from Flores to St. Michaels, or about 360 miles.

The fourth gale came from a more northerly direction, and was felt at Flores. Its greatest force was experienced at St. Michaels and St. Marys, from their greater proximity to the centre. It was not felt at Terceira on the 8th, so that its half diameter was perhaps the distance from that island, to the point of its course on the morning of the 8th, or 440 miles.

The fifth gale was first felt on the 9th at Fayal and Terceira, probably before daylight. On the morning of that day, its violence was as great at St. Michaels as at the other islands. This circumstance renders it probable that its half diameter did not exceed 300 miles, from which fact, connected with the greater velocity of its onward progress, the conclusion arises that the velocity of a gale, in the progress of its centre, is in an inverse ratio to its diameter.

The sixth gale was felt at Flores with violence, characteristic of the storms experienced near that island, but which became less as the gale receded. It followed the ordinary inclination towards the south-east of the Azores until the morning of the 5th, when it was suddenly deflected to the westward, running a zig-zag course until the morning of the 9th, and, then continuing its original inclination to the south-east. The cause of this irregular deviation it is difficult to divine. It can be scarcely attributed to the resistance of another gale, as the rotary motion of winds in these latitudes, on their polar side from east to west, and therefore not opposed to gales tending to the eastward; and as (to be shown hereafter,) the storms which pass over the Azores, never return toward the north and west. This gale was felt at Flores until the 10th, when it was succeeded by the first indications of another. This circumstance would make the half diameter of its circle, (as in the case of the third gale,) the distance from St. Michaels to Flores, or 340 miles.

The seventh gale was first felt at Flores on the 11th, and ceased to be felt there on the evening of the 12th. According to this circum-

stance, the half diameter would appear to be the distance of the gale's centre at 3 P.M. on the 12th to Flores, or 300 miles. The progressive velocity of this gale was greater than usual, being twelve miles an hour. This diminished diameter also accounts for the gale's disappearance from the Azores, after the evening of the 12th.

The eighth gale commenced with the usual violence at Flores, where it was felt until the 17th, when a change took place in the wind, indicating the departure of the gale. It was not felt at Fayal after the 19th, and its half diameter may be therefore stated at the distance of its centre on the 17th from Flores, or on the 19th from Fayal. This is about 400 miles.

The ninth gale is one of those, the courses of which, are disturbed by some unknown cause. In this case, it is not unlikely to have been its union with the vortex of another gale, from a more northerly direction, a supposition which might be strengthened by the fact, that after its deflection on the morning of the 1st, it was given a degree of rotary force which it had not shown in the previous parts of its course. Its progressive speed was also diminished, and did not again increase until on the 2nd, it resumed its previous direction. This gale was not felt at Terceira on the 3rd, and its half diameter may, therefore, be estimated at the distance of its centre from the island on that day, or 360 miles.

The tenth gale set in on the 6th, coming from a north-westerly direction,—continued a south-easterly course until the 9th, and was then diverted during twenty-four hours without any change in its course until the 11th, when it returned to its first direction. It was not felt at Flores on the 9th, and therefore its half diameter (see chart,) was probably 330 miles. The progressive velocity of this gale was also lessened by the same cause which deflected it from its first course.

The eleventh gale was very much disturbed after its first appearance at Flores, from which it on the 12th was turned to the south and west. Here, on the 13th, it was met by and received its force from a westerly gale, also of much greater progressive velocity. On the 14th it suffered another deflection during twenty-four hours, with a diminution of its progressive velocity; after which, it again took its original direction towards the east. This gale was not felt at Flores on the evening of the 14th, and its half diameter was therefore, (see chart,) probably 280 miles.

The twelfth gale was first felt with but moderate force at Flores on the 4th of December, which did not increase until the 16th. On the morning of that day, it suffered a deflection from a more northerly direction, which increased its rotary force without affecting its progressive velocity. On the evening of the 16th, it ceased to be felt at Flores, so that its half diameter may be taken at the distance of its centre at that time at Flores, or 280 miles.

The thirteenth gale was one of great progressive velocity, moving on the 27th and 28th of December at the rate of thirteen miles an hour. As might be expected, its diameter was not so great as usual, being felt at Fayal, Terceira, and Flores, on the 27th, and not until the 28th at St. Michaels. Its half diameter is therefore the distance from its centre on the 27th to Terceira, or 260 miles.

The fourteenth gale, although felt at Flores and Fayal, blew with the greatest violence in its passage over St. Michaels, where it caused the wrecks of two ships. In the harbour of Terceira, which has the same exposure as St. Michaels, the ships lying at anchor were not disturbed. There are no means of ascertainiug the diameter of this gale; but judging of its progressive velocity, it must have been less than usual.

The fifteenth gale was felt at Flores and Fayal on the morning of the 3rd, but not at Terceira. Its half diameter could not, therefore, have exceeded 280 miles, its progressive velocity being more than nine miles an hour,—it passed to the north of the islands.

The sixteenth gale was of moderate force, and does not tend to develope any general results. It cannot be traced beyond the third day, when it had only proceeded 300 miles. Its half diameter was probably not less than 440 miles.

The seventeenth gale, which was felt severely at Flores on the 6th, had not on that day reached Terceira, but it was blowing strong at Fayal. This gives an indication of its diameter, the radius of which must at this time have been 320 miles. On the 7th, it suffered a diversion to the eastward, and lost force in its onward progress. On the 8th, it appears to have met another interruption from the eastward, and its progress on that day was very considerably lessened. It appears to have been overcome by this interruption on the 9th, and deflected to the westward, when the small progress that it made attests the conflict between the gale and the interrupting cause. On the 10th it overcame this diversion, and proceeded in its original direction to the eastward. The disturbance was not productive of such squally, frequent, and sudden changes of wind in its neighbourhood, as would have been the case if the disturbing cause had been a gale, coming in an opposite direction. This gale ceased to be felt at Flores on the 10th, making its half diameter about 230 miles in the latter part of its course.

The eighteenth was a deflected gale, losing progress as usual during its diversion. On the morning of the 21st, it had disappeared from Flores, and its half diameter may, therefore, be taken at 270 miles. The recovery of its primary direction on the 21st, restored its progressive velocity, which it is probable was further increased on the 22nd, when it ceased to be felt at Terceira, and its half diameter had diminished to 250 miles.

The nineteenth gale in the regularity of its progress, is a confirmation of the effect of deflection on the courses of storms. It passed across the centre of the Azores, at a regular rate of eight or nine miles per hour, disappearing from Flores during the 9th of September, when its centre was about 300 miles distant.

The twentieth was deflected on the morning of the 19th of September, and took a new course to the south with diminished velocity. On the 21st it recovered its first direction, but does not appear to have regained its original velocity. This gale was but little felt at Fayal on the 18th, and disappeared there during the day. Its half diameter was, therefore, about 350 miles.

Having thus given the particulars of the twenty gales, of which the courses have been accurately observed during the years 1840, and

1841, there appear to be some general conclusions, which may be deduced from them. The first circumstance developed by the enquiry, is the general direction of storms passing across the Azores. This is invariably from north-west to south-east, a conclusion with which the second, seventh, fifteenth, sixteenth, and seventeenth gales of the accompanying table would undoubtedly be found to agree, if their investigation could be carried further. The coincidence of this course with the Great Atlantic current, which is a continuation of the gulf stream, which may every day be traced to the neighbourhood of the Azores, and which the sudden rise of water in those islands, (where having been hastened by a gale, it is suddenly checked in any locality by the operation of the wind, accompanied by a diminution of atmospheric pressure,) proves to be sensibly carried beyond them, goes very far to identify the Azorean storms, with the tropical gales and hurricanes, traced in the able work of Col. Reid, from the South American coast, along the course of the gulf stream to Cape Hatteras, in North America. There is a further resemblance in their diameters. In the chart, which Col. Reid has composed, of the great hurricane of October the 10th, 1780, the diameter given to it in the latitude of the Azores, is about 550 miles. Of the Azorean gales under consideration, four were about this diameter;—eleven of about or under 650, and five under 900.

With respect to navigators, for whose benefit these enquiries are chiefly intended, the use which may be made of this knowledge of the courses taken by storms across the Azores, is in the direction of vessels which may be reached by them. It seems probable, that if a ship were caught by a violent gale in the current of the gulf stream, near the Azores, her best course would be to steer, so far as the veering of the wind would allow, due north or south;—that if she steered to the eastward, she would accompany the gale, and be overtaken by the greater violence of its centre, and that by steering to the west she would sooner meet the centre, or run into a new gale.

Whatever may be the cause of the occasional deflection of the Azorean storms, whether it arises from collision with another storm, or from atmospheric gravitation, (the radiation of heat from the islands being at all times very great,) the uniform effect appears to be a diminution of their progressive velocity, and frequently an increase of their rotary force.

But as far as these effects can be forseen, from a knowledge of the deflection, (presuming it always to be accompanied by a slower progression,) it is worthy of observation, that the deflexion never appears to take a turn to the northward, but always to the south. If this be true, the safest course for a ship in these gales is to the north, unless there are very cogent reasons for a departure from this presumed rule.

I cannot close this report, without regretting that there are no means in the upper islands of the Azores, of combining the observations upon which it is founded with barometrical notices.

There are many barometers in St. Michaels, but not one in either of the other islands. The facts of this nature developed by one barometer, are not of much importance, but by comparing the results of these observations, made at the same hour in the different islands, during

the passage of a gale, it is likely that valuable conclusions might be elicited from them. There is, indeed, no country so well adapted for the collection of information, for the developement of the laws of storms, and meteorological changes. The islands, nine in number, are so scattered over a considerable region of the Atlantic, and separated by such distances as to receive at the same hour, different atmospheric phenomena. Were it the wish of government to obtain meteorological information from this part of the Atlantic, a moderate remuneration would secure regularity in the registers of the Vice-Consuls,—salaried or unsalaried, and they might at no great expense be furnished with wind-dials, barometers, sympiesometers, and hygrometers, (the latter of which would be useful in determining the origin of a gale,*) for the purpose of rendering their observations complete.

T. C. HUNT.

30*th Nov.*, 1841, *British Consulate, St. Michaels.*

[In order that our readers may follow more clearly the foregoing account given by Mr. Hunt, of the gales of the Azores, we have annexed to it a small chart of those islands and we have introduced into it the positions of submarine volcanoes, which were recently discussed in this journal. The account which Mr. Hunt gives of the gales, will be found practically useful to seamen, and we hope, at some future time, he will follow it up with hourly observations, (or more frequently, if necessary,) at as many places as possible in the islands, of the *successive changes of the wind*, as well as its force. Such observations would possess great interest, in not only affording a comparative view of those changes, but the means of knowing where the focus of the gale is situated.

Deficient as these islands are of harbours, we believe Fayal holds out the best place for supplying one, and by way of making our chart as useful as possible, we have inserted on it a small plan of the little bay of Orta in this island, and of Capellas, in the island St. Michael, with Mr. Hunt's remarks thereon with regard to the landing of boats, and have annexed to this paper some remarks on the two distant islands Corvo and Flores, by Mr. E. May, late master of her Majesty's ship Goldfinch.

We find the following remarks on Orta in Purdy's Atlantic Memoir,† (page 363,) to which work we had occasion to allude lately, in discussing the question of the Bonetta Rock. "The northern point of the bay of Orta is named Espalamaca. • • • At the bottom of the bay is a beach of black sand, which commences near Point Espalamaca, and terminates at Mount Caimado. Within it is the town facing the sea. In the latter are two remarkable buildings, nearly alike; one of these is close to the sea side, and was formerly called the Company's College; the other is in the most westerly part of the city, and is the Carmelite Convent." We must refer our readers to the well known work which we have quoted, for further remarks on Fayal.

The following are the tables alluded to in Mr. Hunt's paper.

* In the Azores, a southerly wind creates great humidity in the atmosphere,—a northerly wind removes it. Under the former influence, there is frequently two per cent. of water in the air,—under the latter less than one. At Flores such an instrument would give the most valuable results, in showing whether the gale passing had come from the south, where the heated air takes up moisture, or from the north where a different condition repels it.

† Published by Laurie, Fleet Street.

Table of the progress and forces of gales of wind over the Azores in 1840 and 1841.

Note.—The hours are numbered from 1 to 24: the former being 1 A.M., the latter midnight; and 13 being 1 A.M.

No. of the Gale.	Date,	Hour.	Direction and Force of Winds at St. Michaels.	Terceira.	Flores.
	1840.				
1	June 4	6	Varying from N. to W. all day.	west 6	north-west 8
	"	19	west 6 north 7	W.N.W. 7	N.N.W. 7
	5	6	N.W. 6 W. 7	N.W. 6 N. 5	calmer toward the evening of the 4th.
2	Aug. 19	6	south-west 4	south-west 7	W.S.W. 8
	20	6	W.S.W. 4	west 6 south 7	north-west 6 west 7
3	Oct. 3	6			south-west 6 south 7
	4	6	S.W. 6 S. 6	S.S.W. 6	north-east 8
	5	6	S.W. 6 S. 9	north-east 6	
	5	12	N.N.E. 6	N.E. 6 E. 4	
	6	6	N.N.E. 6	N.E. 6 E. 4	St. Mary N.N.E. 7
4	Oct. 7	6	north-west 8	N.N.W. 6	
	11	14	N.N.W. 8	north 6 west 6	
	8	6	north 7	St. Mary N. 6 W. 7	
5	Oct. 9	6	S.W. 6 W 8	W.S.W. 7	north-west 6 north 8
	"	16	west 8	N.W. 6 W. 6	north 6 east 7
	10	6	N.W. 6 W. 7	north 7	
	11	6	N.E. 6 N. 5	St. Mary N.N.E. 5	
6	Nov. 2	6			south west 7
	3				west 12
	4			W.S W. 4	north west 5
	5		W.S.W. 6	west 6	N.N.W. 5
	6		W. 6 N. 6	north-west 4	
	7		W.S.W. 6	W.N.W. 7	
	8		N.W. 6 W. 7	north 5	
	9		S.S.W. 5	E.N.E. 5	
	10	6	E.S.E. 6.	north-east 4	
	11		N.N.E. 5	St. Mary N. 6 E. 5	
	12		N.N.E. 5	ditto N.N.E. 5	
7	Nov. 11	6		Fayal S.S.W. 5	south 5
	"	16		ditto S.W. 6 W 5	W.N.W. 8
	12	6		W.S.W. 5	north west 6 north 8
	"	9		west 5	N.N.W. 7
	"	15	west 8	W.N.W. 5	
8	Nov. 14	6			south west 6 south 10
	16	6	S.S.W. 9	south 6 west 7	N.E. 6 E. 8 Fayal S. 9
	17	6	S. 6 W. 8	E.N.E. 6	
	18	6	north-west 6	St. Mary N.W. 6 W. 6	
	19	6	north 4	ditto north 6 west 4	
9	Nov. 28	6		Fayal S.W. 6 S. 7	south west 6 south 7
	29	6	Fayal SW. 6 W 5	south-west 6 south 5	north 7
	30	6	S.W. 6 S. 6	south-west 4	Fayal north 6 west 5

No. of the Gale.	Date.	Hours.	Direction and Force of Wind at St. Michaels.	Terceira.	Flores.
	1840.				
9	Dec. 1	6	north 6	St. Mary N.N.W. 7	
	2	6	N.E. 6 E. 8	ditto north east 9	
	3	6	north east 9	ditto north east 9	
10	Dec. 6	18		Fayal W.S.W. 5	west 8
	7	6	south west 6 west 9	W.S.W. 6	north west 6 west 7
	8	6	variable	west 5	Fayal N.N.W. 6
	9	6	N.W. 6 N. 9	St. Mary W.N.W. 9	
	10	6	E.N.E. 5	ditto E.N.E. 5	
11	Dec. 11	6			south 6 west 2
	12	6			south 8
	13	6			S.S.E. 8
	14	6		south west 6 west 6	Fayal north west 6
	"	18	west 6 south 9	N.N.W. 7	
	15	6	north 6 west 6	S. Mary N.W. 6 W. 10	
	"	19	north 6 west 6	ditto N.N.W. 6	
12	Dec. 15	6			W.N.W. 6
	17	6	W.N.W. 6	north 6 east 5	N. 6 W. 3 Fayal N.W. 3
	18	6	N.E. 6 N. 4	St. Mary N.N.E. 6	
13	Dec. 27	6		Fayal W.N.W. 5	north west 6 north 5
	28	6	north west 6	north 6 east 7	
	"	18	N.E. 6 N. 7	St. Mary N.N.E. 9	
15	Feb. 3	6		Fayal south west 5	south west 6 west 7
	4	6		west 6 south 6	north west 6 north 6
	5	6	west 6 north 6	W.N.W. 8	
14	Jan. 11	6		Fayal W.N.W. 6	north west 6 north 5
	12	6	W.S.W. 10	west 6	north 6 west 8
	13	6	north west 8	N.N.W. 7	St. Mary N.W. 6 W. 7
15	Feb. 11	6		Fayal W.S.W. 6 W. 8	west 8
	14	6	west 6 north	W.N.W. 6	
17	Mar. 6	6		Fayal south west 6	south west 6 south 9
	7	6		south 6 west 9	south 6 east 9
	8	6	south 6 west 12		
	9	6	south 6 east 12		
	10	6	S.S.E. 9	St. Mary south 6 west 7	
	12	6	north 7	ditto N.N.W. 6	
18	Mar. 19	6		west 6 north 6	north west 6 north 6
	20	6	north 6 north 4	north west 5	
	21	6	S.W. 6 S. 9	north east 6 north 4	
	22	6	north 6 west 4	north 6 east 4	
19	Sept. 8	6		south west 3	
	9	6	south west 8	west 6 south 4	
	10	6	N.E. 6 N. 6	St. Mary N. 6 east 6	
20	Sept. 18	6			north west 4
	19	6	north west 8	W S.W. 4	north west 4
	20	6	north 6 west 8	St. Mary N.W. 6 N. 3	
	21	6	N.N.E. 6	ditto north east	
	22	6	north east 4	ditto N.E. 6 N. 4	

[The remark of Mr. Hunt respecting the course of these gales following the direction of the great ocean current, is amply corroborated by the general course of the West India hurricanes, commencing as they generally do to the eastward of those islands, and proceeding with the current along the Gulf stream. It might, therefore, be safely concluded that the focus of the gale takes the general course of the current, and in further illustration of this, our readers will no doubt remember the hurricane of the 6th of Sept. 1838, in which H.M.S.

Thunder was nearly lost. A remarkable feature of this hurricane was the fact of the focus remaining nearly stationary over the Cay Sal Bank, where an eddy of the Old Bahama Channel and Florida streams takes place, having escaped from which, it followed the usual course with the Florida stream. In our volume for 1839, p. 21, will be found an account of this hurricane.—Ed.

Port of Capellas.*—*Azores.*

Persons having stated that the bottom on the north side of St. Michael is foul in the anchoring depths, and that no vessel would be likely to recover her anchor if she brought up there, I thought it my duty to take the earliest opportunity of proceeding thither with the Agent for Lloyds at this port for the purpose of ascertaining the truth of these assertions.

The result of our survey was that at about half a mile distant from the shore between Ribiera Grande and Capellas, there is a line, which, with occasional projections towards the land, separates the foul and stony bottom of the coast from a perfectly smooth and firm bed of fine sand, sloping to seaward; that along this line the depth varies from twenty-five to thirty-five fathoms, and that from the rugged nature of the coast itself the small port of Capellas is the only part at which it would be safe for boats to disembark. T. C. Hunt.

British Consulate, St. Michael, 24th Dec. 1841.

Flores.—*By Mr. E. May, Master of H.M.P. Skylark.*

At daylight bore up for the Bay of Fanaes; at 5h. 50m. shortened sail and sent a boat for water. Found a great surf on the beach, which consists of large stones, none smaller than a man's head. These stones extend from the beach two or three boats' lengths, making it dangerous for boats to land.

The best landing place is a passage between a point of rocks that lies to the south of the beach. From thence you may procure water from a fountain, about half a mile from the beach, employing small casks, and at the rate of three to five tons per day by employing natives, if the weather is fine, and the wind between S.S.E. and N.E. With any other wind, particularly if blowing hard, there would be too much surf, and the passage too narrow in such weather to enter. This place may be known by a very high steep mountain a little to the left of the landing-place, from whence the Island Monchique bears north-west one mile and a half. Between this island and the shore is a clear passage for any ship; but, she should borrow towards the rock, as a reef projects about a cable's length from them, although there are no hidden dangers in the passage.

At this place by the assistance of shore boats, about four tons of water was obtained in ten hours. The place abounds in poultry, sheep, pigs, vegetables of all kinds, and eggs, all very cheap, and were freely exchanged by the natives for old clothes. Those who came off to the ship were well-dressed, clean, healthy people. The shore of the island is bold, and may be approached to the distance of a quarter of a mile. Leaving Fanaes I would recommend vessels to run due west for two or

* See plan on the chart.

three miles to get clear of the high land to the northward of the landing-place, by which they would avoid being becalmed under this land when the wind is from north-east to south-east, and would be enabled to run clear of the island. Corvo has also a bold shore, and can be seen off deck fifty-five miles distant, as was proved by us the day after leaving the island, both by log and observation. Flores may be seen still further off, as it is higher than Corvo. E. MAY.

THE FOX ROCK.—*South of Sardinia.*

London, 25th January, 1842.

SIR.—Observing that the danger called Fox Rock is not laid down in the general charts from a supposition that it does not exist, I beg to inform you that while cruizing with her Majesty's ship Flora, Boston, and Fox cutter in company, I saw the cutter run on the rock, bearing about five leagues south of Touro, (south end of Sardinia,) by compass. By shortening sail, and getting out her boats, she was got off without damage, the weather being fine and the sea smooth. I was informed by Mr. Gibson, commander of the cutter, that the shoalest water on the rock was about ten feet. Considering that this rock should be noticed for the general good of navigation, I hope you will give this a place in your next number of the *Nautical Magazine*.

I am, &c., ALEXANDER CANNON,

To the Editor, &c. *Master R.N.*

[From the foregoing communication, in which Mr. Cannon has done a service to seamen, all doubts of the existence of the Fox rock are set aside, *the* only question now being that of its actual position. The *whereabouts* are, however, sufficient to place seamen on their guard until the difficulty which nearly always attends the ascertaining of the actual position of sunken dangers such as this, is overcome.—ED. N.M.]

TOBACCO.—No. II.—*Pipes, Cigars, Chewing, Snuff.*

"Thus must I from the smoke into the smother."—AS YOU LIKE IT.

THOUGH many nations use tobacco, yet none to such excess and with such deleterious effects as the British.* In every country of Europe, as in the East, the tobacco for smoking, besides being of excellent quality, is prepared, and much of its deleterious principle removed, by infusing the leaf in water,—sometimes even in rose-water. Many seek excuses for smoking:—thus, the Dutch require it because their climate is too damp, the Germans because theirs is too dry. The French are more candid: they smoke because they like it. Still neither in Holland, nor in Germany, nor in France, is smoking carried to so injurious an extent as among the labouring classes in Great Britain. In our last article it was stated that the tobacco used by these is coarse, strong, and very intoxicating; and it is, beyond doubt, the cause, much more than the beer and cider which they drink, of the brutality and excess

* Although we quote this article as generally useful, we dissent from several assertions in it. We find the following contradiction of the first two lines, in Sir Robert Peel's late speech on the Corn laws:—"the consumption of tobacco appears to be greater in Prussia than in England, it being 3lb. per head in the former country, and 1lb. in the latter."—ED.

so common among those classes. The spread of teetotalism, or total abstinence from ardent spirits and even vinous liquids, has assuredly done much in reforming the habits of all classes, and in the diffusion of those moral feelings which form the cement by which the elements of earthly happiness are held together. Still, much more remains to be done: tobacco smoking is increased among those who have forsworn fermented liquors; and, in imitation of the followers of Islamism, a narcotic stimulant is adopted to replace the prohibited wine. Much intoxication of a very distressing kind still prevails among teetotallers, from the use of tobacco,—a fact well worthy of the attention of those who by precept and example are endeavouring, in spite of the opinions of Lord —— and other time-killing, fox-hunting and cock-fighting noblemen and gentlemen, to reform the intemperate habits of the working classes.

Smoking tobacco is performed in two ways: by means of the pipe, and by the cigar. The former has become so general among the nations of Europe, as to render the manufacture of tobacco-pipes a branch of industry of no inconsiderable importance.

Tobacco-pipes, of the common kind, that is to say, of the kind most in use, from their cheapness, are made of a very fine-grained, white clay known by the name of pipe clay. If not precisely identic with, it very closely resembles the plastic clay used by potters for manufacturing the common stone or biscuit ware. Composed of alumina, silicic acid, iron and water, it is beautifully white, and has strong detergent properties, on which account it is used to cleanse white-leather garments and soldiers' belts. It is distinguished also by adhering strongly to the lips and tongue, after it is baked; a property arising from the large proportion of alumina which it contains. The Isle of Purbeck, and other parts of the county of Dorset, yield it abundantly.

Being well washed and dried, this clay is ground into powder, and then worked with water into a thin paste, which, after being passed through a sieve to rid it of impurities and remove all siliceous or other stony matter, is placed in properly constructed clay-pits, there to subside. When it has lain long enough, and a portion of its water has disappeared, the remaining water is evaporated, by exposure to the warmth of the sun, or by the application of artificial heat, until the clay has acquired the consistence of the dough of bread ready for the oven. It is then well kneaded until it assume the condition of a firm, plastic mass, when it is set by, for use, in moderate-sized heaps.

Being thus ready for manufacture, a boy takes from a heap, a portion of the pipe-clay, which he first rolls and fashions into a ball, and then rolls and lengthens out upon a board into the form of a long slender cylinder. Both of these operations are performed with the palms of his hands. The stem of the pipe is thus fashioned. To the end of this stem he sticks another lump of clay for the bowl. The roughly formed pipe thus prepared is laid aside two or three days to acquire consistence. The pipes in this condition, as fast they are made, are laid upon a board, arranged by dozens, and the board, with the pipes upon it, is handed over to the pipe-maker. This workman, after they have acquired the requisite consistence, places the pipes successively into a mould of brass, divided into two parts, and so constructed that

each part fits accurately to the other. The mould is of the exact shape of the stem and bowl of a pipe, each half of it being hollowed out into the form of a section of a pipe divided lengthwise into halves. The ends are made to be opened. To insure the exact fitting of the two halves of the mould, there are pins in the one half fitting into holes perforated in the sides of the other.

Before placing the pipe in the mould, the pipe-maker perforates the stem with an oiled wire, beginning at the extremity furthest from the bowl. With this wire he forms the bore, directing its point by feeling it with his left hand, as it passes through the clay. The pipe, with the wire in it, is now placed in one-half of the mould and the other is made to fit upon it, the two being brought smartly together with a jerk and then united by a clamp. The bowl is now perforated by means of an oiled metal stopper, which forms the cavity; the pipe still remaining in the mould. The stopper is pressed into the clay by means of a lever. During this operation, the wire is thrust backward and forward until it appears through the bottom of the bowl, when the pipe is considered perfect. The mould is now opened, the pipe removed from it, and the superfluous matter still remaining taken off with a sharp knife. The pipes thus fashioned are set to dry for a couple of days, when they are scraped with a tool and polished with a piece of lignum vitæ or other hard wood. They are then placed in the kiln, which, in from eight to twelve hours, can bake fifty gross, a number equal to the work of a man and a boy during ten days.

These are the pipes in ordinary use, though they are not all of the same size. The working classes in England who smoke during the day as they work, generally reduce the length of the stem by breaking it off, forming it into what is called "a short pipe." Short pipes are, in most cases, preferred in France, where the new pipe is never used when an old one can be obtained. Smokers in that country delight in a pipe saturated with the juice and smoke of the tobacco, being black half way up the bowl and an inch or two up the stem, this latter being never more than five or six inches long. Pipes are thus prepared only by length of use, and are held in great estimation by inveterate smokers. They are called *pipes cullotées*. We have seen a pipe thus prepared by a year's use, purchased by a lover of tobacco-smoke for the enormous sum of ten francs, although the original cost was only one penny. These pipes are often tipped with silver, especially when they present that beautiful and regular appearance from the effect of the smoke and tobacco, which so delights the eye of a French pipe-fancier.

We have before stated, that from the excess of alumina contained in the pipe-clay, this, when baked, adheres to the lips and tongue. On this account it is that the stems of the best pipes are tipped with sealing-wax, to the extent of an inch and more: because the adhesion of the baked pipe-clay to the lips while smoking, often produces awkward sores, and not unfrequently cancer in the lip.

The most expensive and highly prized tobacco pipes, are those generally known as German pipes, though in reality they are Turkish, —being manufactured in Anatolia, and imported into Germany. The substance of which they are made is called *meerschaum*, which, in English, signifies *sea-scum*. The term used by the French is *ecume*

de mer, being a literal translation of the German *meerschaum*. This substance is a species of magnesian stone, white, soft, somewhat plastic, and adhering to the tongue. It consists of silicate and carbonate of magnesia, and water. When recently dug from the earth, the meerschaum will lather with water like soap; and, being detergent, is used by the Tartars for washing linen. The pipes are fashioned and then baked in the kiln. When imported into Germany, they are there prepared for sale and exportation by being first soaked in melted tallow, afterwards in melted wax, and then polished. In this condition, they are imported into Great Britain and France.

The tobacco for smoking in pipes is cut into the form in which it is sold, by means of a machine. The finer smoking tobaccos are soaked in water prior to being cut, in order to extract a portion of their narcotic power. But the fine mild Turkish tobacco, after being thus reduced, is soaked in rose-water;—hence its agreeable odour.

The other form of tobacco for smoking, namely, the cigar, requires no pipe. The luxurious and *recherchés*, however, use a gold or silver tube, into the largest extremity of which one end of the cigar is inserted, whilst the other is applied to the lips. The cigar is made by a prepared tobacco-leaf being rolled on it the requisite form, and the end twisted. This small twisted bit is broken, oftener bitten off by the smoker. The best cigars are imported from the Havannah; though by far the greater number sold in London as "Havannah cigars," are manufactured in this country of the strongest and rankest tobacco, reduced in strength by being soaked in water. The infusion, or liquor impregnated with the principle of the tobacco, is employed to give a tobacco flavour to cabbage-leaves soaked in it, and which serve to make the common cigars.

We would call the attention of our smoking readers to this startling fact. Each who smokes six of the best cigars every day—and many consume a much greater number—bestows on this filthy and disgusting habit, no less a sum than £36 per annum. It is thus an expensive indulgence, not justified by the pecuniary resources of many, who nevertheless encounter its expense. But smokers are the most selfish of human mortals. Provided they gratify their own disgusting propensity, they care little how much it annoys their families. It is a comparative trifle that they inflict upon their wives the offensive odour of their clothes and of their breath, and fill the house with the stench proceeding from the tobacco-smoke; but it is lamentable to hear a man, squandering in the purchase of cigars the above-mentioned, and sometimes even a greater sum, declare that he cannot afford to send his son to school, or give his daughters the clothing necessary to render them of "respectable appearance."

The Spanish cigar is often made with a straw running through the middle longitudinally, so as to afford a channel for the smoke. Many make cigars *à la minute* by rolling the chopped or cut tobacco in paper. In these, they have the additional smoke of the paper to enhance that of the tobacco.

In India, cigar-smoking is chiefly confined to the use of a species of cigars called *cheroots*. These are manufactured of a mild, fragrant tobacco, previously soaked in rose-water and partly dried. The half-

dried leaf is spread upon a table, brushed over with a light paste made of arrow-root starch, and rolled so as to leave a channel for the smoke through the centre. The best cheroots are brought from the Spanish settlement of Manila, in the Phillippine Islands, where each family manufactures its own cheroots. A miserable kind of cigars, of very inferior quality, are manufactured in this country, and called cheroots, but they constitute a very inferior article, and are sold at a low price to those ignoraat of the nature of a cheroot.

The *quid* is the next form in which tobacco is used. Put into the mouth, between the jaw and the cheek, it constitutes what is termed *chewing*. For this purpose the strong tobacco-leaf, properly prepared in the manner described in our preceding article, is made into cords, and then into rolls, well known by the name of *pigtail*. The quid in the mouth, like the smoke of tobacco, excites the salivary glands, and the mucus thereby secreted, mixes with the principle of the plant and forms a strong infusion of tobacco. Though this be discharged from the mouth, and little or none of it go into the stomach, the intoxicating and narcotic principle of the tobacco acts upon the brain, and causes the most dreadful intoxication in those unused to it. Like that of smoking, the habit of chewing tobacco is gradually acquired in the same manner as the taking of opium, and the madness of the intoxication gradually ceases; though most chewers of tobacco, unless actively employed, or enduring pain, are always in a state of semi-intoxication, not a few of them displaying an eye which very little would rouse into a glare of ferocious insanity. For it is the intoxication of tobacco that leads to the most cruel acts committed by the idle and lawless.

It is said, and it may be true, that men exposed, as sailors are, to be covered with wet clothes morning, noon, and night, require such a narcotic stimulus as tobacco, to secure them as well against intermittent fever, and other distressing and dangerous complaints, arising from their pursuits and necessary habits of life, as to keep up their strength and courage during the excessive muscular labour and trying hardships they have to endure. The same kind of stimulus may also be requisite in a low, damp country like Holland, and in climates such as those of the south-eastern coast of Madagascar and of Batavia. But of this we are certain: that, with very few exceptions, men exposed, from these causes or from any other, to the necessity of constantly using tobacco, run out more rapidly than others the thread of their existence; and that the inveterate tobacco-chewer is as old in constitution at fifty years of age, as he would be at seventy, did he not use this seductive and dangerous plant.

We shall not further extend this branch of our subject, because all that we have said concerning the nature of tobacco, and the evils attendant upon smoking it, equally applies to chewing it and to taking snuff. We shall only observe that some individuals who chew tobacco, swallow the salival infusion, which impairs the digestive powers in the same manner that the constant use of opium does when taken into the stomach.

It now remains for us to notice *snuff*, which is the third form of taking tobacco. The practice of reducing this plant to a powder and preparing it for introduction into the nostrils, is general throughout

Europe. It is said to have originated with the French; and indeed, it is very probable that no other nation in the world would have imagined so singular a mode of using the tobacco-plant. During the last century it was indispensable for every French gentleman to carry a snuff-box, and the sale of snuff was found so advantageous that the French government created a monopoly of snuff manufacture in its own favour, which has now subsisted about eighty years. There are only two qualities of snuff sold in France by the *regie* or government snuff-board, under whom certain authorised agents retail it. There is so high a duty upon all foreign snuffs as to amount to a prohibition. There exists also an excise duty upon the growth of the tobacco, every native plant being inspected by an excise officer. The profits of this *regie* are so considerable, that it has not been abolished even under the free government of Louis-Philipe.

As a remedial pretence is often assigned for smoking or chewing tobacco, so also is a similar excuse offered for the dirty practice of snuff-taking. Persons who have sore eyes or bad sight are often recommended the use of this tobacco-powder. And it may have happened that inflamed eyes have been cured by such use: from which the takers have inferred that they must ever afterwards continue the practice, or the ophthalmia would return. But the snuff, in effecting such cure, had no peculiar specific virtue; its action was only that of a counter-irritant. The cephalic snuff, Grimstone's eye-snuff, or any other of the quack snuffs, sold as secret remedies for headaches and sore eyes, would have produced the same precise effect, and by the same precise means but without the same injury to the constitution; for these contain no tobacco: they are composed principally of dried and pulverized sternutatory herbs, such as the leaves of the asarum, those of marjoram, and the flowers of the lily of the valley, combined. These, like the snuff of the tobacco-plant, excite and irritate the mucus membrane of the nostrils, and cause an additional secretion of mucus, which accounts for the frequent use of the pocket-handkerchief by snuff-takers. But the tobacco snuff does more: like the smoke of the same plant, and the quid, it acts upon the brain, causing intoxication and sickness. Besides this, a full third of the powder taken into the nostrils enters the stomach, creating a truly distressing disturbance of that organ.

We speak by experience on this subject, having been ourselves inveterate snuff-takers during a number of years. We found it impair the memory, and almost destroy the powers of digestion. The most distressing dispepsia was our lot, and we were emaciated, nervous, and miserable, always resorting to the stimulant under the depression occasioned by its reactive effect. Added to this, we had almost continually a sore nose, from the irritation of the other matters in the snuff besides the tobacco. We have inquired into the sensations of other snuff-takers, and found them similar to our own; and we have succeeded in making many abandon the habit, by using for a time a bottle of strong smelling-salts. We confess that we suffered much during a fortnight or three weeks from the relinquishment of the accustomed stimulus; but our health soon improved, and in a few months all desire for the snuff was completely lost, which would not have been the case had we not resolutely declined to take *even a single pinch*;—for our readers may

be assured that *nothing but total abstinence will eradicate the habit of using tobacco.*

We have just stated that there are other matters in snuff besides tobacco. In some of the best snuffs these matters are not injurious, being only used to impart an agreeable flavour. They consist generally of salted water, and sometimes of molasses or sugar. These latter excite a new fermentation, which is said to improve the flavour and keep the snuff moist. The *Macouba* is a scented snuff, said to be from Martinique, but prepared often in London. Dr. Ure states the following to be the mode of its preparation by a skilful manufacturer:—

"In a solution of liquorice a few figs are to be boiled for a couple of hours; to the decoction, while hot, a few bruised aniseeds are to be added, and, when cold, common salt or saturation. A little spirit of wine being poured in, the mixture is to be equably, but sparingly, sprinkled with the rose of a watering-pot over the leaves of the tobacco, as they are successively stratified upon the preparation floor."

The Masulipatam snuff brought in bottles from the East Indies, is made from a kind of tobacco having a peculiar flavour communicated by the soil in which it grows. It is moistened with sea-water. This, besides common salt or chloride of sodium, contains a little chloride of calcium, which, in a still greater degree, absorbs moisture from the air. Hence the excessive humidity displayed by the snuff of Masulipatam.

But if in some snuffs no deleterious ingredients are used, many are said to contain muriate of ammonia, pounded glass, carbonate of potassa, and other matters intended to communicate pungency to the powder. To produce a certain ammoniacal flavour peculiar to many strong kinds of snuff, it is affirmed that human urine is sometimes employed; and from the odour of more than one variety, we cannot help thinking this affirmation correct.

Pearlash, an impure carbonate of potassa, is very frequently made use of by unprincipled dealers, to impart the pungency and flavour obtained in the best snuffs by more costly ingredients.

"I was," says Dr. Ure, "employed several years ago by the Excise, to analyse a quantity of snuff, seized on suspicion of having been adulterated by the manufacturer. I found it to be largely drugged with pearlashes, and to be thereby rendered very pungent and absorbent of moisture; an economical method of rendering an effete article at the same time active and aqueous."

All the damaged or spoilt tobacco is converted into snuff, which, by the aid of adulterating ingredients and sonorous names, is sold at a high price. Thus, in spite of legislative enactments, a snuff-taker receives into his nostrils, and thence into his stomach, matters which, if he were but conscious that they formed component parts of his favorite powder, would sicken him with disgust. And many of the most *recherchés* and fashionable snuffs are of this description.

It is said that the human senses may be gradually brought to any degree of depravity; and in nothing is this more evident than in snuff-taking. Nauseous odours are considered delicious, and the vilest compounds, have they but a name, eulogised as most exquisite. There is a musty, overpowering ammoniacal smell arising from snuff in large masses kept for years in close vessels. This odious exhalation is one of

the delights of the snuff-taker. Old snuff is, therefore, prized beyond measure; and what in any other vegetable production would render it only fit for the dunghill, is in snuff deemed its highest excellence.—*From the Magazine of Domestic Economy.*

INSTRUCTIONS FOR SHIPS FROM THE CAPE TO THE SOUTH-WEST COASTS OF AUSTRALIA.—*By the Hon. J. S. Roe, Surveyor-General.*

SHIPS from the Cape of Good Hope, bound to Western Australia, should run down their longitude near the parallel of 39° south, where the wind blows almost constantly from some western point, and generally not with so much strength as to prevent sail being carried to it. In a higher latitude the navigation is more boisterous and strong, and sudden changes of wind, with squally wet weather, are constantly to be expected, especially in the winter season, and after passing the islands St. Paul and Amsterdam. Ice-islands have also been encountered in the beginning of summer as far north as 46° or 47° S.

Amsterdam and *St. Paul* are conveniently situated for correcting the reckoning by, before approaching the coast of Australia. The former is in latitude about 37° 52′ S., longitude 77° 52′ E., and St. Paul is in latitude 38° 40′ S. on the same meridian; being visible eighteen or twenty leagues from a ship's deck in clear weather, and having a good passage between them. The strong western gales and thick weather that are frequently met with near these islands in winter, render caution necessary in approaching them during that season, as there are no certain indications of their vicinity, and the seaweed they produce is carried to leeward in small patches by a prevailing north-easterly current. Near St. Paul the variation is about 22½ degrees westerly, decreasing to 5° west off the coast of Australia.

Near Cape Leeuwin the winds blow generally from the westward, varying in the summer from north-west at night, to south-west in the latter part of the day, though not with regularity. Both here and off the south coast, as far as Bass Strait, the strongest and most durable winds blow from the south-westward, and cause a long swell, particularly from April to November, when the weather is generally very unsettled and tempestuous, and gales of wind at south-west are frequent, varying sometimes between S.b.W. and N.b.E. Captain Flinders remarks, "The progress of the gales is usually this:—the barometer falls to 29½ inches or lower, and the wind rises from the north-westward with thick weather, and commonly with rain; it veers gradually to the west, increasing in strength, and the gale begins to clear up so soon as it has got to the southward of that point. At south-west the gale blows hardest, and the barometer rises; and by the time the wind gets to south or S.S.E. it becomes moderate, the weather is fine, and the barometer above thirty inches. Sometimes the wind may return back to west, or sometimes northward, with a fall in the mercury, and diminish in strength or die away; but the gale is not over although a cessation of a day or two may take place. In some cases the wind flies round suddenly from north-west to south-west, and the rainy thick weather then continues a longer time."

Land and sea breezes prevail on the coast in summer, interrupted occasionally on the south coast by a gale from the south-east.

The current near Cape Leeuwin and off the south coast of Australia, appears to be principally influenced by the prevailing winds at all times of the year, some ships having experienced constant northerly currents, from one mile to one mile and a half an hour, changing to north-east as they approached the south-west coast; while others have been set as much as seven degrees to the eastward in the run from the Cape of Good Hope to Bass Straits, without much error to the north. From Cape Leeuwin to the Archipelago of the Recherche the current has been found to run easterly, in a parallel direction with the coast, being strongest between Point D'Entrecasteaux and King George Sound, where its velocity is sometimes one mile and a half an hour.

Cape Leeuwin, in latitude 34° 21′ S., longitude 115° 6′ E., by Capt. Flinders, is visible ten leagues in clear weather, but should not be approached in the night, on account of rocky islets and reefs which extend off it to the distance of five or six miles.

Cape Naturalist, in latitude 33° 26′ 40″ S., by Capt. Freycinet, but by observations of H.M.S. Beagle, in latitude 33° 31′ 50″ S., longitude 1 1° 56′ 40″ E., is low at the extremity, but soon rises to the height of 5 or 600 feet. This headland or Rottnest Island is the best land to make, for a ship bound to Swan River from the westward.

In approaching Cape Leeuwin, the outer danger to be avoided is the Rambler, or Geographe Reef, bearing S. 27° W. by compass, from the body of a remarkable sand patch on the coast to the northward of the Cape,—N. 55° W. from the largest St. Alouarn Island, and N. 67° W. from a small dark-coloured rock with a peaked summit. This reef appears to lie about six miles off the nearest land, and has twenty to twenty-four fathoms water at the distance of one-sixth of a mile from its south-west, west, and north-west sides. Other reefs, partly dry, occupy a considerable portion of the space between it and the main, but the channels amongst them are probably foul and rocky. When the Colonial schooner Ellen passed close to the Geographe Reef on the 22d of February, 1835, the sea broke upon it only occasionally, when it appeared to be about half a mile in extent N.N.W. and S.S.E., and 200 yards wide; the sea was very little discoloured, and when not agitated would prevent the danger being seen at more than a cable's length. There may probably be less than two fathoms on some of its most elevated rocks. It was seen breaking heavily in January 1838, by Capt. Richardson, of the brig Alice, who considered it to lie three or four leagues off the nearest shore, with Cape Leeuwin bearing S.E. by E., and the northern extremity of the land N.b.E.

Naturalist Reef appears to lie sixteen or seventeen miles N.b.E. by compass from the extremity of Cape Naturalist. When seen from H.M.S. Sulphur on the 31st of October, 1831, its west end bore S. 16° W. (magnetic) when in a line with the highest land over the Cape, and the ship's head was W.b.N. It consists of three patches of rocks, extending about one mile and a quarter N.E.b.E., and S.W.b.W. with passages between them. The swell not being heavy at the time, it did not constantly break over them. Capt. Hudson, of the ship Orelia, saw this reef in 1830, and set it bearing magnetic S.b.W. when in a

line with the extremity of Cape Naturalist, from which he considered it was distant sixteen or seventeen miles. The soundings are no indication of its vicinity, the average depth being twenty-five to thirty fathoms between the reef and the Cape, and twenty-five fathoms five or six miles to the westward. At one mile north the depth is thirteen fathoms.

Pioneer Reef is said to lie four miles to the northward of Cape Naturalist, by Capt. D. L. Adams, of the American whaler Pioneer, who writes, " on leaving Castle Bay in (Geographe Bay) after a heavy gale in the month of September, 1838, with a light wind, and a heavy swell running, I observed heavy breakers about four miles to the north of Cape Naturalist, which remained in view nearly all day."

H.M. surveying sloop Beagle, in October, 1840, passed close to the position assigned to this danger, and saw no appearance of it, although aware of its reported existence. The soundings being very regular in twenty-five to twenty-seven fathoms, fine grey sand, leads to the supposition that the broken water seen from the Pioneer was caused by the current out of Geographe Bay meeting the heavy swell and strong southerly current which would be experienced alongshore after the gale alluded to, which at the Swan River blew strong from the south-west on the 2d and 3d of September, 1838.

Wright Bank, a patch of rocks with five or six fathoms water over them, is reported to have been sailed over about one mile and a half northward of Cape Naturalist, by Capt. Coffin, of the American whaler Samuel Wright. The Beagle, on the foregoing occasion, passed about a mile north-west of the position indicated, and had regular soundings in twenty-six fathoms, without observing any appearance of shoal water.

Butcher Reef is a narrow ledge of covered rocks, half or three-quarters of a mile in length, lying two miles and a half S.b.W. $\frac{1}{4}$ W. by compass, from the extremity of Cape Bouvard, and about one mile and a quarter off the nearest shore, which is sandy, with small rocky projections. Another small reef is reported to have been seen about three miles westward from the same Cape.

Coventry Reef bears from the north-west extremity of Cape Peron S. 35° W., magnetic, distant about four miles and a quarter. It is small, and sometimes awash, with apparently seven to ten fathoms all round. From Sandown, or Garden Island, (some remarkable white sand-hills about two miles and a half from the south end of the island) Coventry Reef bears S. 20$\frac{1}{2}$° W., six miles and a half, and S. 64° W. nearly three miles from the conical summit of Penguin Island,—the latter being situate two miles south from the summit of Cape Peron. There is a clear deep channel, two miles wide, between Coventry Reef and a chain of rocks, both above and below water, which form the shelter of Warnboro' Sound; Penguin Island being at the north end of the chain.

Casuarina Shoal, two miles and a quarter, W. $\frac{1}{2}$ N., magnetic, from the north-west point of Garden Island, is situated on a Five-fathom Bank, which extends from the vicinity of Coventry Reef to the east end of Rottnest Island. Casuarina Shoal has ten fathoms water a quarter of a mile eastward, and half a mile westward of it, and has six and seven feet on its shoalest part. To avoid it in coming from the

southward, keep within one mile and a half, or two miles from the north end of Garden Island until the latter bears E.b.S. by compass. Between the Five-fathom Bank and the other parts of Garden Island there is a clear space of two miles and a half to three miles, with eight to eleven fathoms water; and outside of it the depth increases rapidly to twenty and twenty-five fathoms.

Seaward Reef, with six or seven feet water upon it, is a small patch of rocks on the Five-fathom Bank, and is situate three miles and a quarter W. ½ N. by compass, from the north end of Carnac Island,—or in a line between the south-west end of Rottnest and the Haycock on Garden Island,—and in a line also with Row-boat Rock and Arthur Head at the entrance of Swan River. A stranger standing in from seaward may avoid approaching both Casuarina Shoal and Seaward Reef within a mile, by not bringing the beacon on summit of Rottnest Island to bear westward of N.b.W. ¾ W. by compass.

Half a mile E.N.E. from Seaward Reef is a rocky patch of two fathoms, with six and six and a half fathoms water between it and the reef, and a good clear channel of ten and eleven fathoms towards Carnac, which must not be approached within a mile without a pilot on board.

A ship bound for the anchorage off Swan River, and being without chart or pilot, would do well to pass to the westward and northward of Rottnest, where no dangers are known to exist beyond three-quarters of a mile from the island.

Rottnest Island, six miles in length E.b.N., and W.b.S., with an extreme breadth of two miles and a half, has an irregular hummocky surface, not much wooded; and may now be distinguished from Garden Island and the contiguous mainland by a white obelisk fifteen feet in height, with a pole in the middle, of the same length, which has recently been erected on its highest part near the centre of the island. This sea-mark, being elevated about 157 feet above the level of the sea, may be seen from a ship's deck in clear weather, at a distance of seven or eight leagues, and will shortly give place to a lighthouse of greater elevation. Its position, according to observations made in H.M.S. Beagle, is latitude 32° 0′ 14″ S., longitude 115° 29′ 6″ E. from Greenwich.

To round Rottnest on its north side, a ship should not approach nearer than one mile, in order to avoid the Horseshoe Rock, which lies three-quarters of a mile off shore, at the distance of two miles N. 39° E. from the island's west extremity, and Roe Reef, situate three-quarters of a mile N. 16° W. from a small rock with a cask-beacon upon it, about half a cable's length from the island's north-east point. The beacon is upon Duck Rock, and the projection near it is Bathurst Point. A ship will be clear to the northward of Horseshoe Rock while Duck Rock beacon is kept open of the north end of Rottnest; and Roe Reef may be cleared on the north, by keeping the west end of Rottnest (C. Vlaming) open of the north point until Duck rock bears south;—and a course may then be shaped about E.b.S. for a remarkable white sand patch on the main three miles and a half north, from the entrance to Swan River, and when some rocky islets near the south-east side of Rottnest are seen to the S.S.W. opening round the east end of another

small rock with a cask-beacon upon it one mile and a quarter S.E. ½ E. from Duck Rock, a S.E.b.E. course will conduct into Gage Roads.

Kingston Spit, in front of Thompson Bay, extends two miles east from Duck Rock, and a long mile N.E.b.E from the beacon last mentioned, which has recently been placed upon Fisherman Rock, a small mass of white rocks about two cables' length north-east from the sandy east point of Rottnest Island, distinguished by the name of Point Philip. To clear Kingston Spit on the north, keep Duck Rock a little shut in to the south of a bare pointed hill near the northern shore of Rottnest; or, should the bare hill not be distinguished, keep the north extreme of Rottnest to the southward of W. ½ S. To clear Kingston Spit on the south, keep the south extreme of Rottnest (Point Parker) open of the next projection to the north-east of it (S.W.b.W.)

Thompson Bay is a fit resort for boats only, being full of shoal rocky patches and sand-banks to the distance of a mile from the shore,—the remainder of Kingston Spit being occupied by foul uneven ground, with depths varying between five and two fathoms; near its north and east edges are seven fathoms, deepening to nine and ten in half a mile. Between Point Philip and the next projection a long half mile to the S.S.W. (Bickley Point) there is good shelter, in Beagle Anchorage, from all the usual north-west and south-west gales of winter, the best berth being in four fathoms water, sandy ground, nearly half a mile south from Fisherman Rock, and a quarter of a mile north-east from two small rocks called the Twins; the south point of Rottnest being also in a line with Bickley Point. In this situation a vessel should moor, on account of the limited space.

On the south-east side of Rottnest there is a good channel, two miles and a half wide, called the Southern Passage into Gage Roads, the only obstruction in it being a patch of three fathoms, sand and weeds, called Middle Bank, in a line between Point Philip and the Champion Rock, one mile and three-quarters from the former, and one mile and a quarter from the latter. After a gale, the north-west swell round the east end of Rottnest crossing the ocean roll from the south-west, breaks heavily at this spot, and indicates its position; it may, however, be avoided by borrowing towards the rocky islets near Rottnest, which have no dangers fronting them beyond a cable's length. This bank is cleared to the eastward by keeping the beacon on Duck Rock open to the north-eastward of that on Fisherman Rock. These beacons in a line lead also about a cable's length north-eastward of Champion Rock, which has only nine feet water on it, with four and five fathoms all round. This danger which lies on the south-east side of the Southern Passage, is at the north-west extremity of a collection of rocks and foul ground that extend two miles and a half N.N.W. ½ W. from the Stragglers towards the east end of Rottnest, without any channel amongst them which can yet be pronounced safe. In working up for the Southern Passage with a northerly wind, the Champion Rock and dangers in its vicinity may be avoided by keeping the high lump of rock called the Mewstone open to the south-west of the largest and highest of the Stragglers, until the south-west end of Rottnest shuts in round its south point, bearing about W. ½ N. This last mark will carry a ship clear between Champion Rock and Middle Bank; but

should the Mewstone and Stragglers not be satisfactorily distinguished, the beacon on Fisherman Rock should not be brought to bear more to the westward than N. 30° W. by compass, until the south-west point is shut in by the south point of Rottnest, as before shewn.

In steering for Rottnest and the Southern Passage from the westward, the shore should not be approached nearer than half a mile, and the bays on each side the south point are foul and rocky. Porpoise Bay, on its north-east side, is also fronted by a low rocky mass, called Direction Islet, which lies one mile and a quarter E. 23° N. from the South Point, and has deep water to within a cable's length of its south-east side. The summit of Direction Islet in a line with a hill having some trees on its summit (Tree Hill), about half a mile north from the South Point, leads directly over Middle Bank. The next grey rock (Wallace Islet), half a mile to the N.N.E., is very rugged, and lies close in to Bickley Point; it has two fathoms and a half, rocky ground, nearly a quarter of a mile south-east of it, which may be avoided in hauling up for Beagle Anchorage, by keeping the South Point on with the south end of Direction Islet, until Fisherman Rock bears north. The Twin Rocks lie near each other, a quarter of a mile north-east from Wallace Islet, and are bold and steep. Round their north-east side is Beagle Anchorage, which is a secure retreat in winter, between March and October.

When abreast of the east end of Rottnest which is distant nine miles and a half W.N.W. from the mouth of Swan River, the flag-staff and low white jail on Arthur Head will be easily distinguished, and the vessel will be boarded by a pilot. Half-way over, the water deepens suddenly from four and a quarter and five fathoms to nine and ten, gradually increasing to twelve, which is the greatest depth and best holding ground in Gage Roads, at two to three miles from the main land. A safe and convenient berth will be found in somewhat more than six fathoms water a mile from Arthur Head, with its north extreme bearing N.E.b.E., and its south extreme (Anglesea Point,) just on with the end of a wooden pile-jetty in South Bay,—the south extreme of Rous Head (the north point of the river's entrance,) being in a line with a long sandy point in the river which projects from the Freemantle side. For the convenience of discharging and taking in cargo, vessels lie closer inshore, in half the above depth; but the ground is not so good, and at seven-tenths of a mile W. $\frac{5}{4}$ S. from the jail there is a narrow rocky ledge of three fathoms, lying parallel with the shore.

The harbour-master and pilots are prohibited anchoring vessels in Gage Roads, between the 1st of May and 1st of October, on account of the westerly gales which sometimes distress the shipping there during that period, and have driven some on shore. They commence occasionally in March,—rise from the northward, preceded by a fall in the barometer, and clouds piling up in the north-east,—blow longest at north-west,—strongest between W.N.W. and west, and moderate after a hard rainy squall from the south-west, with thunder and lightning.

Sea and land breezes prevail in summer, to the distance of thirty miles from the land, interrupted occasionally by strong southerly winds, or by light winds off the land, for two or three days.

Owen anchorage offers a secure retreat from Gage Roads during

winter, for vessels drawing under nineteen feet water, which should quit the roads at that season, when the barometer falls much below thirty inches, accompanied by threatening weather from the northward or north-west. The directions, by Lieutenant Stokes, of the Beagle, for sailing from Gage Roads over the Success Bank, into Owen anchorage, are as follows.—"Steer for the Mewstone, bearing S. ½ W., until the western side of Carnac and the rocks off can be made out; bring the western end of the inner rock on with the highest hill on Garden Island, which may be easily recognised by a white patch near the top, the bearing being south 4° east; pass on either side of Mewstone, avoiding a rocky ledge which lies nearly a cable's length off its W.N.W. end. Continue standing to the southward, until the south end of some low cliffs, two miles north of Woodman Point, bear south 78° east, then steer direct for them, hauling up north-east, when the north entrance point of the river is a little open to the south; anchor when they are in one,—the depth will be nine fathoms and a half. The following were the bearings from the Beagle's anchorage,—Mewstone, north 77° west, Haycock, south 48° west, south end of the low cliffs, south 59½° east, Jail, north 12° east, a deep hole, having seven and five fathoms within half a mile on either side, still large enough for seven or eight vessels moored; the security of it has been well tested by the Beagle, her yawl at anchor having rode out a heavy north-west gale with perfect ease.

"The Mewstone or Seal Rock, bearing south 49° west, leads over, in three fathoms, another part of the Success Bank, which adjoins the north side of Owen anchorage. A low flat rock, lying close off the south-east end of Carnac, on with the east end and highest part of a white sand patch, on the north end of Garden Island, are the marks for this eastern passage, bearing south 10½° west. In the western or Beagle Passage, there are four feet more water; the Mewstone bearing south 22° east, leads through it. From the shoalest part, (a bar two cables wide,) the highest of the Stragglers bear north 65° west. There is a single rock lying a quarter of a mile N. ¼ E. from Seal Rock, with three fathoms alongside it."

In beating up to Rottnest against a strong northerly or southerly wind, much ground will be gained by working in the stream of the island, in order to avoid the strength of a lee current, which is found on such occasions to run at the rate of one to one and a half mile an hour. The currents on the coast generally, cannot be implicitly relied on, either in point of direction or velocity, being apparently influenced by remote as well as local causes. Prevailing winds govern their movements, and the cessation of a gale is usually accompanied, or very speedily followed, by a change of current to the opposite direction:—thus, a gale from seaward, is either preceded or accompanied by very high water on the shore and in the river, whilst a prevalence of land winds produces the opposite effect. The recent experience of her Majesty's ship Beagle on these coasts, went to shew that "during the winter, the current was either weak from the southward, to the extent of a quarter or half a mile an hour, or strong from the opposite direction to the amount of one or one and a half miles;—whilst during summer, when southerly winds prevail, it generally sets from three quarters to

one and a half knots to the northward, and was strongest near projecting points, such as the west end of Rottnest."

The Beagle found it high water on full and change days in Thompson Bay, Rottnest, at 7h. 50m. P.M., and in Gage Roads at 8h. 50m., the tide ebbing ten hours and flowing fourteen hours, with a rise not exceeding thirty-two inches.

In crossing the bar, at the mouth of Swan River in a boat, observe that the deepest part of the channel is close to some detached covered rocks, which lie to the north of the South Head. In steering for the channel, keep rather towards the South Head, until you bring a black cross beacon, (near the sandy beach inside the South Head,) and the black gable-end of a house a little beyond it, in a line with a large heap of stones on the outline of the hills over the town of Freemantle,—the heap of stones being distinguished from others of smaller size by having a white mark, resembling a roadway, leading down the hill from it. These three marks in a line will lead over sandy ground, close on north side of the covered rocks off the South Head, and clear of a larger ledge which points inwards from the North Head. The depth of water between the two is five to seven feet, according to the time of tide.

Cockburn Sound, between Garden Island and the main, is a splendid sheet of water, six miles in length north and south, and nearly five miles wide, affording secure anchorage in every part, in five to twelve fathoms, well protected from the prevailing westerly winds. The winter resort for shipping is Sulphur Bay, where a vessel may lie within half a mile of the shore, in six to nine fathoms water, abreast of a small limestone cliff close under the island's double summit. There is a patch of two fathoms to the north-east of the cliff, and a rock with eight or nine feet to the S.E. ½ E. of it, but both are within a quarter of a mile of the shore.

(To be continued.)

INSTRUCTIONS FOR SAILING FROM THE BIGHTS OF BENIN OR BIAFRA, TO SIERRA LEONE.—*By Commander W. B. Oliver, R.N.*

CONCEIVING that a shorter passage from the Bights, or Princes Island, to Sierra Leone, than that made by proceeding as recommended in the book of directions to the southward of the line, might be made by keeping to the northward, I determined to ascertain the fact, and though each time accompanied and retarded by a prize, made three unusually short passages, viz.—one from the River Bonny, anchoring at Princes, and landing prisoners at St. Thomas in eighteen days; the other two in thirteen days each from Princes Island to Sierra Leone, and on returning to England in her Majesty's schooner unaccompanied by a prize. Thirty-nine days having been the shortest of three prizes I sent up under the old directions from Benin, and the Gaboon, I issued different directions to prize-masters, and although not acted on, in absence from myself, I feel assured they would have proved, as they did in my company, an improvement on the old one; a copy of which directions, are as follows:—

Your first object will be to get to the southward, unless you can make a west course (true) without any northing, nor should you go on the larboard tack unless you can do so, or to avoid the land. Should the wind hang so much to the westward, as to prevent making a good course on the larboard tack, pass to the eastward of Princes, or St. Thomas, or both, as you will the sooner get out of the strong easterly current; but do not approach the land within twenty fathoms, day or night, and get frequent casts of the lead.

When to the westward of St. Thomas, and on or near the line, steer W. ¼ N., or W.b.N., according as your noon sights, give you a northerly set, or not, until in the longitude of Cape Palmas, 7° 45′ W., when steer, in the rainy season, (May to September,) N.W.b.N.; in the other months north-west, until in 13° W., the longitude of the western limit of St. Ann shoals: you may then make a true north course, sounding every five miles by night, or thick weather, and every ten miles by day, from 6° N. to 8° N. If you reach the latter without striking soundings, it will prove you have passed to the westward of St. Ann shoals; when keep away E.b.N., by compass, to 8° 15′ N., when steer E.b.S. ¼ S., (east true), and you will make the high land of Sierra Leone, if by night anchor on reaching twelve fathoms.

These instructions can only be acted on, in a general way, as of course much depends on winds and currents; but I wish them to have full weight with any officer detached in a prize: and remember the land about Sierra Leone, should always be made to the southward of the Cape.

W. B. Oliver,
Lieut. and Com. of H.M.S. Fair Rosamond.

The Azores.—*Proceedings of H.M.S. Styx, Capt. Vidal.*

In our last volume we gave an account of a submarine volcano, which threw up an island among the Azores, in the year 1614, and also an account of the earthquake which destroyed the town of Praya in Terceira in June last.* It was supposed that one effect of the latter was to leave a shoal some distance from the east end of Terceira, and with the view of ascertaining whether such a shoal existed, and also of examining the channel between Terceira and St. Michael, H.M. steam vessel Styx, under the command of that talented officer, Capt. Vidal, proceeded to those islands in October last. Accounts have been received from Capt. Vidal, which state, that after carefully searching the above channel he has not found any such shoals, nor does it appear that any intelligence has been obtained of them.

In the course of this service the Styx anchored in sixteen fathoms water on the position once occupied by the Sabrina Island, the least water found on it being fifteen fathoms, the operations of Capt. Vidal have been favored with fine weather, excepting on the 11th of January, when he encountered a violent gale in which he lost one of his quarter-boats. In this gale the tiles were stripped from the houses, and such was its violence the inhabitants expected no less than another earthquake. We understand Capt. Vidal is preparing a plan, which will shew in a very interesting manner the ruinous condition of the town of Praya.

* See our present Chart for their positions.

Equal Altitudes.

Malta, December 24th, 1842.

Sir.—I have lately had occasion to observe with equal surprise and regret that officers, and other persons, in charge of chronometers, are in the habit of obtaining their time by the operose and inert method of single altitudes, instead of the far easier and more correct method of equal altitudes, taken before or after noon.

I should not have thought that anything need have been said, at this hour of the day, on the superiority, in all respects, of the method alluded to; but as it seems not yet to have become so fully established among seafaring persons as it ought to be, perhaps you will not think a page or two of your truly valuable practical journal ill-bestowed in the advocacy of an observation so useful as that of equal altitudes for time.

The best way, perhaps, to recommend the method is, to give you an example of the degree of accuracy which may be obtained, without any great trouble, or, very fine instruments. In this view, I shall copy from my work-book some observations which I made a few days ago, in order to ascertain the correct time at this place.

I may mention, in passing, that the local government have just resolved to regulate the public clocks in future, by *mean* instead of apparent time, which latter barbarous usage has hitherto been in use, on this island, to the great inconvenience of the service, and to the community in general.

On the 20th inst. I made several series of observations for time, with the sun's altitude, observed in an artificial horizon of oil, on the top of my house here. These series are of different values, according to the circumstances under which they were taken, and as it is of importance in practice to attend to these distinctions, I take the liberty of calling the attention of such of your readers as may not have worked much with this method, to the superior accuracy which belongs to them.

The essential principle of the method (as every one knows,) consists in using the same altitude *after noon* that has been used *before noon*, and noting the times by chronometer, when the sun is equally high above the horizon, on different sides of the meridian. The best method of securing this identity is, to screw, firmly, on the instrument as low an altitude as may be convenient to observe in the forenoon, and as near the prime vertical as possible (in order to ensure the greatest rapidity of motion,) and then to leave that altitude, untouched, for the afternoon observations. If every precaution be taken, and that the refraction does not change in the interval, a great degree of accuracy may be obtained.

I am in the habit of putting such an angle on the instrument, as will bring the image of the sun about ten or twenty minutes of space above the image seen in the artificial horizon, when viewed through the inverting telescope. I may remark, that unless the inverting telescope be used, no accuracy in the results can be looked for. It is useful to set the instrument at an angle considerably greater than that which measures the altitude at the moment, in order that the tangent screw may have ceased to act, which it generally does for some time after it is left quite to itself.

The moments when the upper limb touches the sun's disc seen in the artificial horizon, when the two discs exactly coincide, and when the limbs just separate, may be observed with the instrument set to one angle in the forenoon; and, in like manner, with the same angle still fixed on the instrument, the contact with the lower limb, the coincidence of the centres, and the moment of separation of the limbs may be observed in the afternoon. In this way six times, by chronometer, in forming three pairs of observation, will be obtained without the angle being changed; and it will generally be found that the time of apparent noon so determined, is nearer the truth than that which results from a much greater number of observations when the angle is shifted in the forenoon, and reset for the afternoon sights. It is advisable, no doubt, to make several other observations; but, the *last* angle of the forenoon series should always be left, screwed on, ready for the first observation after noon.

These remarks are exceedingly elementary, I grant, but as I have seen many observers who were not aware of, or did not recollect, the importance of these precepts, I venture to mention them.

The utility of attending to the distinctions I have pointed out, will be seen in the following series of equal altitudes; one set of which were taken with the angle fixed; the other set, when the angle was unscrewed, and reset for the PM. sights; and though every care was taken, it will be perceived that the results are not nearly so accurate, nor so uniform among themselves.

I have only to add that, none of the observations on the 20th have been suppressed, or any of them altered—the whole of the series being here given exactly as they were recorded.

I remain, &c.

BASIL HALL.

Two Series of Equal Altitudes of the sun for time, observed at Malta, December 20th, 1841, with an Artificial Horizon of oil.

First Series, with three different Sextants, set to certain angles, which were shifted to others for the second series, and reset at the same angles for the sights taken after noon. In the second series, the angles AM. were left screwed on for the PM.

Instruments.	Cary, set to 36° 48′ 30″			Troughton at 40′ 59′ 35″		
Limb of ⊙	Upper.	Centre.	Lower.	Upper.	Centre.	Lower.
	h. m. s.	m. s.	m. s.	h. m. s.	m. s.	m. s.
A.M.	9 5 30·5	7 34·0	9 37·5	9 21 35·0	23 46·5	25 59·5
P.M.	14 49 15·5	47 12·0	45 7·0	14 33 6·5	30 55·0	28 44·0
Sum	23 54 46·0	46·0	44·5	41·5	41·5	43·5

½	11 57 23·00	By Cary's	The altitudes being shifted to others for the 2d series were reset for those taken PM
	23 00		
	22·25		
	20·75	By Troughton's	
	20·75		
	21·75		
	22·25	By Ramsden's Sextant.	
	23·50		
	22·25		
Mean	11 57 22·17	Approximate time of apparent noon by chronometer, with the angles shifted and reset.	

Ramsden at 45° 22′ 50″			
	Upper.	Centre.	Lower.
	h. m. s.	m. s.	m. s.
AM	9 40 27·0	42 55·0	45 19·5
PM	14 14 17·5	11 52·0	9 25·0
Sum	44·5	47·0	44·5

Second Series, with the same Sextants, but the angles used A.M. being left screwed on for the observations taken P.M. In all other respects the circumstances were the same as in the first series.

Instruments. Cary fixed to 38° 49′ 35″ & fixed. Troughton fixed at 42° 29′ 35″

Limb.	Upper.	Centre.	Lower.	Upper.	Centre.	Lower.
	h. m. s.	m. s.	m. s.	h. m. s.	m. s.	m. s.
A.M.	9 13 11·0	15 18·0	17 26·0	9 27 44·0	30 1·0	32 15·5
P.M.	14 41 31·5	39 24·0	37 15·5	14 26 59·0	24 41·5	22 26·5
Sum	23 54 42·5	42·0	41·5	43·0	42·5	42 0

½	11 57 21·25	By Cary's	The altitudes being fixed at the same angle for A.M. & P.M. sights without being shifted in the interval.
	21·00		
	20·75		
	21·50	By Troughton's	
	21·25		
	21·00		
	21·25	By Ramsden's Sextant.	
	21·00		
	21·00		

Ramsden fixed at 47° 50′ 30″

	Upper.	Centre.	Lower.
	h. m. s.	m. s.	h. s.
A.M.	9 48 13·0	50 47·0	53 20·0
P.M.	14 6 29·5	3 55·0	1 22·0
Sum	42·5	42·0	42·0

Mean	11 57 21·11	Approximate time of apparent noon by chronometer, with the
	+ 0·50	Equation of equal altitudes. [identical angles A.M. & P.M.
	11 57 21·61	Chronometer at apparent noon.
	+ 2 4·65	Equation of time.
	11 59 26·26	Chronometer at mean noon.
Chron.	33·74	Slow of mean time.

Computation of the Equation of Equal Altitudes, by Lieut. Raper's method, pages 208 and 9 of his Practice of Navigation.

Interval 5½h. Two daily change decl. 1′ 22″ Increasing. Lat. 35° 54′ N.

Interval	5h. 30m.	Log A	2·2371		Log B	2·3610
Lat.	35° 54′	Cotangt.	0·1403	Decl. 23° 27′ S.	Cotangt.	0·3627
Double change	1·22′	P.L.	2·1196		P.L.	2·1196
Part I.	+ 0·34s.	P.L.	4·4970	Part II.	+ 0·16s.	P.L. 4·8433
II.	+ 0·16					
Eq. Eq. Alt.	+ 0·50					

The above results appear to me practically instructive, inasmuch as they show the great advantage of keeping the same altitudes screwed on the instrument without shifting the indexes in the interval. In the second series with the angles identical, the extreme range of the results with different instruments, is only 0·75s., while in the other series when the index was shifted, the range is 2·75s., or nearly four times as much. The difference from the mean also, is, in one case, only 0·36, in the other it amounts to 1·42s., or four times as great.—B. H.

[We insert the foregoing, with the view of shewing the great advantage of leaving the index with the A.M. altitude on it, *fixed and untouched* after the observation, till the P.M. observation is obtained,—allowing in both cases the reflected images of the sun to pass over each other, and thus getting the times of upper and lower limbs morning and afternoon: because, we believe, that it is too common to use but one sextant, the observer setting the index to different altitudes one after another, and observing the times, whereas there cannot be a greater mistake. It is better where only one instrument can be

obtained to use but one altitude, leaving the index fixed for the P.M. time, rather than adopt this plan.

Capt. Beaufort, the Hydrographer to the Admiralty, in obtaining equal altitudes, was always in the habit of pressing into his service as many sextants as he could get, whether good, bad, or indifferent, and with each of which he obtained a double pair of observations. For in this observation, it matters little what kind of an instrument is used, as long as it remains untouched. If it be full of imperfections, if the adjustments be faulty, if the mirrors be bad, the screens bad, the telescope out of collimation, as long as the instrument used is in every respect in the same condition the same screens used, and in fact it remains untouched till the second observation be obtained, it is just as good as the best of its kind; because everything remains the same, and therefore, if there be such imperfections in any of the instruments, the morning and afternoon observations are affected alike. But the practice to which we have alluded, is, we believe, too general, and observations are often vitiated in consequence. We also recommend those who purchase sextants, to see that the case be so constructed that it will contain the instrument with *the index fixed to any altitude*, a quality which is rarely found even in those of modern construction. —ED. N.M.]

HARBOUR OF REFUGE IN THE GOODWIN SANDS.

Ramsgate, February 6th, 1842.

SIR.—As I would fain believe that the chart of the Goodwin Sands, inserted in your number for the present month, is intended to challenge inquiry, and elicit opinion upon the subject of a Harbour of Refuge, therein delineated, I shall not hesitate to offer a few remarks based upon local experience, and a long residence in the vicinity.

The chart I perceive is copied from the very accurate survey recently made by Capt. Bullock, and the depths at low water in Trinity Bay are such as he found them. Upon those soundings I must remark that, *great alterations* do *occasionally* take place in the swatchway during the prevalence of heavy gales, blowing steadily for a continued period in some one particular point or direction, but especially from the east and north-east; and our hovelling luggers have not been able to shape a course through it, where they have found three fathoms water only a month previous, such is the shifting nature of the surface of these sands; but in a continuance of moderate weather the tides deepen the swatchway channel through.

I cannot understand the motive for the direction given to the proposed piers in the aforesaid plan, inasmuch as the north-east line of pier is carried over a depth of twenty-six feet at low water; when by dividing it in the centre, and inverting the outer half of the segment, the same line and extent of pier, would enclose a larger area, would cross the sand in eight to ten feet water; and if the whole line was made a *perfect crescent*, with its convex to the north-east, it would go into six feet water, equally sheltered by the high part of the shoal, and presenting an arc of resistance where most exposed to the heaviest gales, and the severest action of the tides. Such indeed is my very humble opinion, and it applies equally to the south-western line of pier, which, I think, is unnecessarily distorted, and might also be curved outward into shoaler water, unless the engineer has some reason which

we are not aware of. But surely the projector is not in earnest with the plan thus far submitted, for placing caissons in such depths of water. Let us calculate twelve feet as the least supposed depth of loose silt and sand, twenty-six feet (at one ascertained section) of depth of soundings at low water, fourteen feet the vertical rise of spring tides, and here we have a base requiring an altitude of fifty-two feet solid masonry to bring us on a level with high water mark, add to these fifteen feet above the surface, as a pier on which the proposed cranes, capstans, and buildings essentially necessary to a Harbour of Refuge must be placed, and then taking a comparative estimate according to the plan of the enormous quantity of material, and the consequent labour and risk, in an extent of several miles of *such an edifice* in *such a situation*, I fear we shall be tempted to doubt its practicability, even with the aid of the patent caissons.

If the Sands will support a solid structure in its proper position, a series of rough breakwaters encircling the inner edge of Trinity Bay would perhaps offer the greatest chance of success in the formation of an anchorage. But it would be a mere anchorage, for the idea of establishing a port for repairs, and supplies, as well as refuge, would require an outlay equal to the most costly undertaking, in more eligible situations.

I firmly believe that the projectors might with greater ease excavate and deepen the Stour from Sandwich to Canterbury, or form piers in Dover Bay, for the reception of ships of the line; and, I state these opinions with a feeling that, wherever any person or persons have the public spirit to engage in works of such magnitude, those only are their *real friends*, who will as publicly animadvert on the difficulties and risks of the undertaking.

A few words on the opinions relative to the nature of these Sands.—Most people fancy, that where the shoal is highest, the Sand is deepest, and hence the borings to ascertain the nature of the strata are never made upon the crown or summit of the bank. I believe this is not in accordance with scientific facts. Examine the chart. You will go off from the highest part of the north sand head into an anchorage of six to eight and ten fathoms, chalk bottom. If the inclined plane is continued (which there is little doubt it does) *beneath the sand*, then the solid chalk rock will be found about two fathoms, or twelve feet beneath the surface. If you take a parallel line to this from the swatchway *outwards*, you will quickly come into twenty fathoms water, evidently shewing that the chalk formations under water, and on shore, are geologically similar.

Now then, the estuary of the Stour, or Sandwich Haven, is a chalk basin, and if you continue its windings outwards with its depths and levels, it will require no great stretch of credulity to believe it possible, that at some very remote period, this said Trinity swatchway might have been one of its outlets.

My friends at Minster, in boring their Artesian wells, pierced through a very great depth of marine deposit before they came to the chalk strata, although contiguous to the escarpment of the neighbouring hills. Hence it is reasonable to infer that the greatest depth of sand and silt would be found in the smaller chalk basin, which is the nucleus of the

Goodwin Sands, called Trinity Bay. In all chalk formations the thinest soil covers the eminence, and I am of opinion that the highest parts of all these shoals have a comparatively thin covering of sand upon them, while in the hollows, as in the vallies on shore, would be found a vastly increased depth of deposit, and consequently increased difficulty of getting down to a solid foundation.

To build on so exposed a situation as the crown of the shoal, those who know the Goodwin Sands will believe to be impossible; but in shallow water, protected by them during a great part of the tide, there would be a better chance of success, than in the line of deep water occupied by the proposed piers in the aforesaid plan.

I remain, &c.

K. B. MARTIN,
Harbour-Master, Ramsgate.

To the Editor, &c.

The once-famed Cinque Ports are but a name; they have dwindled into muddy creeks, or bar harbours. Natural causes and effects have had much to do with this, but selfish motives much more. Wherever a few yards of deposit is formed, the Lord of the Manor, or Landowner, immediately embanks, incloses, and appropriates it; the body of back water, thus gradually reduced, loses its scouring power, and the deposit increasing in proportion to the weakness of the stream, a haven is, in a few ages, ruined for all maritime purposes. When any great convulsion of nature assists these effects by choking the mouth, and forming pents, as at Dover, the Reculver, and elsewhere, the opportunity of encroaching upon the waters is seized with avidity. In lieu of re-opening obstructed channels, with an eye to the future navigation, the lucky owner of the soil extends his landmarks upon the spoils of ocean, and thus, the monks of Minster, and the farmers of Rye, Romney, and many other localities, sowed their grain over the remains of broken anchors, beds of oysters, and the wrecks of past ages. It is local usurpation which prevents the Lord Mayor of London from opening that once noble creek, called Yantleet, which united the rivers Thames and Medway; it is local usurpation which has joined the Isle of Thanet to the mainland of Kent, and shut the sea out from the Wantsum, and once navigable stream of the Stour, till it can never be restored: it has assumed a value not to be assailed by any schemes which would remunerate the parties in possession for its loss. Thus, there appears to be but one resource left to the Civil Engineer, who is called upon to reinstate his country in the possession of sufficient harbours of Refuge, in the Straits of Dover; for the cause continues, which has placed the ancient Cinque Ports in some instances, in the midst of fertile marshes; and where the sea recedes, man has but one alternative,—he must advance!

Our neighbours on the opposite side of the Channel, are continually projecting forward their moleheads into deeper water; and their batteries formed on plankets upon the heads of timber piles, sufficiently attest their determination to adhere to a plan which, on their part, experience has approved. It is seldom we hear of making a thing shorter, to increase its capacities. We extend streets and buildings, and lengthen ships and piers; but with respect to Dover Harbour, it appears improve-

ment has been sought in a reduction both of length and breadth, or by contraction, and while they complain of too much sea, and an increase of bar, they shorten their jetty, or breakwater, which their ancestors run out for the express purpose of relieving both these evils.

This must be contradictory to natural effects. The truth appears to be, that the shingle might be, and has been for considerable periods, turned away from the harbour entrance, but then there is a fear of the Marine Parade in the bay. Thus it is reduced to a very plain question: are the owners of that property to protect it by jetties at their own expense, as they have thought proper to place it there on speculative principles, or is the nation to do without an efficient Harbour of Refuge at Dover? Those who can remember the remains of the old Three-gun Battery, the Roman pavement uncovered at St. Mary's church, and some other relics of piling, and antiquity about the market-place, will have no hesitation in believing, that the sea once flowed up into Bench Street, and washed that old bulwark called the Long Wall, which is now far in the rear of all those beautiful houses and highly valuable property called the Marine Parade. The bay, then, has advanced to an extraordinary degree, and the sea line is consequently straightened. It does then appear that consistently with the true principles of engineering, the Piers of Dover Harbour should be carried farther out, and their direction altered agreeably with altered circumstances. Expense is out of the question; it is a national affair of vital importance, and should be borne by the nation. For unless the people will be satisfied with the production of their own country, and return to the simple habits of their forefathers; if they will have importations and foreign commerce, they must also have harbours for their ships. The cost of their construction, as I have before shewn, is expended in the country, and among their countrymen; and they are indispensable for the warlike equipment of our fleets, if we mean to keep on equal terms with our neighbours. (Vide page 145, of the *Nautical Magazine*, for 1838, on Boulogne Harbour.) That article contains some very useful correlative hints for our Dover friends, and the engineers of that harbour. Its improvements are upon a bold and decisive plan—the French Government contributing 106,000*l*., and the inhabitants of Boulogne 14,000*l*., towards the completion of its advanced piers. Admitting then, the possibility of another Boulogne armament, under some now embryo Napoleon, and considering the alteration steam-navigation may create in modern warfare, surely we ought to keep pace in the improvement of our maritime resources, and if possible oppose good harbours with others equally efficient in every degree. This naturally directs our attention still nearer the mouth of that fine river which is the high road to the metropolis, and heart of England.

In the Downs, a most powerful squadron has always been anchored during war, for the protection of our merchant shipping, and our coasts. But open roadsteads would now be subject to the most insidious night attacks from steam cruizers. Here then we look for the formation of some auxiliary power for the protection of such fleets, not only from an enemy, but from elemental war. A breakwater might here be constructed. We have four miles in extent of the Brake Sand, with only six to twelve feet upon it, at low water. Here a rough breakwater,

flanked with Martello towers, might be constructed upon the same principle as that at Plymouth. Its south-west end would be within mortar range of the Downs anchorage, and while it protected the inner roadstead, it would command the Gull Stream, and oblige an enemy to keep without the Goodwin Sands. The area within it would be capable of sheltering a fleet of steam men-of-war, where they might lie anchored in eighteen to thirty feet, at low water. There is very little sea in this area, now, at low water; in heavy gales it is completely locked by the tides ebbing off the Goodwin and outer shoals; and the bottom is all clear; the soundings decreasing gradually in depth from the Small Downs in six fathoms, into Ramsgate Harbour, in eight feet alongside the East Pier end, at low water. The average rise is about eight feet for neaps, and twelve feet for spring tides, giving a depth at high water of sixteen to twenty feet in that harbour—much influenced, however, by the prevailing winds. Here a fleet of steam frigates would reach the Narrows between Dover and Calais, in an hour; and, when in need of repairs or fuel, would have Ramsgate Harbour to resort to, where there is now constructing a patent slip-way, affording the only facility at present, on either side the Channel, between Portsmouth and Sheerness, where steam-vessels of large dimensions could adjust or repair any of the flanges of pipes which lead through their bottoms, below the floor heads.—(Vide *Nautical Magazine*, page 46, 1838.) This breakwater would also protect a considerable line of coast, and cover the retreat of a large fleet of merchantmen or transports, if necessary; and it never would have to resist anything like the weight of water which falls upon that magnificent structure in Plymouth Sound.

The Royal Harbour of Ramsgate is also capable of extension, either east or west of its present area, and eligible for the formation of either wet or dry docks for merchant ships and steam frigates of very considerable tonnage. This would be much easier effected, it is presumed, than any attempt to restore the Port of Sandwich, as these extentsions interfere with no vested property; but like the Harbour itself, are grafted into the bosom of that element, whose powers it has so effectually controlled. Thus the vicinity of the Thames, nearest the Continent, would be effectually guarded. Upon its northern entrances I do not offer an opinion, not being sufficiently acquainted with its coast line; and, therefore, with all deference, leave them to such as are resident, or officially connected with their roadsteads and harbours.

K. B. M.

PROCEEDINGS OF H.M.S. BEAGLE.—*Extract of a letter.*

H.M.S. Beagle, Port Essington, 1st Aug. 1841.

The Beagle rounded Breaksea Spit in the afternoon of the 3rd of June, having left Port Stephens on the 1st, where a few days were spent getting the errors and rates of the chronometers, and collecting material for a plan of that place. Off Breaksea Spit, four merchant

ships were met, and given convoy to through the strait. Between the spit and the main land, a westerly current of nearly a knot an hour was experienced; the same was noticed in ('39.) The next morning, a small patch of six and seven fathoms was passed, with thirteen and fourteen on each side, apparently a ledge extending eight miles south-west from the western isle of Bunker Group. Four days were passed under Magnetical Island, getting fresh rates for the timekeepers, and examining the south part of Halifax Bay, where a large estuary was supposed to exist. Of this, however, nothing was found beyond a small rivulet, on a rich and very thickly inhabited flat.

The natives of this part wore neat mats over their heads, and used a different kind of throwing stick. Their teeth were all perfect, and they had a more robust appearance than is generally met with among New Hollanders,—a certain proof of the country being fruitful.

A running survey was made of the coast, between Point Barrow and Cape Melville, as Capt. King appears to think it not quite correct in his chart. Young Island, in latitude 12° 06′, had no mangroves on it, and was covered (S.b.W.,) when the Beagle passed.

On the 23rd of June, the five ships anchored under Booby Island, passing through Possession and Endeavour Strait; in the former the tide was setting to the southward, upwards of three knots. Finding water could be obtained from the ships in company, the idea of seeking it in Port Lihou was abandoned, and also the examination of Endeavour Strait for the present.

At all the anchorages on the north-east coast, the current was setting from half to one knot an hour from N.N.W. to north-west; the flood tide came from the southward.

On the 25th of June the ships separated, and the following evening the Beagle stood down the Gulf, with a strong south-east wind.

The discovery of two rivers, besides many inlets may be attributed to our being on the coast at a time when the shore could be carefully examined in boats. No channel was discovered into any of the openings. It appeared that whilst in the influence of the stream out of them, a temporary channel was formed, but which ultimately becomes lost in the great flats that front the shore everywhere for the distance of from one to three miles.

In a climate so well suited for Europeans (thermometer generally below 60°), and in so rich a country, the discovery of rivers must be of great importance. I trust you will consider them so, and worthy of the names that have been given to them.

As a point of departure for a party exploring the interior, the position of the Albert may be considered highly favorable.

The last seen of this promising stream was in latitude 17° 59′ S., longitude 7° 17′ E. of Port Essington, and 139° 29′ approximately of Greenwich; sixty miles by the river, in a south-west general direction from the entrance, the width was scarcely twenty yards, with a depth of five feet flowing from the south, through a rich alluvial flat, at the rate of nearly a mile an hour. Increase of elevation of the country at that point, nearly sixty feet.

There was nothing indicative of its being a mountain stream; probably then, it is the drainage of a large swamp or inland sea. Rushe

and other drift were seen in the trees, twenty feet above its present level, but this, and every other information, can be better learned from the tracings.

The contrast between the rich scenery on the banks of the Albert, and the dull wearisome appearance,—the low mangrove shores of the Gulf ever present, is very striking. It might be considered navigable thirteen miles for vessels of thirteen feet, (five within where the water is fresh,) and fifty for boats.

Some of the Aborigines were seen, but they avoided all intercourse. They appear to have a novel and strange manner of disposing of their dead. At the upper part of Flinders River, a corpse was found lodged in the branches of a tree, about twenty feet from the ground; the body was first covered with bark, then with a net, and the whole with large layers of sticks. The Arafuras, or mountain men of New Guinea, have rather a similar manner of disposing of their dead.

Flinders River is much occupied with banks, and, therefore, not of great importance, yet there are the same rich vast plains at the upper part.

Wood, and water by digging for it, was plentiful on Sweers Island, the only part of the Gulf where these supplies can at all benefit a ship. The Investigator's name and date (1802) were found cut in a tree near the west point of the island.

The tides were found to run twelve hours each way, as Capt. Flinders has before noticed, and rise from five to thirteen feet. In the bottom of the Gulf it is high water at full and change, at 7h. 25m. AM. At this time also strong winds prevail from south-east and S.S E., beginning at midnight and ending the following noon; it is then calm for about four hours, when the breeze again springs up from S.b.E., blowing frequently a five and six knot breeze from S.E.b.S., between six and ten in the morning, these last three or four days; at other times land and sea breezes prevail. The barometer ranged from 30·02 to 30·08; thermometer, between 10 A.M. and 4 P.M. from 70° to 72°, and 51° to 65°; the remainder of the twenty-four hours it was below 60°, and as low as 51°.

Many rare birds were killed and preserved, also one of the new species of kangaroo, with a nail on the end of its tail. Not any kind of rock was noticed on the shores of the Gulf, until the neighbourhood of the islands was approached, then a few ledges shew themselves at low water, composed of a concretion of sand and shells, with grains of ironstone.

Booby Island was revisited in the second week of August to obtain fresh rates for the timekeepers; whilst waiting for the latter Endeavour Strait was examined, and found to be a safe channel for large ships, by giving Cape Cornwall a berth of four, and North Wallis Isle of two miles; when the latter bears south that distance, a west (magnetic) course will take a ship to sea without getting into (at low water) four fathoms, the general depth will be five and six. The tide sets through this strait from half to one and half knots, and rises twelve feet, it is high water on the full and change day about 11h. 15m. PM. The flood comes from the eastward, but the stream sets to the westward two-th.rds of the twenty-four hours.

From stations on Booby Island and North Wallis Isle, several of the Prince of Wales Islands were fixed.

On the 20th of August, the Beagle reached Port Essington, leaving Booby Island on the 16th. This was a period looked forward to with deep interest, and not a little anxiety. The relief from the latter was speedy, by finding the settlement in such a flourishing state,—a state that will ever reflect the highest credit on the hardy few that have laboured so earnestly in its advancement.

The month of October will be spent on the north-west coast. On the passage, a line of soundings will be obtained in the neighbourhood of the Great Sahul Shoal, and Timor visited for water; afterwards, every exertion will be made to get into Bass Straits.

The following extract from the survey of the Albert River, sent home by Acting-Commander Stokes, gives some further important particulars relating to it.

The banks of the Albert River become higher as they recede from the sea; at the upper branch, a distance of nearly fifty miles, they reach an elevation of seventy feet, thickly clothed with large white and drooping gums, acacias, and tall palms, rendering the scenery beautiful in the extreme. Behind, the country is rather lower and trees smaller, in clumps, having extensive plains between them covered with long dry grass; beyond the upper branch, the river is thickly strewed with dead trees, and consequently impassable for boats. Reeds and other drift have been noticed in the trees, twenty feet above its present level. The flood stream ceases about the middle of Hope Reach, but there is a slight rise in the waters as far as the upper branch, about four hours after high water takes place at the entrance. When this promising stream was last seen, the width was scarcely twenty yards, with a depth of five feet flowing from south, at the rate of nearly a mile an hour. There was nothing noticed indicative of it being a mountain stream. It is probably the drainage of a large swamp or inland lake. Natives are few and shy. Alligators, fish, and wild fowl (geese, ducks, and teal,) plentiful. Kangaroos and Emus scarce. Climate delightful,—temperature below 60° eighteen hours out of the twenty-four. Lowest 51°. Soil generally a rich mould,—furthest point 17° 59′ south, and 139° 29′ east, sixty miles south-west from its mouth.

Two instances of Transit of the centre of a Hurricane over land.

We gather, Mr. Editor, from two of your recent numbers, very interesting statements of the passage of the *centre of rotation* of two hurricanes, happening at long intervals of time, and at very remote parts of the world. You will perceive, that their publication has served to increase our knowledge of the economy of these storms, and as every new point gained leads that knowledge nearer to completion, all who take an interest in the subject, must feel gratification even at the most trifling acquisition.

The first storm occurred at the city of St. Domingo, on the 3rd of August, 1508 The second hurricane happened on the 25th of December, 1839, at Port Essington, in Australia. The operation of both these tempests were very similar, subject to the particular law which governs the revolution of the wind in either hemispheres.

It is rather remarkable, that in the long interval of 331 years, we should now for the first time find out parallel, or nearly parallel cases, with respect to the immediate passage of the centre of operations over a given place. If there are instances of this recorded, they have escaped our notice. In the storm of 1508, it appears that there was but *one* shift of wind,—from north to south. It is sufficiently evident from this circumstance, that the city of St. Domingo was *directly* in the line of the progression of the meteor, and that the only remarkable effect in the centre of rotation, was the instantaneous change of wind from one point to another diametrically opposite. In the hurricane of 1839, the wind shifted from south to east, and then to north. The centre of rotation must have passed *very near* to Port Essington; sufficiently so to denote, that like the former storm, there was no *lull* or calm space *within* the hurricane zone, which fact demonstrates that all hurricanes are *not* attended by that phenomena, and that the vortex was not accompanied, in the two instances, with greater peril, if we except the sudden shift of wind than in other parts of the circle.

These facts inform us, that the disposition of the central operations is subject to mutation;—that is to say, there may be a large space in profound calm in one instance, and none whatever in another. But we are still in doubt, whether there may not be at times as high a degree of peril in the vortex, as theory has assigned to it. The causes which govern these remarkable changes in the centre of a raging hurricane, the Savans may probably be enabled to explain, as our knowledge of the subject increases.—We perform our part in drawing their attention to these curious facts.

Both these storms appear to have been moving due west,—here they accord; for it seems that in both hemispheres the first part of their general route is westwardly. After curving, they no longer agree, except inasmuch as they turn towards their respective poles, north and south.

As these points may have escaped the notice of your readers, I have, Mr. Editor, thought them sufficiently interesting to warrant my sending you these brief remarks upon them

Nov. 19th, 1841. S. J.

Light on Cape Agulhas.

Like many other useful measures which have been proposed and their importance acknowledged, that of the proposed light on Cape Agulhas has been, and has had its day having passed away, leaving behind it instead of a good solid building, the reasons why it ought to be erected.

We should have been better satisfied if even the commencement of a light-house had taken place. That would have been at least some promise of a future. But no, all is disappointment. How long is this to continue? We trust that before we arrive at the conclusion of another volume, some friend to his country will have taken up the subject in earnest, and that we shall have to record the good work as at least commenced, if not in a fair way of being finished.

In the mean time we record the following, as shewing that expectations are abroad on the subject.

"Brig Lion, from Bombay for London 15th inst. off Agulhas out fifty days, all well; had been in Struys Bay, looking for Agulhas Light, it being expected at Bombay, when she left, that the light would be up by this time; by the Conch, arrived at the Cape."

"I heard of a proposal some time ago for building a light-house in honour of the immortal Horsburgh whom every navigator in the Eastern Seas, must revere as a guardian spirit. I have also heard of Cape Lugullas as the site, for one, and I am sure, Mr. Editor, if a call for subscriptions were made at Calcutta for that purpose, it would be instantly responded to, and let me tell you, it is your peculiar duty to keep alive such good intentions in your readers, by frequently bringing them to notice. With regard to Cape Lugullas, I read somewhere the remark, that captains ought to know their duty too well to require a light there. This is unworthy of notice, only that one cannot help wincing at such a remark from any land person. At the risk of being thought ignorant of my duty, I will state, that I very nearly lost the William Wilson, in rounding that Cape in the night, and I will also state how, for I think all such information of consequence to the mariner. After two or three days contending against a strong westerly gale, I found myself one evening well inshore, and about sixty miles eastward of the Cape. The wind came round to the eastward, and as I expected to pass the Cape before daylight on the next morning, I shaped a course *three points* outside of the Cape, but the wind failing, I found myself at daylight still to the eastward, and my course of the night before heading me full *two points* within the Cape, the wind was fine, with studding sail set; and I could only account for it by supposing a current; and I have no doubt but this has been felt by many others,—the wrecks they speak for themselves."—*Extract of a letter.*

The Merchant Service.

Hull, February 9th, 1812.

Sir.—Again I presume to address you on subjects having reference to the mercantile marine, and to offer a suggestion or two on matters relating thereto.

A proper title is greatly needed for the officers in this employ, the terms, "Captain," or "Master," usually applied to the person in command of a merchant ship, are both very inappropriate. In using the first,—a title properly belonging to the officers in the country's service, is most unwarrantably usurped: in the second, the puerility of the term quite debars its general application. We all know that young gentlemen are commonly styled "Master;" supposing this term to be generally applied to ship-masters, how could we tell if we saw a name in print with "Master" before it, whether it related to a schoolboy or a ship-master.

Impressed with the perfect validity of these objections, I set about thinking of a fresh title for the ship-master; at length I fixed upon that of *Sea-chief*, which is a word clearly expressive of its intended meaning, and of the calling of the person to whom it refers, moreover it is far from being an inelegant word either. For these reasons I recom-

mend the adoption of it, as it will give the ship-master a distinct and suitable title, which will neither encroach on that belonging to others, nor bear any other meaning.

The tyrannical and hard-hearted custom enforced by many owners of ships, in compelling their apprentices who have been brought up genteelly to live for some years along with the uncouth, and perhaps, dirty crew, and to perform servile duties, is highly censurable; it is also productive of injury to the merchant service in general. What youth of a proper spirit would submit to this degradation? Never one surely, without he had an unconquerable desire for a sea-faring life: these cases are but few, comparatively speaking, hence the paucity of liberally educated and enlightened Sea-chiefs now in the service. Even those youths, originally genteel, who undergo the humiliation, must in after life manifest evident signs of their *forecastle* education. A reform must be effected in this particular, before we can hope to see a superior set of officers in the merchant service. All genteel youths apprenticed to this employ, should *live in the cabin, be treated as their station in society demanded,* and *not* be suffered to perform any duties in the least degrading, or to mix with the crew further than absolute occasion required.

Perhaps, some one will say that it would not be worth while for an owner to take an apprentice of this kind. Then let him require a suitable premium, which parents undoubtedly would gladly pay, in consideration of the important advantage accruing thereby. Youths of the class in question should not be called apprentices, but *Co-adjutors.* The first officer should be termed the First Co-adjutor, and the others in numerical order, of course the youngest officer would by this plan bear the highest figure. All the Co-adjutors should wear uniform of a similar colour to the Sea-chiefs, varying in smartness according to the rank of the wearer. This plan would be an excellent one, not only would discipline be more easily obtained by all the officers, both living apart from, acting in consort together, and being dressed distinctly from the crew; but still further it would greatly tend to produce a future superior race of Sea-chiefs.

Small ships are not in the habit of taking any kind of apprentices, excepting those which must work hard, and expect rough treatment; nor is the uniform plan intended for those under 200 tons register, therefore, my remarks have no reference to them.

I purposely use the word genteel, there being many persons in humble circumstances who are very respectable, but still, not genteel. I apply this latter term in reference to persons in the superior classes of life, such as merchants, officers, clergymen, persons living independent, professional men, &c.

As a hint to shipowners I may as well relate an anecdote.—Sea-chief Parlow, of the brig Alfred of Stettin, told me that some years ago, he, along with some brother sea-chiefs, went to Vauxhall Gardens, London. One of his companions accidently broke a chandelier or lamp, for which he had to pay between 8*l.* and 9*l.*: what should he do but insert this sum in his ship's account, as the price paid for a *new anchor* in the room of one lost in *Vauxhall Roads.* The owner asked him the situation of these roads. The sea-chief replied that, it was a portion of the

English coast so called; with this explanation the owner passed the account!! Similar tricks may not be confined to Prussians alone. It is somewhat singular that Sea-chief Parlow was in Blucher's Hussars at the glorious victory at Waterloo, where he received a ball in his leg. He is still a fine looking and vigorous man.

A most reprehensible system of appropriation is secrectly practised by numbers of the sea-chiefs, it consists in supplying their families, &c. with groceries, spirits, beef, &c., out of the ships' stores. Let owners pay their subordinates in a fair and liberal manner, and punish any dishonest trick, when discovered, with the utmost severity allowed by law.

I perceive, Mr. Editor, that you give blue the preference over red, for the sea-chief's coat, as also does a correspondent, signing "Constant Reader." Certainly the minor details are not important, so long as the principle is acted upon. Blue would do as well as red, providing the coats of the former colour are suitably ornamented; care should be taken that the facings be different from those of the Royal Navy, if this colour be used. It is to be regretted that Messrs. Brocklebank, of Liverpool, Messrs. Wigram and Green, of London, or some of the other leading ship-owners have not already adopted the uniform plan.

Too many Englishmen appear averse to change, and gaudy attire; whether it arises from apathy or force of habit, I know not. Without doubt an enterprising and persevering disposition is highly commendable and worthy of imitation.

I am, &c.

THOMAS HODGSON.

To the Editor, &c.

[We insert the foregoing, but are not to be considered as agreeing with the writer in all his proposals.—ED.]

THE VARIATION OF THE COMPASS.

(Continued from p. 50.)

Royal Observatory, Jan. 18th, 1842,
Magnetical and Meteorological Department.

MEAN MAGNETIC VARIATION FOR DECEMBER 1841—23° 11′ 5″.

At 9 A.M.	At 3 P.M.
68° 22′	68° 27′

G. B. AIRY, *Astronomer-Royal.*

VISIT OF THE KING OF PRUSSIA.

ON Saturday (22d Jan.) His Majesty the King of Prussia arrived at Greenwich, and landed at the stairs of the hospital amidst the shouts of assembled thousands, who had collected to welcome His Majesty on the important occasion of his visit to this country. The arrival of a foreign King in this country is an event of no ordinary nature, and calculated in itself to draw together a multitude of curious people, naturally desirous to witness the splendid spectacle which would be expected to attend the reception of so illustrious a visiter; but a higher feeling than mere curiosity appeared to prevade the breasts of the numerous assemblage which thronged the terrace of Greenwich Hospital.

The interesting and important purpose for which the King of Prussia had undertaken this voyage, was deeply felt by all present. He came among them with the intention of giving the most decided pledge of his friendly feelings towards this country, by taking on himself the solemn duty of becoming sponsor for its future sovereign; and there were none among the vast concourse collected to witness his arrival on Saturday, who did not seem to think it equally a duty on their part to reciprocate these kindly sentiments, and show by the warmth of their welcome the importance they attached to the object of his Majesty's visit.

At an early hour in the morning the town of Greenwich presented, as on the previous day, when his Majesty had been expected, a very animated appearance. Business appeared to be entirely postponed, and the day converted into a complete holiday. From all parts of the neighbourhood crowds of people poured into the town, and every fresh train brought down numbers from London. Such as had tickets of admission to the quadrangle of the hospital lost no time in proceeding to that spot, while others, less fortunate, occupied any station outside from which they fancied they could obtain a favourable view of the proceedings of the day. The numbers in Greenwich on Saturday were much more considerable than on the previous day, and the increase was, in all probability, occasioned by the certainty which was felt with respect to the King of Prussia's arrival, and the prospect of a fine day, which the state of the weather in the morning seemed to hold out. Those, however, who had been induced to rely on a continuance of good weather, were in the end, most wofully disappointed, for in the course of the morning a good deal of sleet fell, and it ultimately rained heavily.

As early as 12 o'clock thousands had arrived, and were admitted at the east gate of the hospital, where, notwithstanding the great number of the applicants for admission, all confusion was prevented by the excellent regulations of the Governor, Sir Robert Stopford, and the police authorities acting under his instructions. In the interior of the quadrangle the arrangements made for the accommodation of the spectators, and the order of proceedings were the same as on the day previous. As it was expected that His Majesty the King of Prussia would, after landing, walk from the Governor's house along the west side of the quadrangle to his carriage, the public generally were, of course, not allowed to encroach on that path, but were permitted to promenade or stand in any other part of the quadrangle, where the pressure of a crowd would not interfere with the business of the day. The gallery above the colonnade next the chapel was fitted up with seats for the accommodation of visitors, as was also that adjoining the Painted Hall. The appearance of the river in front of the terrace was, notwithstanding the gloominess of the weather, as the day advanced, lively enough. In pursuance of the orders of Sir R. Stopford strong barriers had been erected across the river-terrace to keep the landing clear. Against these barriers a number of persons had taken their station, and, with the most enduring patience, remained there, in defiance of sleet and rain, for hours together. Several private boats and pleasure yachts were also anchored close to this spot, which certainly afforded the best opportunity of witnessing the landing of the King, and his reception by the illustrious individuals who had assembled at Greenwich to greet him on his arrival in England. The Admiralty barge, manned with her crew, in their gorgeous state dresses, lay off the stairs leading from the middle of the quadrangle; and close by was also to be seen the barge belonging to the Governor of the hospital.

Shortly after 12 o'clock the Royal Marines, selected for the guard of honour entered the quadrangle, headed by their excellent band, playing "Rule Britannia." This fine body of men had marched in the morning from Woolwich, where, about a quarter past 11 o'clock, they had assembled on their parade ground in front of the barracks, under the command of Colonel Conolly, and consisted of two companies of 90 rank and file each, the one under the charge of Captain Taylor, of the Woolwich division, and the other under Captain Wes-

ley, of the Chatham division; with Lieutenants Frazer, Ayles, Varlo, Harvey, and Grey. Two of the lieutenants carried the colours of the corps, after they were delivered to them with the usual formalities on such occasions. After entering the quadrangle by the east gate, the men piled their arms in a line fronting the river, the station they were to occupy on the arrival of the King of Prussia, and were then allowed to shelter themselves under the colonnades of the east wing from the snow and sleet, which were falling heavily at the time.

The arrival of the Marines was quickly followed by the entry into Greenwich of a body of Life Guards, intended to form an escort for the King of Prussia. As they proceeded through the town the picturesque costume and martial appearance of these troops formed the theme of general admiration. They were commanded by Captain Biddulph, with two subalterns, and consisted of one quarter-master, three corporals, one trumpeter, and 16 troopers, with a standard of the regiment, and entered the interior open space in the north-east wing, where they dismounted and walked their horses, to keep them warm during the prevailing storm. About the same time a detachment of artillery arrived from Woolwich, bringing with them four guns (9-pounders), commanded by Captain Lethbridge, occupied the same situation in the Royal Park as on the previous day, known by the name of "One-tree hill." Colonel Cleaveland, commanding officer of the field battery, on his arrival at Greenwich proceeded to the quadrangle of the hospital, and remained there.

A number of distinguished individuals had by this time reached the governor's house; and among them his Grace the Duke of Wellington, who, on being recognized, was enthusiastically cheered by the company. The different uniforms of the naval and military officers who were promenading in the quadrangle, made the scene exceedingly brilliant.

At 20 minutes past 1 o'clock a carriage containing Prince Albert and Col. Bouverie, preceded by two outriders, drove into the quadrangle. His Royal Highness was received by the governor and other high officers of the hospital, and hailed in the warmest manner by the assembled multitude. Immediately on his arrival, the Royal Standard was hoisted in the centre of the quadrangle. Another flag, with the arms of England emblazoned on it, was at the same moment hoisted on the top of the governor's house, where it continued to wave majestically in the breeze as long as his Royal Highness remained in the hospital.

Expectation was now at its highest pitch, promenading ceased, and each person stationed himself in the most favourable position he could get. All on a sudden a most extraordinary activity was observable among the veterans of the hospital, and it quickly became known that their ears, so accustomed to the cannon's roar, had detected the distant sound of the discharge of guns. This was a salute fired at Woolwich, intimating that the Firebrand, conveying his Majesty the King of Prussia to the British shores, had at that time reached Woolwich. The drum was now beat, and all the pensioners, dressed in their best clothes, were summoned from their different quarters, and drawn up in a line against the carriage road on the west side of the quadrangle. At the same time the boys of the Greenwich Hospital schools entered the south gate of the quadrangle, headed by their band, and stationed themselves on the steps in the space between the chapel and Painted Hall.

Immediately on the arrival of the Firebrand in Woolwich-reach, with the King of Prussia on board, Captain Sir Francis A. Collier, CB. and KCH., went on board, and was introduced and most graciously received by His Majesty, as senior officer in the river Thames, one of Her Majesty's aides-de-camp, and superintendent of the Royal Dockyard at Woolwich. Sir Francis, who was accompanied by Captain Bullock of the Fearless steam-vessel, and Mr. Hicks, master of the William and Mary yacht, in the royal barge, was invited on board the Firebrand, and accompanied the royal party to Greenwich. The first announcement of the approach of the King of Prussia, when the Firebrand was a considerable way down the river, was the hoisting of the Prussian standard on

the tower of the parish church, and likewise in the dockyard and Royal arsenal. The bells at the same time rang a merry peal. As the Firebrand came up the river, a salute from the field batteries in the Royal arsenal, conveyed the intelligence that His Majesty was opposite that station; and as he passed the various vessels belonging to Her Majesty at Woolwich the yards were manned, and the band of the 15th Regiment, stationed on board the William and Mary yacht, played "God save the Queen" and "Rule Britannia," amidst the cheers of the crews and the workmen of the Royal dockyard and Royal arsenal. His Majesty was on deck all the time, and repeatedly took off his hat in recognition of the compliment.

Within about ten minutes after the Royal salute had been fired at Woolwich, the Lightning steam-vessel, Second-master H. K. Bowen commanding, having on board several persons attached to the suite of the King of Prussia, arrived at Greenwich, and, on the governor's barge going alongside, communicated the pleasing information that His Majesty would arrive in less than half an hour.

His Royal Highness Prince Albert, who was dressed in plain clothes, now left the governor's house, accompanied by all the naval and military officers present. In the large square of the quadrangle, every arrangement had been carried into effect with the most perfect regularity. In the centre was placed the battalion of Marines, while on the path adjoining the river, was collected a body of naval and military officers of high rank, habited in their various uniforms. The windows of the different rooms in the hospital were occupied by beautiful and elegantly attired ladies. The old pensioners, in their best dresses, were ranged along the paths of the quadrangle; while the steps on the southern side were occupied by the boys of the Greenwich Hospital schools. The effect of the scene at this moment was splendid in the extreme. His Royal Highness Prince Albert, it is reported, expressed his admiration of this inspiriting spectacle. Anxious to be ready to receive his Royal guest on landing, he seemed desirous of leaving the governor's house even before it was necessary to do so; and to Sir R. Stopford, who expressed a fear that he might take cold, he observed, "I do not care for the weather; I shall not catch cold; it is a beautiful sight."

His Royal Highness, together with the naval and military officers who accompanied him, stood for some time at the top of the steps leading from the river to the quadrangle, until the near approach of the Firebrand, having the Royal party on board, and carrying at the masthead the dark figure of an eagle on a white ground. Amongst the persons waiting the arrival of the vessel, were the following distinguished individuals belonging to Her Majesty's naval and military service:—

Naval.—Adml. the Right Hon. Sir G. Cockburn, GCB., Major-Genl. of the Royal Marines; Adml. the Hon. Sir R. Stopford, GCB., and GCMG., Governor of Greenwich Hospital; Rear-Adml. Sir J. A. Gordon, KCB., Lieut.-Governor; and a number of the officers of the institution.

Army.—Field Marshal the Duke of Wellington, KG., GCB., and GCH.; General Lord Hill, GCB., GCH., and KC., Commander of Her Majesty's Forces; Lieutenant-General the Right Hon. Sir H. Hardinge, KCB.; Lieutenant-General Lord Bloomfield, GCB. and GCH., Commandant of the garrison at Woolwich; Col. Conolly, Commandant of the Royal Marines at Woolwich; Col. Cleaveland, commanding the field batteries at Woolwich; Lieutenant-Colonel Dundas, CB., Royal Arsenal Department; Lieutenant-Colonel Wylde, CB., Royal Horse Artillery; Major Hardinge, Royal Artillery (brother of Sir Henry Hardinge), and Major Sandilands, Royal Artillery, Deputy-Assistant-Quarter-master-General.

As the Firebrand approached Greenwich the weather became fair, and the King of Prussia having remained on deck the whole time had an excellent view of the preparations to welcome his arrival in this country. On the arrival of the Firebrand opposite the landing-place the Governor's barge went alongside, and His Majesty having descended into it he was rowed ashore. One of the trumpeters of the field batteries during the time the King was in the Governor's

barge sounded his trumpet, and five other trumpeters stationed from the landing-place re-echoed the signal with beautiful effect, as the sounds became more mellow by the distance, and, the guns being in readiness, as the signal was displayed on the roof of the Governor's residence, the first gun was fired, and the report heard at the moment His Majesty landed in this country. Prince Albert attended by his illustrious retinue, descended the steps to receive his Royal visitor, and immediately on his landing they both simultaneously uncovered and greeted each other. The guns of the Firebrand (six in number) were fired amidst continued cheers and the waving of hats and handkerchiefs, and His Majesty seemed to be highly gratified by the warmth of his welcome to the country of his Royal relatives.

His Majesty, after receiving the congratulations of all present, accompanied Prince Albert to the residence of the Governor, where he partook of a splendid cold collation prepared for the Royal visitors and the distinguished personages present.

After remaining about 20 minutes in the residence of the Governor, His Majesty and Prince Albert walked side by side to the carriage, which was in waiting to convey them to Windsor. They were both uncovered, and bowed continually in acknowledgment of the hearty cheers with which they were greeted. His Majesty did not appear to have suffered in the slightest degree from his voyage. He looked in very good health, and wore a most pleasing expression of good temper in his countenance. He was dressed in plain clothes, and enveloped in a mantle of ample dimensions, so that an appearance of stoutness was given to his figure. His height seemed to be about 5 feet 8 or 9 inches. As his Majesty passed along to the carriages, he was saluted by the old pensioners, and the boys of the Greenwich Hospital school with three cheers, which were re-echoed by "the merry seamen's rude but cheerful shout," on board the Firebrand.

Prince Albert entered the carriage first, and seemed almost overcome with emotions of pleasure, at the hearty and cordial welcome the King of Prussia received; and His Majesty could not avoid smiling, when seated in the carriage, to witness the anxiety of the ladies to obtain a glimpse of him; for which purpose they had patiently for many hours endured exposure to the cold and unfavourable weather.

His Majesty landed at Greenwich about 20 minues past 2 o'clock, and left the hospital for Windsor, escorted by a body of Life Guards, about a quarter to 3 o'clock.

Arrival of the reigning Duke of Saxe Coburg and Gotha, and Duke Ferdinand of Saxe Coburg.

On Sunday morning, the 23rd of January, two of the Royal carriages arrived at Woolwich, and were stationed in the Royal dockyard, as the arrival of other Royal personages was anticipated. At a quarter before 4 o'clock in the afternoon, Her Majesty's steam-vessel Shearwater, Captain Washington, arrived, having been delayed to convey the reigning Duke of Saxe Coburg and Gotha, Prince Albert's father, and Duke Ferdinand of Saxe Cobourg, his Royal Highness's brother. The Royal party proceeded immediately after arrival to Windsor Castle.

Departure of the King of Prussia.

In consequence of it having been announced that the King of Prussia would embark at Woolwich, on the 4th February, and that a grand review would previously take place; at an early hour the roads were crowded by people coming from all directions to be present on the occasion. At a little before 8 o'clock, three troops of the 13th Light Dragoons, commanded by Col. Brunton, marched into the garrison from Hampton-court, with their band, and shortly afterwards a squadron of Life Guards arrived, to form a guard of honour upon the arrival

of His Majesty and Prince Albert, and their suites. At half-past 10, the hoisting of the Royal Standard at the Mortar Gun Battery in the Park, and the firing of the Royal salute, announced the arrival of His Majesty at the south-west entrance to the common, where he was met by a guard of honour, formed of Life Guards, the escort of Prince Albert's Own, the 11th Hussars, which proceeded from town, dropping in the rear.

As soon as His Majesty had mounted, he dashed forward to the front of the line, and was received when opposite the centre of it by a general salute, the brass band of the Royal Horse Artillery playing the National Anthem. After which the Royal party rode down the front and returned by the rear of the line, when having taken up his station at the flag-staff the troops passed in double column, at a walk, and afterwards at a trot. After passing His Majesty the second time, the Royal Horse Artillery countermarched on the centre, and as soon as the left flank of the field batteries were clear of them they charged, passed His Majesty at full speed, and took up a position to the left. The field battery then commenced a series of manœuvres, which they went through in their usual efficient manner; after which the Horse Artillery dashed to the front, unlimbered, and fired three rounds,—limbered up, formed action to the right, left, and rear, firing three rounds in each position, and concluded by dismounting and remounting their guns, advancing, and giving the general salute. His Majesty then advanced, and complimented Colonels Dyneley and Cleaveland on the efficiency of the troops, and proceeded to leave the ground to view the models, &c., in the Royal Repository on foot. The Royal party next proceeded to the splendid mess-room of the Royal Artillery, and partook of an elegant *dejeune* with Lord Bloomfield, the officers of the garrison, and staff. The Marchioness of Douro was the only lady present, and specially invited by Lord Bloomfield. After luncheon, the Royal carriages were ordered, and His Majesty, attended as before, by the Horse Guards, proceeded to the practice-ground, in Plumstead Marshes, where he witnessed several flights of rocket practice, with which he appeared greatly delighted, and called out several times "*encore*," which, of course, was immediately complied with. The next place visited was the Royal Arsenal, which was entered by the eastern gate. His Majesty inspected Napier's new method of compressing shot, and was much interested, as he and Prince Albert were at the progress of cartridge-making by the boys.

The time had now arrived for His Majesty's departure, and the *cortege* moved to the West Wharf-stairs, where the Admiralty barge awaited to convey him to the Firebrand steamer, lying off in the stream. After first taking leave of the Duke of Cambridge, and Prince George, he saluted Prince Albert on both cheeks, and appeared much affected, and seem to cling to him to the last moment. The parting with the Duke of Wellington was also an affecting scene. After taking leave of the other noblemen and officers, exactly at 2 o'clock he stepped into the barge with Sir George Cockburn, and a Royal salute announced his departure. The Firebrand in a short time proceeded down the river, Prince Albert anxiously gazing after her as long as persons on board could be recognised, and then took his departure for Buckingham Palace. Never was there more people at Woolwich on any previous imposing scenes, and great difficulty was experienced in getting to town, many being obliged to walk the whole way up.

Chinese Intelligence.

(Circular.)

To Her Britannic Majesty's subjects in China.

Her Britannic Majesty's Plenipotentiary in China has the utmost satisfaction in announcing, for general information, that the city of Tinghae, the capital of

the Chusan group of islands, was yesterday re-occupied by her Majesty's forces.

During the eight months that have elapsed since the island was evacuated by her Majesty's forces in February, 1841, the Chinese government appears to have exerted itself greatly to strengthen the defences. The whole sea face of the city is now one continued line of fortification, extending for nearly two miles, and redoubts and intrenched camps have been thrown up in every direction.

The Chinese troops made a better attempt at resistance than they have hitherto done, but nothing could withstand the intrepid valour and discipline of her Majesty's combined forces, and in less than two hours the batteries were cleared, the city escaladed, and the enemy flying in all directions.

Great quantities of ordnance (amongst which are about forty pieces of brass cannon,) other arms, and military stores of every description, besides magazines of gunpowder, and large granaries of rice have been found, and from a variety of concurrent circumstances it is evident that the Chinese authorities had had no conception that the place could be taken in such rapid and gallant style.

Arrangements will be made immediately for establishing a provisional Government, and her Majesty's Plenipotentiary deems it advisable, after what has already happened, to intimate to her Majesty's subjects and all others, that, under no circumstances will Tinghae and its dependencies, be restored to the Chinese Government until the whole of the demands of England are not only complied with, but carried into full effect.

God save the Queen.

Dated on board her Majesty's ship Blenheim, in Chusan harbour, this 2d day of October, 1841.

HENRY POTTINGER,
Her Majesty's Plenipotentiary.

(CIRCULAR.)

To Her Britannic Majesty's subjects in China.

HER Britannic Majesty's Plenipotentiary in China has the renewed extreme gratification of announcing, for general information, the further brilliant and important successes of her Majesty's combined naval and land forces in the reduction and occupation, on the 10th and 13th inst., respectively, of the cities of Tinghae and Ningpo.

The city of Tinghae is situated at the mouth of the Tahea, or Ningpo River, and was covered so strongly by its citadel, (a fort built on a lofty headland jutting into the sea,) and a number of heavy batteries and outworks on each bank of the estuary, that the Imperial Commissioner, Yukien, who had come specially to defend it, and the other civil and military Chinese authorities, appear, from their proclamations, to have flattered themselves, even after their past and recent experience of the power of the British arms, that the place could not be taken; but they were, as on all previous occasions, speedily undeceived, and, although the Chinese troops displayed considerable bravery, and in many individual instances would neither retreat nor surrender, though deserted by their officers and comrades, the main bodies were driven from one rallying spot to another, and at length routed and entirely dispersed; whilst the fort and works were demolished or rendered utterly untenable by the overwhelming and beautiful practice of the squadron.

It is reported that a great many of the Chinese officers of rank have fallen with a large number of men, but no precise information has as yet been obtained on this point. The Imperial Commissioner is stated to have attempted to drown himself immediately after the battle, and to have since died at a short distance inland from the effects of that attempt, or some other unexplained cause.

ABout 150 pieces of brass ordnance, exclusive of iron cannon, many hundred

gingals and wall pieces of various calibre, and some thousand matchlocks, and other warlike weapons, were captured, besides which several extensive magazines of gunpowder have been blown up, or otherwise destroyed.

It affords her Majesty's Plenipotentiary the highest additional satisfaction to add, that this achievement has been happily effected with a much smaller loss on our side than could have been almost hoped for, there being only five killed and about thirty wounded of all arms of her Majesty's forces.

The necessary arrangements having been made, and reconnoissances had during the 11th and 12th inst., the squadron named below, carrying the troops, marines, and extra seamen from the ships left behind, moved on the 13th up the river to Ningpo, which was found undefended, the Chinese soldiers having positively refused to face our troops again, in consequence the Civil Mandarins and all the military and naval officers, fled from the city, about two hours before the squadron reached it. The city was, therefore, peacably occupied by the troops under his Excellency Sir Hugh Gough, KCB., and the ships moored in the river within 100 yards of the wall.

Squadron.—The Modeste, carrying the flag of his Excellency the Admiral, Cruiser, Columbine, Bentinck, Queen steamer, Sesostris, Nemesis, and Phlegethon.

God save the Queen.

Dated on board the steam-frigate Queen, in the river of Ningpo, this 15th October, 1841.

HENRY POTTINGER,
Her Majesty's Plenipotentiary.

NEW ZEELAND.—*Reported Dangers.*

SIR.—When cruizing off New Zeeland, in her Majesty's sloop Pelorus, I observed in the Bay of Plenty three high towering rocks, bearing E.S.E. by compass, when on with the centre of White Island, distant from it about five or six miles. I also learned that a small rock, awash at low water, bears north by compass four miles from the Brothers, in Cook Straits; but there is a reef off Poverty Bay, distant about twenty miles, with only ten feet water on it, and also the Brampton Shoal and the black rocks off Motou Proa Islands, Bay of Islands, lie further off than laid down in the charts.

Should you consider the above worth publishing, for the benefit of navigation in general, I should feel obliged by your doing so.

I have the honour, &c.,

D. CRAIGIE,

9, *Hornsey Row, Islington, Feb. 3rd*, 1842. *Master, R.N.*

[We trust that these observations will meet with the attention of some amongst our numerous contributors, and induce them to forward to us the correct positions of the dangers referred to by Mr. Craigie.—ED. N.M.]

NAMES.—"What's in a name?" has often been enquired. We might reply, a great deal, and so it would appear,—for we find that the Firebrand steamer, which conveyed the King of Prussia to this country and back, is to exchange her's for that of the "Black Eagle," in testimony of the honourable mission on which she has been employed; while she bestows her's on a large steamer building at Portsmouth, hitherto know by the name of Beelzebub, an exchange we may add desirable to both parties.

Perilous situation of Her Majesty's Cutter Mercury.

Bristol, Jan. 28th, 1842.

Her Majesty's cutter Mercury was last night towed in here by the County of Pembroke steamer, in a very disabled state, having lost four of her hands during the gale, and had six others severely wounded.

This morning I went on board of her, and having seen Mr. Scarlett (her commander), acting-master of the Queen, I learnt from him the following particulars:—

The Mercury tender sailed from Kingroad on Saturday last, for the Queen, now lying at Spithead, with twenty-two volunteers, and having on board Mr. Francis Peel, a first class volunteer, nephew to the Right Hon. Sir Robert Peel, her commander, and a crew of six men and a boy. Having experienced very heavy weather, she hove to under Lundy Island, where she lay until Tuesday morning, the 26th. She then again put out to sea, and about 2'clock, when about thirty miles to the westward of Lundy Island, as she was lying-to under a close-reefed try-sail and a storm jib, in consequence of the hurricane, which was then raging with the utmost fury from the W.N.W., a sea suddenly struck her, which washed away the mainsail, the boat, and the companion, threw the cutter completely down on her beam ends, half filling her with water, and sweeping every one of the six men who formed the crew overboard, four of whom almost miraculously recovered the vessel, the other two meeting a watery grave. The violence of the shock caused the whole of the pig-iron ballast to be thrown to leeward, and forced up the lower deck, which was split into a hundred pieces. Mr. Molesworth and Mr. Peel, who were below, immediately jumped on deck, and, aided by the volunteer seamen, fortunately succeeded (after cutting away the wreck, pumping, baling, &c.) in righting the vessel. Her head was then put before the wind, and she ran up the Bristol Channel, until she fell in with the County of Pembroke, by which she was towed safely to Bristol. So sudden was the shock, that the helmsman, who saw the sea coming, had scarcely time to cry "Look out, there!" and catch hold of a rope, before the sea struck her, and he was unfortunately drowned. After they had succeeded in getting the vessel in sailing trim, on going below they found two men—viz. Alick Mackay and James Reed, killed, and six others severely wounded—one having his thigh fractured, another his arms broken, and another having lost an eye, in addition to other severe injuries. The two men belonging to the crew who were drowned were named Thomas Sangar and Thomas Berry, and were both married men. Berry has also left two children. —*Times*.

Chusan.—The variation of the compass at the Chusan Islands is remarkable for its sudden change. On the north side of Chusan the variation is 1° 57′ W., and on the south side of Tinghae it is 2° 33′ E. At Buffalo's Nose the variation is 1° 57′ W., and at Tree-a-top Island, six miles to the northward it is 0° 43′ E. The geological specimens collected at the different stations afford no trace for the cause of these differences.—R. Collinson, *Com. R.N.*

The Niger Expedition.

Liverpool, Jan. 25th, 1842.

Sir.—I have only time, on landing from the Wave merchant schooner, (in order to save a post,) to beg you will inform the Lords Commissioners of the Admiralty of my arrival from Fernando Po, which I left on the 23rd of November, at the recommendation of the medical officers, for the re-establishment of my health.

Although now almost entirely recovered, tendency to attacks of ague make it advisable that I should not travel by night, but I hope to be able to report myself at the Admiralty the day after to-morrow at furthest.

I regret to be obliged to report the death of Lieut. Stenhouse, Mr. Woodhouse, assistant-surgeon, and Mr. Wilmot, clerk of the Albert, and one seaman and marine belonging to the same ship, since I last wrote to their lordships, on the 25th of October, besides a seaman of the Soudan, on the passage home with me from Africa; but the remainder of the crew of the Albert, I am happy to say, were all getting better, and are, by this time, I hope, safely arrived at Ascension.

I am, &c.,

To the Secretary of the Admiralty. H. D. Trotter, *Captain.*

Her Majesty's steam-vessel Albert, Clarence-cove, Fernando Po, Oct. 25th, 1841.

Sir.—My last letter to you, dated the 18th of September, from the Confluence of the Niger and Tchadda, would acquaint the Lords Commissioners of the Admiralty, that fever had broken out on board the vessels of the expedition, and that I had found it necessary to despatch the Soudan to the sea with all the cases the surgeons deemed to require a change of climate, directing Lieut. Fishbourne to take charge of her in the absence of Commander Bird Allen, engaged in his duty as commissioner.

I also informed their lordships, in the same letter, that the Albert was about to proceed up the Niger, and the Wilberforce up the Tchadda, in prosecution of the objects of the mission.

After the departure of the Soudan, however, two of the engineers of the Wilberforce were taken ill, and the crew had become so weakened by an increased number of cases of fever, that Commander William Allen found it impossible to proceed up the Tchadda, and I accordingly ordered him to take his vessel forthwith to the sea, and, if necessary, on to Ascension.

As there was still an engineer quite well on board the Albert, and another convalescent, and I considered the ship in other respects quite able to continue longer up the river; and as Dr. M'William, the surgeon, thought the fever, when we reached higher up the stream, might probably assume a milder character, and the change of air might soon restore the patients still remaining on board, who were not desirous of going in the Wilberforce to the sea; and it being of importance to reach Rabbah this year, to finish the chain of treaties with chiefs on the banks of the Niger, I deemed it my duty to try the experiment, and accordingly I wayed at the same time with the Wilberforce, on the 21st of September, and the Albert proceeded up the river while she moved down.

The cases of sickness, however, continued to increase, till at length, when we got to Egga, on the 28th of September, the only remaining engineer was taken ill, and no officers, excepting Dr. M'William, Mr. Willie, mate, and myself, were free from fever. We continued wooding and preparing to return down the river till the 4th of October, when I was myself seized with fever, and Mr. Willie a day or two afterwards.

On the 5th of October, Mr. Willie wayed and dropped down the river, but was soon prevented by sickness from carrying on duty; and Dr. M'William,

assisted by only one white seaman, lately recovered from fever, took charge of the vessel, not thinking it right, in my state of fever, to report Mr. Willie's illness.

From want of engineers, we should have had to drop down the whole length of the river without steam, had not Dr. Stanger, the geologist, in the most spirited manner, after consulting Tredgold's work on steam, and getting some little instruction from the convalescent engineer, undertaken to work the engine himself. The heat of the engine-room affected the engineer so much as to throw him back in his convalescence, and prevent him rendering any further assistance; but Dr. Stanger took the vessel safely below Eboe, without anything going wrong with the machinery; while Dr. M'William, in addition to his enormous press of duty, as a medical officer, conducted the ship down the river in the most able and judicious manner. I may here remark that the doctor steered the ship entirely by Commander William Allen's excellent chart of the Niger, of the correctness of which we had a good opportunity of judging on ascending the river, and which proved eminently useful on the passage down; and Mr. Brown, clerk, a native of Africa, who had been up the river before, also rendered him considerable assistance in the pilotage.

When about 100 miles from the sea, Captain Becroft happily made his appearance in the Æthiope steamer, having been requested to ascend the river and communicate with us by Commander William Allen of the Wilberforce; and it was really a providential mercy that he arrived when he did; for had any accident, however trivial, happened to the engines, they could not have been worked any longer, as Dr. Stanger had no knowledge of the manner of rectifying it. Fever still prevented my going on deck, and there was no executive officer to take the vessel over the bar, and only one convalescent sailor doing duty, and no black sailor who could properly take the helm. Captain Becroft, however, came on board with an engineer, and not only took the vessel over the bar, but brought her all the way across to this anchorage, (a distance of 160 miles,) where we arrived in safety on the 17th instant.

The assistance rendered by Captain Becroft, independent of the services of his vessel, the Æthiope, was, I can assure their lordships, almost indispensable to the safety of the Albert; and I consider it to have been so highly conducive to the preservation of many valuable lives, which might have been sacrificed had we run aground in the Delta, and remained there even for a few days, that I shall present him with £105, and his engineer with £10 10s., by bills on the Accountant-General of the Navy, and I trust their lordships will sanction this expenditure when they take the circumstances of the case and the highly meritorious conduct of Captain Becroft into consideration.

The morning after our arrival here, the sick were all landed in comfortable quarters, provided for the officers and men in the most kind and prompt manner by the agent of the West African Company; and we have reason to believe the climate to be healthy for the present. The air is cooler than the Niger by about twelve degrees.

I omitted to mention that off the bar of the Nun we met the Soudan, about to re-ascend the river, under the charge of Lieut. Strange, in the absence of Lieut. Fishbourne, who had been sent sick to Ascension. She was in a very inefficient state, and returned with us to the anchorage. Mr. Strange is at present in charge of the Albert, as well as the Soudan, the officers of this ship of every rank being in sick quarters, with the exception of Mr. Mouat, assistant-clerk, doing duty at the hospital.

I regret to state, that in addition to the loss of Mr. Nightingale, assistant-surgeon, and four seamen, as mentioned in my letter of the 18th of September, between the Confluence and Egga, Mr. Lodge, the second engineer, threw himself overboard in a fit of delirium, and was drowned; and that afterwards two seamen and one marine of the ship died, and Mr. Kingdon, seamen's schoolmaster of the Soudan; and that Mr. Willie, mate, and the purser's steward, have died here since our arrival; and it is my painful duty to add,

that the death of Commander Bird Allen, of the Soudan, has been this moment reported to me, and that Mr. D. H. Stenhouse, acting-lieutenant of the Albert, is lying in a most precarious state. For several days after Mr. Willie was taken ill, he insisted occasionally upon getting out of his cot, (which was on deck,) and giving orders, and I fear the extra exertions of this zealous young officer contributed much to aggravate his case.

I am happy to say there is a general improvement taking place in the remainder of the sick, with the exception of Dr. M'William and Mr. Woodhouse, assistant-surgeon, who have lately been taken ill, the latter with the "river fever," and Dr. M'William, it is feared, may prove to be so likewise; but these cases, I trust, will not prove severe, now that we are in a better and cooler climate. I hope all the patients will be so far improved, and the engineers so much recovered, as in a short time to be able to proceed with the Albert to Ascension.

I call the disease the "river fever," because the surgeons report it to be of a nature that is not treated of in any work on the subject, and it has such peculiarities as they appear never before to have witnessed, either in African or West Indian fever.

The Soudan, as alluded to before, left the Confluence on her passage down the river on the 19th of September, under charge of Lieut. Fishbourne, with the master, a mate, and the second engineer able to do a little duty; but on the following day these officers were too ill to afford Mr. Fishbourne any assistance. He had, however, two stokers able to drive the engines, who were for a time well enough to do duty, and he reached the mouth of the Nun in the short space of two days afterwards. During the last twenty-four hours before reaching Fernando Po, he was compelled to work the engines and do every other duty himself. Such exertions could not fail to hurt his health, and he was seized with fever at this place after his arrival, though I am happy to say he was doing well on board the Wilberforce when she sailed for Ascension.

I beg strongly to recommend the zeal and exertions of this officer, for the favourable consideration of their lordships.

The Soudan opportunely met the Dolphin at the mouth of the Nun, and received prompt assistance from her commander, who embarked thirty-five patients, (all that were fit to be removed,) and sailed with them for Ascension, under charge of Mr. Sterling, assistant-surgeon of the Wilberforce.

Before the Soudan reached Fernando Po, Mr. Marshall, acting-surgeon, and Mr. Waters, clerk in charge, fell a sacrifice to the climate; and a stoker of the Soudan, and the seamen's schoolmaster of the Albert, died after their arrival.

Mr. Thompson, assistant-surgeon of the Wilberforce, had charge of the sick on board the Soudan on her passage down the river, and his exertions and fatigue, from which he is now suffering, were only equalled by those of Mr. Fishbourne.

The Wilberforce left the Confluence on the 21st of September, but owing to the necessity of cutting fuel, did not reach the mouth of the Nun until the 25th, nor Fernando Po till the 1st of October. Dr. Pritchett, the acting-surgeon of that ship, had twenty-six cases under treatment when she left the Confluence, and the number increased afterwards, and I can assure their lordships that the exertions of that officer were of no ordinary kind, and his duties on the way to Ascension, now that he has no assistant, are likely to be still more arduous; this officer's services, as well as those of Mr. Thompson, acting-surgeon of the Soudan, render them highly deserving of their lordships' consideration for promotion. The Inspector of Fleets and Naval Hospitals will, when he receives their reports, be well able to judge of their merits and arduous services on this expedition.

The Wilberforce, during her passage down and at Fernando Po, had the misfortune to lose her purser, Mr. Cyrus Wakeham, and Peter Fitzgerald, a stoker; also Mr. Harvey, acting-master of the Albert; and Mr. Coleman, acting-assistant-surgeon of the Soudan.

I have before mentioned the exertions and judgment displayed by Dr. M'William, the surgeon of this vessel, in bringing her down the greater part of the Niger in safety; but this would be considered the more remarkable if it were possible to convey to their lordships the exertions and fatigue he had to go through in his attendance upon the sick. I cannot speak too much in praise of this valuable officer, nor feel thankful enough that a man of so much talent and energy was appointed to the expedition.

I have already alluded to Dr. Stanger's praiseworthy conduct in acquiring a knowledge of the steam-engine, by which we were enabled to get down the river so much more speedily than we otherwise could have done; but this gentleman was, if possible, still more useful in the medical assistance which he rendered to Dr. M'William, who latterly had no assistant-surgeon to relieve him in his duties. I am sorry to say that Dr. Stanger is beginning to feel the effect of his exertions, having had fever (although slightly,) within the last two days.

I must also mention Mr. Mouat, assistant-clerk, who, having served many years with a surgeon in London, was able to render great assistance in the medical department up the river, and is particularly of use at this moment, when Dr. M'William and Mr. Woodhouse, assistant-surgeon, are ill. I beg to recommend to their lordships' consideration the propriety of remunerating this gentleman for his services, particularly as his pay as clerk's assistant is so very small.

In bringing before their lordships' notice the admirable conduct of the surgeon and acting-surgeons of the expedition, I wish by no means to disparage the exertions of Mr. Woodhouse, the assistant-surgeon of this ship, or of Mr. Sterling, the assistant-surgeon of the Wilberforce, or those of the deceased medical officers, which were very great, though not of so responsible a nature as those of Dr. M'William and Dr. Pritchett, or of Mr. Thompson, who before he descended the river with the large number of sick in the Soudan, was for a length of time doing duty in that vessel, during the protracted illness of the late acting-surgeon, Mr. Marshall.

The number of deaths that has happened after the vessels got through the Delta, until the sailing of the Wilberforce hence for Ascension, is shown in the enclosed paper. I have no exact return of the number taken ill in the Wilberforce, but I believe it may be stated that only five white persons escaped the fever in that vessel, whilst there are only four who have not been attacked in the Albert up to the present time, and no white person in the Soudan escaped it; and when I add that Dr. M'William is of opinion that few, if any, will be fit to return to the coast of Africa, who have had the fever, and that every lieutenant, excepting Mr. Strange, all the medical officers but Dr. Pritchett and Mr. Thompson, (it is doubtful yet whether Dr. M'William has the river fever or not,) all the mates, masters, second-masters, and clerks, the whole of the engineers and stokers of the expedition, and the gunner of the Albert (the only vessel that has an officer of that rank,) have been attacked, their lordships will be able to form an idea of the paralyzed state of the steam-vessels.

It will be impossible for me to inform their lordships as to the efficiency of the expedition for future operations until I can get to Ascension. I may, however, observe that it will be found scarcely possible to officer and man more than one of the steam-vessels, unless assistance be sent from England, or obtained from the strength of the African squadron.

As the Æthiope will probably go home in April next, I have obtained the promise of Captain Becroft to leave his surgeon behind, if he can be spared, who would take an acting order as assistant-surgeon, and willingly go up the Niger again; and if he can spare his black engineer also, he will endeavour to induce him to remain out, with the view of joining the expedition.

Could their lordships obtain assistant-surgeons and black engineers in England to volunteer for the expedition, it would be desirable, as it is quite a contingency our obtaining the individuals alluded to belonging to the Æthiope.

Dr. M'William is quite of opinion, as far as he can judge, that the Niger is not fit for white constitutions, and I shall take care to keep this in view when making arrangements at Ascension, so that the fewest possible number of white men may be continued in the steam-vessels.

Captain Becroft, whose knowledge of the river exceeds that of any other person, is of opinion (and I quite concur with him on the subject,) that the Niger should not be entered before the beginning of July, as it is doubtful whether the river will have sufficiently risen to insure the passage up without detention; so that their lordships may calculate upon the Albert and Wilberforce remaining at Ascension till the 1st of June.

It will be necessary for one steam-vessel to go up the Niger next year, as I left the Amelia tender at the Confluence of the Niger and Tchadda, for the protection of the people of the model farm. Not thinking it right to leave up the river any white person after the fatal sickness we had experienced, I placed the vessel in charge of a trustworthy black, with twelve other natives of Africa under him, all intelligent steady men.

Their lordships will remember that they gave permission for the utensils of the model farm to be carried out by the expedition, which were landed at the desire of Mr. Can, the superintendent, at a spot which he selected for the site of the farm, situated immediately opposite the Confluence; and as Mr. Can made a request for naval protection to his people in the absence of the steamers, which I considered very reasonable, I obtained volunteers to remain there in the Amelia before the Albert went to Egga; and on my return to the Confluence I was too ill to do duty, but Dr. M'William, at my desire, sent nine months' provisions on board, and cowries were left to buy several months' more. In our distressed state, it would have been impossible to tow the Amelia down the river, but, independently of that consideration, it was, I conceive, necessary to leave a vessel for the protection of the farm people.

It is also very desirable that a vessel should get up to Rabbah, if possible, next year, not only to complete a series of treaties which have been already commenced, but to show the people of Rabbah that a man-of-war can get up to their town; and the presence of one of her Majesty's vessels there might, I conceive, have a beneficial effect in their future treatment of the Nufi nation, whom we found much oppressed by the Felatahs, and also tend much to the extinction of the slave trade in the upper part of the Niger. This, however, cannot be determined upon till I meet my brother commissioners at Ascension.

Should only one of the steamers ascend the Niger next year, I would prefer one of the larger ones to be selected, from their superior velocity and stowage. Under present circumstances, I would countermand the coals which I requested might be forwarded to Bonny, though, if already shipped, they will doubtless prove very useful; for it is more difficult to procure wood in that than in most other African rivers, owing to the prejudice of the natives against Kroomen cutting it.

I conceive it will be my duty to go to England by the first opportunity from Ascension after my arrival, in order to lay the exact condition of the expedition before their lordships, and I have every reason to think I shall be able to arrive in March, which would give me ample time to rejoin the expedition, should their lordships require my further services.

I may state, for their lordships' information, that the Albert and Wilberforce could not proceed to England with safety excepting in the summer months, and I consider the Soudan as quite incapable of returning to Europe at all. I am preparing to leave the Soudan in this sheltered harbour, in charge of native ship-keepers; and as Captain Becroft has promised to make his engineer light the fires occasionally, and work the engine, and as Lieut. Blount, of the Pluto, will be able to do the same when he comes into port, there is every probability of the machinery being kept in good order.

I am in daily expectation of the arrival of the Golden Spring, with fuel from England, of which there is scarcely enough remaining here to fill the Albert's

bunkers, the Pluto having used a large quantity of our store. I hope a supply of fuel may have been sent to Ascension before this time, so as to enable us to keep the machinery of the vessels in good order at that island.

I have the honour, &c.,

H. D. Trotter, *Captain.*

The following are the names of officers and men of the Niger Expedition, who have died between the 1st of September, 1841, (the time of the vessels getting through the Delta of the Niger, on the passage up, and of the first breaking out of the "river fever" on board the Soudan,) and the 25th of October, 1841. The list does not include any who may have died on the passage to Ascension in the Dolphin or Wilberforce :—

Her Majesty's steam-vessels Albert, Wilberforce and Soudan.

Names.	Rank.	Date of Decease.
Albert :—		
F. D. Nightingale	Assistant-surgeon	
G. B. Harvey	Acting-master	Died in the Wilberforce.
W. C. Willie	Mate	October 18th, 1841.
Albion Lodge	Second-engineer	October 7th, 1841.
John Peglar	Armourer	September 6th, 1841.
George Powell	Cooper	September 11th, 1841.
John Burgess	Sailmaker's crew	September 14th, 1841.
James Robertson	Stoker	September 17th, 1841.
John Fuge	Ship's cook	September 27th, 1841.
George Symes	Caulker	October 17th, 1841.
Robert Milward	Purser's steward	October 22nd, 1841.
Lewis J. Wolfe	Seamen's schoolmaster	September 27th, 1841; died in the Soudan.
Wilberforce :—		
Cyrus Wakeham	Purser	
—Kneebone	A. B.	
—Rablin	Sapper	
—Fitzgerald	Stoker	
Soudan :—		
Bird Allen	Commander	October 25th, 1841.
W. B. Marshall	Acting-surgeon	September 21st, 1841.
H. Coleman	Assistant-surgeon	
N. Waters	Clerk in charge	September 22nd, 1841.
W. Levinge	Captain's steward	
James Thomas	Carpenter's crew	September 21st, 1841.
Christopher Bigley	Stoker	October 2nd, 1841.
William Kingdon	Seamen's schoolmaster	Oct. 12th, 1841; died in the Albert.

H. D. Trotter, *Captain.*

Nautical Notices.

Directions for Nassau.—*New Providence.*

A white flag will, as heretofore, be hoisted upon the flag-staff on the west point of Hog Island, near the light-house, when the bar is passable for a vessel;

but the pilot boat cannot come out, but will be in attendance inside, with the pilots' distinguishing flag (half white, half red horizontal,) flying. The vessel about to enter must in that case steer in, giving the west point of Hog Island (upon which the light-house stands,) a berth of about eighty fathoms, and keeping Toney Rock, upon which there is a white beacon, and the beacon upon the hill to the eastward of the west fort in one, until the white flag upon the light-house point bears east, and then haul up for the pilot-boat, when a pilot will be put on board to conduct the vessel to her anchorage. A red flag will be hoisted upon the flag-staff near the light-house, when the pilot considers it would be very hazardous, and would by no means recommend a vessel to attempt to cross the bar. Lest, however, any case of extreme necessity should induce a vessel to make the attempt, the pilot-boat (with the white and red flag flying,) will be in attendance within the bar. Should such necessity not exist, it would be advisable for the vessel to haul off (should the wind be in the north-east quarter,) to the westward, and, keeping about three or four miles from the land, run for the west end, and rounding the Key near the point, she will have excellent anchorage in the south-west bay, by bringing Gaulding Key (the key near the west end,) to bear N.W. ½ W., and Wylly Cliff, (a remarkable cliff forming the bay,) N.W.b.N. in from four to eight fathoms water, about a cable and a half within soundings, in clear sandy bottom and good holding ground, —the only danger to be avoided is a rocky shoal, with only twelve feet water upon it, bearing S.b.E. ½ E., distance about three miles from Wylly Cliff, and which can always be seen during daylight.

Should the wind be from the north-west quarter, it would then be advisable for the vessel to haul off to the northward and eastward, and steering about E.N.E. for thirteen or fourteen miles, she will then be abreast of the Booby Rocks, (the entrance to Cochrane Anchorage,) upon each of which there is a beacon, which two beacons being brought into one, the course in is south-east until the two beacons are open, when the vessel can be anchored in safety. A sail boat or vessel will, if practicable, go up inside, ready to put a pilot on board to conduct the vessel to her anchorage.

By order of the Commissioners of Pilotage,

Sept. 23*d*, 1841. J. A. Brook, *Clerk.*

Lisbon.

Admiralty, Dec. 27*th*, 1841.

Sir.—I am commanded by my Lords Commissioners of the Admiralty to transmit to you herewith, for the information of the committee for managing the affairs at Lloyds, a copy of a despatch from her Majesty's consul at Lisbon, respecting a new pilot flag to be used at the entrance of that port.

I am, &c.,

To the Secretary, Lloyds. J. Barrow.

British Consulate, Lisbon, Nov. 29*th*, 1841.

My Lord.—I have the honour to enclose, for your lordship's information, the *Diario do Governo* of the 7th inst., together with a transcript of a notice from the captain of the port of Lisbon, relative to the flag to be in future used by the pilot-boats stationed at the entrance of the harbour.

I have, &c.,

To Earl Aberdeen, K.T., &c. W. Smith.

Captaincy of the Port of Lisbon, Nov. 26*th*, 1841.

By the Captaincy of the Port of Lisbon, it is made public that, the two boats stationed at the bar to furnish pilots to vessels seeking this port, will henceforth bear a blue flag, hoisted at the extremity of the yard, instead of the pendant hitherto used by them, as the latter may be confounded with the pendants used by them as owners' signals.

Pedro Nolasco da Cunha,

Inspector of the Arsenal and Captain of the Port.

Calais Harbour.

Hydrographic Office, Admiralty, Jan. 1st, 1842.

The French Government has given notice, that on the western jetty head of Calais Harbour, which has been recently extended 269 yards, a small fixed light is now exhibited, and is visible at three miles distance; but in bad weather it may be impossible to approach the extreme end of the jetty, and in that case it will not be lighted.

Until the 1st of May next, this light will be shown and extinguished at the same time as the tide light on Forte Rouge, but after that date, the new light will continue all night.

Bantry Harbour.

Bantry, Dec. 30th, 1841.

Such vessels as may have occasion to enter Bantry Harbour, are cautioned not to anchor nearer the town of Bantry than where the flag-staff in front of Bantry House bears S.b.W. ½ W., and the centre battery on Whiddy Island, N. ½ W. compass bearings. This precaution will be found absolutely necessary, as the inner section of Bantry Harbour has become extremely dangerous, owing to neglect, and allowing small vessels coming to load grain, &c., to throw their ballast overboard in all parts of the harbour. A few days back, a very serious accident was near occurring, from this dangerous state of the harbour. The Dealy, of Bantry, returned from America, and was anchored in what was supposed to be the best part of the harbour; however, a few days after, whilst the vessel was tending to a shift of wind, she tailed on to one of these heaps of discharged ballast, on which she grounded; fortunately the weather was moderate, and she was hove off without sustaining any injury. At low water (spring tide,) this morning, there was only nine feet water on this shoal of discharged ballast. The flag-staff in front of Bantry House bore from it W.S.W., and the centre battery on Whiddy Island N.b.W. ½ W. This shoal was found to be the outer one, but there are several others between this and the town of Bantry.—*Cork Constitution.*

Light-house at Gibraltar.

Trinity-House, London, 6th April, 1841.

The light-house which for some time past has been in course of erection at Gibraltar, being now nearly completed, notice is hereby given, that the light therein will be exhibited for the first time on the evening of the 1st of August next, and thenceforth continued every night from sunset to sunrise.

Mariners are to observe, that this light-house is situate upon Europa Point, and that a powerful fixed light will be exhibited therein, and will burn at an elevation of 150 feet, or thereabouts, above the level of the sea.

By order,

J. Herbert, *Secretary.*

Drogheda Harbour.—*East Coast of Ireland.*

Ballast Office, Dublin, 9th Dec, 1841.

The Corporation for preserving and improving the Port of Dublin, hereby give notice, that three light-houses have been erected at the entrance of Drogheda Harbour, from which lights will be shown on the evening of the 1st of March, 1842, and thenceforth will continue to be lighted every night from sunset to sun-rise.

Specification given of the position and appearance of the buildings, by Mr. Halpin, inspector of light-houses:—

Three light-houses erected on timber framings coloured brown, have been placed on the sand hills at the entrance of the River Boyne, or Drogheda Har-

bour. The east and west lights, kept in line, will lead in the deepest water over bar. The north light will lead vessels, when within the bar, to the long deep which extends from abreast of the Maiden Tower towards the South Crook Point.

1. The Drogheda east light is a fixed white light, open to seaward from E. ¼ N. to S.E.b.E. ¼ E., it is elevated thirty feet above the level of the high water of spring tides, and bears from the Helly Hunter Rock, off the entrance of Carlingford Lough S.W. ½ W., distant nineteen sea miles, and Rock-a-bill N.N.W., distant eleven and a half sea miles.

2. The Drogheda west light is a fixed white light, open to seaward from E. ¼ N. to S.E.b.E. ¼ E., it is elevated forty feet above the level of the high water of spring tides, and bears from the east light-house W.b.N., distant 300 feet.

The relative bearings of the east and west lights will, whenever necessary, be changed, as alterations may take place, either from the shifting of the sand banks, or from the operations in progress for the improvement of the harbour.

3. The Drogheda north light is a fixed light of red colour, open to channel from within the bar, it is elevated twenty-eight feet over the level of the high water of spring tides, and bears from the bar perch north-west, distant 1,583 yards, and east light-house N.b.W. ¼ W., distant 780 yards, and Maiden Tower N.N.W., distant 280 yards.

Vessels having passed to within the bar in the line of the east and west lights, should, on opening the north light, alter their course.

The bearings stated are magnetic.

By order,

H. Vereker, *Secretary.*

Adriatic.—*Dalmatian Islands.*

A rock, with seven feet on it at low water, has been discovered in the channel between the island Zuri and the small islet Skroada, 100 fathoms S.S.W. from Skorcadozza. To avoid it, vessels should pass about 50 fathoms from Zuri.

[The foregoing is from the Annales Maritimes for August, 1841, page 296, and can only apply to *small merchant vessels.*—Ed.]

Light at Demerara.

Pilots'-office, Demerara, Dec. 24, 1841.

The light-house of this port, which has hitherto been white, is now painted in white and red stripes alternately, vertically, in conformity with a recommendation of the Lords of the Admiralty, of which this notice is given for general information.

By Command,

W. E. Pierce,
Secretary to the Committee of Pilotage.

Dover Harbour Light.

Additional Red light on the North Pier-head, at the entrance of Dover Harbour.

Notice is hereby given, that on and after the 1st day of March next, a Red light, twelve feet above the level of average spring tides, will be exhibited on the North Pier-head, at the entrance of Dover harbour, in addition to those on the South Pier; and that all the lights will be lighted at ten feet water, and extinguished when the water falls to ten feet.

By order of the Honorable Warden and Assistants of Dover Harbour.

Dover, 15th Jan., 1842. John Iron, *Harbour-Master.*

Light on the Swedish Coast.

The Swedish Marine Administration has given notice that, a light-house will be erected on the Island Stallo, before Kungshamn, in the northerly Scheoren of the Bohns Lehus, about a quarter of a league off the Kennungs beacon of Salo, and situated in latitude 58° 20′ 30″ N., and longitude 29° 25′ 45″ E. of Ferro, or 11° 16′ 45″ E. longitude of Greenwich; which lights, intended to be on the revolving system, are to appear first at the close of the year 1841, or, at all events, before the 1st of June, 1842, and be distinctly different to the light of Marstensand. Further particulars will be published hereafter.—*Shipping Gazette, Feb. 3d.*

Endeavour Strait,

Is a safe channel for large ships by giving Cape Cornwall a berth of four, and North Wallis Isle two miles. When the latter bears south two miles a west (magnetic) course, will take a ship to sea without getting into four fathoms at low water; and the general depth will be five and six. The tide sets through this Strait from half to one and a half knots, and rises twelve feet. It is high water on full and change days, 11h. 15m. PM. The flood comes from the eastward, but the stream sets to the westward two-thirds of the twenty-four hours.—Act. Com. Stokes.

China Sea.

The Alexander Shoal in the China Sea lies in latitude 10° 28′ N., and longitude 111° 27′ E.; and not as stated in p. 224 of our volume for 1837.

Light at Alexandria.

The following notice dated Alexandria, 20th January, 1842, has been received from Mr. Best, engineer at that place:—I have now erected the lantern and apparatus upon the tower, that has been for some time building at this place, Alexandria, and which will be illuminated for the first time on or about the 20th day of February next. The tower is situated on Point Unostos, in latitude 31° 11′ 31″ N., and longitude 27° 51′ 28″ E., elevated 200 feet from the level of the sea; a fixed light with thirteen lamps and parabolic reflectors made by Messrs. Wilkins and Son, Long Acre, who will be able to give you any further information you may require respecting the construction of the lanterns. I have been unable to ascertain the exact bearings of the lights at present, but will forward them to you as soon as I can ascertain them correctly; in the meantime I beg of you to give public notice of the above to mariners, and all others concerned therein.

(Signed) F. W. Best,
Engineer and Light-keeper.

New Books.

Treatise on the Improvement of the Navigation of Rivers; *with a new Theory on the cause of the existence of Bars,—by William Alexander Brooks, M.Inst.C.E.*

We now proceed to redeem the pledge which we gave in our last volume to consider more at length the views of Mr. Brooks on bars, which, though virtually a subject for engineers, carries with it sufficient to interest the Nautical reader.—The first chapter of the treatise before us, consists of a review of the various theories which have heretofore been advanced, to account for the formation of bars.

The most popular of the old theories, or that which is generally considered as the cause of the existence of bars, is described by the late Major Rennell, in his translation of Herodotus, and of which a similar account is given by Col. Emy, of the French engineers, in his "treatise on the movement of waves and on hydraulic works," from which copious extracts are given in the work now before us, and we find that the gallant officer thus alludes to the popular theory which Mr. Brooks shows is the same as that propounded by Major Rennell. "A bar is a bank of sand which obstructs the embouchure of a river. The cause to which the formation of bars has been attributed, is, that a stream flowing on a horizontal bed, on its approach to the sea, spreads its surface and diminishes in depth, so that on its meeting with the current of the flood, or even solely with the mass of the water of the sea a stagnation is caused, by which the sands are deposited, whether brought by the river or by the flood tide. It is easy to comprehend that this explanation is not satisfactory,—for the repose supposed to take place at the meeting of the currents cannot exist. In the Mediterranean, the current of the flood is never opposed to any stream. In the ocean, one of the two currents overcomes alternately the other.

"If the assumed repose resulted from the equilibrium of the two currents, or solely from the resistance of the sea to the current of the river, all rivers would have bars, and they would certainly be at a greater distance than where we find them, since the current of the river always extends far into the sea."

The gallant officer then proceeds to substitute his own theory; but we cannot find space for the ample extracts from his work, which Mr. Brooks has given, but must confine ourselves to state, that Col. Emy attributes the formation of bars, to what he calls "*flots de fond*," ground waves, and that these latter are produced wherever the bed of the ocean, adjoining a coast, consists of a succession of lifts, or platforms, in lieu of a gradually inclined plane.

Mr. Brooks opposes this theory by a direct reference to examples, in which this very feature exists, but without producing the effect assigned to it by Col. Emy, and adds,—"If ground waves were formed, and were capable of producing the accumulation of sand, forming bars at the mouths of rivers, which accumulation is, according to Col. Emy, only reduced by the discharge of the backwater; the same effects ought to be manifested all along the shores on each side of the bar or embouchure of the river."

In reference to Col. Emy's statement, that "This sand forms the bar, which increases rapidly in stormy weather, because at that time the ground waves bring to it an abundance of materials, and deposit them as on a flat shore," the following is the reply in the work now before us.

"From my own personal examination of bar rivers, I do not find any material alteration takes place in the depth of their entrances, and certainly, during a succession of long calms, no increased depth is attained, such as should be produced by Col. Emy's theory; indeed, according to it, during long calms, all bars should totally disappear, but we know that this is not the case. Happily his theory is not correct, for if it were, we should find so great an alteration during the long continuance of on-shore gales of wind, that the mouths of rivers would be totally unserviceable when most required for refuge."

Recurring to the previous observations, many of our nautical readers will be able to inform Col. Emy, that the shore currents of the Mediterranean are frequently opposed to the streams which are discharged into that sea, and have invariably the effect of turning aside the direction of the discharge of the river waters. In Mr. Brooks' Treatise, we have decisive evidence thus to refute the statement, that the "repose supposed to take place at the meeting of the currents cannot exist," this repose will be seen in his description of bar rivers. This brings us at once to a consideration of the new theory, on the cause of bars, which is advanced by Mr. Brooks, founded as he tells us, upon an investigation of the difference which he has observed in the features of rivers which are free from bars, as compared with those which are embarrassed by their presence.

Thus, in chapter 2, *on rivers which are free from bars*, we have the following description of a river without a bar.

"It will generally be found, that whenever a navigable river approximates to the condition of a simple inlet for the reception of the tide, as far as regards the longitudinal section, presented by its surface at low water, it will either have no bar, or be but lightly obstructed by one; the same may be said of those sea-ports, or pier harbours, which, though free from bars in their natural state, are well known to become encumbered by them immediately on the introduction of an artificial scouring power. Resuming the investigation of the state of a river, whose entrance is free from a bar, we shall find, that from its junction with the ocean, a long line of navigable course exists with an extremely gentle fall, or slope of its surface at low water; the river is in this case in a proper train, its longitudinal section presenting a succession of inclined planes, becoming more and more gentle as they approach the ocean; and the lower course of the river, from the slightness of its fall, approximates to the condition of a frith, or deep inlet of the coast, or to that of one of those large natural or artificial harbours, which being mere tidal receptacles, wherein the influx and efflux take place in equal times, are necessarily free from bars.

"The river being in this perfect state as regards the slope of its surface at low water, a consequent attendant upon the latter will be an equal duration, or nearly so, of the period taken up by the flow of the flood tide, with that of the ebb in the lower reach of the river; by the term flow being understood, the direct upward course of the current of the flood tide immediately after the true time of low water. Assuming that to the possession of a nearly equal duration of the period of the ebb and flow, in the lower reach of a river, accompanied by an extremely gentle inclination of its surface at low water, is to be attributed to the freedom from the incumbrance of a bar."

(To be continued.)

New Charts.

(Published by the Admiralty,—and sold at 21, Poultry.)

River Thames.—*Sheet* 3.—*Surveyed by Capt. F. Bullock, R.N.* Scale three inches to a mile.

Port Nicholson, *New Zeeland, North Island.—Surveyed by E. M. Chaffers, R.N.*—Scale two inches to a mile.

Waitemata Harbour, *New Zeeland, North Island.—Surveyed by Capt. Owen Stanley, H.M.S. Britomart.*—Sandy Bay.—*Lieut. P. Fisher, and P. Bean, master.*—Scale two inches to a mile.

Tory Channel, *New Zeeland*, from a sketch by E. M. Chaffers, RN., 1839.—One inch and a quarter to a mile.

Sketch of Matagorda.—*By an officer in the service of Texas; communicated by Commander Joseph Hamilton, R.N.*—Scale *(supposed)* about three miles to the inch.

Of the foregoing, we may first call the attention of the officer in the Texian Service just alluded to, as well as that of Commander Hamilton to the deficiency of scale in the last-named plan. An approximate scale is given which we hope will soon give place to the proper one. This deficiency we noticed in a recent number, but the plan with the "supposed" scale may be of service to vessels, being the only one we have met with.

Tory Channel supplies us with new information about that highly interesting part of the world—New Zeeland; and with the plan of Port Nicholson is highly creditable to Mr. Chaffers. Waitemata bears the improving corrections of

Capt. Stanley in the important parts about the entrance, and the site of the new settlement of Auckland. With the assistance of this neat chart, some use may be made of the directions in our last volume (p. 402.)

"Sea-reach" is the first published result that we have seen of Capt. Bullock's laborious operations in the river Thames. While we congratuale seamen on having so valuable a chart as that before us of this very important navigation, we may compliment Capt. Bullock as its author. It contains not only the sea-reach of the Thames, but also that of the Medway.

Courts' Martial.

A Court-Martial was held on the 16th of February, and continued by adjournment to the 19th, on board the St. Vincent, flag-ship, at Portsmouth, on Capt. J. T. Nicolas, CB., of her Majesty's ship Vindictive, on charges preferred against him, for getting his ship on shore, on the Dean or Horse Shoal, near St. Helens, on the 26th of January last.

President.—Vice-adml. Sir E. W. C. R. Owen, KCB, GCB. Hon. Rear-adml. D. P. Bouverie; Capt. W. W. Henderson, CB., KH.; Capt. Right Hon. Lord A. Fitz-Clarence, KCH.; Capt. Right Hon. Lord G. Paulet; Rear-adml. Sir T. J. Cochrane, CB.; Capt. G. F. Rich; Capt. Sir T. Hastings; Capt. H. J. Codrington. J. Hoskins, Esq., Judge-Advocate.

The court having investigated the circumstances under which her Majesty's ship Vindictive grounded on the Dean Shoal, on the forenoon of the 26th of January, having maturely weighed and considered the whole, the court cannot decide with precision on the causes which led to the disaster,—they appear to have rested mainly on some error in the supposed position of the ship when at anchor off the Nab, on the morning of the 26th of January last, and in the course intended to be made good whilst underway; but it is not proved by evidence that there was any material error, or deviation in the compasses. Taking, therefore, all the circumstances into consideration, the court is of opinion that Capt. Nicolas was justified in the attempt to move her Majesty's ship Vindictive, from the exposed anchorage she was supposed to hold near the Nab light; and Capt. Nicolas having so determined, the court considers that he put the ship under sufficient and manageable sail for doing so; and that when the buoy of the Dean was made, and the Vindictive's danger discovered, the measures most expedient were adopted by him, to prevent her falling on the shoal, under the circumstances she was placed in then demanded. That when she was aground, and striking, as well as subsequently, the conduct of Capt. Nicolas was marked by propriety and energy, and was such as to inspire confidence in those around him, and that every possible exertion was made to save the ship, and to prevent worse consequences than did occur. The court doth, therefore, *fully acquit* the said Capt. J. T. Nicolas, of blame on the occasion before referred to, and the said Capt. J. T. Nicolas is hereby fully acquitted accordingly. And it appearing that every exertion was made by the officers and ship's company of the Vindictive, under the orders of Capt. Nicolas, and that he had no complaint to prefer against any of his officers or ship's company, with the exception of two men who have been already sufficiently punished; but, as on the contrary, he has commended their zeal and great exertions, the court doth hereby acquit the said officers and ship's company of her Majesty's ship Vindictive of blame on the occasion referred to, and they are hereby so acquitted accordingly.

A Court-Martial, of which Rear-adml. Sir J. Louis, Bart., was presiding officer, and which was also composed of Captains T. Forrest, CB., of the Impregnable; B. Reynolds, CB., of the Ganges; S. Chambers, of the Monarch; Sir D. Dunn, Knt., KCH., of the Vanguard; E. Barnard, of the Cambridge; and

R. Smart, KH., of the Howe, was held in November last, on board the Monarch, at Malta, to try Mr. E. W. Elton, midshipman of the Cambridge, on a charge of sending the following letter to Capt. Williams, of the Stromboli :—

"*Her Majesty's ship Cambridge.*

"SIR.—I consider your conduct to me, in not giving any answer whatever to my note, the night you dined on board this ship, to be most uncourteous and ungentlemanlike; you screen yourself under your rank in the service, to offer an insult which you would not dare to do were I not by far your junior officer.

"EDMUND W. ELTON."

"*To Capt. Williams, H.M.S. Stromboli.*"

The affair out of which this arose was, it appears, the following note to Capt. Williams, from the prisoner, while the former was on board the Cambridge, on the 18th of last July :—

"MY DEAR SIR.—I have a friend on board who is travelling in Syria, he starts for Jerusalem to-morrow. The boat which he ordered to come for him has not arrived. Would it be asking too great a favour if you would grant him a passage in your boat? I should have made a point of calling on you had I not been in the sick list.

"Believe me, yours sincerely,

"*Capt. Williams, R.N.*" "EDMUND ELTON."

The sentence of the court was, that Mr. Elton be dismissed from her Majesty's service, and to be confined six months in the Marshalsea, on his arrival in England.

We understand that Mr. Elton has been released from his confinement in the Marshalsea, by order of the Lords Commissioners of the Admiralty.

NAVAL COLLEGE.—Six Captains, six commanders, and twelve lieutenants of the Navy, on half-pay, after going through the practical gunnery course in her Majesty's ship Excellent, will in future be allowed by the Admiralty to study at the Naval College for one year. They will have the advantage of a cabin in the building, and be allowed to join the mess with the usual provision-money while in it. All these officers will of course be selected and appointed by the Admiralty.

We understand that orders have been given, that the whole of the wood-work of the coal boxes of her Majesty's steam-vessels, whether the side of the vessel or otherwise, be securely lined with copper to the very top of the boxes, so as to guard against the effect of fire, in case of the spontaneous ignition of the coals,—notwithstanding the precautions ordered to be adopted by their Lordships' circular in a following page.

THE NIGER EXPEDITION.

Having received the following document from an authentic source since the list in p. 198 went to press, some of the names will be unavoidably repeated. But we give it as a complete document on which our readers may rely as being correct in every particular. It will be seen that of the river fever 39 have died, amounting to one-fourth of the whole persons of the expedition, a tolerable promise of what would have followed had the vessels remained longer *before* returning to the sea.

A LIST of officers and men belonging to the Niger Expedition, whose deaths occurred after the departure of the vessels from England.

Names.	Rank.	Date.	Remarks.
D. H. Stenhouse	• Lieutenant	28 Oct.	at sick quarters, Fernando Po
G. B. Harvey	• Master	2d Oct.	on board Wilberforce at ditto
W. C. Willie	• Mate	18 Oct.	at sick quarters, Fernando Po
J. Woodhouse	• Act. Asst.-Surgeon	30 Oct.	at ditto
F. D. Nightingale	• Ditto	17 Sep.	at Conflu. of Niger & Tchadda
W. H. Wilmott	• Clerk	5 Nov.	at sick quarters, Fernando Po
A. Lodge	• Second engineer	8 Oct.	between Egga & Confluence, drwned himself, fit of delirium
L. J. Wolfe.	• Seamen's schlmster	27 Sep.	on board Soudan, Fernando Po
J. Pegler	• Armourer	6 Sep.	at Iddah
G. Powell	• Cooper	11 Sep.	between Iddah & Adda Kudda
J. Burgess	• Sailmaker's crew	14 Sep.	at Conflu. of Niger & Tchadda
J. Fuge	• Ship's cook	29 Sep.	near Egga
J. Robertson	• Stoker	17 Sep.	at Conflu. of Niger & Tchadda
G. Symes	• Caulker	2 Oct.	at Egga
R. Millward	• Purser's Steward	22 Oct.	at sick quarters, Fernando Po
J. Waller	• Corporal Marines		on board Dolphin on her passage from the river to Ascension.
W. Moffat	• Sapper and Miner		
W. McMillen	• Quarter-master		
E. Jones	• Ropemaker		
W. Bach	Instrument maker	August	at mouth of river, from effects of climate on worn-out constn
J. Johnson	C. F. Castle	3 July	at sea, fell from foreyard
J. McClintock	Stoker	20 Nov	Fernando Po, died of a fall
M. Kinson	Marine	6 Nov.	ditto from effects of climate
—— Johnson	Interpreter	6 Sep.	a liberated African, drowned at Iddah, his native place
H.M. Steam-vessel Wilberforce.			
C. Wakeham	• Purser	25 Sep.	at the mouth of the river
G. Cuthbertson	• Sergt. of Marines	7 Oct.	Fernando Po
P. Fitzgerald	• Stoker	2 Oct.	ditto
J. Kneebone	• A. B.	11 Sep.	Adda Kudda
W. Rabblin	• Sapper	14 Sep.	at Confl. of Niger & Tchadda
W. Allford	• Boatswain's mate	Oct.	On passage to Ascension
R. James	• Ordinary	Oct.	ditto
—— Hulbert		July	Cape Coast, coast fever, a woolly haired man
J. Morley	Carpenter's mate	June	St. Vincent, Cape de Verdes, drowned
—— Wright	Carpenter's crew	July	on coast of Africa—apoplexy
H.M. Steam-vessel Soudan.			
Bird Allen	• Commander	25 Oct.	at sick quarters, Fernando Po
W. B. Marshall	• Acting Surgeon	21 Sep.	at the mouth of river
H. Collman	• Act. Assit.-Surgeon	6 Oct.	on board Wilberforce, Fer. Po
N. Waters	• Clerk in charge	22 Sep.	at sea, off the river
W. Kingdon	• Ass.-clk. & sea. sch.	13 Oct.	near Iddah
W. Levings	• Com. steward	9 Sep.	between Iddah & Confluence
J. Thomas	• Carpenter's crew	21 Sep.	near Eboe
C. Bigley	• Stoker	2 Oct.	Fernando Po
J. Kerrens	• Stoker		on board Dolphin on her passage from the river to Ascension.
J. Young	• Quarter-master		
J. Whittaker	• Quarter-master		
J. Hill	• Gun-room steward		
W. Maclackland	• Sail-maker	20 Jan. 1842	on passage home from effects of river fever
R. Edwards	Purser's steward		on passage from England

Those marked thus • died of the river fever, or from its effects.

ABSTRACT OF DEATHS.

	Albert.				Wilberfrce.				Soudan.			
	Officer	Men		Total.	Officer	Men		Total.	Officer	Men		Total.
		w	c			w	c			w	c	
Coast							1	1				1
River Fever	7	12		19	1	6		7	5	8	13	39
Effects of climate on worn out constitutions		2		2								2
Apoplexy							1	1				1
Casualties		2	1	3		1		1		1	1	5
	7	16	1	24	1	7	2	10	5	9	14	48

	Albert.	Wilberforce.	Soudan
Number of days at the mouth of the River within the bar	8	9	9
Ditto up the River	56	36	31
Total number of days in the River	64	45	40

BIOGRAPHICAL MEMOIRS.

COMMANDER BIRD ALLEN.—(See Obituary, p. 143.)—He entered the navy as a student at the Royal Naval College in Oct. 1817, from which he joined the Larne in the Mediterranean, successively commanded by Captains H. Forbes and R. Tait. Afterwards we find him in the Phaeton, Capt. Sturt, in the Channel, and Forte, Capt. Sir T. Cochrane in the West Indies, on which station he continued in the Dartmouth and Scylla obtaining his lieutenant's rank in the latter vessel. In 1829, he joined the Blossom as lieutenant, and continued with her Commander, Richard Owen, in that ship, and the Thunder, both of which were occupied in the survey of the West Indies. He obtained his rank as Commander in 1838, and with that devoted zeal in the cause of humanity which formed a prominent feature of his character, he embarked his services in the late ill-fated expedition to the Niger. To the forlorn but noble objects of this enterprise he fell a victim, lamented by all who knew his public value, and his private worth;—for he was firm and energetic, though mild and gentle,—of high attainments in every branch of his profession, yet modest and unassuming,—unbending in principle, yet encouraging and forbearing to others;—his loss is indeed great to his country, and irretrievable to his friends.

THE LATE COMMANDER SLATER, R.N.—(See Obituary.)—The following letter from Lieut. Kortwright, R.N., employed with the late Commander Slater, in surveying the coast of Scotland, announced the event with which most of our readers are already acquainted.

Thurso, Caithness, Feb. 3rd, 1842.

"SIR.—I regret exceedingly, that it becomes my painful duty to announce the melancholy death of Commander Slater, which sad event took place yesterday afternoon, under the following distressing circumstances;—

"About noon of yesterday, Capt. Slater left Thurso, (on horseback,) for the purpose (as generally supposed,) of visiting and examining the coast to the westward of Holburn Head, there being a very heavy sea running at the time.

"Late in the evening, the horse returned without its rider. Search was immediately made, as far as the darkness of the night would permit, and again renewed this morning at daylight for Capt. S., which I am grieved to state, terminated in the conviction that he must have fallen over the cliff, (nearly 300 feet in height,) and perished, which conviction I was induced to come to, from the fact of his whip being found close to the edge of the precipice, together with the track of the horse to the same spot.

"From the depth of water, and the heavy sea breaking on this iron bound shore, (which precluded the possibility of a boat living near the spot,) I much fear no hope can be entertained of recovering the body."

"I have the honour, &c, "A. KORTWRIGHT, *Lieut., R.N.*"

Commander Slater entered the service in August, 1811, on board the Rota, Capt. Somerville, and served in her and the Creole on the French coast; from which latter ship he joined the Phœnix, Capt. C. J. Austen, and proceeded in her to the Mediterranean. The Phœnix was wrecked near Smyrna, on the 3rd of February,

1816, after which, the subject of our memoir joined the Aid, under Capt. W. H. Smyth, whose extensive and accurate surveys of the coasts of Italy, Greece, and Africa, are so well known. It was, while surveying with this officer, that Commander Slater laid the foundation of that eminent skill which he possessed as a Nautical surveyor and draftsman, and in which he was not surpassed by any of those highly distinguished surveying-officers who at present do such honour to the Navy. His appointment to the Aid took place in January, 1817, and he continued his useful labours in the Mediterranean in that ship, and in command of the Nimble cutter as Lieutenant, till 1827. For the last thirteen years he has been employed in surveying the coasts of Northumberland and Scotland, by which he earned his rank of Commander in January, 1837, and eventually perished in the actual fulfilment of those duties in which he so much excelled. He leaves a widow without children to mourn the event, which deprives the service of one of its brightest ornaments.

Acting Appointments and Removals in the Niger Expedition.

Commanders—E. G. Fishbourne (act.) to *Soudan*, and placed in temporary command of *Albert*.

Lieutenants—W. H. Webb (act.) to *Albert*—H. C. Toby, (act.) and F. W. Sidney (act.) to *Wilberforce*.

Mr. Fairholm is also promoted to the rank of Lieutenant.

Master—W. H. T. Green (act.) to *Wilberforce*.

Surgeon—J. R. H. Thompson (act.) to *Soudan*.

Purser—W. R. Bush (act.) to *Wilberforce*.

Clerk—R. Mouat (act.) to *Albert*.

Removals—Lieut. J. N. Strange from *Wilberforce* to *Albert*.

Master—W. Forster from *Wilberforce* to *Albert*.

The Commander's and Lieutenants appointments have been confirmed.

Admiralty Orders.

Admiralty, Jan. 20th, 1842

The Lords Commissioners of the Admiralty considering it desirable that in all her Majesty's steam vessels, except those employed as Mail steam packets on the home stations, there shall be as many engineers' boys borne as engineers, and that the pay of the engineers of the second class shall be increased by placing boys under their instruction with the same allowance of 6d. per diem for each boy so instructed, as was granted by her Majesty's Order in Council of 19th of January, 1837, to engineers of the first class. And her Majesty having been graciously pleased by her Order in Council of the 15th inst. to sanction the allowance of 6d. a day for each engineer boy placed under the instruction of the second class engineer, the following rules and regulations are in future to be observed, viz.

The first class engineer to have the instruction of two boys as heretofore, with the 6d. per day for each.

When there are three boys the second class engineer to instruct the junior boy of the three.

When there are four boys, the senior second class engineer is to instruct the third boy. The junior second class engineer the fourth boy.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, Feb. 4th, 1842.

With a view to prevent accidents in steam vessels by fire from the spontaneous ignition of coals in the bunkers from wet or other causes, My Lords Commissioners of the Admiralty are pleased to direct that the commanding officers of all steam vessels shall take the greatest care that the coals be not shipped wet, and that they be kept as dry as possible when shipped.

Their lordships are also pleased to direct that, before a supply of coals is taken on board a steam vessel, the coals remaining in the boxes be so trimmed as to ensure their being first used.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, Feb. 16th, 1842.

Manufacturers of Marine Engines, whose tenders are accepted by the Lords Commissioners of the Admiralty, are desired to take notice that it is their lordships' intention to appoint a first class Engineer to each of her Majesty's steam-vessels before any part of the machinery is put on board, for the purpose of seeing each portion accurately weighed, with a view to ascertain and certify that the total weight mentioned in the specification be bona fide not exceeded.

It will, likewise, be the duty of the said first class engineer to see each of the spare articles actually tried in its place, before it is stowed away on board.

The said Manufacturers are desired, in order to give effect to this regulation, to give fourteen days' notice to the Secretary of the Admiralty before the several parts of the machinery are ready to be weighed.

Parties receiving this communication are requested to acknowledge the receipt of it.

By command of their lordships,
SIDNEY HERBERT.

RANKS AND RATINGS.	1st Rates. 1000 men. 950 men.	2nd Rates. 850 men. 750 men.	3rd Rates. 700 men. 620 men.	4th Rates. 500 men. 450 men.	5th Rates. 360 men. 320 men.	6th Rates. 240 men. 200 men.	6th Rates. Steam vessels 200 men.	6th Rates. Steam vessels 175 men.	Sloops. 150 men. 140 men. 130 men.	Sloops. 80 men.	Sloops. Steam vessels 145 men.	Gun brigs Schooners and Cutters. 70 men. 60 men.	Gun brigs Schooners and Cutters. Steam vessels 80 men.	Gun brigs Schooners and Cutters. Steam vessels 60 men.
a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*k*	*l*	*m*	*n*	*o*	*p*
Captain	1	1	1	1	1	1	1	1	—	—	—	—	—	—
Commander	1	1	1	—	—	—	—	—	1	1	1	—	—	—
Lieutenant	8	7	6	5	5	4	3	3	3	2	2	1	1	1
Master	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Chaplain	1	1	1	1	1	1	—	—	—	—	—	—	—	—
Surgeon	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Purser	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Naval Instructor and Schoolmaster	1	1	1	1	1	1	—	—	—	—	—	—	—	—
Mate	8	8	6	4	4	4	3	3	2	2	2	2	2	2
Second Master	2	2	2	1	1	1	1	1	—	—	—	1	1	1
Assistant Surgeon	3	3	2	2	1	1	1	1	1	—	1	1	1	1
Gunner	1	1	1	1	1	1	1	1	1	1	1	1	—	—
Boatswain	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Carpenter	1	1	1	1	1	1	1	1	1	1	1	—	—	—
‡ Engineer	—	—	—	—	—	—	5	4	—	—	3	—	3	3
Midshipman	16	12	10	8	6	4	3	3	2	2	2	2	2	2
NB.—Mates may be substituted in these Ratings.														
Masters' Assistant	4	4	4	2	2	1	1	1	1	1	1	1	—	—
Volunteer of first class	8	7	6	5	4	3	2	2	2	1	1	—	—	—
Clerk	3	3	2	2	2	2	2	2	1	1	1	1	1	1
1st class Working Petty Officers. Master at Arms	1	1	1	1	1	1	1	1	1	—	1	—	—	—
Seam's schlmastr	1	1	1	1	1	1	1	1	1	—	1	—	—	—
Capt.'s Coxswain	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Gunner's Mate	5	5	4	3	2	2	2	2	2	2	2	1	1	1
Boatswn's Mate	8	7	6	4	4	3	2	2	2	2	2	1	1	1
Quarter Master	10	8	7	6	5	3	3	3	3	2	3	2	2	2
Captain forcastle	3	3	3	2	2	2	2	2	2	1	2	1	—	—
Ship's Corporal	2	2	2	2	2	1	1	1	—	—	—	—	—	—
Coxswn Launch	1	1	1	1	1	1	—	—	—	—	—	—	—	—
Captain of Hold	1	1	1	1	1	1	1	1	—	—	—	—	—	—
Sail-Maker	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carpnter's Mate	3	3	3	2	2	2	2	2	1	1	1	1	1	1
Caulker	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Rope-Maker	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Blacksmith	1	1	1	1	1	1	1	1	1	1	1	—	—	—
Leading Stoker	—	—	—	—	—	—	5	4	—	—	3	—	3	3
Ship's Cook	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Capt. Maintop	3	3	3	3	2	2	1	1	2	1	—	1	—	—
Capt. Foretop	3	3	3	3	2	2	1	1	2	1	—	1	—	—

	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p
2d class Working Petty Officers.	Captain of Mast	3	3	3	2	2	2	1	1	1	—	—	—	—	—
	Capt. Afterguard	3	3	3	2	2	2	1	1	1	—	—	—	—	—
	Yeomen of Sgnls	2	2	2	1	1	1	1	1	—	—	—	—	—	—
	Coxswn Pinnace	1	1	1	—	—	—	—	—	—	—	—	1	—	—
	Sailmker's Mate	2	2	2	1	1	1	—	—	—	—	—	—	—	—
	Cooper . .	1	1	1	1	1	1	1	1	1	—	1	—	—	—
	Armourer . .	2	2	2	1	1	1	1	1	1	—	1	1	1	1
	Caulker's Mate.	1	1	1	1	1	1	1	1	—	—	—	1	—	—
	Musician .	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Purser's Steward	1	1	1	1	1	1	1	1	1	1	1	—	—	—
	Capt. Mizen-top	3	3	3	3	2	2	—	—	2*	—	—	—	—	—
	Carpenter's Crew .	18	16	14	12	8	6	6	6	4	2	4	1	1	1
	Sailmaker's Crew .	4	4	3	2	1	1	1	1	1	1	1	—	—	—
	Cooper's Crew .	2	2	2	2	1	1	1	1	1	—	1	—	—	—
	Painter . .	1	1	1	1	1	1	1	1	1	1	1	—	—	—
	Able Seamen .	The Number to complete the complement													
	Yeoman of Storeroom														
	Captain's Steward .														
	Captain's Cook .														
	Ward or Gun-room Steward . .														
	Ward or Gun-room Cook . .														
	Young Gentlemen's Steward . .														
	Young Gentlemen's Cook . .														
	Ordinary Seamen .														
	Purser's Steward's Mate . .														
	Cook's Mate .														
	Barber . .														
	Landmen . .														
	† Stoker and Coal Trimmer . .	—	—	—	—	—	—	21	20	—	—	17	—	11	7
	† Engineer Boy .	—	—	—	—	—	—	5	4	—	—	3	—	3	3
	Boy of first class .	39	35	29	25	23	19	10	10	15	6	8	4	4	4
	Purser's steward's boy	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Boy of second class .	26	24	23	21	15	13	13	13	8	6	8	4	4	4
	MARINES.														
	Captain . .	1	1	1	1	—	—	—	—	—	—	—	—	—	—
	Lieutenant . .	3	3	2	1	2	1	1	1	—	—	—	—	—	—
	Serjeant . .	4	3	3	2	2	1	1	1	1	1	1	—	—	—
	Corporal . .	4	3	3	2	1	1	1	1	1	1	1	1	1	1
	Fifer . .	2	2	2	1	1	1	1	1	1	—	1	—	—	—
	Privates . .	146	138	114	63	44	21	21	21	17	10	17	9	9	9
	Seamen Gunners are to be borne in the following proportions, but are to be included in the above ratings, either as Petty Officers or Able Seamen.														
		15	12	10	8	6	4	4	4	3	2	3	2	2	2

Except in Steam Vessels, which will not be allowed Seamen Gunners when Marine Artillery are embarked in them.

Vessels of smaller Class than those mentioned in the foregoing Table, are to be manned with such smaller complements as the Lords Commissioners of the Admiralty may think proper to direct.

* This Rating only applies to vessels rigged as ships.

† Should the power of the engines be increased in vessels of any given class, the establishment of engineers, engineer boys, and stokers, will be increased in proportion, without an addition to their total complements.

Promotions and Appointments.

(From the Naval and Military Gazette.)

Downing Street, Jan. 17th, 1842.

The Queen has been pleased to appoint Captain Augustus Leopold Kuper, of the Royal Navy, to be a Companion of the Most Honourable Military Order of the Bath.

PROMOTIONS.

Commanders—P. Fisher, T. Mitchell, C. Holbrook, A. Boyle, and R. H. B. Rowley.

Lieutenants—M. H. Conolly, C. R. Read, G. Pigot, J. F. Slight, and J. Cleavelan l.

Surgeons—W. H. Fisher, M.D., Kinnear.

APPOINTMENTS.

Rear-admiral Sir T. Cochrane, CB., to be 2nd in command in the East Indies.

Captain—H. W. Bruce, (1821) to *Hastings*.

Commanders—R. Harris (1841) to Naval College, to avail himself of the course of instruction—H. M. Denham (1835) additional to *Lucifer*, (for detached surveying service on that part of the coast of Lancashire comprising approaches to Morecombe Bay, Pile Harbour, and Port Fleetwood.)—J. W. Noble (1841) to *Indus*—C. Patey to *Powerful*—W. Kelly (a) to *Winchester*—P. G. Haymes to *Fantome*.

Lieutenants—G. E. W. Hamond (1835) to *Howe*, as flag Lieut.—J. H. Cockburn (1840) to Naval College, to avail himself of the course of instruction. —J. T. Caldwell (1834) to be flag Lieut. to Rear-admiral Sir T. Cochrane—A. Boyle (1830,) R. H. B. Rowley (1837,) and C. Holbrook (1815) to *Firebrand*—E. E. Gray (1827) to *Bonetta*—J. Rawstorne (1815,) F. S. M'Gregor (1838,) T. C. O. D. Whipple (1840,) and J. A. Paynter to *Implacable*—J. W. Tarleton (1835) to *Carysfort*—J. H. Christian (1839) additional to the flag-ship on the East India station—T. A. Allridge to *Royal William* for rank—A. P. E. Wilmot (1840) to *Vindictive*—P. Bisson to *Dolphin*—O. J. Jones to *Calcutta*—C. J. Postle to *Lizard*—W. H. J. Lowe, and A. Mellersh to *Minden*—A. Davies to be Emigrant Agent at Hobart Town—J. S. W. Grandy to *Royal William* for rank—J. W. Darleton to *Vindictive*—Hon. M. Kerr to *Formidable*—G. G. Phillips to *Calcutta*—E. J. Pearce to command *Lightning*, v. Berners promoted—F. P. Egerton to *Implacable*.

Masters—J. Browning (1815) to *Implacable*—R. L. Burnard to *Blossom*—W. C. Pettigrew, (act.) to *Ringdove*—Hodges to *Vindictive*.

Mates—W. H. Moubray (1837) to *Hazard*—H. L. Griffiths (1833,) and G. Durban (1839) to *Impregnable*—L. Gibbard (1839) to *Wolverine*—A. J. Curtis (1837) to *Minden*—G. J. Napier to *Lightning*—A. Hamilton to *Shearwater*—G. B. B. Collier (1837) to *William and Mary*, for service in *Lightning*—C. J. Perkins to *Implacable*—J. F. Slight (1836,) and G. Pigot (1835) to *Firebrand*—P. F. Shortland, to *Excellent*—T. Miller, P. W. May, from *Excellent*, and C. Baskerville to *Carysfort*—T. Cochran to *Thalia*—R. Willcox to *Alfred*—E. Morgan to *North Star*—C. B. Yule additional to *Fly*, to take charge of the *Bramble* tender—R. H. Dalton, and J. Corbel to *Queen*—W. B. G. Johnson to *Wolverine*.

Second-Masters—J. Shadwell (act.) to *Rapid*—J. Wilkinson to *Carysfort*—G. S. Hall to *Rapid*—R. Hartfield, Jun. (act. additional) to *Victory*, for service in *Lively*.

Surgeons—G. Mackay, MD., to *Ringdove*—W. White to *Ferret*—R. Fairservis to be Garrison Surgeon at Ascension —J. W. Reid to *Implacable*.

Master's-Assistants—A. Thomas to *Star*—J. Ellis to *Delight*—A. Ballerton of the *Penguin* to the *San Josef*—J. Thomas to *Rapid*—C. B. Jackson, (act.) to *Vindictive*—M. J. Strong, (act.) to *Pearl*—T. Henderson to *Victory*.

Midshipmen.—G. Whateby to *Queen* —F. Egerton and C. Stanhope to *Warspite*—R. Bateman to *Ringdove*—J. B. Hanham to *Carysfort*—T. Rich to *Queen*.

Volunteers 1st Class—J. W. Fernandes to *Calcutta*—W. G. Morgan to *Vernon*—V. Robinson to *Dublin*—J. Packwood to *Minden*—Cornick to *Carysfort*—J. A. Deudney, J. Gale, and Atkinson, to *Queen*—J. R. Veitch to *Calcutta* —J. Pearce to *Cornwallis*—T. H. D. Martin to *Carysfort*—N. Jackson, and S. Twyford to *Alfred*—Fox to *Formidable*.

Assistant-Surgeons—D. Thompson, MD., (1840) acting to *Minden*—W. Maitland (1841) to *Rapid*—A. M'Clutchie (act.) to *Caledonia*—C. C. R. Kinnear to *Howe*—J. Laffan to *Rapid*—T. M. Costello, (act.) to Haslar Hospital—D. B. Whipple, J. M. Mustard, and W. Roger,

(b) to *Minden*—A. M'Clatchie to *Fly* for service in *Bramble*—J. Caldwell, MD, to *Locust*—H. F. S. Beveridge, MD., to *William and Mary* yacht, v. Foster promoted—A. L. Elmslie to *Alfred*—R. Anderson, and R. M. Isbell to *Implacable*—C. G. Campbell, (act) to *Scylla*.

PURSERS—W. T. James (1808) to *Royal George*—J. Chimmo to *Harlequin*—W. B. Farror to *Royal William*—W. T. James to *Alfred*—W. L. Freeman to *Royal Sovereign* yacht—S. Wadland to *Implacable*.

CHAPLAINS—J. U. Campbell to *Belvidera*—W. S. Parish to *Implacable*.

NAVAL INSTRUCTOR—P. Robertson to *Carysfort*.

CLERKS—J. C. Motley, and J. E. Styles to *Carysfort*—W. J. Stram to *Warspite*—J. Ozzard to be Secretary to the Flag-ship of Rear-Admi. Sir Thomas Cochrane.

SECRETARY—J. M. Hobbs, purser, (1839) to be secretary to Commodore Purvis, on the coast of Brazil—W. Dyer to be Secretary to Rear-Admi. J. Percy, Commander-in-chief at the Cape of Good Hope.

COAST-GUARD.

Com. T. H. Holman, J. M. Bate, v. Gape, promoted, and P. D. Bingham, v. Pancy, appointed to *Sappho*, to be Inspecting Commanders—Lieut. A. Carrol to *Millisle*, v. C. J. Portle resigned, and appointed afloat—Lieut. D. Dennehy, and Lieut. J. Brown (1829) to be Chief Officers.

Removals.—Commander S. Ramsay from Sunderland to Gosport—Mr. W. C. Forsyth, Chief Officer, from Kingston to Chichester Harbour—Lieut. J. Kempe, from Tor Head to Cushendun—Lieut. J. S. W. Grandy, (recently promoted,) from Hayling Island to Hardway—Lieut. R. Combauld, from Langton to Hayling Island—Lieut. W. Welsh, from Alum Bay to Langton—Mr. J. Morgan, Chief Officer at Hardway, and formerly a Chief Mate of a revenue cruizer, has been appointed to the command of the *Lion* cruizer, building at Hastings.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

DIDO, 18, Capt. H. Capel, 24th Jan., sailed for China.

FORMIDABLE, 74, Capt. Sir C. Sulivan, 25th Jan. at the Nore.

IMPLACABLE, 74, Jan. 31, paid off at Plymouth, and re-commissioned by Capt. W. H. Bruce.

RAPID, 10, Lieut, Earle, 8th Feb. left Portsmouth for Africa.

RINGDOVE, 16, Jan. 29th, commissioned by Com. Sir W. Daniell.

SCYLLA, 16, Feb. 2d, commissioned at Plymouth, by Com. R. Sharpe.

VINDICTIVE, 50, Capt. J. T. Nicholas, 24th Jan. left the Downs for Portsmouth, on her way round. Having anchored outside of St. Helens, she got under way for St. Helens, and owing to some circumstances now under the investigation of a Court Martial she was obliged to anchor to prevent running on the Dean Sand in a gale of wind from south-west on the 26th Jan. at low water. She tailed on the sound, where she remained some hours, and with the assistance of a shift of wind got off, and ran over to her former anchorage.

The Vindictive has been taken into dock, and upon being examined all her injuries are found to be forward, and not abaft, as was supposed from her mizen-mast having been cut away. It appears that nearly the whole of her false keel is gone, and that about 30 feet of her main keel forward are destroyed, her gripe is gone, the stern about 7 feet up destroyed, her frame much shook, her copper much ruffled, and the oakum for about three streaks from the garboard is started fore and aft. It will be necessary to take out her guns and all her stores before she can be repaired; and it is considered that it will take a month or six weeks before she can be got ready for sea. Hauled out of dock and fitting,

VIXEN, (st. v.) Com. W. Boyes, 14th Jan. left Plymouth for China.

WARSPITE, 50, Capt. Lord J. Hay, 10th Feb. left Portsmouth with Lord Ashburton for New York, on a special mission.

WOLVERINE, Com. E. L. Hoblyn, Feb. left Portsmouth for China.

PORTSMOUTH.—*In Port.*—St. Vincent, Victory, Excellent, Royal George, Vindictive, Carysfort, Ringdove, Nautilus, Speedy. *At Spithead.*—Queen, Revenge.

PLYMOUTH.—*In Port.*—Minden, San Josef, Caledonia, Implacable, Fly, Scylla, Delight, Bramble, Diligence.

ABROAD.

ANDROMACHE, 26, Capt. R. L. Baynes, 5th Dec. arrived at Rio from the Cape.

APOLLO, (tr. s.) Com. T. Festing, Jan. 1st, at Tenerife.

ATHOL, 28, (tr. s.) Mas.-com. C. P. Bellamy, 10th Jan. arr. at Madeira from Cork, and sailed for Barbados.

BASILISK, 6, Lieut.-com. J. Russell, Oct. 3d, left Valparaiso for Coquimbo.

BELLEISLE, 72, Capt. J. Kingcome, Jan. 1st, at Tenerife.

BRITOMART, 10, Com. O. Stanley, 24th Nov. left Singapore for Rangoon.

CALCUTTA, 84, Capt. Sir S. Roberts, Jan. 25th, at Gibraltar.

CAMBRIDGE, 78, Capt. E. Barnard, Jan. 25th, at Gibraltar.

CARRON, 7th Dec. arr. Bermuda.

CLIO, 16, Com. S. G. Freemantle, 13th Nov. left Singapore for China.

CORNWALLIS, 72, Capt. P. Richards, Nov. 16th, left Singapore for China.

CURACOA, 24, Com. W. Preston, 27th July at Callao.

FAIR ROSAMOND, 2, Lieut.-com. A. G. Bullman, Feb. 3d, Carlisle Bay.

FANTOME, 16, Com. E. H. Butterfield, 24th Oct. returned to Simons bay, after a 6 months cruize on the coast of Algoa for the suppression of the slave trade, having lost the Brisk and Waterwitch under her orders, during which period they have captured 33 slave vessels, and liberated 3,427 negroes, viz. Fantome, 16 vessels, 1,340 negroes; Brisk, 10 vessels, 1,136 negroes; and Waterwitch, 7 vessels, 951 negroes. 1st Dec. left Algoa Bay for west coast.

HARLEQUIN, 16. Com. Hon. G. Hastings, 25th Dec. arr. at Madeira, 29th sailed.

ILLUSTRIOUS, 72, Capt. J. Erskine, arr. at New York with Sir C. Bagot, on the 30th Dec. having experienced very bad weather on her passage, but proved a good sea boat; she had lost several spars, a portion of her hammock netting, and some of her boats by the heavy sea.

INDUS, 84, Capt. Sir J. Stirling, Jan. 22d, at Lisbon.

LILY, 16, Com. J. J. Allen, Nov. 30th arr. at the Cape from Mauritius.

LYNX, 3, Lieut. S. Burslem, Jan. 23d, at Lisbon.

MADAGASCAR, Capt. J. Foote, 25th Dec. arr. at Madeira, 26th sailed for Africa.

MALABAR, 74, Capt. Sir G. Sartorius, 31st Dec. at Gibraltar.

NORTH STAR, Capt. Sir J. E Home, Bart., 27th Dec. arr. at Madeira on way to China.

PILOT, 16, 9th Dec. at Tampico.

PRESIDENT, 50, Capt. W. Broughton, 28th October arr. at Valparaiso from Callao.

RACEHORSE, 18, Com. Fitzgerald, 8th Dec. arr. at Bermuda from Jamaica.

RACER, 16, Com. Harvey, 26th Nov. arr. at Jamaica, 2nd Dec. sailed for Nassau.

REVENGE, 76, Capt. Hon. W. Waldegrave, 24th Jan. at Lisbon.

ROVER, 18, Com. T. W. C. Symonds, 29th Nov. at Barbados.

SAPPHIRE, (troop ship,) Master-Com. G. W. Nembhard, 1st Jan. at Teneriffe.

SNAKE, 16, Com. Hon. W. Devereux, 9th Jan. arr. at Gibraltar, 20th at Malta, and to sail for Corfu.

SOUTHAMPTON, 15th Nov. left Rio for the Cape.

VERNON, 50, Capt. W. Walpole, 13th Jan. arr. at Cadiz from Gibraltar, 20th at Cadiz.

VOLAGE, 26, Capt. Sir W. Dickson, 11th Jan. arr. at Madeira, 13th sailed for Bermuda.

WATERWITCH, 10, Lieut. Com. H. J. Matson.—Her boats under the charge of Mr. Willcox, on the 4th of August, after a chase of six hours captured the Portuguese brigantine Corisco, with 392 slaves on board.

WEAZLE, 10, Com. J. Simpson, 19th Jan. left Malta for Syria.

MALTA—*Ships in Port*—Howe, 120, bearing the flag of Rear-Admi. Sir F. Mason, KCB.; Ceylon, 6, bearing the flag of Rear-Admi. Sir J. Louis, Bart.; Impregnable, 104, Rodney, 92, Monarch, 84, Ganges, 84, Thunderer, 84, Vanguard, 80, Aigle, 24, Snake, 10, steam-frigate Hecate, steam-packets Stromboli, Prometheus, Alecto, and Locust, cutter Magpie, and four transports.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At St. Paul's-square, Southsea, on the 4th of February, the lady of Com. G. Davies, of a son.

On the 9th of Feb. at Lisbon, the lady of Capt. Sir J. Stirling, of her Majesty's ship Indus, of a daughter.

Marriages.

At Adelaide, South Australia, A. M. Mundy, Esq., of Shipley, Derbyshire, to Jane, daughter of Capt. Hindmarsh, RN., Lieut.-Governor of Heligoland.

On the 29th of January, at Alverstoke, G. C. Langley, Esq., of the Royal Ma-

rines, to Frances Louisa Halliday, eldest daughter of the late Capt. F. A. Halliday, RN.

On the 10th of Feb., at Valetta, W. Wilkins, Esq. Purser of her Majesty's steam-frigate Hecate, to Elizabeth Jane Balcombe, only daughter of Lieut. D. Nagle, 47th Regiment.

Lately, at Portsea, Capt. W. J. Williams, late in command of the Stromboli at Acre, to Anne, third daughter of the Rev. Dr. Morgan, Chaplain of Portsmouth dockyard.

At Bexley, near Maidstone, R. Jesse, Esq., Lieut. RN., to Emily, second daughter of the Rev. G. C. Tennyson, DCL., Rector of Somersby, in the county of Lincoln.

At Bishop's Tawton, Devon, A. Jukes, Esq., of Trinity College, Cambridge, to Augusta, daughter of Capt. L. Hole, RN.

Deaths.

At St. Omer, on the 28th of Jan., Capt. J. Douglas, RN.

Lately, Lieut. H. Smithwick, R.N.,

On the 2nd of Feb. near Thurso, Caithness, in N.B., Com. M. A. Slater, RN., in charge of the Government survey on the north coast of England, in his 47th year.

On the 18th of October, at Fernando Po, Mr. W. C. Willie, Mate of the Albert, of the pestilential epidemic which prevails at the mouths of the great River Niger, on the exploration of which this promising young officer was employed.

On the coast of Africa, Lieut. Stenhouse, Mr. Woolhouse, Assistant-surgeon, and Mr. Wilmot, Clerk of the Albert, employed on the Niger Expedition.

At Fulham, on the 19th of Feb., Mary, eldest daughter of the late Rear-adml. R. Smith, of Pooltoncum-Seacomb, and relict of G. Palmer, Esq., Admiral of the White.

At Brunswick Terrace, on the 17th of Feb., Margaretta Sarah Lady Morris, relict of Vice-adml. Sir J. N. Morris.

At Plymouth, Henrietta Catherine, only daughter of Capt. Higman, RN., aged 19 years.

On the 2nd of Feb., at Bedford-place, Carisbrooke, Isle of White, Mrs. Blanch Charlesson, relict of the late Lieut. F. Charlesson, RN., aged 79

On the 3rd of Feb., at Lyme Regis, Margaret, widow of the late Capt. Waring, RN., and daughter of the late J. H. Franks, Esq., of Misterton Hall, Leicestershire.

At Cold Harbour, Gosport, on the 6th of Feb., Georgiana Margaretta Johnson, wife of Lieut. Johnson, RN., and youngest daughter of Rear-adml. Carter.

At Malta, aged 25, Mr. A. Glen, Mate of her Majesty's ship Thunderer.

At Bombay, aged 33, Capt. A. Young, of the ship Mor, fifth son of Rear-adml. Young, of Denmark Hall, Camberwell.

At Gosport, Mrs. Henville, aged 72, relict of C. P. Henville, Esq., Lieut. RN., and late of the island of Antigua.

On the 13th of Feb., at Plymouth, Mr. H. Podder, Master, RN., late of the Bellerophon, aged 49.

On the 23rd of Jan., at Plymouth, the wife of Lieut. Yule, RN.

At Mayfair, Elizabeth, wife of Capt. E. Chappell, RN.

At Ascension, on the 10th of Dec., of apoplexy, Capt. H. Bennett, of the Royal Marines, commandant of that settlement.

At Clapham Rise, on the 28th Jan., Mrs. J. A. Jones, widow of the late Capt. R. Jones, RN.

On the 22nd of Oct., at Mozambique, on the coast of Africa, Mr. N. B. Pearce, Master of her Majesty's ship Grecian, aged 33.

On the 4th of Feb, in Belgrave Sqr., Lady Ogle, wife of Admi. Sir C. Ogle.

On the 22nd of Jan, at Gloucester, aged 38, Mary, the wife of Lieut. C. March, RN., and only daughter of the late J. Byles, Esq., of Stowmarket, Suffolk.

At Boulogne-sur-Mer, on the 29th of Jan., Emily, wife of Capt. W. Webb, RN., and daughter of Admi. Sir W. Lake, KCB.

At Paris, in his 84th year, L. Gillespie, Esq., MD., RN., one of the oldest physicians in the service. As private physician to Lord Nelson, and Physician-General to his fleet, he had the honour of enjoying the closest intimacy with that distinguished Admiral for many years.

Lately, at Gosport, in her 73rd year, Mrs. Silver, widow of the late Commander Silver.

On the 23rd of January, in the Bay of Gibraltar, G. S. Bigland, Esq., of the 46th Regiment, eldest son of Capt W. B. Bigland, RN., of Bigland Hall, Lancashire. The deceased unfortunately lost his life by falling down the hatchway of the Java transport.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,

From the 21st of January, to the 20th of February, 1842.

Month Day	Week Day	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9 AM.	3 PM.	Min	Max	AM.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	F.	30·00	30 02	32	32	32	33	E	NE	2	2	od 2)	og
22	S.	29·88	29·60	31	34	30	37	SE	SE	4	5	os 2)	ogsr (3)
23	Su.	29·21	29·31	29	33	28	34	NW	NW	4	6	b	qbcps (3
24	M.	29·80	29·80	21	30	20	31	SW	S	1	1	bm	bm
25	Tu.	29·30	29·52	33	40	24	41	NW	NW	4	5	osr (1)	qbc
26	W.	29·46	29·12	37	42	26	43	S	SW	6	6	qor 2)	qbc
27	Th.	29·64	29·76	35	42	34	44	W	W	5	5	qb	qbc
28	F.	29·79	29·86	33	41	31	42	SW	NW	4	3	bm	b
29	S.	29·94	22·99	32	39	29	40	SW	NW	3	3	bcm	bcm
30	Su.	30·20	30·20	34	36	33	37	NE	NW	2	2	om	bcm
31	M.	30·09	30·00	38	46	32	47	SW	SW	4	4	od (2	or 4)
1	Tu.	30·07	30·12	36	42	33	43	NW	N	2	2	bcm	bcm
2	W.	30·16	30·16	38	48	31	49	NW	SW	2	3	o	bcm
3	Th.	30·36	30·41	43	47	42	48	NW	SE	2	2	o	bc
4	F.	30·43	30·38	37	37	36	40	SE	E	2	4	om	bc
5	S.	30·24	30·19	34	36	31	37	E	E	4	5	bc	qbc
6	Su.	30·08	30·00	31	36	28	38	E	E	2	4	bc	bc
7	M.	29·71	29 70	34	39	26	41	SE	SW	3	4	or (2)	bc
8	Tu.	29·78	29·77	33	46	30	47	E	SW	2	3	ofd (2)	ofd (3
9	W.	29·79	29·74	37	47	35	48	S	S	2	5	bcm	om
10	Th.	29·91	29·97	44	49	41	50	S	SW	3	3	o	o
11	F.	29·99	30·00	47	51	45	52	SW	SW	6	6	qbc	qor (4)
12	S.	30·02	30·00	49	50	47	53	SW	SW	5	6	o	qo
13	Su.	30·16	30·03	43	50	37	52	S	SW	2	6	o	qop (3
14	M.	30·38	30·44	36	48	34	50	W	W	2	4	b	bc
15	Tu.	30·45	30·45	45	50	39	51	W	W	2	4	o	bc
16	W.	30·50	30·46	44	47	39	48	W	SW	1	2	o	o
17	Th.	30·38	30·30	43	48	37	50	SE	S	2	2	o	bc
18	F.	30·31	30·33	33	43	27	44	SW	W	2	2	bc	bcm
19	S.	30·35	30·27	28	44	25	45	NE	S	2	2	f	b
20	Su.	30·03	29·93	32	35	31	36	SW	SW	1	2	ofg	og

January—Mean height of barometer = 29·943 inches; mean temperature = 32·2 degrees; depth of rain and melted snow fallen = 1·07 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

The Master of the Ship Emily is perfectly right, both in his calculations and conclusions. His method, although excellent, is not new. He will find it abbreviated in table No. V. in Raper's Navigation, described at p. 79.—See also *Nautical Magazine*, vol. 1, p. 208.

The illustrations of Commander Sullivan's paper, have prevented its appearance in this number.

Our Bristol Friend has our best thanks for his useful notes. They came late, and were obliged to give place to the *current* matter of the day.

Notices of Japan in our next.

Amoy.—*By Commander R. Collinson, R.N.*

[To accompany the plan of Amoy just published by the Admiralty.]

This harbour is superior in my opinion to any I have seen as yet upon the coast of China, my experience comprising all the Chusan Archipelago, and the Choukeang or River of Canton.

The access and egress is easy; in the outer harbour there is good holding ground, and unless vessels are badly found in ground-tackle, I should conceive no gale of wind could hurt them.

In the inner harbour from the appearance of the rocks, and immediate vicinity of the houses to the beach, I think no great swell ever exists, and it is capable of containing from 60 to 100 vessels.

Chapel Island.—Chapel Island, or, Tung-ting-seu, in the offing of Amoy, is situated in latitude 24° 15½′ N., and longitude 118° 13½′ E., and 9′ 44″ E. of the south-west point of Koolongseu: it is of an even surface, and probably 200 feet high, and three cables in circumference. When in its neighbourhood, the pagoda Nan-tae-wooshan on the hills over Chang-chow-foo, which is 1,728 feet above the sea, will also form another mark by which the entrance to the harbour may be easily recognized.

Chaw-chat.—Chaw-chat, or Kew-tsee-tseao, in the entrance of Amoy harbour, is a rock nearly level with the waters' edge, (during our stay, which was at spring tides, it was never covered,) N. 22° W., 10·6 miles from Chapel Island; when on it the three chimneys on Wooseushan Island, are in line with the pagoda Nan-tae-wooshan, bearing S. 82° W.; by keeping Taepan, or Wei-tsze-seu point open to the eastward of Tsingseu Island, which it will be, bearing N. 55° W. the rocks will be avoided, should high tides and smooth water prevent their being seen. The channel between Chaw-chat and Wooseushan Island is five cables long.

Wooseushan.—This island is 1·2 mile long, and near the centre only a cable's length in breadth. On the east side is a sandy bay, with a fort, having embrasures for eight guns. The north-east and south-east faces of the island are steep cliffs. On the west side are three sandy bays with two batteries, each having five embrasures. In the northernmost bay of the three is a large village, and the ruins of an ancient fort.

On the north point is a large battery mounting thirty guns, and there are two 4-gun batteries on the north-east side of the island. On its summit (which is about 300 feet above the sea,) are three chimnies, which are intended for alarm signals. Similar buildings exist all along the coast of the provinces of Fokien and Chekeang.

Wooan.—To the westward of Wooseushan, half a mile, is the island of Wooan, which is five cables long,—it is barren and without inhabitants. Between the two are three small islets, with reefs lying off them. Shelter from easterly winds, with a depth of from four to six fathoms, might be found here; but vessels had better not pass to the westward of Wooseushan, until more soundings have been obtained; the number of detached reefs in this neighbourhood, leading me to suspect that many sunken rocks will be found.

South from Wooseushan Island 1·1 mile, is another half-tide reef, which lies seven cables from the main.

North 32° east from Wooan Island, lie two patches which are covered at high water, and between it and the main are several islets and half-tide rocks.

North 40° west from Woosenshan Island is Tsingseu, midway between the two is a cliff islet, (Jihseu,) north-west of which two cables, and S.S.W. one cable, are reefs which dry at low water.

Tsingseu.—Tsingseu Island rises precipitously from the sea; three forts are built on its summit, which is about 250 feet above the sea. These forts are situated on the east, west, and south faces, having embrasures for six, eight, and twelve guns. On the north-west side is a jetty with stone steps, leading to the summit, but these, as well as the barracks, were in an unfinished state in August, 1841.

Cheihseu.—The entrance to the harbour lies between this island and a small islet Cheihseu, (sixty feet high,) which is eight cables to the north-east. The shores of both islands, facing the passage, are steep to. These rocks lie half a cable southerly from Cheihseu.

Two half-tide rocks lie north four cables and a half, and north 18° east three cables from it. To avoid which, when standing to the eastward, and within half a mile of Cheihseu, keep the east end of that island open of the west end of Wooseushan.

N.E.b.E. from Cheihseu are four islands. The two nearest are rather larger than Cheihseu, and are called by the Chinese Ta-o-seao and Hwangkwa.

Seao Tan.—Seao Tan Island is six cables long, and about 200 feet high, and has a sandy bay upon its northern side. On this island also there are three chimnies and forts upon its northern and southern shores.

Tatan.—Tatan is eight cables long, with a low sandy isthmus in the centre. The east end is the highest, (about 300 feet,) with a small circular watch-house and three chimnies on it.

On the west side of the isthmus is a village. Between this island and the south end of Amoy, only one and a half fathoms were found; soundings, however, were not obtained close in to the Amoy shore.

Tsingseu to Taepan Point, or Wei-tsze-seu.—From Cheihseu to the outer harbour, the course is north 38° west, four and a half miles in a depth of from seven to twelve fathoms.

Between Tsingseu and Taepan Point (one cable and a half to the south-west of which are several half-tide rocks, and a small peaked islet off its north point,) is a deep bay, in which are several reefs. Vessels, therefore, should not stand further to the westward than to bring Taepan Point to bear north 60° west, or Tsingseu Island south 60 east, until the positions of the dangers in it have been correctly ascertained.

Amoy.—The south end of Amoy is a sandy point, with several black rocks extending two cables from the shore. On the slope of the hill which forms the point is a circular battery.

W.b.S. 0·6 of a mile, is a second battery. Between the two, a half-tide rock lies three cables from the shore. To avoid which, when standing into the coast, a cliff point with a battery, and three chimnies on it, (1·3 mile from the rock,) will be seen, and also a sandy point with a large stone at its southern extreme, 0·8 of a mile further to

the north-west. Tack before these two points come in line with one another.

From the Chimney Point above-mentioned, the three fathoms line extends two cables, otherwise the coast line Amoy, which is a continuous sandy beach, is steep to, and the lead a good guide.

North 61° west, about half a mile from the Chimney Point, is a wall surmounted by a parapet, which extends from the coast inland three cables. From hence, to the stone on the beach, which is 0·38 of a mile distant, was one continuous line of battery, mounting forty-eight guns. From the stone on the beach, opposite to which was a white semi-circular battery, (and which with two others further to the north-west, appear to have been the only defences, until after the visit of Her Majesty's ship Blonde, in 1840,) the coast trends rather more to the northward for 0·28 of a mile, where there is a creek dry at low water; along this space was a similar line of fortification, (stone faced with earth,) mounting thirty-eight guns. At the back of the creek is an extensive suburb, and an isolated hill, the summit of which is a large mass of granite.

At the creek entrance was a battery faced with plank, mounting five guns, and upon the opposite side was one similarly constructed, mounting twelve guns.

N.W. ½ W., 0·7 of a mile from the stone on the beach, are a number of rocks which cover at half-tide, the outermost being one cable and a half from the shoal. On the point from whence they extend, is a mass of granite,—the side facing the sea of which has some Chinese characters upon it. To the westward of this, was a battery mounting seven guns, and on the point forming the other end of the same bay, was one mounting five. These terminated the defences upon the Amoy side, and here the hills which form the back ground of the coast line also end. The city, which is very little above the level of the sea commences.

The ridge of hills upon this face of the island does not rise above 600 feet. They are abrupt and barren, with numerous large boulders of granite, a square upright mass of which, on the highest part of the western extreme of the ridge, rises to the height of 528 feet above the sea, and is about the average height of the chain. From the large stone, with the Chinese characters upon it, to the western extreme of Amoy, the distance is one mile. The houses extend close down to the beach, and the trading junks lay aground opposite to them.

The distance across at the entrance of the channel between Amoy and the island of Koolongseu (which is abreast this stone,) is 840 yards, and the narrowest part of the channel 675 yards.

The island of Koolongseu is 1·1 mile long, and 0·7 wide; detached rocks lie off nearly all the points. Off the north-east face, or that towards Amoy, are several which are covered at high water, therefore, in passing into the inner harbour by the channel, it is recommended to keep Amoy shore on board, after you have passed the rock with the characters on it.

The west extreme of Howseu Island, which is in the centre of the inner harbour, in line with a peak on the east part of a ridge of hills at the back of it will put you on the outer rock. The summit of the

island in line with the rock will carry you through nearly in mid-channel.

Having passed Harbour Rock, Fantsead, which is steep to, and lies not quite a cable from the west point of Amoy, having one fathom and a half between it and the shore, haul to the northward, and bring up where you please, taking care not to approach nearer the Amoy shore than three cables, to avoid a reef of rocks which lie to the northward of Harbour Rock.

Sanpeen-sheih.—Off the north point of Koolongseu is a peaked rock covered at high water, one cable and a half from the shore, and N.b.W. from it two cables, is a shoal patch having two fathoms and a half at low water, which ought to be buoyed, if the harbour be frequented.

The other entrance to the harbour is between Koolongseu and Taepan Point, the distance between which is 1·8 miles. The coast is steep to, and in the channel the depth of water varies from eight to twelve fathoms.

Having passed the west point of Koolongseu, off which are several half-tide rocks one cable from the shore; the channel narrows to eight cables, and the course for Howseu Island is N.N.E., which has fifteen fathoms within thirty yards of the rocks, and should be passed close to avoid the two fathoms and a half patch mentioned above.

Harbour Rock may be steered for directly it bears to the southward of east.

N.B. This channel requires further examination.

On Koolongseu are five batteries; two on the south end mounting fifteen and nine guns, two on the south side having seven and three guns, and one on the north-west side mounting eight guns.

On Taepan point were two batteries, and on the points further to the westward three other, one of six and two of five guns.

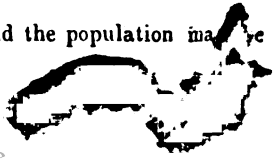
The rise and fall of the tide from one day's observation on the full moon in September, was fourteen feet and a half: at this period, however, the night tides exceeded the day by two feet. The change in the depth, in all probability, three days after full and change would exceed sixteen feet. This would be of infinite importance to vessels requiring repair, particularly as sites for docks, and ample materials for making them are to be found upon the island of Koolongseu, as well as in other parts of the harbour.

Koolongseu.—This island is well adapted for a settlement, being 2·85 miles in circumference. The channel between it and Amoy is 675 yards wide. The ridge of hills on this island being higher than those opposite.

There are two distinct ridges upon the island, which might be separately defended, the highest part being 280 feet above the sea. The geological features of the island are principally granite, the soil being formed of it in a decomposed state. Large boulders of it also occur in many places, both upon the shores and the highest parts of the island.

Fresh water from wells was plentiful, the cultivation and artificial channels for leading it to boats, lead me to suppose that there is always a good supply of this article.

There are many houses upon the island, and the population may be estimated at between 3,000 and 4,000.



Remarks on a Passage from China to Batavia *in H.M.S. Conway, by Capt. Drinkwater Bethune, R.N., through Basselan Strait and the Molucca Passage.*

Chusan to Canton River.

We left the outer anchorage of Chusan with a convoy on the 24th of February, 1841, anchored in the evening to the southward of Kittoe Point.

The next morning with a strong breeze at north-west we ran through Gough Channel, and were abreast of the Quesan Islands at noon: at 1h. 30m. observed the Hesan Islands S. ½ W., and by 4h. were nearly abreast of them. Could get no sights, but by our run they bear S.b.W. twenty-six miles from Pathecock; about twenty miles to the east of Horsburgh's chart of the East Coast of China.

At noon the 26th, in latitude 26° 48′ N. and 0° 22′ W. from Chusan sounded in twenty-eight fathoms sand and small stones. March 1st, in the evening ran through the Lama channel, and anchored at 1 A.M. betwixt Ching-chow and Lama, in seven fathoms.

The next morning we beat up into Hong-kong, found the fleet gone; bore up at 8 A.M., ran through the Lantao passage, and at sunset anchored off the Bogue, in twelve fathoms, passing to the westward of Lintin.

The next day wayed at daylight, and at noon anchored at Whampoa, having touched the ground for five minutes at the first bar.

Run entirely by Horsburgh's chart without a pilot; we have since passed down by the Fan-sy-ack channel, beat through the Cap-sing-moon, &c., with only his chart. The ship touched the ground several times, which must be expected when time presses. Capt. Belcher has, I believe, completed a survey of the river, which will, probably, supercede Horsburgh. Hong-kong is a fine anchorage, I am not sufficiently acquainted with it to offer any useful remarks.

Canton River to Batavia by Mindoro Strait and Molucca Passage.

Left Macao about noon, 17th of July, wind very light from the eastward; gradually freshened from the same quarter, so that in forty-eight hours were not far from the Paracels. Crossed the Macclesfield on the 5th day; had one day's calm, then strong breezes from south-west. Being well to the southward steered free for Northumberland Strait, which we entered on the 25th; weather very dirty.

The islets and rocks off Busvagon appeared to be accurately laid down in the chart. (Phillippine Island 1808, 1832.) When well in the Strait the wind slackened, and after a hard squall from the westward the weather cleared up.

The island of Quiniluban, and the Banco Seco were seen; they are erroneously placed in both the Phillippine Island chart and in Horsburgh.

Centre Quiniluban.

Phill. Island, chart	11° 30′ N.	121° 5′ E.
China Sea, I.	11 30	121 7
Conway . .	11 29	120 47

Baneo Seco.

Phill. Island, chart	11° 25′ N.	121° 38′ E.
China Sea, I.	11 25	121 54
Conway . .	11 25	121 34

It will be observed that we make the difference of longitudes the same as Horsburgh.

Islet off Point Naso Luegas.

Phill. Island, chart	10° 25′ N.	121° 56′ E.
China Sea, I.	10 24	122 3
Conway . .	10 29	121 55

Reached Basselan Strait on the 2d of August, the wind having been very light, chiefly from the south-westward.

Sent a boat into Samboanga, a Spanish settlement. Refreshments and water can be procured, but some hours notice are necessary if much live stock is required. While waiting for the boat, tacked off the islet Santa Cruz in nine fathoms,—extremes N. ½ E. and E. ½ N. Afterwards was set by the tide to the eastward, within two or three miles of the island Malanipa, and got nine, seven, and five fathoms uneven soundings, the Cocos Island being on with a hummock at the east end of Basselan. To keep clear of this patch, do not bring Cocos on with Basselan.

Samboanga.

Phill. Island, chart .	122° 2′ E.	
China Sea, I. . .	122 8	
Conway . . .	122 3	

East end Basselan.

Phill. Island, chart	6° 34′ N.	122° 23′ E.
Conway . .	6 41	122 17

East Islet of Sibago.

Phill. Island, chart	6° 44′ N.	122° 28′ E.
Conway . .	6 46	122 19

Coco.

Phill. Island, chart	6° 41′ N.	122° 17′ E.
Conway . .	6 45	122 15

It had been my intention to pass through the Strait of Macassar, but after two or three days calm, the wind freshening from the south-west, I bore up for the Molucca passage, and on the 9th passed to the southward of the north Karakita Island, with a strong breeze at south. The position of Siao differs materially in latitude from Horsburgh, who gives it on the authority of Capt. Heywood. Mine were compass bearings, and I presume some error was committed.

The southerly breeze soon blew out, and light winds took its place. By getting on the Gillolo Shore we got land winds, which took us slowly to the southward, and we reached the Greyhound Straits on the 16th.

Talenading Islands, north end.

China Sheet, II.	2° 20′ N.	127° 38′ E.
Conway . .	2 17	127 37

Island Meyo.

China Sheet, II.	1° 14′ N.	126° 39′ E.
Conway . .	1 18	126 32

When south-east, four miles from the centre of Meyo Island, Tyfore bore S.W. ¼ W., five or six leagues.

I committed a mistake in running so far to leeward as these straits. By passing to windward of the Zulla Islands, it is pretty certain that you will weather Bouton, whereas, the wind coming strong from the southward, it took us forty-eight hours hard work to get through the straits, and I did not round the east end of Bouton till the 23rd. There appear to be some shoal spots in the neighbourhood of the Greyhound Straits. The two islets marked on Sheet II, south of them, do not exist.

Off Waxway the sea was of a remarkable white colour, as if on a shoal chalky bottom. No soundings with forty fathoms. Horsburgh's directions for the straits and the charts, do not agree as to the names of the islands.

East end of Bouton.

China Chart, II. . .	123° 14′ E.
Conway . . .	123 20

South end Bouton.

China Chart, II. . .	5° 41·5 S.
Conway . . .	5 44

When passing the east end of Bouton, two islets were seen to the eastward, at about five or six leagues. Extremes E. ½ N., E.b.S. ½ S. This puts the north end of Wangi Wangi in 5° 12′ three miles north of the chart. Once round Bouton the passage is made. We passed through Salayer Strait, and arrived at Batavia on the 29th of August. An English barque, the Apolline, left Macao the same day we did, passed through Macassar Strait, and arrived two days before us. Capt. Deane told me that when through Basselan Strait, all his efforts were turned to make westing. At this point we were five days ahead of him, we may conclude, therefore, that if in like manner I had persisted in making westing, our passage would have been shortened a week at least. It appears desirable to find a safe passage through the Sooloo Archipelago, to prevent going so far east and to leeward.

Batavia Roads.—Coming from the eastward, a berth must be given to Point Krawang. When it bore S.W.b.W. five miles, we had four and a quarter, and steering west deepened very gradually to seven, then the point bore S S.W. ½ W. two or three miles. Horsburgh marks ten fathoms in these positions.

When Point Krawang bears south two miles, a S.W.b.W. course will lead between the islets Leyden and Eukhuysen, both small sandy Cays, with trees on them. When Eukhuysen is on with Eden, bearing about N.b.E., a S.b.W. ½ W. course leads to the anchorage, betwixt the Neptune on the port hand and the Rhynland on the starboard hand. There are perches on all the rocks and shoals. Anchor about half a mile from the pier head, in five or six fathoms.

A rear-admiral resides at Batavia, and a guard-ship lies in the Roads.

The Naval Arsenal is at Omrust, a small island six miles north-west from the Roads.

It is convenient to get all communications with the shore over before nine or ten o'clock, as about that time the sea breeze comes in and knocks up a swell. A blue flag is hoisted at the pier-head, when it is dangerous to cross the bar. A canal runs up about one mile and a half to the landing place, up which the boat may be tracked. Carriages are always to be got to communicate with the town, which lies two or three miles from the landing.

No European should sleep in the old town; the new one is healthy.

Supplies can be obtained; bread can be baked at a short notice; but it is not so good as foreign, which can generally be obtained. A heavy duty on foreign articles, (30 per cent.) renders them expensive. Stock plentiful, but not so cheap as Anger. The badness of the water was at one time a great drawback to the advantage of Batavia as a stopping place; at present it can be procured of excellent quality. The machinery established by M. le Brun, works sixteen hours per diem, producing in that time 15,000 gallons.

It is supplied to ships from proas, there are two in use at present. The largest proa is fitted with five leaden tanks, each containing ten leagers of 120 gallons each—6,000 gallons; the smallest has four tanks of the same capacity—5,800 gallons; they can be pumped dry in two or three hours. The price is five shillings sterling per leager. The cost is greater if you hire natives to pump.

A time-ball is dropped from a post at the upper end of the canal at noon, Batavia mean time, and at 1h. 7m. 28s, which is six hours from Greenwich mean time, allowing Batavia to be in 106° 52′, or 7h. 7m. 28s.

Leaving Batavia roads to proceed to the westward, I recommend the inner channel inside of Omrust. We left at 6 A.M., carried the land breeze fresh, and got clear out. While in the roads we observed that vessels going out to the northward remained becalmed sometime.

The Vigia of the Eight Stones, and a few Remarks on Oceanic Dangers.

The course pursued by her Majesty's ships in quest of the Eight Stones seem to determine that they do not exist in the positions assigned to them. With a fleet, I have, myself, passed at noon over the space, on a south course, our latitude, on the 2d of February, having been 34° 30′ north, and the longitude by chronometer 16° 40′ west; Funchal bearing S. 11° W., distant 114 miles; and fifteen years after I sailed in a single vessel, within a mile of the southern position in a clear evening. Whether these rocks may be found to the westward of the given sites, or whether they exist at the present day, I shall not pretend to offer an opinion; but I by no means consider that the account of their first discovery is to be disbelieved, as their disappearance may be easily and satisfactorily explained upon the very probable supposition, in which I am fully justified, of the rocks having been up-hove

by a submarine volcanic eruption, and what is quite as likely, that, they have since submerged.*

If, we bear in mind the operations of this nature, which have from time to time occurred in different parts of the ocean, the appearance of rocks and islets hove up, sometimes from great depths, and which often submerge, we need be at no loss to account for the non-appearance of the Eight Stones (supposing these not to exist,) at this day, after a lapse of 104 years from the date of their first discovery,—and, surely this consideration ought to create some degree of reserve in us, when disposed to pass judgment, as we might, although perhaps unintentionally, inflict what may possibly turn out to be an act of injustice, on the veracity of the first reporter. Why should the "traveller's licence" be attributed to a voyager in reports of this sort? What is there to flatter human pride in the discovery of a danger at sea, to induce any man gratuitously to embrace such meanness? or, what earthly good can possibly arise from an assertion of what has no foundation in truth? The only satisfaction that can follow the discovery of real dangers at sea is that, which springs from humanity—the pointing out to others where peril lies, in order to its avoidance; and he who neglects this, neglects a very important duty of his professional calling. And even when there appear doubts of the accuracy of such reports, would it not be wise to give the benefit to the side of security, until repeated investigation confirm their doubts? The evidence of one's eye-sight is not always to be depended upon, and no man's judgment is infallible; but in the case of the Eight Stones, the extent of the danger and the circumstantial detail given by Capt. Vobonne, of having counted eight rocks even with the water, implies that he was at some pains to ascertain the fact, and that the rocks could not be small to be observed in a space occupying three leagues in extent.

The liberal mind will always give a reporter credit for what he asserts, unless, indeed, such person is well known to be a decided romancer. The life of the celebrated Scotch traveller Bruce, of Kinnaird, and the extreme injustice,—not to speak of the illiberal and infamous detraction heaped upon him whilst reposing after his extraordinary, and in some respects, unequalled exploits, during a long sojourn among a demi-civilized people, is a clear illustration of the moral iniquity of pronouncing a censorius judgment upon matters of this sort, merely because they may appear not to agree with our preconceived ideas, our present knowledge, or are novel or even unlikely, and of saddling the memory of a man with a stigma upon insufficient grounds. I believe all the extraordinary things reported by the abovenamed intrepid gentleman, have been verified, even to the eating of a steak cut from the back of a cow whilst alive, and to the very "*Zimb*" itself, which the entomologists would not "bolt," but which has at last, with every reason, been identified with the *Œstrus!* It has been

* The corroborative testimony brought forward by Lieut. Crooke, and which appears to be too circumstantial and plain to be doubted, informs us that, a danger of some description or other exists, *or did exist*, in this part of the ocean. If proceeding from volcanic action, the appearance and disappearance of rocks here may go on for years, until ultimately, by an energetic impulse, an islet may be forced up sufficiently high above the surface of the sea, so as no longer to create doubt.

asserted, that the lamented Mungo Park suppressed some extraordinary circumstances he had noticed, during his travels in Africa, because the public would not be inclined to give credence to them. Without detracting from the merits of that exalted traveller, does not this reserve in a man, whose personal bravery was of the very first stamp, serve to display the moral courage of Bruce in an eminent degree? Now, I trust, malgré the belief or dis-belief of the public, every seaman in matters of reported dangers at sea, will rouse his moral courage to the "sticking point," and tell "the truth and nothing but the truth."

On the coast of Portugal a submarine volcanic explosion is known, and recorded to have taken place many years ago; and navigators have also reported appearances in the ocean, southward of Madeira, which were considered as the effects of submarine fire. Can any reasonable doubt be entertained why these operations may not be, occasionally taking place in the lines of communication throughout the ocean?

About the year 1752, a rock was reported to have been seen in north latitude 49° 40′ north, and west longitude 29° 41′ 12″, or 440 miles north of the Azores. In that year it was looked for by Lord Rodney, (then a Commodore,) and Sir Charles Saunders, but in vain;—considering the position, may it not have been the ephemeral display of the igneous trough,—the *submarine spirit*, between Hecla and the glowing furnaces of St. Michael of the Azores? The probability of its having been black ice, is not great, as we have no report of the bergs drifting in that parallel so far to the east. And whilst I am writing, notice has been given that the Thetis West Indiaman, had foundered at 3 A.M. on the 6th of May last, by striking upon a rock or wreck, at the distance of seventy miles from the coast of Portugal. It is not improbable that the ship may have struck the Dædalus Rock, the exact position of which is yet undetermined, but has been reported to lie to the W.S.W. of Cape St. Vincent, at a distance of thirty or forty-five miles. Sea-quakes have been experienced in this part of the ocean, and an alteration in the depth of the water may consequently take place occasionally.

As a commentary on this extremely interesting subject of physical geography, I take the opportunity to subjoin one or two brief notices of phenomena of this nature, which, independent of their connection with the point we are considering, will not, it is presumed, be uninteresting to those of your Nautical readers, who may not have been there before.

On the 5th of September, 1799, after a subterraneous noise, accompanied with terrific thunder, there was seen to rise from the bottom of the sea of Azof, opposite Temruck, an islet about 600 feet in circumference. From its centre, a quantity of mud appeared to issue, and a volcanic eruption suddenly covered it with fire and smoke. In the following year the islet totally disappeared. Here we have before us, in the plainest and most convincing language, "nature displayed" in one of her serious and energetic moods—a light, as it were, that should have the effect of dispelling the mist before the eyes of the sceptical: and in the beautiful passage quoted by a late lamented and facetious Admiral, of happy memory,—I may say, if seamen will not credit this, every whit as sound and true as the words taught by Moses and

the Prophets, "neither will they be persuaded though one rose from the dead."

Our next display, (at the island of Santorin,) occasioned by the same potent principle, is of very recent date, and the only surprise we can feel at the melancholy event, is, that the unfortunate inhabitants, knowing as many of them must have known, that they were residing on the cover of a natural burning furnace, should, after fifty years of warning, have passively awaited their fate! According to Pliny, Santorin (formerly Calista and Thera,) rose out of the sea by volcanic agency, as did another not far from it in the year 1707; and indeed many others are so reported as coming into existence in the Archipelago. It is not, therefore, at all improbable that some of these may sink, and new isles arise to stud the "spotted surface" of the *regium mare*.

M. Theodore Virlet lately addressed a note to the French Academy of Sciences, in which he directed the attention of geologists to the probability of the speedy appearance of a new island in the Grecian Archipelago, in consequence of the progressive rise of a sunken solid rock, (composed of *trachytic obsidium?*) in the gulf of the volcanic island of Santorin.

Towards the end of the last century, at the period Olivier visited Santorin, the fishermen of the island asserted, that the bottom of the sea had recently risen between the Little Kameni and the port of Thera; in fact, the soundings did not give a greater depth than from fifteen to twenty fathoms, where formerly the bottom could not be reached.

When Colonel Bory and the author visited this island in 1829, they were able not only to confirm the truth of Olivier's statement, but also to ascertain by various soundings, that the rise of the submarine land had continued, and that at the point indicated, the depth was not more than four and a half fathoms.

In 1830 the same observers re-sounded the space, which enabled them to determine the form and extent of the mass of rock, which in less than a year had been elevated half a fathom. It was found to extend 800 *metres* from east to west, and 500 from north to south. The submarine surface augmented to the north and to the west, from four to twenty-nine fathoms, while on the east and south this augmentation amounted to forty-five fathoms. Beyond this limit, the soundings indicated in all directions a very great depth. I have lately been informed that Admiral Lalande, who, since 1830, has twice returned to Santorin, ascertained that the rock still continues to rise, and that September 1835, the date of the last visit, the depth of water amounted to only two fathoms, so that a sunken reef now exists, which is dangerous for brigs to approach.

If the rock continue to rise at the same rate, it may be calculated that, in 1840 it would form a new island, without, however, those catastrophes which this phenomenon seems to presage for the Gulf of Santorin, being a necessary consequence of the epoch of its appearance to the surface of the water.

Since the eruptions of 1707 and 1712, which produced the new Kaimeni, the volcano does not appear to have been active. Nevertheless, the rise of a portion of its surface, seems to demonstrate continual effort to make an eruption during fifty years, and that whenever the

resistance shall not be strong enough to offer a sufficient obstacle, the volcano will again resume its activity.

The following additional particulars of the date, 19th of April, 1837, inform us that the catastrophe apprehended has taken place; and we learn also from other accounts, that the phenomenon was not confined to Santorin or the bed of the sea, but extended to the continent.

"The little island of Peroa was half opened by the late earthquake, and a part of the island of Santorin had completely disappeared, and 4 or 5,000 lives lost."

"Capt. Leftere reports, that many of the inhabitants of Hydra, where ten or twelve houses had been destroyed by the earthquake, had repaired to Smyrna. He states, that at the island of Santorin, the ground had been cleft near the town, and that part on which the town stood, together with the entire population, had suddenly sunk into the sea, without leaving a trace of the dreadful disaster!"

Thus the effort of the expansive force beneath the bed of the ocean, after half a century of unceasing, though slowly operating action, has at length burst through all obstacles, and adds another instance to those which have been already recorded, of the irresistable force of the explosive principle of volcanic gas, and the tremendous effect produced thereby. The sea, in the vicinity of these islands, is said to be unfathomable?

It seems quite within the line of probability, that in such a sea as the Archipelago, subject to the awful phenomenon just described, a ship passing through it, may at daylight, descry an islet in a position, where according to the charts and directions, not even a rock or a shoal is marked or noticed as existing; it may also so happen, that in the evening of the same day, another vessel passing the identical spot, may find no object of the sort to arrest the eye of the skipper; the consequence likely to ensue would be, that on the report of the first commander being made, the second, on reading it, and comparing notes, decides that the reporter has been deceived by some optical illusion, or has fabricated a "story."—Yet, like the controversy about the Chamelion, in which more than one are positive of the truth of having seen a different colour, both the captains, like the disputants, may have been correct. The moral is an excellent one, and well worthy to be borne constantly in mind. Volcanic action having gone on for some time, may have at last forced up the bed of the ocean, and formed an islet during the night preceding the passage of the first vessel, and so account for the captain's report; by noon the confined expansive gas having found vent, may have been dissipated, and before sunset the new islet, like the fairy form of a soap-bubble, may have burst and sank into the abyss, leaving not a trace behind, except perhaps a few floating pieces of pumice-stone, and thus reconcile the contradictory affirmation, though not the censure, of the second captain.

In those seas where volcanic phenomena exist, such occurrences may be likely to happen from time to time; to dispute which, would betoken a want of information or a disposition perversely sceptical; yet, how ready do we find persons offering their decided disbelief of the reports of others, for no other sounder reason than that they themselves happen not to have witnessed the danger named, when sailing near its

given position. Now, in many cases, it is highly probable that these disbelievers may have passed within a few fathoms only of the very object, without having seen it,—a rock awash, or but a few feet above the surface of the ocean, may be visible at a certain interval, and be hid at another, for obvious resons.

During the war, a rock in the Adriatic was reported as having been seen by some trader. There was, as usual, doubts about its existence, as our ships had repeatedly cruised about the assumed position without seeing it. Many were the narrow escapes during the shade of night, no doubt, these ships had of verifying it by a *bump!* The consequence of a disregard of such notices may lead to very distressing results, whilst a contrary line of conduct, which embraces no greater exertion than that of a little extra vigilance, would often save a world of trouble if it did no more. I will illustrate the latter case here. Whilst a sixty-four was cruising in the above-named sea, the captain gave orders to the officers to keep a good look-out for the said reported rock. Just before daylight one morning, as the ship was speeding her way, a lieutenant (my informant,) happened to look through his cabin-port, when he thought he saw the sea break at no distance from the bow,—another look convinced him that the water broke over the "rock." Hastening upon deck, he found it had been seen at the same instant. The ship was hove in stays, (and a brig of war astern was hailed to do the same,) and just swang clear of the treacherous black lump, which on being examined in a boat, was found not much larger than a launch, and nearly awash! The position is probably now well known,—I do not recollect it, but I believe it lies on the Italian side.

After this example, we need not ask which is the best line of conduct to pursue in similar cases.

That navigators are sometimes deceived by various appearances into a belief of having seen a rock, and discerned the semblance of a shoal, it is natural to believe; but a whale which is the largest of aquatic mammalia of which we have any certain knowledge, "napping," or, the wreck of a vessel bottom up, are not objects sufficiently bulky to be easily mistaken for an island or an islet, (although at a distance they may be for a rock,) and I know of no other * solution, whereby such appearances, when really deceptive, can be satisfactorily accounted for, but from extraordinary terrestrial refraction, or reflection, instances of which have occurred, and offer a very curious subject to the contemplative mind. That an object shall be seen where it *really is not*, is about one of the most marvellous phenomena that present themselves to our wondering eyes! The admiration created in the mind by a magnificent sight of this sort is indiscribable,—but it is not, I believe, yet clearly determined whether on such occasions the objects seen are original or merely representations. What are the opinions of the Arctic voyagers with respect to the *premature* sun, which they must have hailed with all the enthusiastic ardour felt towards an old and beloved friend who had been long absent, after their protracted twilight? For

* Fog banks and low clouds often assume the appearance of *distant* land, but do not leave the mariner long under delusion, and these appearances are generally too extensive to deceive. When compared with the reflection of real objects, the difference is striking, and equally or more so when refraction lifts the objects.

my own part, without presuming to settle the point, I am inclined to think that, according to the state of the atmosphere, and the disposition of the objects acted upon, and the position of the observer, on one occasion the real objects may appear to be lifted, or lengthened in their dimensions upwards; and at another where distance places these beyond the visible horizon, the reflections only are seen, the objects as it were, become painted upon the visible screen of the atmosphere; the inversion of objects adds to our wonder.

The extreme difficulty of discovering a small sunken rock in the ocean has been dwelt upon in the pages of the *Nautical*, and it may be expected that there are few experienced seamen who would question such a plain truth. Even in harbours of no great extent the finding of a pinnacle has been attended with much pains, an instance of which is given in this work, where it will be found that the search was not successfully accomplished until the rock was swept for.

Without a doubt the ability and judgment of seamen vary, and all young mariners cannot be expected to possess the discriminating discernment of those whose long course of servitude and experience ought more fully to qualify them for forming just and correct opinions; yet it is not uncommon to find on many occasions prejudice and incredulity usurping the sober dictates of sound sense, in opposition to the verification of facts so clear and distinct as to be understood by the meanest capacity.

Your judgment, Mr. Editor, as expressed in the article on the Eight Stones, in the last number, is, I conceive, highly to be commended.

DADDY NEPTUNE.

To the Editor, &c.

AUSTRALIAN NAVIGATION.—*Remarks of Capt. Drinkwater Bethune, R.N., H.M.S. Conway.*

(Concluded from page 79.)

Viji to Port Jackson.—Left Onalan at 6 A.M. on the 15th of September,—ran out by the lee passage, and anchored off Biva at eleven.

Left Biva the next day at 9h. 30m., and after a long beat cleared the Matoriki passage at 4h. 15m. P.M.

The next day ran down the north side of Kandavu. In the Admiralty chart of the Viji, Mywoolla has been evidently placed with the north end to the southward; it matters little however, as the whole affair as far as the lee group is concerned, is very bad.

The west end of Kandavu forms in a high cone.

At a quarter of a mile from the shore this point is clear of danger, therefore would be a good point to run for in coming to the islands from the westward; having got hold of the land, you might beat up to Rewa in comparatively smooth water.

On the 19th being near a reef, marked on Norie's chart, I steered for it, and at noon by account, was on the spot nearly; but having been set twenty-five miles to the northward, I gave up thoughts of seeing it. However, at 5 P.M. we sighted a reef, probably the same, and standing

up close to it got sights for time, and at twilight a star for latitude. It is about one mile and a half E.S.E. and W.N.W., and three-quarters of a mile across in its broadest part, having about the centre a dry sandy islet. No bottom at half a mile north with eighty fathoms. I think it probable that anchorage may be found on the north side close in, in latitude 21° 40·5′ south, and longitude 174° 43·5 east.'

Sighted Norfolk Island on the 24th, but there being a very heavy swell, did not attempt to communicate.—Arrived at Sydney on the 4th of October.

CURRENTS.

Latitude.	Longitude.	Direction.	Distance.
20° 9′	176° 1′	N. 15° W.	26 Miles.
22 5	174 2	S. 74 W.	26 "
24 6	172 1	S. 79 W.	28 "
26 0	170 7	N. 65 W.	19 "
27 3	169 6	S. 17 W.	23 "
28 6	168 6	N. 22 W.	12 "
29 1	167 5	N. 30 W.	14 "
30 5	164 3	East	25 "
31 1	162 9	S. 57 W.	19 "
31 3	162 1	N. 27 E.	10 "
32 1	161 0	N. 8 E.	18 "
32 3	159 0	S. 29 E.	17 "
33 8	156 6	N. 43 E.	25 "

Port Jackson to Madras.—Wayed from Farm Cove at 1h. 30m. October 20th, wind N.N.E. While working down it had every appearance of blowing from south-west; therefore, brought up in Watson Bay in seven fathoms, St. James Spire on with Bradley Point S.W. $\frac{3}{4}$ W., Sow and Pigs on with Middle Head N.b.W. $\frac{1}{2}$ W. At 6 the wind flew round to S.S.E., and at midnight was S.S.W.

On the 22nd the weather was moderate from south-east,—went out by the eastern passage, wind light from the northward. On the 25th, on rounding Cape Howe, wind flew to south-west, in a squall blew hard. On the 29th, after vainly endeavouring to get to the westward, bore up to round Van Diemen Land. On the 30th, when half across Stormy Bay, there being every appearance of bad weather, put into Port Arthur.

CURRENTS.

Latitude.	Longitude.	Direction.	Distance.
34° 3′	151° 3′	S. 2° W.	25 Miles.
35 6	151 0	S. 8 W.	23 "
37 2	150 9	S. 31 E.	21 "
38 7	151 0	N. 83 W.	17 "
39 8	150 1	N. 38 E.	15 "

Port Arthur.—There is no danger not visible. Keep about mid-channel. Coming in with an easterly wind, keep rather on east side. There is shelter in Safety Cove on the larboard hand, going south of Point Puer, but I did not visit it. Weather very bad until the 13th of November, when we sailed. Wind baffling off Point Puer,—obliged to anchor and run out kedge. Fine easterly breeze which carried us round the south-west Cape. It blows nine days out of ten from the westward, and there is generally a nasty sea.

On the 18th made Kangaroo Island, and ran through the Backstairs Passage, and keeping close alongshore anchored in Holdfast Bay at midnight. A few miles west of Cape Willoughby there is a sandy patch. The Pages appear to be correctly placed by Flinders, but I had not the opportunity of examining them strictly.

Commander Harding, her Majesty's sloop Pelorus, mentioned to me the existence of a small island off the low rocky point on the south side of Kangaroo Island, and a reef more to the southward and westward. This last agrees nearly with the position assigned to Hammants Land, that is admitting an error of 10° in the longitude. This error is probable, as he saw Kangaroo Island three hours after seeing the danger, which is quite impossible had he been in 127°; he meant, doubtless, to write 137° 2′.

Holdfast Bay is no bay at all. The best anchorage is with the flagstaff bearing E.b.N., or nearly on with Mount Lofty, about one or 1·5 miles off shore, (Mount Lofty belies its name, for it requires some talent to pick it out,) the bottom appears good, and it is perfectly flat for miles. I should imagine a ship might ride there for ever, as no great sea can find its way into the gulf.

CURRENTS—PORT ARTHUR TO HOLDFAST BAY.

Latitude.	Longitude.	Direction.	Distance.
43° 5′	145° 5′	N. 26° W.	11 Miles.
42 2	142 7	N. 20 W.	29 "
39 5	140 8	N. 23 W.	17 "
38 2	138 7	N. 35 W.	30 "
36 7	138 2	N. 13 E.	15 "

From Glenelg, the distance to Adelaide is six or seven miles. The real Port Adelaide lies up a river, the mouth of which is a few miles to the northward,—fifteen feet can easily use it. Should a projected new road be carried into effect, the convenience of shipping will be much advanced. No water can be got but from Adelaide.

Capt. Sturt has lately decided, that there is no practicable entrance to Lake Alexandria from the sea.

Left Holdfast Bay on the 22nd, and after baffling weather, arrived at King George Sound December 2nd.

I steered to make the Pollock Reef, and at daylight on the 27th, was two miles from it. It breaks heavily over a space of about a

quarter of a mile across,—two miles north from it forty fathoms sand. Latitude of rock 30° 34′ south, and longitude 123° 25′ east.

I saw nothing of the Long Tail marked in the chart, and indeed must have passed over it.

My position of the rock agrees very nearly with that on the Admiralty chart. South-east Island appears also to be correctly placed, and there is decidedly no island to the south-east of it. When it bore north, there was a smaller island two points to the eastward of it.

CURRENTS.

Latitude.	Longitude.	Direction.	Distance.
35° 30′	135° 6′	N. 65° W.	33 Miles.
35 30	130 48	N. 45 W.	13 "
35 30	127 18	S. 71 W.	18 "
35 18	125 0	N. 32 W.	22 "
34 42	123 36	N. 65 W.	12 "
34 48	120 54	North	24 "
34 48	120 0	N. 61 W.	11 "

King George Sound.—The Sound from its position and capabilities, will eventually become of great importance. The shelter is excellent; almost directly you round Bald Head you get anchorage, a point of great importance to a ship in distress.

The appearance of the bottom being alternately patches of sand and rocks, may alarm a stranger, but there is no danger.

A rock is said to have been seen between Breaksea Island and Bald Head, with these bearings obtained from the harbour-master, Lieut. P. Belcher, R.N.

Centre of Breaksea Island	North
West Point of Michaelmas Island	N.b.W. ½ W.
Point of Bald Head	W.S.W.
Point of Mount Gardner	N.E.b.E. ½ E.
Rock east of Breaksea Island	N.N.E. ½ E.

West Point of Breaksea on with a clift near the western point of Michaelmas Island.

The master went in search of it, but found nothing, and in running out in the ship, I think, had it existed, it would have shewn, as there was a considerable swell. Though doubtful, a good look-out should be kept, and it must not be forgotten that the above position is vague.

Bald Head seen from the south-east shews many white patches, some of it sand, and part bare rock. Mount Gardner from the same direction is a remarkable peak, but seen from the Sound agrees with the description in the Directory.

It is recommended not to open the entrance of Princess Royal Harbour.

A ship refitting will probably go inside. Good anchorage may also be found west of Seal Island in five fathoms and a half. Here a ship might complete water more expeditiously than in any other place,

lying about half a mile from the shore, where casks might be filled in the boat. By digging a little, two frigates might water at one time. It can also be procured in Princess Royal Harbour and Oyster Harbour. In the entrance to Oyster Harbour, are, what are known as Vancouver Wells. I had them cleaned out, and they afford a good supply, indeed water abounds. Wood in abundance.

At present few refreshments can be obtained here, but as Western Australia progresses, I imagine the settlers will work down to the southward, when the Sound will shortly rise in importance.

There is anchorage in Two People Bay and under Cape Riche, and, doubtless, if the whaling continues on the coast, other shelter will be found.

For five years a south-east gale has not blown home. Looking far forward, as a naval station and a rendezvous for a fleet, King George Sound deserves every attention.

Left King George Sound on the 8th of December, and on the 12th anchored off the Swan. I do not think that the dangers near Cape Leeuwin lie so far off shore as marked. This Cape should be surveyed. Anchored in Gage Roads, flag-staff east, in four and a half fathoms. We were hardly far enough to the southward. Flag-staff on with a road behind is said to be the best berth, as there is about that bearing a patch clear of rocks.

Swan to Trincomalee.—Left the Swan on the 15th of December with a strong breeze from south-west, which hauled to south and south-east, in 25° and 110°. Sighted the Cocos on the 26th,—they are very low but are correctly placed; latitude, north end, about 12° 0′, longitude 97° 0′.

In about 8° south, 93° 5′ east, we got into the variables,—occasionally fresh breezes from the westward, and a good deal of rain. Crossed the equator on the 3rd of January, 1839, in 91° 2′. Light breezes from E.N.E.,—occasionally calm in 1° 3′ and 92,—then squally, north-east, south-east, south-west rain, after which calm in 6° 8′, 85° 4′—breeze again from north-east fine. Arrived at Trincomalee on the 13th.

CURRENTS.

Latitude.	Longitude.	Direction.	Distance.
26° 6′ S.	110° 0′ E.	N. 2° E.	21 Miles.
20 12	105 48	N. 70 E.	30 "
18 54	104 36	N. 62 W.	15 "
13 12	95 18	N. 80 W.	29 "
11 18	96 18	N. 18 W.	15 "
9 36	94 48	N. 63 W.	22 "
5 18	92 24	N. 14 W.	12 "
3 48	91 42	N. 15 W.	12 "
2 6 N.	91 30	N. 62 E.	12 "
1 18	91 54	N. 32 E.	15 "

Notices of Japan.—No. III.

(Continued from p. 102.)

It has been said, that the Dutch cannot pass either of the gates of Dezima without the express permission of the governor. This permission is, indeed, seldom, if ever, refused, but it is clogged with conditions that prevent its being indiscreetly solicited. When any member of the factory wishes to obtain a little recreation or relief from the monotony of his seclusion at Dezima, he causes a petition, soliciting liberty to take a walk in Nagasaki and its environs, to be presented, four-and-twenty hours beforehand, to the governor, through the intervention of the proper interpreter. Leave is granted, provided the captive be accompanied by banyoos as also by the comprador, whose business it is, upon the occasion, to defray whatever expenses or purchases the indulged foreigner may incur during the trip of pleasure. All these individuals are again attended by their several domestics, until the followers amount to twenty-five or thirty persons.

So cumbersome a train might seem in itself a sufficient drawback on the enjoyment of a ramble, especially when it is added, that all the boys within reach assemble and pursue the party wherever they go, incessantly shouting, holanda! holanda! or horanda! horanda! which appears to be the more usual pronunciation of the Japanese. But even so, the train is far from its complement. Every official attendant holds himself entitled to invite as many of his friends as he pleases to join the party, the whole of which the temporarily liberated Dutchman is bound to entertain. Nor can the heavy expense, thus rendered inseparable from every excursion, be lightened by partnership; as, in case of two members of the factory obtaining a joint permission for a stroll, the number of attendants is doubled.

The usual objects of these excursions are to explore the neighbouring country, to banquet in a temple, to ramble through the streets of Nagasaki, or to visit its tea-houses. Each of these demands a few words, and it may be best to begin with the town itself, through which, whatever be the excursion designed, the rambler must pass. Nagasaki spreads up the side of a hill: like every Japanese town, it is regularly built, and, as every house has its garden, large or small, offers a pleasing *coup d' œil*. The houses are low, none containing more than one good story, to which is added in some a sort of cockloft, in others a low basement. The height of the street-front, and even the number of windows, are determined by law. All are constructed of wood, and a mixture of clay and chopped straw; but the walls are coated with a cement, that gives them the appearance of stone. In the windows, very fine and strong paper, unoiled, and protected from bad weather by external wooden shutters, supplies the place of glass. The windows to the street are further provided with Venetian blinds, and every house is encircled by a verandah, into which all the rooms open.

The front of the better class of houses is occupied by a large portico and entrance, where the sedans, umbrellas, and sandals of visitors are left, where servants and persons on business wait, &c.; and which is

connected with all the domestic offices. The back of the house is the part inhabited by the family, and it projects into the garden triangularly, for the benefit of more light and cheerfulness. These gardens, however diminutive, are always laid out in the landscape-garden style, with rocks, mountains, lakes, waterfalls, and trees, and uniformly contain a family chapel, or oratory. Absurd as these would be pleasure-grounds may seem, when confined in extent, as must be the garden even of a wealthy householder in the heart of a city, this intermixture of verdure, nevertheless, contributes greatly to the airiness and gay aspect of the town itself. And we are told that the very smallest habitations possess similar gardens, yet more in miniature, sometimes consisting of what may be called the mere corners cut off from the triangular back of the house, with the trees in flower pots.*

But the most remarkable part of Japanese houses is the provision against fire. To each belongs a detached store-room, or warehouse, such as those which Siebold mistook at a distance for the mansions of nobility. In these, tradesmen keep their stock of goods, and private families their most valuable effects, as pictures, books, collections of rarities, &c. These store-rooms are built of the same materials as the houses; but the whole wood-work, doors and roof included, is covered with a coating of clay a foot thick; the apertures for windows are closed with copper shutters; and for further security, a large vessel of liquid mud is always at hand, with which to smear over every part of the building in case of danger; that is to say, in case one of the conflagrations for ever occurring amidst such combustible houses should break out in the neighbourhood, or the wind drive the sparks and flames of a distant fire in a menacing direction. These fire-proof store-rooms answer their purpose so well, that president Doeff, in describing a conflagration, which spread so near to the bridge between Nagasaki and Dezima, that the governor allowed the scared inhabitants general egress by the water-gate, and which consumed eleven whole streets of Nagasaki, partially destroying others, explicitly states that not one of the store-rooms was injured. Neither did Dezima suffer; the flames having at length been extinguished, before they crossed the bridge. But to return to the excursion of the Dutchmen.†

* So far as our information extends, derived both from drawings as well as from natives, we are led to believe that the Japanese usually follow their own inclinations in building their houses, making them of such shapes and dimensions as will best suit the purposes for which they design them. In markets and public thoroughfares, where the space is valuable, the shops are built close to each other, without any gardens either in the rear or on the side. The blocks of buildings in towns are often constructed somewhat in the manner of a hollow square, the interior open space being occupied with trees, flowers, gardens, &c., belonging to some one or more of the houses in the block, and forming, not only a refreshing variety, but an inlet for the entrance of light and air into the back part of every dwelling. The part of the house opening into the central area is not always triangular, nor any other uniform shape.

† There are two kinds of these storehouses; the kura, or common storehouse, and the dozoo or ana-gura, an ancient kind of mattamore or souterain, that is at present it would appear, disused. The kura vary in their size and uses; grain, money, books, clothes, &c., being usually stored in different buildings. The walls are much thicker than those of dwelling-houses: large joists form the framework, then bricks, stone, and lastly, a mixture of lime and clay, are used to fill in and complete the walls. The roof is tiled; and the interior divided into an upper and lower story by

When the town is passed, the promenader comes upon exquisitely beautiful scenery, commanding, from innumerable different points, the most enchanting views over hill and dale, land and sea. Nay, so bewitching are the various prospects which successively greet the eye in the course of every ramble said to be, that the spectators, we are assured, entranced in their contemplation, entirely forget every drawback upon their enjoyment. And this is an indulgence that the Japanese are the more prompt to grant their guests, because they themselves fully sympathize in its delights, being passionate lovers of beautiful country and fine prospects.

A striking and somewhat peculiar mark of this prevalent taste is, that the most lovely sites are invariably selected for the temples. Of these temples, there are sixty-one within a short distance from Nagasaki, built as plainly and as destitute of ornament as the houses; and like them, encircled by a verandah, and often having many smaller temples, like chapels, surrounding the principal edifice. The whole, or the large temple, is called by Siebold, a yasiro; the smaller chapel-temples, miya. Every yasiro stands upon a hill, commands a fine view, and is enclosed in a garden. These gardens are the habitual resort of parties of pleasure, whether Japanese or Dutch; and, for the further enjoyment of their picturesque attractions, to almost all temples are attached large rooms, unconnected, apparently, with the service of the divinity there worshipped. In these apartments, in places destitute of inns, travellers are accommodated, and the priests usually let them out as banqueting-rooms; nay, even as the theatre of such orgies as seem most desecrating to any edifice connected, however remotely, with purposes of religion.*

When a member of the factory indulges in excursion, the whole party collected by his official companions must be feasted at his expense at one of these temples. He himself, however, is not always required

a floor. A bucket of liquid bean-curd or of mud, is always kept just within the door to smear over the part most endangered by the fire. Although they do not often catch fire, the contents are sometimes destroyed, or very much injured, by the surrounding heat igniting the woodwork inside. The kura are not built as high as dwelling-houses, and the few apertures in their thick walls for windows or doors are not so large as to weaken them; consequently, earthquakes do much less injury to them than might otherwise be expected. The treasure storehouses are made stronger, and guarded more carefully, than those containing grain or goods. We are told that one mode of safeguard among others, is to build an external wall a little distance from the main one, or else to make the wall hollow, and fill the cavity with sand; the thief, when he has made a hole in the wall, finds it constantly obstructed by the falling sand.

* The word miya is applied to the chapels and temples of the Sintoo or Shiyanin; a tera is a Budhist temple. The premises of a miya are called yasiro; those of a tera are termed tera-yasiki. We think Siebold must have intended, by this term, the premises surrounding the temple, rather than the dwelling itself, from inquiries made of one who has often, he says, accompanied the liberated Dutchmen in their excursions. He states that the tea-houses, or cha-ya, often adjoin the yasiro, but are not within them. Our informants add, that except on festival days, the temples are not usually let out for feasting; travellers are, however, sometimes accommodated in them, and especially travelling priests. The priests of Sintoo are married, and do not live in their miya, nor do the Budhist priests always reside in their temples. From all that we can ascertain, we suspect that the instances of the temples of either sect being used as "theatres of desecrating orgies" are very rare, and form exceptions to the usual regulations.

to do the honours of his banquet, which thus affords a short interval of comparative liberty. Whilst the police-officers are reveling with their friends on the good things the foreigner in their custody has provided for them, they are content to connive at his partial transgression of the rigid laws of seclusion and separation. Thus, at such an opportunity, and only such, can a member of the factory ramble about with a single interpreter, enter the shops, and make purchases at his own pleasure. Upon other occasions, the resort of the Dutchman and his whole party is to a tea-house—a licensed place of entertainment for drinking and music. But these are not the only purposes of the tea-houses; and here it again becomes necessary to advert to a subject which it is revolting to every correct feeling, and almost a violation of self-respect, even to allude to; but some points of which are so extraordinary, so completely peculiar to the Japanese, that to pass them over in silence would be to omit one striking feature of this very singular nation.

The proprietors of these tea-houses are further licensed to purchase female infants of indigent parents for purposes of infamy. These girls act during their childhood as the servants of the full-grown inmates, but are, at the same time, educated with the utmost care; they are not only rendered skillful in every accomplishment that can enhance the effect of their personal charms, but their minds are sedulously cultivated, and enriched with all the stores of knowledge that can make their conversation attractive and agreeable. Thus, the whole body of these victims of the vices of others bear considerable resemblance to the few celebrated individuals amongst the courtesans of ancient Greece; and the resemblance holds good in another point, the consequence of the first. As we are told that Athenian husbands took their wives into the society of the notorious Aspasia, to share in the instruction they themselves derived from her; so in Japan do husbands invite their wives to join their party to the tea-houses, there to partake of the amusement afforded by the music, singing, and conversation of their accomplished, but unfortunate and dishonoured, sisters.

But the most extraordinary part of the whole is, the position in the moral scale assigned to these degraded women by the Japanese, who are, in the general relations of life, to the full as tenacious of female purity as the nations by whom wives and daughters are kept under lock and key. Whilst their worthless purchasers, those shameless speculators in human depravity, the tea-house proprietors, are universally despised as the very scum of the earth, far more lenient is the appreciation of the purchased thralls, who may, indeed, be held guiltless of their own pollution, being destined to a temporary career of sin without their own concurrence: a temporary career only, however, inasmuch as these girls are purchased for a term of years, and may be considered rather as apprentices than slaves for life. When the period for which they are bound to their disgraceful trade expires, they may return to their families, and are received into society in any station of which they show themselves worthy. Many enter the order, as it may be called, of Mendicant Nuns; but numbers are said to find husbands, and to emulate all the good qualities of the most immaculate Japanese wives and mothers. But whatever be the condition of these ex-courte-

sans, it is solely by their conduct in the character of their choice that they are thenceforward judged, without any reference to their past, compelled occupation. The number of tea-houses appears to be beyond all conception. The Dutch writers state that at Nagasaki, a town with a population of from sixty to seventy thousand souls, there are no less than 750; and that, upon the road to Yedo, the inns, almost invariably, either are houses of this description, or have such attached to them. It is from these houses that the Dutch factory procures its female servants or companions.

But to dismiss this painful topic, and return to the rambles of the Dutch, their walk, and the amusements above-mentioned, must terminate with the day, and sunset find them again in Dezima; a necessity from which no indulgence seems ever to exempt them; and, indeed, it may be concluded, from the various statements respecting ingress, that the gates of the island are never, upon any occasion, opened during the hours of the night, *i. e.* between sunset and sunrise. An especial petition must be presented if a Dutchman wishes to visit a Japanese acquaintance, or is invited by any inhabitant of Nagasaki to partake of his hospitality, the ordinary permission to take a walk not sanctioning the foreigner's setting his foot in a private house. A similar form is necessary when the object is to witness any particular show or ceremony; and such petitions appear to be almost always granted, although upon one occasion a secret, or, according to the established Japanese practice, naibon, view is spoken of.

Of the public sights that diversify the few amusements of the factory, the various and numerous religious festivals seem to be the principal; and of these the festival of the god Suwa, the patron kami, or deity of Nagasaki, seems the most remarkable. The local festival, which is the more brilliant from chancing to coincide in point of time with one of the annual religious festivals common to the whole realm, is some days' duration, and begins, as might be expected, by devotional rites in the temple dedicated to Suwa. This temple, which is decorated with flags for the occasion, everybody visits in the dress of ceremony, prays, and makes the usual offering, greater or smaller, according to their means and rank, but always including a cup of sake. The public solemnity consists in placing the image of the god, together with the most precious ornaments of the temple—of which, costly arms form an important part—in a shrine, magnificently gilt and lackered; which is then borne by servants of the temple in procession through the town, attended by the chief priests in palanquins or on horseback, and by a body of horsemen, deputed by the governor to honor the ceremony. Shrine, image, and treasures, are finally deposited in a straw hut, erected for the occasion in a large square, or clear space in the city; and here they remain as a public exhibition, the hut being open in front, although partially encircled with screens: and with this concludes, it would seem, the religious part of the festival. Sports and scenic representations follow, the expense of which is defrayed in different years by the different streets and districts, or what we should call the wards, of the town. The rivalry of these different districts is most keen, with regard both to the costliness and splendour of the shows, and to the diligence and skill with which the children of the inhabitants, from seven to fourteen

years of age, are trained to perform parts in the spectacle. Every district appears to send forth a train, or shall we say lay procession, of its own, to which every street contributes two or three juvenile, though practised, performers; and the course and performances of these several trains are thus described by an eye-witness; Fischer:

"First goes a monstrous, shapeless bulk of linen, fastened to a hoop, from which it hangs down to the ground. Of the man who carries it upon a bamboo, nothing can be seen but his feet, and mighty is the load he bears; first, in the magnitude of the embroidered cloth itself, comprising not less than twelve ells; and further, in the ornaments that decorate the upper part of this grand pageant. For these ornaments, emblematic objects are selected, such as birds or beasts that are especially esteemed, some renowned man or celebrated woman, a forest covered with snow, the instruments of some trade, or something that alludes to the prosperity of the country, or even of the single street, one that recalls the fame or the simplicity of the early Japanese. Next follow the musicians in great numbers, playing upon drums, cymbals, and flutes, strangely attired, headed by their ottona, the chief local municipal officer, and accompanied by a number of servants belonging to the street. Then appears a train of children, representing some expedition of one of their mikado, or demi-gods. This part of the show really merits admiration. Clad and armed in the correct costume of the time, the leaders proceed in the utmost state, followed by the representatives of the whole court, male and female, displaying all the pomp and luxury of a Japanese court and surpassing every conceivable idea of dainty nicety. Each of the trains is attended by a number of small palanquins and servants, to take up any of the children who may be fatigued. After these comes a company of actors: in an instant, two or three benches of equal size are placed side by side; upon them, a few screens and decorations; and, to the sound of samishen (a sort of three stringed guitar,) drums, and other musical instruments, the actors perform their play, which does not occupy more than a quarter of an hour, but is represented with great spirit and freedom, as well in language as in gesture and feeling. When this is over, a crowd of musicians, palanquins, servants and family connections of the children, follow, who close this train, and, moving forward, make way for the next.

"The first representation takes place before the already-mentioned straw hut, in honour of the god Suwa, and all round the square sit a crowd of spectators, amongst whom especial and separate scaffoldings are assigned to the members of government and the Hollanders, in order that they may assist at this festival. The representations take place at several appointed parts of the town; and the eleven or twelve trains always follow each other so regularly, that nothing like disorder occurs, notwithstanding the immense multitudes of people who attend this festival.

"When the first train presents itself, at seven o'clock in the morning, it is usually noon before the last performs (at the straw hut, apparently;) and until a late hour in the evening, these same trains are met in different quarters of the town, so that it may be supposed that the strength and powers of the children are severely tried. The festival lasts many days, but the 9th and 11th of the month *i. e.* the first

and third of the festival) are the most solemn, putting a stop to all business. The poorest artisan then appears as a gentleman, clad in his dress of ceremony, and all the houses are adorned, internally with carpets and screens, externally with hangings and awnings, under which friends entertain each other, making merry all day long, with eating, drinking, and music. Every street has to contribute to this expensive festival once in about five or six years, and it is inconceivable how the great waste is supported, as only a few trifling articles are ever used a second time, whilst everything for dress and decorations is purchased new, and of the best materials. Thus was this religious solemnity, like every other in Japan, celebrated with universal demonstrations of joy, yet with such unanimity, mutual forbearance, delight, and order, that one may well agree with the Japanese as to the impossibility of honoring or serving the gods more agreeably; and I may add, that so many and such various peculiarities belong to this matsuri (or municipal) festival, as render a detailed and accurate description incompatible with the designed conciseness of this work."

This, if it be the principal religious festival at Nagasaki, is by no means the only one calculated to relieve the tedium of life at Dezima. There are many others, and some whimsical in form and character; and of one of the exhibitions, it is hard to say whether it seems meant as a religious ceremony, or merely as an amusement. The former notion is, however, the most probable, from the circumstance of its being an annual festival, held throughout the empire, in the same style as it is witnessed by the Dutch at Nagasaki. President Meylan says:

"I know not whether it be to do the devil honour or to jeer at him, that the Japanese, in their eighth month, take pleasure in contemplating a grotesque dance, performed in the streets by persons attired as demons, and duly horned and vizarded. They have, besides, a drum hung about them, or are armed with a stick, with which, beating the drum, they make a prodigious noise, and mark the measure for their dance; but what most deserves mention is, that their dresses are of various colours—to wit, black, white, red and green. It is well known that white men represent the devil as black, while the negroes make theirs white; but red and green devils are, I believe, wholly and solely Japanese. I long sought their reasons for these colours, and at length obtained the following explanation. Amongst the unlucky theological disputes that disturb all lands, one arose in Japan concerning the colour of the devil; one party affirming it to be black, a second white, a third red, and finally, a fourth declared that the fiendish hue was green. This difference of opinion seemed likely to produce a civil war, when the judicious idea was started of submitting the question to the spiritual emperor. The Son of Heaven, after a short deliberation, prevented the threatening evil, by declaring all parties to be in the right, and sanctioning the belief in devils indiscriminately black, white, red, and green. Since that time, the Japanese devils have adopted the four colours, and thus tinted, dance once a year up and down the streets, to the great delight of the curious spectators, who, whilst they look on, no longer dream of menacing disputes."

Of the other religious festivals, it may suffice to say that, besides

others, in every month there are two, somewhat analagous to our Sunday, that the grandest annual festival is New-Year's day, preceded by the imperative payment of every debt on New-Year's eve; that the prettiest is one in which lighted lanterns are launched at night upon the bay, to ascertain, by their fate, the destiny of the souls of deceased relatives and friends; the queerest one, in which men, holding high official situations, and of advanced years, busy themselves in flying kites, the strings of which are covered with broken glass, and wherein great interest is attached to the cutting the string of a rival's kite; and the most absurd, one in which the foul fiend is simultaneously expelled from every house, by dint of pelting him with broiled peas, according to Meylan; with stones, according to Fischer.

It has been stated, that the Nagasaki shows can sometimes be seen only underhand by the strangers of the factory. Of the show which we are told was thus beheld, it is not easy to say whether it were civil or military. It was called a hunting procession of the governor's, but Fischer considers it rather as a sort of review; and if his excellency were indeed, only bent on the chase, his equipage might well be termed a hunting procession, or a state hunting, either of which versions the Dutch expression will bear. And either as a hunting party or a military evolution, it is so original as well in its composition as in the sort of mystery purposely attached to it, and in both so characteristic of Japan, as to be worth extracting, notwithstanding the inevitable dryness of a processional programme. He says:

"We were permitted privately to see the train pass through Nagasaki. Such expeditions take place from time to time at Yedo, and probably at other towns of the empire, as well as at Nagasaki. They are called state-huntings, but I have grounds for rather calling them military inspections, inasmuch as the whole train were in warlike equipment, and besides the weapons used in the chase, a number of men had heavy guns, likewise badges of distinction, as though they were taking the field. It was an awe-inspiring scene; every one sympathized therein even whilst satisfying his curiosity, but the majority gazed in silent respect, by which means the march proceeded with the utmost order. The streets and roads were neatly swept; scarcely any one was seen in the street, and every body lurked peeping behind the blinds, or the flags and hangings that decorated the houses.

"When the approach of the procession was announced, a general earnest charge was given to refrain from laughter, and from any demonstration that could create disturbance, or betray a want of respect. First, walked four men with brooms, such as always precede the retinue of a great lord, in order to admonish the people with cries of 'Staye! staye!' which means, 'Sit, or bow you down.' Their brooms are to clear away loose stones, or anything else that might obstruct the march. The van was led by eight huntsmen, with matchlocks and lighted matches, all wearing flat lackered hats, a short upper garment of green calico, with a coat of-arms on the breast, and a sash of brownish ribbon, wide trowsers, sandals bound to the feet, and a single short sword; a gobanyosi, being one of the governor's council or clerks, dressed like the preceding, only in silk, and having two swords. He is followed by three

servants in succession, carrying, the first a pike, the second two chests of clothes, the third two baskets of rain-proof cloaks; three servants, each wearing two swords; five under police-officers, with two swords each; nine ottona, or municipal superintendents of districts, walking three and three, dressed in silk with flat lackered hats, and each two swords; eighteen of their attendants, in coloured linen, with flat straw hats; seventy-two huntsmen, with matchlocks and lighted matches, in couples, not following each other closely, but at intervals of six feet; the bailiff of a neighbouring village, towards which the march led, in in the usual dress of ceremony; five servants; ten huntsmen, with matchlocks and lighted matches, in green linen upper dresses and brown lackered hats, leading four hounds by white cords; two directors of the imperial rice-granaries, in brown silk upper garments and black lackered hats, each wearing two swords; six servants of theirs, simply armed with swords; the commandant of the town-guard, magnificently attired, sitting on a horse, which two servants led by the bridle (the usual mode of riding in Japan;) six huntsmen with metallic blunderbusses; the commandant's son; a man carrying a massive Japanese weapon of about 50lbs. Dutch weight, which the commandant is wont to hurl with a steady hand. I have since had an opportunity of examining this weapon closely, and found this to be no fable; the officer in question attained his present rank in consequence of his extraordinary bodily strength. Then followed ten huntsmen, with blunderbusses of extraordinary size all nicely kept, and carried in stately guise, each by two men; fifteen men with common blunderbusses; twenty-four men with large blunderbusses, followed by twelve servants.

"A short interval divided these from a banner-bearer, preceding the burgomaster Takasima Sirobe sama, also commissioner of the imperial treasury, on horseback, in an upper robe of gold stuff, and a brown lackered hat, with golden arms, his horse led by two foot soldiers, and followed by ten servants; a man bearing a long pike, its steel head enchased in a beautiful lackered sheath; an embroidered flag; six huntsmen with blunderbusses; the burgomaster Yaksizi Kuizayemon sama, on horseback; two servants; the said burgomaster's son; four huntsmen with beautiful bows and arrows; six servants, armed only with swords; the son of burgomaster Seyemon sama; two huntsmen with bows and arrows; twenty-seven huntsmen with matchlocks and lighted matches; eight servants with swords; a gobanyosi, or privy counsellor of the governor; four servants; a pike bearer; a servant with two lackered clothes-chests; a servant with two rain-cloak baskets; thirty huntsmen, all under police-officers, with matchlocks and lighted matches; six personal servants of the governor, each armed with two swords; a flag, embroidered with gold letters on a white ground; ten servants, each bearing a long pike, adorned with lackered sheath and silk tassels; forty-eight officials and servants, dressed in silk or linen, each having two swords; eight servants with clothes-boxes; four ditto with ditto of fine basket-work; two cases of armour, square cabinets, with magnificent covers, embroidered in gold, each case carried by two men; two magnificently lackered sword-cases, adorned in like beautiful style, and each carried by one man; a chabento, or tea-equipage, consisting of two cases hanging on the opposite ends of a pole, the one

containing fire and a kettle of hot water, the other the remaining requisites for drinking tea at any moment; two men carrying a lackered pail, water-scoop, and halter, all for the governor's horse; a saddle-horse with beautiful trappings, led by two foot soldiers; fourteen servants, each with two swords; eight servants with rain-cloak baskets: six servants, each with clothes-boxes; three servants, each with two swords; the gokaro, or governor's secretary, on horseback; four bearers, each with two clothes-chests; four ditto, with two rain-cloak baskets; six servants, each with two swords; four ditto, with long pikes; an ornament with feathers, like the governor's, but less costly (to be presently described;) the burgomaster Pizamats Kifye sama, on horseback; two huntsmen with matchlocks and lighted matches; a pike-bearer; two rain-cloak basket-bearers; the governor's palanquin, carried by two men, six other bearers running on either side, all stout, bold men, dressed in blue linen, each a sword by his side, and a colored fan stuck in his girdle at his back; twenty-seven huntsmen with bows and arrows; a gobanyosi, or clerk of the governor; five servants, each with two swords; a pike-bearer; a clothes-chest bearer; a rain-cloak basket bearer; ten huntsmen, armed; three ditto, with blunderbusses; three ditto, with hunting horns; one ditto, with a great drum, beautifully lackered, gilt, and adorned with silk tassels; a civil officer with two swords; a gobanyosi, as before; five servants with swords; a pike-bearer, a clothes-chest bearer; two rain-cloak basket bearers; an ornament, or mark of distinction, shaped like a broom, with beautiful feathers, and a flag of white cloth, embroidered with gold cyphers, attached to it; two long pikes, with sheaths of embroidered red cloth, hung with silk tassels; a state bow, in a yellow silk case; two long pikes, magnificently adorned, like the preceding; a banner of gold letters on a red ground; a gobanyosi, or cabinet secretary to the governor. An interval of some paces, then the governor of Nagasaki, Mamya Chikuzen no cami sama, riding a splendidly caparisoned horse, with two foot soldiers on either side: he was magnificently dressed in a garment of gold and silver cloth, on his head a lackered helmet that glittered with silver edges, and a coat-of-arms in gold: he wore two swords, and his staff of office stuck in his girdle at his back: his deportment, like that of his whole retinue, was grave and haughty, and above all, so profound a stillness now prevailed, that one might rather have supposed one's-self in an uninhabited street, than in a place where so many thousands of spectators were congregated; the governor's banner, with gold letters embroidered on a blue ground; five pike-bearers; eleven servants, each wearing two swords; fourteen huntsmen with matchlocks and lighted matches; the treasurer, Takaki Sakyemon, on horseback, and expensively attired; two servants next the horse; the treasurer's son on horseback: twelve servants, each with two swords; a considerable train of servants, carrying clothes-chests and other necessaries, all in regular order. And this is the train of a governor of Nagasaki, who, although invested there with supreme authority, at Yedo, at the emperor's court, hardly enjoys the honour of carrying his majesty's slippers."

(To be continued.)

STORMS OF THE AZORES.—*Remarks on Mr. Hunt's Paper* by Stormy Jack.*

Paragraph No. 3.—The remark that a uniform fall of the barometer† takes place during the transit of a hurricane will be of value if confirmed. Mr. Redfield pointed out that there was a fall as the centre was approached, but did not go further. Subsequent experience shows that fluctuations take place, attributable to the change of direction of the wind. In one of my papers, the very point Mr. Hunt has made his observations on, is stated to be a desideratum, viz. the desirability of ascertaining the progressive fall in order to determine whether it were uniform throughout, as the centre approached. But it is obvious that if the instrument be affected by a certain direction of the wind, the uniformity would be interrupted; if I am correct in my recollection it was thus interrupted in the Thunder's storm. The calculation appears to have been made on the posterior semi-circle; the reverse, therefore, may be inferred of the anterior position of the storm,‡ the rise alone is given in probation, the fall implied.

Paragraph No. 4.—The remarks here, if applied to a circular storm, would appear to demonstrate that the rain-belt is confined, to a certain extent, in the middle portion of the aërial commotion. A measure is given—is it a mean of many observations; or is it to be considered as applying to each and all that have passed? In hurricanes investigated, the circle of operations varies considerably, from 30 miles (and perhaps less) diameter to 500 miles and upwards indefinitely. It would be a curious circumstance, indeed, if all the storms spoken of, supposing them to be circular, should have the rain-belt, a zone of one uniform extent.

If such a fact could be supported, it would give rise to the inference that, as the meteors advance to the northward and eastward from the tropic, all from some unknown cause either expend or contract (according as they are large or small) so as to fix the rain-belt to one certain width, which belt no doubt, is the hurricane zone, or the great whirling stratum of Mr. Redfield, encircling the calm central space, and being itself surrounded by a consequential belt, wherein the wind seldom reaches 12 of the scale. The safest plan seems to be to measure the rain-belt by time, *i. e.* the period it occupies in its transit. Change of temperature and electricity may regulate the lateral extent; but it seems very doubtful that the rain should occupy the same extent in all hurricanes. It has been proved that the size of a meteor has no effect on the progressive rate; the variation depends, perhaps, on the state of the atmosphere.

My observations inform me that the rain is not in a compact stratum, but in veins, and variable in intensity, some storms have had but short showers.

The tabular view given, is difficult to be clearly understood by a seaman. The second storm appears to have lasted from the 4th of Oct. to the 6th. I conclude that the wind veered regularly round from

* Perhaps Mr. Consul Hunt will afford us some further information on his paper, which was printed as it came into our hands.

† In the observations of Commander Sullivan this fact seems to be established, by his account of the storms of the Falkland Islands, which he has sent us, and which with its illustrations, shall appear in an early number.

‡ In the approach the instrument falls to 28·50, from which a rise of one-tenth appears to take place for every ten miles removal of the centre.

south-west to N.N.E. If so the progressive course would have been about S.E.b.E. the force, a strong gale at St. Michael. At Terceira the wind from S.S.W. to north-east, agreeing.

7th storm—At Terceira, wind from south-west to W.N.W., fresh breeze. Meteor, if circular, moving about E.b.N.

15th and 16th storms.—Typographic errors prevent remarks.

17th storm.—Too confused to make anything out of it.

6th storm.—At Flores the wind appears to have had the force of the hurricane, 1·2, (I presume that the numbers given denote the force of wind,) south-west to west, and N.N.W., the meteor moving E.S E.

8th March, 1841.—Wind south to west, 12, or hurricane force, moving about north-east.

9th, (the next day.)—Wind south to east, force 12, moving about south-east.

I can hardly believe that there was but one meteor here. I think there were two crossing. When these storms meet and collise, what effect follows? Do they deflect, or fall into each other, and so break up, creating the variable winds, as I suggested?

It appears by Mr. Hunt's table that there were only three storms with the force of the wind as high as 12; supporting the opinion that as they advance eastward their strength is reduced.

It is to be regretted that Mr. Hunt in his notes on the gales, did not add the regular succession of changes of the wind; this would afford a much clearer idea of what really took place than the tabular view does.

Using Cicilian time confuses and gives unnecessary trouble to the reader, who is obliged to reduce it to civil time as used in the logs of men-of-war. The time of each successive change should be given as near as possible, and the island or place where the storm *commences* should be given first, and each other isle or place in succession as the storm advances. The force of the wind should be in a separate column, the number placed in line with the name of the wind; and a column to the right for remarks.

The storms are said to be deflected—supposing these rotary, is it meant that the entire meteor is deflected from a particular line of path it had followed at first? or, is it merely that the wind is altered in its direction—in other words, *backs?*

By the table (Gale, No. 1,) it is stated, wind from "north to west all day," June 4, 1840. Supposing this to have been a rotary storm, these changes would give to the meteor a progressive course to the north-west. The next day, the 5th, a continuance, as it appears, of the same gale, the wind is stated to have been from north-west to west. Hence from a want of connected succession in the veering, I am puzzled to know if the wind *backed* to north-west, from west of the 4th, and on the 5th ended at west.

The paper is very interesting, and if it could be cleared of its ambiguity would no doubt be valuable to seamen. A more complete space for observation is not to be found in the Atlantic; and as the isles appear to be the focus of the retreating meteors, and there seems to be a plurality of them hurrying onwards to their final goal. In these very latitudes the variable winds perhaps take their origin. Some, however, pass northerly, and reach Britain, others more upon a parallel line, go

over Northern Europe, and agreeable to a suggestion in one of my papers, others would seem to follow a south-easterly course into the Mediterranean.

I trust Mr. Hunt will pursue his useful labours, and that he will be supplied with proper instruments, and his other wishes attended to.

Could the storm experienced by Capt. Vidal be identical with that felt here on the 16th of January? Elapsed time fifteen days. If so its progress was very slow.

STORM with intervening calm, which passed over the south-west of England, on Wednesday, March 9th, 1812, three days before the new moon.

Tuesday 8th.—Heavy rain with squalls from south-west; forenoon fine; afternoon dull, with rain; wind getting light; evening dull, dry, and nearly calm; night cloudy and dull.

Wednesday 9th.—Rain early; forenoon fine, wind west, moderate. Afternoon and eve rainy, wind the same. At 6h. P.M. wind commenced rising suddenly, gradually increased to a gale, accompanied with rain from the south-west; 8h. 30m. P.M. heavy squalls; at 9h. strong gale with very heavy squalls, which made the house (walls three feet thick,) shake,* wind veering to the west, force 10 to 11. There did not appear a single detached cloud, and I did not observe any *scud*, the whole concave was covered, the whole assuming a light whitish appearance. 9h. 30m., heavy squalls; 9h. 40m., a sudden lull to a light air. At 10h., it was a dead calm, in about five or ten minutes after, a passing whistle and peculiar moaning sound, but very gentle; 10h. 15m., squally again; 11h. smart gale. At this time there was a narrow opening in the clouds to the west, through which three stars in horizontal line threw out a luminous light, that had a very curious appearance. 11h. 30m., squalls again powerful, northerly of west. Between this time and midnight, the squalls were very heavy, force at 11. Wind veering to the north-west, there was little rain.

Thursday 10th.—The squalls continued until about 1h. A.M., after which they gradually subsided. At 8h. A.M. the weather was fine, with a moderate breeze from the west.

Some of the squalls may have reached as high a force as 12, for a minute or two, but the general strength of the gale here did not, I think, exceed 10. At sea, its force was probably greater. The air was remarkably warm whilst it lasted to the southward of west; but the temperature was at least ten degrees lower on the morning of the 10th, and continued cold all day.

It was too dark for me to notice the gradual veering of the wind by the vanes; but I believe I am correct in stating that the changes were from south-west to about north-west. The meteor was, therefore, moving to the east.

I think there is little doubt of the storm having been a circular one. I should say, the lull and calm certifies this. Its duration seven hours only; the lull and calm, little more than half an hour. The focus of the storm was to the northward of our position, the southern edge of the central calm just brushing us as it passed.

* A farmer assured me, that he felt his bed shake as well as the house, which he expected to fall about his ears.—The *calm* puzzled him.

Commercial Telegraphs *of the British Coasts.*

Not having noticed any communication in the *Nautical* respecting the system of Commercial Telegraphs, brought into practice by Lieutenant Watson, R.N., and considering that too much publicity cannot be given to so useful a project, I shall make no apology, Mr. Editor, for transmitting to you the accompanying extracts.

It appears that, although the system began some years ago, it was only partially adopted at Liverpool, and subsequently at Hull. The telegraph at Durdham Downs, near Bristol, which has been several years in practice, I believe, confines its intelligence solely to the steam vessels belonging to the companies of that city.

Since the reduction of letter postage, the establishment of Lieutenant Watson's plan has been extended on many parts of the coasts, from headland to headland. The advantages are so apparent, from what is said in the following extracts, that I need say no more myself.

"Telegraph stations are now at work at Flamborough Head and the North Foreland; at the Needles, Isle of Wight, to Southampton, whence by the railroad, communications are received six times a day in London; at Skirra Head, Pentland Firth, Peter Head, Aberdeenshire; and others are in progress from the Start to Dartmouth, and other principal headlands, including the Bristol Channel, the Clyde, and the south-west coast of Ireland. Cutters, as floating-telegraphs, will be constantly cruising in the Downs, and off the Isle of Wight, for the purpose of communicating with the vessels as they pass.

"Such telegraphs, when established, will enable vessels from every quarter of the globe, to report themselves, or forward intelligence immediately on making the British shores. They may communicate to the owners, consignees, or others interested, in cases of accident, or distress; if out of time, or detained by adverse winds; if in want of stores or provisions; the state of foreign markets; notice of arrivals out, &c.; and they may frequently save postage, port charges, and loss of time, by calling off any of the telegraph stations for orders."

Instances have frequently appeared of the utility of these telegraphs. Some of these cases are given by Lieut. Watson, which are interesting; I extract the following:—

"11h.—The ship Consbrook, from Bombay, unable to save her tide into Liverpool, came to an anchor off the floating light. She had but one anchor on board; at low water a gale commenced from the westward, and as the flood made, she dragged towards the banks; she could not slip and claw off against wind and tide, nor could she run into port for want of water; she, therefore, telegraphed as follows:—

"1545 In want of an anchor and cable.

"1531 Weight of anchor 16 cwt.

"These were supplied, and brought the vessel up within 150 yards of that fatal spot, the North Spit Bank. The vessel and cargo were estimated at about 65,000*l.*, and even underwritten in London, Liverpool, Glasgow, &c."

I am not aware of the flags which are in use, &c., but it would be desirable, that these should be the same as those now so extensively in use among merchant vessels. The *tel* words may be added to Capt. Marryat's book.

Semaphore.

The Quintuple Treaty for the Suppression of the African Slave Trade.—*Signed at London, Dec. 20th,* 1841.

Art. 1.—Their Majesties the Emperor of Austria, King of Hungary and Bohemia, the King of Prussia, and the Emperor of all the Russias, engage to prohibit all trade in slaves, either by their respective subjects, or under their respective flags, or by means of capital belonging to their respective subjects; and to declare such traffic piracy. Their Majesties further declare, that any vessel which may attempt to carry on the slave trade, shall, by that fact alone, lose all right to the protection of their flag.

Art. 2.—In order more completely to accomplish the object of the present treaty, the high contracting parties agree by common consent, that those of their ships-of-war which shall be provided with special warrants and orders, prepared according to the forms of the annex A of the present treaty, may search every merchant vessel belonging to any one of the high contracting parties, which shall, on reasonable grounds, be suspected of being engaged in the traffic in slaves, or of having been fitted out for that purpose, or of having been engaged in the traffic during the voyage in which she shall have been met with by the said cruisers; and that such cruisers may detain, and send, or carry away such vessels in order that they may be brought to trial in the manner hereafter agreed upon.

Nevertheless, the above-mentioned right of searching the merchant vessels of any one or other of the high contracting parties, shall be exercised only by ships-of-war, whose commanders shall have the rank of captain or that of lieutenant in the Royal or Imperial Navy, unless the command shall, by reason of death or otherwise, have devolved upon an officer of inferior rank. The commander of such ship-of-war shall be furnished with warrants according to the form annexed to the present treaty, under letter A.

The said mutual right of search shall not be exercised within the Mediterranean Sea. Moreover, the space within which the exercise of the said right shall be confined, shall be bounded on the north by the 32d parallel of north latitude, on the west, by the eastern coast of America, from the point where the 32d parallel of north latitude strikes that coast, down to the 45th parallel of south latitude: on the south, by the 45th parallel of south latitude, from the point where that parallel strikes the eastern coast of America, to the 80th degree of longitude east from the meridian of Greenwich; and on the east, by the same degree of longitude, from the point where it is intersected by the 45th parallel of south latitude up to the coast of India.

Art. 3.—Each of the high contracting parties which may choose to employ cruisers for the suppression of the slave trade, and to exercise the mutual right of search, reserves to itself to fix, according to its own convenience, the number of the ships-of-war which shall be employed on the service stipulated in the second article of the present treaty, as well as the stations on which the said ships shall cruise.

The names of the ships appointed for this purpose, and those of their commanders, shall be communicated by each of the high contracting parties to the others; and they shall reciprocally apprise each other every time that a cruiser shall be placed on a station, or shall be recalled thence, in order that the necessary warrants may be delivered by the Governments authorizing the search, and returned to those Governments by the Government which has received them, when those warrants shall no longer be necessary for the execution of the present treaty.

Art. 4.—Immediately after the Government which employs the cruisers, shall have notified to the Government which is to authorize the search, the number and the names of the cruisers which it intends to employ, the warrants authorizing the search, shall be made out according to the form annexed to the

present treaty, under letter A, and shall be delivered by the Government which authorizes the search, to the Government which employs the cruiser.

In no case shall the mutual right of search be exercised upon the ships-of-war of the high contracting parties.

The high contracting parties shall agree upon a particular signal, to be used exclusively by those cruisers which shall be invested with the right of search.

Art. 5.—The cruisers of the high contracting parties, authorized to exercise the right of search and detention in execution of the present treaty, shall conform themselves strictly to the instructions annexed to the said treaty, under letter B, in all that relates to the formalities of the search and of the detention, as well as to the measures to be taken, in order that the vessels suspected of having been employed in the traffic, may be delivered over to the competent tribunals.

The high contracting parties reserve to themselves the right of making in these instructions by common consent, such alterations as circumstances may render necessary.

The cruisers of the high contracting parties shall mutually afford to each other assistance in all cases, when it may useful that they should act in concert.

Art. 6.—Whenever a merchant vessel, sailing under the flag of one of the high contracting parties, shall have been detained by a cruiser of the other, duly authorized to that effect, conformably to the provisions of the present treaty, such merchant vessel, as well as the master, the crew, the cargo, and the slaves who may be on board, shall be brought into such place as the high contracting parties shall have respectively designated for that purpose, and they shall be delivered over to the authorities appointed with that view by the Government, within whose possessions such place is situated, in order that proceedings may be had with respect to them, before the competent tribunals in the manner hereafter specified.

When the commander of the cruiser shall not think fit to undertake himself the bringing in and the delivery up of the detained vessel, he shall intrust that duty to an officer of the rank of lieutenant, in the Royal or Imperial Navy, or at least to the officer who shall at the time be the third in authority on board the detaining ship.

Art. 7.—If the commander of a cruiser of one of the high contracting parties, should have reason to suspect that a merchant vessel, sailing under the convoy of, or in company with a ship-of-war, of one of the other contracting parties, has been engaged in the slave trade, or has been fitted out for that trade, he shall make known his suspicions to the commander of the ship-of-war, who shall proceed alone to search the suspected vessel; and in case the last-mentioned commander should ascertain that the suspicion is well founded, he shall cause the vessel, as well as the master, the crew, the cargo, and the slaves who may be on board, to be taken into a port belonging to the nation of the detained vessel, to be there proceeded against before the competent tribunals, in the manner hereafter directed.

Art. 8.—As soon as a merchant vessel, detained, and sent in for adjudication, shall arrive at the port to which she is to be carried in conformity with annex B to the present treaty, the commander of the cruiser which shall have detained her, or the officer appointed to bring her in, shall deliver to the authorities appointed for that purpose a copy, signed by himself, of all the lists, declarations, and other documents specified in the instructions annexed to the present treaty under letter B; and the said authorities shall proceed, in consequence, to the search of the detained vessel, and of her cargo, as also to an inspection of her crew, and of the slaves who may be on board, after having previously given notice of the time of such search and inspection to the commander of the cruiser, or to the officer who shall have brought in the vessel, in order that he, or some person whom he may appoint to represent him, may be present thereat.

A minute of these proceedings shall be drawn up in duplicate, which shall be signed by the persons who shall have taken part in, or who shall have been present at the same; and one of those documents shall be delivered to the commander of the cruiser, or to the officer appointed by him to bring in the detained vessel.

Art. 9.—Every merchant vessel of any one or other of the five nations, which shall be searched and detained in virtue of the provisions of the present treaty, shall, unless proof be given to the contrary, be deemed to have been engaged in the slave trade, or to have been fitted out for that traffic, if in the fitting, in the equipment, or on board the said vessel during the voyage in which she was detained, there shall be found to have been one of the articles hereafter specified, that is to say:—

1. Hatches with open gratings, instead of the close hatches which are used in merchant vessels.
2. Divisions or bulk-heads, in the hold or on deck, in greater number than are necessary for vessels engaged in lawful trade.
3. Spare plank fitted for being laid down as a second or slave-deck.
4. Shackles, bolts, or handcuffs.
5. A larger quantity of water, in casks, or in tanks, than is requisite for the consumption of the crew of such merchant vessel.
6. An extraordinary number of water-casks, or of other receptacles for holding liquid, unless the master shall produce a certificate from the Custom-house at the place from which he cleared outwards, stating that sufficient security had been given by the owners of such vessel that such extra number of casks, or of other receptacles should only be used to hold palm-oil, or for other purposes of lawful commerce.
7. A greater quantity of mess-tubs or kids than are requisite for the use of the crew of such merchant vessel.
8. A boiler or other cooking apparatus, of an unusual size, and larger, or capable of being made larger, than requisite for the use of the crew of such merchant vessel; or more than one boiler, or other cooking apparatus, of the ordinary size.
9. An extraordinary quantity of rice, of the flour of Brazil manioc, or cassada, commonly called farina, or of maize, or of Indian corn, or of any other article of food whatever, beyond the probable wants of the crew; unless such quantity of rice, farina, maize, Indian corn, or any other article of food, should be entered on the manifest, as forming part of the trading cargo of the vessel.
10. A quantity of mats or matting greater than is necessary for the use of such merchant vessel, unless such mats or matting be entered on the manifest as forming part of the cargo.

If it is established that one or more of the articles above specified are on board, or have been on board during the voyage in which the vessel was captured, that fact shall be considered as *prima facia* evidence that the vessel was employed in the traffic; she shall, in consequence be condemned, and declared lawful prize, unless the master or the owners shall furnish clear and incontrovertible evidence, proving to the satisfaction of the tribunal that at the time of her detention or capture the vessel was employed in a lawful undertaking; and that such of the different articles above specified as were found on board at the time of detention, or which might have been embarked during the voyage on which she was engaged when she was captured, were indispensable for the accomplishment of the lawful object of her voyage.

Art. 10.—Proceedings shall be immediately taken against the vessel detained as above stated, her master, her crew, and her cargo, before the competent tribunals of the country to which she belongs; and they shall be tried and adjudged according to the established forms and laws in force in that country; and if it results from the proceedings that the said vessel was employed in the slave trade, or fitted out for that traffic, the vessel, her fittings, and her cargo of merchandize, shall be confiscated; and the master, the crew, and their accom-

plices, shall be dealt with conformably to the laws by which they shall have been tried.

In case of confiscation, the proceeds of the sale of the aforesaid vessel shall, within the space of six months, reckoning from the date of the sale, be placed at the disposal of the Government of the country to which the ship which made the capture belongs, in order to be employed in conformity with the laws of that country.

Art. 11.—If any one of the articles specified in Article 9 of the present treaty is found on board a merchant vessel, or if it is proved to have been on board of her during the voyage in which she was captured, no compensation for losses, damages, or expenses, consequent upon the detention of such vessel, shall in any case be granted, either to the master, or to the owner, or to any other person interested in the equipment or in the lading, even though a sentence of condemnation should not have been pronounced against the vessel, as a consequence of her detention.

Art. 12.—In all cases in which a vessel shall have been detained in conformity with the present treaty, as having been employed in the slave trade, or fitted out for that traffic, and shall, in consequence, have been tried and confiscated, the Government of the cruiser which shall have made the capture, or the Government whose tribunal shall have condemned the vessel, may purchase the condemned vessel for the service of its Royal navy, at the price fixed by a competent person, selected for that purpose by the said tribunal. The Government whose cruiser shall have made the capture shall have a right of preference in the purchase of the vessel. But if the condemned vessel should not be purchased in the manner above pointed out, she shall be wholly broken up immediately after the sentence of confiscation, and sold in separate portions after having been broken up.

Art. 13.—When by the sentence of the competent tribunal it shall have been ascertained that a merchant vessel, detained in virtue of the present treaty, was not engaged for the slave trade, and was not fitted out for that traffic, she shall be restored to the lawful owner or owners. And if, in the course of the proceedings, it shall have been proved that the vessel was searched and detained illegally, or without sufficient cause of suspicion; or that the search and detention were attended with abuse or vexation, the commander of the cruiser or the officer who shall have boarded the said vessel, or the officer who shall have been intrusted with bringing her in, and under whose authority, according to the nature of the case, the abuse or vexation shall have occurred, shall be liable in costs and damages to the masters and the owners of the vessel and of the cargo.

These costs and damages may be awarded by the tribunal before which the proceedings against the detained vessel, her master, crew, and cargo, shall have been instituted; and the Government of the country to which the officer who shall have given occasion for such award shall belong, shall pay the amount of the said costs and damages within the period of six months from the date of the sentence, when the sentence shall have been pronounced by a tribunal sitting in Europe; and within the period of one year when the trial shall have taken place out of Europe.

Art. 14.—When in the search or detention of a merchant vessel effected in virtue of the present treaty, any abuse or vexation shall have been committed, and when the vessel shall not have been delivered over to the jurisdiction of her own nation, the master shall make a declaration upon oath of the abuses or vexations of which he shall have to complain, as well as of the costs and damages to which he shall lay claim; and such declaration shall be made by him before the competent authorities of the first port of his own country at which he shall arrive, or before the consular agent of his own nation at a foreign port, if the vessel shall in the first instance touch at a foreign port where there is such an agent.

This declaration shall be verified by means of an examination upon oath of

the principal persons amongst the crew or the passengers who shall have witnessed the search or detention; and a formal statement of the whole shall be drawn up, two copies whereof shall be delivered to the master, who shall forward one of them to his Government, in support of his claim for costs and damages.

It is understood, that if any circumstance beyond control shall prevent the master from making his declaration, it may be made by the owner of the vessel, or by any other person interested in the equipment, or in the lading of the vessel.

On a copy of the formal statement above-mentioned being officially transmitted to it, the Government of the country to which the officer to whom the abuses or vexations shall be imputed shall belong, shall forthwith institute an inquiry; and if the validity of the complaint shall be ascertained, that Government shall cause to be paid to the master or the owner, or to any other person interested in the equipment or lading of the molested vessel, the amount of costs and damages which shall be due to him.

Art. 15. The high contracting parties engage, reciprocally, to communicate to each other, when asked to do so, and without expense, copies of the proceedings instituted, and of judgments given, relative to vessels searched or detained in execution of the provisions of this treaty.

Art. 16.—The high contracting parties agree to insure the immediate freedom of all the slaves who shall be found on board vessels detained and condemned in virtue of the stipulations of the present treaty.

Art. 17.—The high contracting parties agree to invite the maritime Powers of Europe which have not yet concluded treaties for the abolition of the slave trade to accede to the present treaty.

Art. 18.—The acts or instruments annexed to the present treaty, and which it is mutually agreed to consider as forming an integral part thereof, are the following:—

A. Forms of warrants of authorization, and of orders for the guidance of the cruisers of each nation, in the searches and detentions to be made in virtue of the present treaty.

B. Instructions for the cruisers of the naval forces employed in virtue of the present treaty, for the suppression of the slave trade.

Art. 19.—The present treaty, consisting of 19 articles, shall be ratified, and the ratification thereof shall be exchanged at London, at the expiration of two months from this date, or sooner if possible.

In witness whereof, the respective plenipotentiaries have signed the present treaty, in English and French, and have thereunto affixed the seal of their arms.

Done at London, the 20th day of December, in the year of our Lord 1841.

ABERDEEN.
KOLLER.
ST. AULAIRE.
SCHLEINITZ.
BRUNOW.

ANNEX.—INSTRUCTIONS TO CRUISERS.

1. Whenever a merchant vessel belonging to, or bearing the flag of, any one of the high contracting parties, shall be visited by a cruiser of any one of the other high contracting parties, the officer commanding the cruiser shall, before he proceeds to the visit, exhibit to the master of such vessel the special orders, which confer upon him by exception the right to visit her; and he shall deliver to such master a certificate, signed by himself, specifying his rank in the navy of his country, and the name of the ship which he commands, and declaring that the only object of his visit is to ascertain whether the vessel is

engaged in the slave trade, or is fitted out for the purpose of such traffic, or has been engaged in that traffic during the voyage, in which she has been met with by the said cruiser. When the visit is made by an officer of the cruiser other than her commander, such officer shall not be under the rank of lieutenant in the navy, unless he be the officer who at the time is second in command of the ship, by which the visit is made; and in this case, such officer shall exhibit to the master of the merchant vessel, a copy of the special orders above-mentioned, signed by the commander of the cruiser; and shall likewise deliver to such master a certificate, signed by himself, specifying the rank which he holds in the navy of his country, the name of the commander under whose orders he is acting, the name of the cruiser to which he belongs, and the object of his visit, as herein-before recited.

If it shall be ascertained by the visit that the ship's papers are regular, and her proceedings lawful, the officer shall certify upon the log-book of the vessel, that the visit took place in virtue of the special orders above-mentioned; and when these formalities shall have been completed, the vessel shall be permitted to continue her course.

2. If, in consequence of the visit, the officer commanding the cruiser shall be of opinion that there are sufficient grounds for believing that the vessel is engaged in the slave trade, or has been fitted out for that traffic, or has been engaged in that traffic during the voyage in which she is met with by the cruiser; and if he shall in consequence determine to detain her, and to have her delivered up to the jurisdiction of the competent authorities, he shall forthwith cause a list to be made out, in duplicate, of all the papers found on board, and he shall sign this list and the duplicate, adding after his own name, his rank in the navy, and the name of the vessel under his command.

He shall, in like manner, make out and sign, in duplicate, a declaration, stating the place and time of the detention, the name of the vessel, and that of her master, the names of the persons composing her crew, and the number and condition of the slaves found on board.

This declaration shall further contain an exact description of the state of the vessel and her cargo.

3. The commander of the cruiser shall, without delay, carry or send the detained vessel, with her master, crew, passengers, cargo, and the slaves found on board, to one of the ports herein specified, in order that proceedings may be be instituted in regard to them, conformably to the laws of the country under whose flag the vessel is sailing; and he shall deliver the same to the competent authorities, or to the persons who shall have been specially appointed for that purpose by the Government to whom such port shall belong.

4. No person whatever shall be taken out of the detained vessel; nor shall any part of her cargo, nor any of the slaves found on board, be removed from her, until after such vessel shall have been delivered over to the authorities of her own nation; unless the removal of the whole or part of the crew, or of the slaves found on board, shall be deemed necessary, either for the preservation of their lives, or from any other consideration of humanity, or for the safety of the persons who shall be charged with the navigation of the vessel after her detention. In any such case, the commander of the cruiser, or the officer appointed to bring in the detained vessel, shall make a declaration of such removal, in which he shall specify the reasons for the same; and the masters, sailors, passengers, or slaves so removed, shall be carried to the same port as the vessel and her cargo, and they shall be received in the same manner as the vessel, agreeably to the regulations herein-after set forth.

Provided always, that nothing in this paragraph shall be understood as applying to slaves found on board of Austrian, Prussian, or Russian vessels; but such slaves shall be disposed of as is specified in the following paragraphs.

5. All Austrian vessels which shall be detained on the stations of America, or Africa, by the cruisers of the other contracting parties, shall be carried and delivered up to the Austrian jurisdiction at Trieste.

But if slaves shall be found on board any such Austrian vessel at the time of her detention, the vessel shall, in the first instance, be sent to deposit the slaves at that port to which she would have been taken for adjudication, if she had been sailing under the English or French flag. The vessel shall afterwards be sent on, and shall be delivered up to the Austrian jurisdiction at Trieste, as above stipulated.

All French vessels which shall be detained on the western coast of Africa, by cruisers of the other contracting parties, shall be carried and delivered up to the French jurisdiction at Goree.

All French vessels which shall be detained on the eastern coast of Africa, by the cruisers of the other contracting parties, shall be carried and delivered up to the French jurisdiction at the Isle of Bourbon.

All French vessels which shall be detained on the coast of America, to the southward of the 10th degree of north latitude, by the cruisers of the other contracting parties, shall be carried and delivered up to the French jurisdiction at Cayenne.

All French vessels which shall be detained in the West Indies, or on the coast of America, to the northward of the 10th degree of north latitude, by the cruisers of the other contracting parties, shall be carried and delivered up to the French jurisdiction at Martinique.

All British vessels which shall be detained on the western coast of Africa, by the cruisers of the other contracting parties, shall be carried and delivered up to the British jurisdiction at Bathurst, on the river Gambia.

All British vessels which shall be detained on the eastern coast of Africa, by the cruisers of the other contracting parties, shall be carried and delivered up to the British jurisdiction at the Cape of Good Hope.

All British vessels which shall be detained on the coast of America, by the cruisers of the other contracting parties, shall be carried and delivered up to the British jurisdiction at the colony of Demerara, or at Port Royal, in Jamaica, according as the commander of the cruiser may think most convenient.

All British vessels which shall he detained in the West Indies, by the cruisers of the other contracting parties, shall be carried and delivered up to the British jurisdiction at Port Royal, in Jamaica.

All Prussian vessels which shall be detained on the stations of America or Africa, by the cruisers of the other contracting parties, shall be carried and delivered up to the Prussian jurisdiction at Stettin.

But if slaves shall be found on board any such Prussian vessel at the time of her detention, the vessel shall, in the first instance, be sent to deposit the slaves at that port to which she would have been taken for adjudication, if she had been sailing under the English or French flag. The vessel shall afterwards be sent on, and shall be delivered up to the Prussian jurisdiction at Stettin as above stipulated.

All Russian vessels which shall be detained on the stations of America or Africa, by the cruisers of the other contracting parties, shall be carried and delivered up to the Russian jurisdiction at Cronstadt, or at Revel, according as the season of the year may allow the one or the other of those ports to be reached.

But if slaves shall be found on board any such Russian vessel at the time of her detention, the vessel shall, in the first instance, be sent to deposit the slaves at that port to which she would have been taken for adjudication, if she had been sailing under the English or French flag. The vessel shall afterwards be sent on, and shall be delivered up to the Russian jurisdiction at Cronstadt, or at Revel, as above stipulated.

6. As soon as a merchant vessel, which shall have been detained as aforesaid, shall arrive at one of the ports or places above-mentioned, the commander of the cruiser, or the officer appointed to bring in such detained vessel, shall forthwith deliver to the authorities duly appointed for that purpose, by the Government within whose territory such port or place shall be, the vessel and

her cargo, together with the master, crew, passengers, and slaves found on board, and also the papers which shall have been seized on board the vessel, and one of the duplicate lists of the said papers, retaining the other in his own possession. Such officer shall, at the same time, deliver to the said authorities one of the original declarations, as herein-before specified, adding thereto a statement of any changes which may have taken place from the time of the detention of the vessel to that of the delivery, as well as a copy of the statement of any removals which may have taken place, as above provided for.

In delivering over these several documents the officer shall make, in writing and on oath, an attestation of the truth.

7. If the commander of a cruiser of one of the high contracting parties who shall be duly furnished with the aforesaid special instructions, shall have reason to suspect that a merchant vessel sailing under convoy of, or in company with a ship-of-war of any one of the other contracting parties, is engaged in the slave trade, or has been fitted out for the purpose of that traffic, or has been engaged in the traffic in slaves during the voyage in which she is met with by the said cruiser, he shall confine himself to communicating his suspicions to the commander of the ship-of-war; and he shall leave it to the latter to proceed alone to visit the suspected vessel, and to deliver her up to the jurisdiction of her own country, if there should be cause for doing so.

8. By Article 4 of the treaty it is stipulated, that in no case shall the mutual right of visit be exercised upon ships-of-war of the high contracting parties.

It is agreed that this exemption shall apply equally to vessels of the Russian-American Company, which, being commanded by officers of the Imperial navy, are authorized by the Imperial Government to carry a flag which distinguishes them from the merchant navy, and are armed and equipped similarly to transports of war.

It is further understood that the said vessels shall be furnished with a Russian patent, which shall prove their origin and destination. The form of this patent shall be drawn up by common consent. It is agreed that this patent, when issued by the competent authority in Russia, shall be countersigned at St. Petersburgh by the consulates of Great Britain and France.

9. In the 3d clause of Article 9 of the treaty it is stipulated that, failing proof to the contrary, a vessel shall be presumed to be engaged in the slave trade, if there be found on board spare plank fitted for being laid down as a second or slave-deck.

In order to prevent any abuse which might arise from an arbitrary interpretation of this clause, it is especially recommended to the cruisers not to apply it to Austrian, Prussian, or Russian vessels employed in the timber trade, whose manifests shall prove that the planks and joists which they have, or have had, on board are, or were, a part of their cargo for trade.

Therefore, in order not to harrass lawful commerce, cruisers are expressly enjoined only to act upon the stipulations contained in the 3d clause of Article 9, when there shall be on board the vessel visited spare plank evidently destined to form a slave-deck.

The undersigned plenipotentiaries have agreed, in conformity with the 18th Article of the treaty signed by them this day, that these instructions shall be annexed to the treaty signed this day, between Great Britain, Austria, France, Prussia, and Russia, for the supression of the African slave trade, and shall be considered as an integral part of that treaty.

In witness whereof, the plenipotentiaries of the high contracting parties have signed this annex, and have thereunto affixed the seal of their arms.

Done at London, the 20th day of December, in the year of our Lord 1841.

ABERDEEN.
KOLLER.
ST. AULAIRE.
SCHLENITZ.
BRUNOW.

Chinese Intelligence.

Official Accounts of the Capture of Chusan, Chinghae, and Ningpo.

(Notification.)

Political Department, Calcutta, Dec. 20, 1841.

The Right Hon. the Governor-General of India, in council, has the highest satisfaction in publishing, for general information, the subjoined despatches from his Excellency Rear-Admiral Sir W. Parker, K.C.B., Naval Commander-in-chief on the East India station, and his Excellency Major-General Sir H. Gough, G.C.B., commanding the Military branch of the expedition, detailing the brilliant successes on the coast of China of the combined naval and military forces of her Britannic Majesty and the Hon. Company, the results of which have been the total defeat and dispersion of Chinese armies of far superior numbers, the destruction of extensive fortifications of the enemy, the capture of a large quantity of ordnance, and other munitions of war, and of stores; the surrender of numerous prisoners, and the occupation, with very trifling loss on the part of the British troops, of the important and populous cities of Tinghae, Chinghae, and Ningpo.

A royal salute will be fired in honor of these achievements.

By order of the Right Hon. the Governor-General in Council.

T. H. Maddox, *Secretary to Government.*

Wellesley, at Chusan, Oct. 4, 1841.

My Lord.—I have much pleasure in reporting to your Lordship, that the island of Chusan was re-occupied by the combined forces of her Majesty on the 1st instant.

My last communication from Amoy, on the 31st of August, will have informed your lordship of our hopes of immediately quitting that anchorage; but a continuance of bad weather prevented the expedition from putting to sea before the 5th of September. We were, however, favoured in our progress to the northward with fair, but light breezes until the 13th, when the north-east monsoon set in strong against us, with thick weather, causing the unavoidable separation of many of the transports, and it was only by considerable perseverance, and taking advantage of the tides in shore, which we were enabled by the regularity of the soundings to approach with confidence, that we succeeded on the 21st inst. in reaching the Chusan group of islands, where I had the satisfaction of collecting several of the missing ships and steam-vessels, and gained the anchorage off the little isle of "Just-in-the-way" on the 24th with the preconcerted intention of making our first attack on Chinghae, and pressing forward by the Tahae River, to take possession of Ningpo.

The transport in which Sir Hugh Gough and his staff were embarked, having fallen far to leeward before we got sight of Chusan, the Cruizer was despatched to convey him to the fleet, and rejoined with his Excellency on the evening of the 25th.

The weather was now too boisterous to approach the exposed position of Chinghae; we therefore, on the following day, made a very satisfactory reconnoisance of the defences of Tinghae and Chusan harbour, in the Phlegethon and Nemesis steam-vessels, and determined on immediate preparations for re-occupying the island.

The Chinese have been indefatigable in erecting batteries since the British forces were withdrawn in February last; and it is almost inconceivable that so much has been done by them. From the western extremity, outside Guard

Island, to the eastern termination of their works, which extend half a mile beyond the commanding position of the Joss-house or Temple-hill, (now greatly strengthened,) there is a continued line of strong battery on the sea face, principally constructed with mud, comprising 267 embrasures for guns, and 25 of various calibre, actually mounted on different points, independently of 41 planted on the ramparts of the city, and numerous gingals in every direction.

The rapidity of the tides in the different channels to Chusan harbour is so great, as to render large ships frequently quite unmanageable, even with the assistance of steam-vessels; and the chance of placing them in any precise position for action so uncertain, that it was at once seen our object would be best effected by landing the troops, seamen, and Marines, to the westward of the sea defences, and take them in reverse. We found a stone work, with eight embrasures, constructed near Guard Island, to defend the point on which we proposed to disembark the troops, bnt no guns placed in it. About 1,200 yards above it, on a steep hill, was also a strongly fortified encampment, in which a large body of Chinese were posted: Capt. Eyres was, therefore, detached with the Modeste, Columbine, and Nemesis, to anchor close to the battery, and prevent its occupation, or any movement of the Chinese to strengthen their position. This duty was, with the usual zeal of himself, Commander Clarke, and Mr. Hall, most effectually performed, and a considerable breach made by the Nemesis's guns in the wall of the fortified encampment.

A continuance of north-east gales, with incessant rain, rendered it impracticable to move the fleet from the anchorage off "Just-in-the-way" before the 29th, when we reached the outer harbour of Chusan with part of the transports.

The Blonde, Modeste, and Jupiter, with the Queen steam-vessel, immediately proceeded to take up a position on the south side of the Macclesfield and Trumbull Islands, to cover and assist a party of the Royal Artillery under Capt. Knowles, in erecting a battery of one 68 and two 24-pounder howitzers, against the Joss-house Hill and the adjoining works, which kept up a frequent but ineffectual fire, and this service was, with infinite labour, accomplished with a celerity that reflects much credit on all the officers and men employed on it.

The Wellesley was moved as close as possible to the intended point of landing; the Cruizer and Columbine were advanced within 200 yards of the beach, and by occasional well-directed shot from the vessels, and shells from the Sesostris, the Chinese were completely kept in check.

The remainder of the transports having joined in the course of the 30th, and the preparations being completed, the disembarkation was ordered on the morning of the 1st instant, in two columns—the first, about 1,500 strong, to take possession of the heights, and then to move on the city; the second (to which the Royal Marines and a party of seamen were attached,) altogether 1,100 strong, to carry the sea line of battery, by pushing round on their right, and proceeding to make a lodgment in the suburbs to attack the Joss-house Hill.

Our resources in boats did not admit of more than one column being landed at a time, including a portion placed in the Phlegethon and Nemesis; and finding these small vessels had scarcely power to tow the boats with the troops against the tide, I was compelled to keep the Sesostris to facilitate their disembarkation.—With this additional assistance, it was nearly half-past 10 o'clock before the first column, under the gallant Commander-in-chief, reached the shore, when they were assailed by a heavy discharge of gingals and matchlocks from the heights, but immediately formed, and supported by the fire of the ships, the advance quickly ascended the hill, and gallantly carried everything before them, although a more resolute stand was made by the Chinese than had been previously experienced in any encounter with them.

The howitzers on the island were opened simultaneously, with the advance of the troops to the shore, when the Queen endeavoured to tow the Blonde into a favourable position against the Joss-house and eastern batteries; the strength of the spring tide, however, baffled every effort to place her satis-

factorily, but the exertions of Capt. Bourchier throughout entitles him to my best thanks. The lighter draft of water of the Modeste and Queen enabled them to get into good situations, and by the excellence of their fire, in conjunction with that from the mortar battery on Trumball Island, the Joss-house battery was silenced, and the Chinese troops driven from that post and the batteries to the eastward of it.

The Marines and part of the seamen were landed as fast as the boats could return for them, but before the second column got on shore, the Chinese abandoned the western end of their sea defences, which were entered by part of the troops of the first column, who completely cleared the line of batteries, and took possession of the Joss-house Hill.

The steam-vessels moved into the inner harbour as soon as the troops were landed, to assist in the reduction of Tinghae, on which the main body was rapidly advanced; the walls were escaladed without opposition, and by 2 P.M. the British colours were flying in every direction.

Thirty-six new and well-cast brass guns are mounted in the batteries, and will be shipped in one of the transports. I believe a considerable store of Government rice has been found in the city.

I fear the troops have suffered a loss of one ensign and one private killed, and about 24 men wounded. The casualties in the squadron are confined to one seaman in the Cruizer, severely wounded, (since dead,) another slightly wounded, and one man of the Phlegethon slightly wounded. The Blonde had one of her quarter-deck guns disabled, but no further mischief was sustained.

The unremitting exertions of every officer and man of her Majesty squadron, Royal Marines, and Indian Navy, throughout the operations, merit my warmest commendation. I subjoin a statement of the ships present.

Capt. Herbert of the Blenheim, whose zeal is always conspicuous, handsomely volunteered to head the landing party of seamen and marines; and I gladly acknowledge the valuable assistance I have derived from the local knowledge and skill of Capt. Maitland of this ship, who has conducted her with much ability in the intricate and difficult navigation amongst these islands.

Commander Giffard, of the Cruizer, has been indefatigable in the duty assigned him of superintending the disembarkation, which he has performed to the entire satisfaction of the General and myself.

The fire from the ships and steam-vessels covering the landing party did much execution; it was, indeed, directed with such precision, that two or three individuals fell by single cannon-shot, at a distance of 700 yards; one of them while in the act of waving the Chinese banners.

It is out of my province to observe on the movements of the land forces, but I may be permitted to express my admiration of the gallantry which was throughout displayed by our companions of the army, and their distinguished chief; and I can but express my regret that circumstances did not admit of the officers, seamen, and Royal Marines of her Majesty's squadron, as well as of the Indian Navy, participating to a greater extent in the operations of the day.

Sir Henry Pottinger has witnessed all the proceedings of the expedition, and considering the lateness of the season, it is a subject of congratulation to his Excellency, as well as to Sir Hugh Gough and myself, that the re-occupation of this island has been secured.

Your lordships may be assured that not a moment will be lost in making the contemplated movement on Chinghae and Ningpo, whenever the state of the weather renders it practicable.

I have the honour, &c.,

W. PARKER, *Rear-Admiral.*

To the Right Hon. the Earl of Auckland, GCB.

A LIST of her Majesty's ships and vessels, and of the steam-vessels of

the Indian Navy, present at the reduction of Chusan, the 1st of October, 1841 :—

Wellesley, 72 guns, Rear-admi. Sir William Parker, KCB., Captain Thomas Maitland.
Blenheim, 72 guns, Capt. Thomas Herbert.
Blonde, 42 guns, Capt. Thomas Bourchier.
Modeste, 18 guns, Capt. Harry Eyres.
Cruiser, 16 guns, Commander H. W. Giffard.
Columbine, 16 guns, Commander T. J. Clarke.
Bentinck, 10 guns, Lieut. R. Collinson.
Jupiter, (troop ship,) Master-Commanding Robert Fulton.
Rattlesnake, (troop ship,) Master-Commanding James Sprent.

STEAM-VESSELS.

Sesostris, 4 guns, Acting-Commander Ormsby.
Phlegethon, 2 guns, Lieut. M'Cleverty, RN.
Nemesis, 2 guns, Mr. W. H. Hall, Master, RN.
Queen, 6 guns, Mr. W. Warden, Acting-Master, RN.

W. PARKER, *Rear-Admiral.*

Modeste, at Ningpo, 11th Oct., 1841.

MY LORD.—My despatch of the 4th inst., in which I had the honour of communicating to your lordship the re-occupation of Chusan by her Majesty's forces, would apprise you of the anxiety of Sir Hugh Gough and myself, to commence operations against Chinghae, as soon as a change of weather should enable the ships of the expedition, with common prudence, to approach that exposed position.

On the 7th the wind veered to the desired point, and every preliminary arrangement having been made, not a moment was lost in embarking the troops intended for the expedition. The following day, most of the transports were moved to the anchorage off "Just-in-the-way," four leagues in advance; and the General and myself, accompanied by Sir Henry Pottinger, proceeded at the same time in the Phlegethon and Nemesis, to reconnoitre the points of our intended attack, where we were fully informed and found that every preparation for resistance had been made.

The city of Chinghae, which is enclosed by a wall 37 feet in thickness, and 22 feet high, with an embrasured parapet of 4 feet high, and nearly two miles in circumference, is situated at the foot of a very commanding peninsular height, which forms the entrance of the Tahae River on its left or north bank. On the summit is the citadel, which, from its strong position, is considered the key to Chinghae, and the large and opulent city of Ningpo, about 15 miles up the river; and it is so important as a military post, that I trust I may be excused for attempting to describe it.

It stands about 250 feet above the sea, and is encircled also by a strong wall with very substantial iron plated gates at the east and west ends. The north and south sides of the height are exceedingly steep; the former accessible only from the sea by a narrow winding path from the rocks at its base; the south side and eastern end being nearly precipitous. At the east end of the citadel, outside its wall, 21 guns were mounted in three batteries of masonry, and sand bags to defend the entrance of the river.

The only communication between the citadel and city is on the west side by a steep but regular causeway, to a barrier gate at the bottom of the hill, where a wooden bridge over a wet ditch connects it with the isthmus and the gates of the city, the whole of which are covered with iron plates and strongly secured. The space on the isthmus between the citadel hill and the city wall, is filled up towards the sea with a battery of five guns, having a row of strong piles driven in a little beach in front of it, to prevent a descent in that quarter; and on the

river side of the isthmus are two batteries adjoining the suburbs, and mounting 22 and 19 guns, for flanking the entrance. Twenty-eight guns of different sizes and numberless gingals were also placed on the city walls, principally towards the sea.

The main body of the Chinese forces were posted on the right bank of the river, in fortified encampments, on very commanding and steep hills, field-works and entrenchments being thrown up in every advantageous position, with 23 guns and innumerable gingals mounted in them to impede the advance of the troops. The principal landing-place on this side is within a considerable creek, close to the south entrance of the river, and across this creek we found a row of piles driven. Four batteries, mounting 31 guns, were also newly constructed on this side of the river, to flank the entrance; and about half a mile above its mouths a similar obstruction of larger piles was carried completely across, space only being left for one junk to pass at a time. In short, the Chinese had exercised there ingenuity to the utmost to make their defences secure, and a great amount of treasure and labour must have been expended in the execution of these works, fully evincing the importance which they attached to this position.

The plan of attack agreed upon by the General and myself was to land the troops in two columns on the right bank of the river, inside the small islands called the Triangles; the main body under his immediate command (about 1,040 strong) to disembark a short distance beyond the creek above referred to; the other (about 500 strong) immediately at its entrance, where it appeared to us practicable to put them securely on shore outside the piles, under the cover of one of the brigs, good anchorage being found within a few yards of the spot.

The attack of the citadel and city on the left bank of the river was assigned to the naval branch of the force, strengthened by about 23 of the royal and 12 of the Madras artillery, under Lieuts. the Hon. F. Spencer and Molesworth; and 50 sappers, under Captain Cotton and Lieut. Johnston, of the Madras engineers. It was calculated that the advance of the two columns of troops by different routes would not only secure every point of the right bank, but cut off the retreat of many of the Chinese; and by a simultaneous bombardment of the citadel and city, by the squadron, we entertained confident hopes of complete success, which has been happily realised in every respect.

On the evening of the 9th, the whole of the squadron, as per subjoined list, and the transports, were anchored off Chinghae, in convenient situations for the intended operations; and at an early hour on the following morning, the troops proceeded in the Queen, Nemesis, and Phlegethon steamers, and the boats of the transports, to the point of debarkation, where the cruisers Columbine and Bentinck, most judiciously took up their positions, under the direction of Commander Giffard. A few shot from them cleared the shore of about 300 of the Chinese, who had assembled to oppose the landing: and by half-past nine o'clock, under his excellent arrangements, every man was safe on shore.

The Wellesley, Blenheim, Blonde, and Modeste were appointed to cannonade the citadel and eastern part of the city walls; and the Sesostris, Queen, and Phlegethon, after landing the troops, and towing up the ships to their stations, to shell the citadel in flank, and enfilade any of the batteries in harbour which their guns could bear upon. The Nemesis to join in the attack on the north side, in readiness to cover the landing of the seamen and marines as soon as it became practicable.

The citadel hill cannot be approached for an attack by large ships, except on the north side, and the water in that direction is so shallow, that it is only in the calmest weather that they can be carried with safety sufficiently near to fire with effect. The day was fortunately everything we could desire, and the Wellesley, as soon as the tide served, was towed by the Sesostris into an excellent position, where the anchor was dropped, about a quarter before nine o'clock, in four fathoms, about 1,360 yards from the citadel and town walls.

As the water ebbed, she settled imperceptibly into a bottom of soft mud, and was as steady as a land battery. Commander Ormsby (with very commendable activity,) immediately afterwards brought in the Blenheim; the Blonde and Modeste, favoured by a light breeze, took their stations under sail, and every ship was placed to my entire satisfaction as close as possible, the Blenheim and Modeste touching the bottom at low water. The precision of the fire both from shots and shells from all exceeded my most sanguine expectations; and the destruction of the works from the commencement of the attack was never doubtful.

As the troops on the right bank of the river moved forward, Commander Gillard advanced the sloops towards the entrance of the harbour, and the steamers all took up very good positions, and performed excellent service with their guns. They were for a considerable time under a heavy fire from the river batteries, but fortunately sustained no damage.

About 11 o'clock we had the gratification of seeing the British colours planted by the troops in one of the batteries on the opposite shore; and within a few minutes, the others on that side were all carried, and the Chinese observed flying in every direction before our gallant soldiers on the heights.

At a quarter past 11, the wall of the citadel was breached by the fire from the ships, and the defences being reduced to a ruinous state, the Chinese abandoned their guns, which they had hitherto worked with considerable firmness, and a large portion of the garrison retreated precipitately towards the city. Not a moment was lost in making the signal for landing the battalion of seamen and marines, with the detachments of artillery and sappers, (the whole under the commander of Capt. Herbert, of the Blenheim.) Before noon the boats were all on shore; every impediment presented by the difficulty of landing on rugged rocks was overcome, and the force gallantly advanced to the assault, with a celerity that excited my warmest admiration. An explosion at this time took place in a battery near the citadel gate, and the remnant of the garrison fled without waiting to close it. The citadel was therefore rapidly entered, and the union jack displayed on the walls. Our people had scarcely passed within them, when another explosion occurred, happily without mischief, but whether by accident or design is uncertain.

Capt. Herbert having secured this post, quickly reformed his men, and advanced towards the city; the Chinese still occupying in considerable force the walls of it, as well as the two batteries beneath the hill on the river side, against which our troops had already turned some of the guns taken on the bank. A few volleys of musketry speedily dislodged them from both positions, and the battalion of seamen and marines pushed on in steady and excellent order to attack the city. The wall (26 feet high,) was escaladed in two places, and in a short time complete possession was taken of Chinghae, the Chinese troops having made their escape through the western gate.

While in the act of scaling the city wall, a third and formidable explosion took place at one of the river batteries within a short distance, by which I regret one man of the Blenheim was killed; there is strong suspicion that it was caused by a mine, intentionally sprung, and considering the number of our men which were assembled at the time, it is most providential that the consequences were not more disastrous.

The seamen immediately returned on board for the security of their ships, which, with the rising tide, were moved into secure berths; Capt. Herbert remaining with the marines in charge of the town until the evening, when Sir Hugh Gough arrived, and a considerable portion of troops were conveyed across the river in the Phlegethon, to garrison it.

I have sincere pleasure in again bringing before your lordship's notice the gallantry and excellent conduct of every officer and man of her Majesty's ships and the Indian Navy under my command.

To Capt. Herbert my best acknowledgments are due for his zeal for the public service, and animating example on all occasions; and he speaks in

strong terms of commendation of the gallant support he received from Capt. Bourchier of the Blonde, Major Ellis, of the Royal Marines, and the officers and men of every description attached to the force placed under his command; of which, and of those employed in the boats, I transmit a list, and cordially join in every praise that can be bestowed on them.—I must also state that although Captains Maitland and Eyres were not directly attached to the battalion of seamen and marines which disembarked, they landed at the same time, and accompanied them in their operations.

To Capt. Maitland, of my flag-ship, I feel much indebted for the able and zealous assistance which he at all times affords me; and my obligations are equally due to Capt. Eyres, for the invaluable services of the Modeste.

The activity and ardour of Commanders Giffard, Clarke, Fletcher, and Watson, and of Lieut. Collinson, in command of the Bentinck, has been eminently displayed on this and every other opportunity; and I have no less pleasure in bearing testimony to your lordship, that the same spirit of enterprise and zeal has been conspicuously evinced by Commanders Ormsby, Lieut. M'Cleverty, Mr. Hall, and Mr. Warden, and indeed of every officer and man in the steamers attached to the expedition.

I may be permitted also to notice that my flag-lieutenant, Charles Tennant, has attended me in every operation since I took the command of the squadron, and his zeal and attention is deserving of my highest approbation.

By official Chinese documents found in Chinghae, we have good reason to believe that the regular Tartar troops quartered on the 19th in the city and batteries on the left bank of the river amounted to 3,000, of which about 700 composed the garrison of the citadel or Joss-house Hill. Their loss on these points is calculated at 150 men.

The troops opposed to Sir Hugh Gough were estimated at 10,000, and they have sustained a heavy loss, but no amount of force as yet met within this country can withstand the gallant band under his command, into which his active and energetic example infuses unbounded confidence.

The total number of guns which have fallen into our hands, amounts to 90 iron and 67 brass—the latter will be embarked without delay in one of the transports, with a large quantity of metal, which has been found in a cannon foundry at Chinghae.

I have the honor, &c.

W. Parker, *Rear-Admiral.*

To Earl Auckland, GCB., &c.

Modeste, off Ningpo, 14th October, 1841.

My Lord.—It is with feelings of the greatest satisfaction that I have now the honour of addressing your lordship from the anchorage off the walls of Ningpo, on which the British colours are flying.

The progress of the expedition has been greatly favoured by the fine weather, which enabled it to complete the reduction of Chinghae, on the 10th inst,, and to place the large ships and transports on the following day at a safe anchorage, after landing the requisite supplies for the army, for the wind changed to the north-east on the 12th, and blew strong. The ships, however, were all in security; the Blonde, with the sloops and steamers under excellent shelter, within Tahae River, a few of the piles being taken up for their admission.

I removed on the 11th to the Modeste, and that no time might be lost in prosecuting our further operations I directed Captains Maitland and Herbert, when the Wellesley and Blenheim were anchored off "Just-in-the-way," to return by one of the steam-vessels, with the boats and 150 seamen from each ship, in readiness to advance on Ningpo, and on the 13th I proceeded in the Nemesis to ascertain the practicability of taking the large steamers and vessels up the river. We found it wide, free from shoals, and carried not less than 14 feet at low water to the walls of the city, which appeared not only unpre-

pared for resistance, but a general panic pervading the inhabitants, who were evacuating the town in every direction, with their goods and families. Sir Henry Pottinger, Sir Hugh Gough, and myself, therefore, deemed it expedient to move on it without delay, to check as much as possible the departure of the respectable portion of the population, and the ravages which are invariably committed by the lower orders of the Chinese on all property which is left unprotected.

The whole of the troops (with the exception of a garrison for Chinghae and the citadel,) were consequently embarked on the following morning in the Sesostris, Queen, Phlegethon, and Nemesis, and the supernumerary seamen and marines were distributed in the Modeste, Cruizer, Columbine, and Bentinck, the Blonde being ordered to remain at Chinghae for the support of the garrison.

Sir H. Pottinger and the General accompanied me in the Modeste, and the expedition proceeded up the river soon after 9 A.M.; but owing to some unavoidable delays did not reach Ningpo until 1 P.M., when the Nemesis and Phlegethon, which contained a large portion of the troops, anchored within a few feet of a floating bridge, which connects the city at its east gate with the suburb across the river. The men were disembarked with the greatest facility by stages from the bows of these vessels, the battalion of seamen and marines, under Capt. Herbert, landing at the same time in the suburbs on the city side, a short distance below them.

The gates of the city were all found secured and barricaded inside, but an entrance was soon forced, when her Majesty's forces marched in and took possession without a symptom of resistance being indicated in any quarter. The Mandarins and troops had all left the city, the latter having, since their defeat at Chinghae, refused to fight.

Her Majesty's sloops and the steam-vessels are anchored under the walls of the city, and his Excellency the General, is actively exerting himself in securing all the government property on shore, and endeavouring to establish order and prevent the pillage of this populous and opulent place, where I am happy to say, such of the respectable inhabitants as have remained, evince much less apprehension at the presence of the English than was exhibited either at Amoy or Chusan.

From the number of large junks found in the river, the trade with Ningpo, by sea, must be extensive, but an embargo will be laid on all vessels until measures can be concerted for our future proceedings.

A few war-junks and trifling amount of naval stores have fallen into our hands.

I beg to offer my congratulations to your lordship on the result of our operations.

I have the honour, &c.,

To Earl Auckland, GCB., &c. W. PARKER, *Rear-Admiral.*

Head-Quarters, Tinghae, Island of Chusan, October 2nd, 1841.

MY LORD.—I feel much satisfaction in informing your lordship, that Chusan is in our possession, notwithstanding the extraordinary exertions made by the Chinese to strengthen the defences, since our departure in February last, and rather a gallant defence on their part, particularly on the heights west of the city, generally denominated the 49 hills, and along the shore, where, as a defence to the inner harbour, (which was our former part of attack,) a new line of battery has been constructed, presenting so formidable a front, that with due regard to the peculiarity of the tides, it would not have been advisable to bring in the ships-of war.

2. The fleet had passed Chusan, and assembled at an anchorage off Silver Island, half way between Chusan and Chinghae when, after waiting three days, the continuance of contrary winds, together with the lateness of the season, induced his Excellency the Naval Commander-in-chief, to propose a change in

the plan of operations, which I mentioned to your lordship in my last report. I fully concurred with Sir W. Parker in the expediency of attacking Chusan first under these circumstances, instead of proceeding to Chinghae and Ningpo, particularly as in a reconnoisance, which we made in the Phlegethon steamer, with his Excellency Sir H. Pottinger, we ascertained that two forts were in progress of construction upon the base of the heights already named. This reconnoisance confirmed me in the opinion which I had previously formed, from the report of officers acquainted with the ground, that this would be the most eligible point of attack. I must add that the fire opened on the Phlegethon as she skirted the harbour, also established that the sea line of battery was sufficiently armed.

3. I shall leave it to the Admiral to detail the movements of the fleet, but I cannot deny myself the gratification of expressing how greatly I am indebted to him for his judicious arrangements, and the cordial assistance which I have experienced throughout, anticipating my wishes, at the same time that the arm over which he so ably presided has been brought prominently forward whenever practicable, and I must be allowed to remark, that the precision of the fire from the ships surpassed my most sanguine expectations, and did very great execution wherever it could be brought to bear.

4. The greater part of the fleet assembled in the outer roadstead on the 29th ult., and during that night and the following day a battery was thrown up on Trumbull Island, by a detachment of the Royal and Madras Artillery, under Capt. Knowles of the former corps, aided by Lieut. Birdwood, of the Madras Engineers, for the purpose of shelling the Joss-house hill, which the enemy had strongly fortified, following out the unfinished plan of our own engineers. The remaining ships having arrived in the meanwhile, it was determined to make the attack on the 1st inst.

5. I beg to refer your lordship to the annexed disposition of attack, which will show what were my intentions. Early on the morning of the 1st, the first division, consisting of the Madras Artillery with eight guns, the Sappers, her Majesty's 18th and 55th regts., and rifle company of the 36th Madras Native Infantry, were placed in steamers and boats in tow of them, and under the zealous superintendence of Capt. Giffard, of her Majesty's ship Cruiser, who conducted the disembarkation, was landed as soon as practicable, though not without much delay from the extraordinary strength of the tides at this point. Finding that the enemy, whom occasional shots from the ships had hitherto kept under cover, now crowned the heights, and opened a galling fire of gingals and matchlocks, and that some of my men were falling, I deemed it advisable to push on at once, the two flank and a third company of the 55th that were first on shore, directing the remainder, who closely followed, to move up in support. This duty was gallantly performed under the directions of Lieut.-Col. Craigie, commanding the column, and Major Fawcett, in the temporary command of the regiment, and notwithstanding the steepness and ruggedness of the ascent, and a heavy and well-sustained fire from an infinitely superior force, this gallant corps carried the whole extent of the ridge of hills terminating in a fortified camp, and drove everything before them. Lieut.-Col. Craigie has brought to my notice the prominent conduct of Lieutenant and Adjutant Butter, who was with the advance at this point, and seized the first of the enemy's colours; as also of Capt. Campbell and Lieut. Tuddy, who led the two flank companies.

6. This movement completely turned the right of the enemy's positions, and gave us the command of a bridge which led direct on the flank of the whole line of sea defence. The 18th and artillery being landed, and the light guns placed so as to enfilade this line of batteries, I felt it best to change my first intention of attacking the sea defences by the right column, and ordered the 18th at once to push forward to the attack on this point. This was executed with equal gallantry by Lieut.-Col. Adams, in the face of a very large force, which contested the whole line with more than ordinary spirit, apparently led by one of the principal mandarins, who, with several of inferior rank, was killed on the spot, when

the Chinese fled, and the 18th pushed on and occupied the Joss-house hill, which the well-directed fire of the guns on Trumball Island, under the Hon. Lieut. Spencer, of the Royal Artillery, and of the detached squadron under Capt. Bourchier, had compelled the enemy to evacuate. Lieut.-Col. Adams speaks warmly of the spirited manner in which Capt. Wigston led the grenadier company of the Royal Irish in this attack.

7. Considering it advisable to support the 18th I had pushed forward across the valley the light and another company of the 55th, with Lieut.-Col. Mountain, who is well acquainted with the country, and most judiciously placed in a position close to the west gate of the city, so as to prevent any support being given from the town, and intercept the enemy in falling back on it. The Rifle Company of the 55th having joined me, I moved on with the remainder of the 55th, covered by the rifles, for the heights overlooking the city to the north-west, which we occupied. During these operations, by the praiseworthy efforts of the Madras Artillery, under Capt. Anstruther, the light field guns had been brought to the summit of the heights, and opened their fire on the walls and town. The enemy was now in full retreat through the north and east gates, although a few guns and gingals with some matchlocks, continued to be fired from the walls, and I directed the 55th to proceed to the escalade, whilst Capt. Simpson, with the rifles, rapidly passed down a deep-wooded ravine to cut off the retreat to the north. The scaling ladders had been brought up on most difficult and rugged heights, by the great exertions of the Madras Sappers, and were now gallantly flanked under the directions of Capt. Pears, who was the first to ascend, and I had soon the satisfaction of seeing the colours of the 55th regiment waving on the walls of Tinghae, while those of the Royal Irish were planted on the Joss-house hill, above the suburb. Capt. Anstruther reports that Capt. Balfour and Lieut. Fowlis had the opportunity of distinguishing themselves in bringing up the guns, and directing their fire.

8. Although the 49th regiment and Royal Marines, whom I first ordered, together with a body of seamen, to form the right column under Lieut.-Col. Morris, and attack the sea defences, could not be landed in time for that purpose, I was much pleased with the promptitude with which those two corps moved on to the support of the 18th, the 49th proceeding to occupy the south gate of the city.

9. The loss of the enemy has been very considerable both on the sea line and upon the heights, several of their principal mandarins it would appear were killed, and the Chinese fled in all directions, throwing away their arms and clothing. The loss, on our side, I am happy to say, has been wonderfully small. I have the honour to enclose your lordship the return, together with a list of the ordnance captured.

10. On the 2d, I directed Lieut.-Col. Adams to move westward with the 11th and Rifle Company on Tsing Kong, to which point the Admiral had dispatched two of the ships-of-war, and from whence the Lieut.-Colonel is to proceed to-day to Sahoo. This morning I have moved 200 men, under Major Blyth, 49th regt., eastward to Sinkca Mun, where he will also meet a ship-of-war; also three companies of the 55th, under Capt. Campbell, over the northern hills to Pishoon, from whence they will march to Kanlon and Mowah, returning by a different pass to head-quarters. By these movements I hope that every one of the fugitives will be driven off the island or captured.

11. It is difficult to mete out praise when every man did his duty well, but I feel it right to express my sense of obligation to the following commanding officers of columns and corps:—Lieut.-Col. Craigie, commanding the left column; Lieut.-Col. Morris, commanding the right column; Lieut.-Col. Adams commanding 18th; Major Fawcett, commanding 55th; Major Stephens, commanding 49th; Major Ellis, commanding Royal Marines; Capt. Simpson, commanding Rifle Company 36th Madras Native Infantry; Capt. Knowles, Royal Artillery, senior officer of artillery; Capt. Pears, senior officer of engineers; Capt. Anstruther, commanding Madras Artillery; Capt. Cotton, assistant-field engineer.

From Lieut.-Col. Mountain, deputy-adjutant-general, and Capt. Gough, acting deputy quarter-master-general, I have received throughout the whole operations the most valuable assistance. I must also mention the active services of Lieut. Gubbith, my aid-de-camp.

I have to repeat my thanks to Capt. Giffard of the Royal Navy, who, after ably conducting the disembarkation, rejoined me, and accompanied me during the rest of the day, as did Major Malcolm, the secretary of legation.

I have the honor, &c.

H. Gough, *Major-General,*
Commanding Expeditionary Force.

To Earl Auckland, &c.

Return of Officers and Men killed and wounded of the Force under the command of Major General Sir Hugh Gough, KCB., at the re-capture of the Island of Chusan, on the 1st inst.

Killed—Sappers and Miners, 1 rank and file; 55th regt. 1 officer.

Wounded—Sappers and Miners, 1 serjeant severely; 18th Royal Irish, 1 rank and file dangerously; 1 serjeant and 1 rank and file severely; and 4 rank and file slightly; 55th regt., 3 rank and file dangerously; 5 rank and file severely; 11 rank and file slightly.

Name of officer killed—Ensign R. Duel, 55th regt.

A. S. H. Mountain, *Lieut.-Col. D.A.G.*

Return of Ordnance captured in Chusan, and mounted on the Defences, in the action of the 1st of October, 1841.

On Temple Hill redoubt, 12 iron guns.
Battery to the east of Temple Hill redoubt, 10 iron guns; ditto, 10 brass.
Battery to the west of Temple Hill redoubt, 8 iron guns.
On the western line, 40 iron guns; ditto, 15 brass.
On the ramparts of the city, 40 iron guns; ditto, 1 brass.
Grand total, 110 iron, 26 brass.

Gingals 540, carrying balls from ½ to 1lb.; matchlocks in considerable numbers lying on the works, but all destroyed; gunpowder tubs, 514; rockets, bamboo, 33; rockets, arrow cases, 20; balls, leaden, boxes and tubs, 100.

N.B.—The brass guns are remarkably well bored, and although of great thickness of the metal, yet evidently show considerable advance on the part of the Chinese in casting.

Some of the gun carriages are superior to those hitherto in use with the Chinese, particularly one on which a brass gun is mounted; and the models of gun carriages and sweeps which have been found, prove that the Chinese are quite ready to introduce improvements.

J. Knowles, *Captain,*
Commanding Artillery Brigade.

Chusan, Oct. 3, 1841.

Head-Quarters, Oct. 18, 1841.

My Lord.—With feelings of the deepest thankfulness I have the honor to acquaint your lordship that, under the protection of a gracious and all-wise Providence, perfect success has attended her Majesty's combined forces in all our projected operations. Considering the extent of the enemy's preparations, the strength of his different positions, and his overwhelming numbers, the loss on our side has been surprisingly small, while that on the part of the Chinese has been almost appalling.

2. My last despatch will have informed your lordship of our proposed movement on Chinghae and Ningpo. On the 8th instant I accompanied their Excellencies Sir Henry Pottinger and the Admiral in a steamer, for the purpose of reconnoitering the former place. For the period of the monsoon, upon a lee

shore, the weather was singularly favorable. Both on this and the following days the enemy allowed us to come within range without firing a shot, and the Admiral and I were thus at once enabled to make our dispositions.

3. The fortified city of Chinghae, the great military depot of this province, is situated on the left bank of the Tahia or Ningpo river, occupying, with its suburb, the whole space between the river and the sea. The walls are nearly three miles in circumference, and their sea face runs for about a mile along a massive stone embankment, that extends for three or four miles further up the coast. At the south-eastern extremity, separated only from the the walls of a narrow gorge, a precipitous rock arises abruptly from the sea, throwing out a steep and rugged spur, at the point of which is the entrance to the river. Upon the summit of this rock there is a large Joss house, extending along the coast of the ridge and forming a sort of citadel, the several buildings being loop-holed and connected by castellated walls, and in front of the outer gate, commanding the spur before-mentioned, a battery armed with some pieces of heavy ordnance has been recently constructed. From information I obtained, it would appear that the Joss-house was occupied by about 400 men, while 3,000 held the city and various small encampments without the walls.

4. The same information led me to believe, and the reconnoissances confirmed the statement, that the great body of the troops were strongly posted on the right bank of the river upon a range of steep hills overlooking the city and Joss-house, with heavy batteries, armed for the most part with new brass guns, commanding the entrance to the river, which was staked across. All these heights were fortified, and presented both a sea defence and military position of great strength, consisting of a chain of entrenched camps on all the prominent points difficult of approach from the natural steepness of the hills, which had been further scarped in several places; field redoubts crowned the summits, and hill and ravine bristled with gingals. A low swampy flat, reaching to the shore, and only to be crossed by narrow winding causeways, lay in front of the left of this position, which was also protected by a deep canal, that, after skirting the hills, runs through the flat into the sea; but I ascertained that there were two bridges over this canal.

5. We returned to Chusan the same evening, and the troops which I ordered for this service, having been previously embarked, as thick as they could stow on board the transports, selected by the admiral as fittest in regard to the extraordinary currents on this coast, the squadron arrived the following evening off the mouth of Tahea river.

6. I beg herewith to enclose for your Lordship's information the disposition for landing. It appeared to me advisable, in which Sir William Parker concurred, that we should make a conjoint attack on both banks of the river, first drawing the attention of the enemy to the right bank, and the dispositions were accordingly made for attacking in three columns, while the two line of battle ships, with the Blonde and Modeste, were to cannonade the Joss-house Hill and sea line of the city defence; the smaller vessels of war and the steamers to cover the landing and to support, when practicable, the advancing columns by their fire. Sir William Parker will detail to your Lordship, the truly spirited manner in which the several ships of war and steamers took up their positions and fulfilled his orders. It only remains for me to say that the cordial co-operation and powerfully support which I have received upon every occasion, from the ships-of-war under the direction of their gallant chief is matter of the warmest thankfulness.

7. At daylight on the morning of the 10th, the left column, consisting of a wing of the 18th, five companies of the 55th, the rifle company of the 36th, Madras N. I., a company of Madras artillery, and one of sappers, in all 1,040 men, with four light howitzers and two 5½ inch mortars, was embarked in the steamers. This column I placed under Lieutenant-Colonel Craigie, but accompanied it myself, and at eight o'clock, the steamers having run in close to the shore, the troops were promptly landed, without any opposition, under the

judicious superintendence of Capt. Giffard, ably aided by Lieut. Somerville, of the Royal Navy, at a rocky point, having the low flat, and the canal already mentioned, to their right.

8. The centre column was soon after landed about a mile to my right, under a detached rocky hill, near the mouth of the canal, but on the opposite bank, having in its front a part of the low flat between it and the enemy's position, my object being to threaten a front attack, and deter the enemy from weakening his centre to support his right, which the left column under my own superintendence was destined to turn. The centre column consisted of the 49th Regiment, detachments of the Royal and Madras Artillery, under Capt. Knowles, of the former corps, and 50 men of the Sappers, amounting altogether to 440 men, with two 12-pounder howitzers, and two 9-pounder field guns, under Lieut-Col. Morris.

9. Immediately after landing, the left column moved rapidly over a succession of steep hills that skirted the intervening flat in front of the enemy's position, until it reached a point from whence I had a full view of the whole position, and of the two bridges over the canal—that to my front I ordered the rifle company to protect, by occupying a few houses on our side, supported by the 18th, and I directed Lieut-Col. Craigie with the 55th, accompanied by Capt. Pears, commanding engineer, to move quickly on the second bridge, which was about a mile further up the flat, cross it, and push on for the hills beyond, thus turning the extreme right of the enemy's position, and threatening to cut off his retreat. By this time the centre column had formed and showed its head at the opposite side of the flat, just out of gingal range, threatening a front attack. Capt. Simpson very promptly performed the duty entrusted to him, and I ascertained that the bridge was uninjured, but had been barricaded by a solid wall of masonry, with merely an aperture so narrow, that soon after the gate was with much difficulty removed, a single soldier could not pass through without unstrapping his great coat. Having assembled the 18th at the foot of the bridge to cover the rifles, that company passed over in Indian file, in face of a large body of the enemy, assembled in an advanced redoubt upon the summit of an eminence within 150 yards of us, who cheered our advance, but most unaccountably reserved their fire; having placed the rifles behind a hill just beyond the bridge, I directed the 18th to cross and form, and finding the 55th had arrived at its point of attack, sent orders for the 49th to advance, which they did with a spirit worthy of that gallant corps.

10. From the rapidity of these movements, and difficulties of the ground, the guns could not be brought forward enough to act, but Capt. Anstruther, of the Madras Artillery, with the usual alacrity of that corps, brought up the rockets which now began to play. The moment the advance of the 49th got into action, the 18th and rifles rapidly moved forward, and the 55th having crossed the upper bridge, pressed the enemy's right. I have seldom witnessed a more animated combined attack, the Chinese cheering until we got close to them, now poured in a heavy but ill-directed fire, and displayed in various instances acts of individual bravery that merited a better fate; but nothing could withstand the steady but rapid advance of the gallant little force that assailed them. Fieldwork after fieldwork was cleared, and the colours of the 49th were displayed on the principal redoubt above the sea and river batteries, while the 18th, who had charged up a deep gorge to the left, broke the central encampment, carrying everything before them. From 12 to 1,500 of the enemy, that had stood longest, were driven down the heights into the river, their retreat being cut off by the flank movement of the 55th. Many were drowned in attempting to swim across to the city, others sought concealment on a rock in the stream, and were afterwards picked up by the boats of the Queen, and nearly 500 surrendered as prisoners.

11. I feel a difficulty in naming any individual, where all so well merit my warmest meed of praise, but I cannot avoid bringing to your lordship's special notice, as having fallen under my own personal observation, the conduct of

Capt. Reynolds, of the 49th, and Lieutenant and Adjutant Browne, of the same corps, whose bold advance up the first hill, the one with his company, the other with a covering party of his regiment, was most conspicuous. Lieut.-Col. Morris reports most favourably of the spirited manner in which Capt. Tabor, with his light company, covered his right flank.

12. The operations on the right bank having thus terminated, I had a full view of the effect of the fire from the ships-of-war and steamers on the Joss-house Hill, and of the landing of the right column, which consisted of the seamen battalion, Royal Marines, a detachment of the Artillery, and 50 Sappers, in all about 700 men, with two five and a half inch mortars, I had entrusted to Capt. Herbert, of her Majesty's ship Blenheim, whom Sir William Parker placed at my disposal, sending with him Capt. Cotton, of the Madras engineers. Capt. Herbert was instructed to land at the extremity of the Spur, under the Joss-house, and to storm and take it by the sea front, whenever the fire from the ships should make it practicable, and it was left to his discretion to push in and take the city if the effect of a plunging fire from the hill, aided by a powerful cannonade from the ships-of-war, should justify the advance.

13. I had it only in my power, as the flying enemy had carried off every boat from the right bank of the river, to aid the operations on the left bank, by turning such of the captured guns as our Artillery could at the moment bring to bear upon the city, and by a well directed fire of rockets; but it appeared to me evident that more aid was necessary, as the admirable fire of the ships-of-war and steamers occasioned fearful devastation on the Joss-house Hill. The right column landed a little after 11 o'clock, and the seamen, with characteristic spirit, dashed up the face of the nearly precipitous rock, supported by the steady advance of the Royal Marines. A magazine in the new battery before the outer gate exploded.

The way was thus cleared, and the column entered, the garrison escaping into the town, and the union jack was displayed on the Joss-house walls. Capt. Herbert, with his usual sound judgment, instantly determined upon taking advantage of the general panic, quickly followed up the retreating enemy, and cleared the city rampart in his front by a sharp fire of musketry. At this moment a tremendous explosion took place in a battery below the hill, by which the Chinese suffered severely, and a drummer of the Marines received so severe a wound that he soon after died. The column escaladed at the south-eastern angle, where the city wall is about twenty feet high, the enemy flying before it as it rapidly pushed along the ramparts, and escaping through the western gates. I cannot omit to mention here that Sir William Parker accompanied this column, and, with the true spirit of a British sailor, was amongst the first to scale the walls. Thus the fortified city of Chinghae, with the several shore batteries, as well as the enemy's works and fortified encampments on the right bank of the river, all of which they had been for the past year busily employed in strengthening at an immense expense, fell into our possession. Of the principal Mandarins, some are reported to have been killed, others to have destroyed themselves, and the Chinese army dispersed, the fugitive soldiers throwing away their arms and military clothing.

14. Capt. Herbert speaks in high terms of the zealous and spirited conduct of every individual under his command, and particularly calls my attention to the able assistance he received from Capt. Bourchier, of the Blonde, commanding the battalion of seamen, Major Ellis, commanding Royal Marines, and Capt. Whitcomb of that corps, an old and zealous officer, and Capt. Cotton, of the Madras engineers, I beg, therefore, to bring these officers to your lordship's favourable notice.

15. The obstructions at the river's mouth having been removed by the boats from the ships-of-war and the steamers, the latter came in, and I passed over in the afternoon, leaving a sufficient force on the right bank to collect the arms, protect the brass, and destroy the iron guns.

16. I have not been able to ascertain the actual strength of the Chinese

army, but from the heavy masses collected at the different points upon the right bank, from the number I saw upon the walls of Chinghae, as well as from the multiplicity of arms found over the whole face of the hills, and on the ramparts, and in the streets of the city, I am ready to conclude that my information before stated, as to the force on the low bank was correct, and that from 8,000 to 9,000 men occupied the works and position on the right, where the bodies of several Mandarins were found amongst the killed, while others, supposed to be Mandarins, were seen to drown themselves, when their retreat was intercepted.

17. We found Chinghae to be, I may almost say, one great arsenal, with a cannon foundry and gun carriage manufactory in active operation on improved works, together with warlike stores of various descriptions. In a battery upon the river, one of the carronades of the Kite was found, with an excellent imitation alongside it, and many of the new Chinese brass guns are very efficient.

18. It having been determined to push on with the least possible delay to Ningpo, Sir William Parker proceeded on the 12th in the Nemesis steamer, to ascertain the practicability of the river, and actually reached, without the slightest attempt at opposition, the bridge of boats which connects the city with the opposite suburb. Upon his return in the evening, arrangements were made for the attack on the following morning, lest the enemy by his apparent submission should intend to entrap us. Having left the 55th, with the exception of the light company, 100 of the Royal Marines, with detachments of Artillery and Sappers in Chinghae, the rest of the force, about 750 bayonets, exclusive of the Artillery and Sappers embarked in steamers by 8 A.M., on the 13th, and we reached Ningpo at 3 o'clock. No enemy appeared, and it was evident that no ambuscade was intended, as the inhabitants densely thronged the bridge of boats, and collected in clusters along both banks. The troops landed on and near the bridge, and advanced to the city gate, which was found barricaded, but the walls were soon escaladed, and the Chinese assisted in removing the obstructions and opening the gate. The little force of soldiers, seamen, and Marines, drew up on the ramparts, the band of the 18th playing "God save the Queen." The second city of the province of Che-keang, the walls of which are nearly five miles in circumference, with a population of 300,000 souls, has fallen into our hands. The people all appear desirous to throw themselves under British protection, saying publicly that their Mandarins had deserted them, and their own soldiers are unable to protect them. I have assembled some of the most respectable and influential of the mercantile class that have remained, and have assured them of my anxiety to afford them all protection, consistent with our instructions to press the Chinese Government. Proclamations have been issued, calling upon the people to open their shops, which I have engaged shall not be molested. This they have done to some extent, and confidence appears to be increasing. It affords me very great gratification to be enabled to report to your lordship, that the orderly conduct of the troops calls for my warmest commendations, evincing the constant attention of the officers, and the true British feeling which exists in this little force.

19. I have placed the troops in two large public buildings, as comfortable quarters as I could find consistent with security. The duties to guard against any sudden attack, and to protect the Chinese against gangs of robbers of their own countrymen, are necessarily very severe. Cholera has appeared, I regret to say, both in Chinghae and in this city; in the former six Marines have died; here all the cases have recovered, and I trust, that by the unremitting attention and judicious arrangements of Dr. French, the superintending surgeon, the progress of the disease has been arrested.

20. I have spoken of the troops towards the inhabitants, under temptations of no ordinary nature, and it is with equal pride that I feel myself called upon to bring to your lordship's notice their excellent conduct in the field throughout the operations I have detailed. Every officer and soldier has merited my approbation. I will, therefore, only further beg to name the commanding officers of

the columns and corps:—Capt. Herbert, R.N., commanding right column; Lieut.-Col. Craigie, 55th, commanding left column; Lieut.-Col. Morris, 49th, commanding centre column; Capt. Bourchier, R.N., commanding seamen battalion; Lieut.-Col. Adams, commanding 18th Royal Irish; Major Blyth, commanding 49th regt.; Major Fewcett, commanding 55th; Major Ellis, commanding Royal Marines; Capt. Simpson, commanding Rifles, 36th M. N. I.; Capt. Knowles, commanding Royal Artillery, senior officer of that arm, and Capt. Anstruther, commanding Madras Artillery. From Capt. Pears, the commanding engineer, I have received every assistance.

Lieut.-Col. Mountain, deputy-adjutant-general, and Capt. Gough, acting deputy-quarter-master-general, have continued their able and active services with unabated zeal.

This despatch, together with plans of Amoy, Chusan, and Chinghae, will be delivered by Lieut. Gubbith, of the Madras Artillery, my aid-de-camp, whom I beg to recommend to your lordship, and who will be able to afford you any further information you may require.

I have the honor, &c.

H. Gough, *Lieut.-General,*
Commanding Expeditionary Land Force.

To Earl Auckland, &c.

Return of killed and wounded of the Force under the command of Lieut-Gen. Sir Hugh Gough, K.C.B., at the storming of the fortified heights and citadel of Chinhae, on the 10th of October, 1841.

Head-Quarters, Ningpo, Oct. 6, 1841.

Royal Artillery.—1 private, severely wounded.

18th Royal Irish.—1 rank and file killed; 2 ditto severely, and 1 slightly, wounded.

49th regt.—1 rank and file dangerously, 1 officer, 1 serjeant, 3 rank and file severely, and 4 rank and file slightly, wounded.

Royal Marines.—1 drummer killed.

55th regt.—1 camp follower, severely wounded.

Rifle Company, 36th M. N. I.—1 private killed.

Recapitulation.

Three rank and file killed; 2 rank and file dangerously wounded; 1 officer, 1 serjeant, and 6 rank and file severely, and 5 slightly, wounded. One camp follower, severely wounded.—Total, 3 killed, 16 wounded.

Name of officer wounded—Lieut. J. M. Montgomery, 49th regt.

A. S. H. Mountain, *Lieut.-Colonel,*
Deputy-Adjutant-General Expeditionary Force.

The Variation of the Compass.

(Continued from p. 184.)

Royal Observatory, March 7th, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Declination for January 1842—23° 11′ 54″.

Mean Magnetic Dip for January 1842.

At 9 A.M.	At 3 P.M.
68° 46′	68° 42′

G. B. Airy, *Astronomer-Royal.*

Errata.—In the January number, *omit* the — before 68° 43′.

In the March number, *insert* over 9 A.M. and 3 P.M.,—"Mean Magnetic Dip for December."

(Continued from p. 128.—cs crew saved—D drowned—L lost.)

VESSELS.		BELONG TO	MASTERS.	FROM.	TO.	WRECKED	WHEN.	
Arctarus	110	———	Bunbury	Limerick	Preston	Pil. Fdry	Dec. 24	cs
Ardent		Nevin	Roberts	———	———	Portinlan	Jan. 26	2D
Baltic		London	Lingham	———	———	StudlndB	Jan. 13	cs
Briton		London	Pattison	London	Hartpool	Redcar	Dec. 25	cs
Brutus		———	Gourlay	Grenock	St.Thmas	Donhade	Jan. 26	cs
Ceylon	115	———	Hart	———	———	Chimlico	Nov. 29	cs
Chance		Stockton	Trotter	Liverpool	Naples	at sea	Jan. 12	cs
Christian		———	Gardner	Liverpool	Lisbon	at sea	Jan. 15	cs
Columbia		———	Clarkson	———	Constple	Imbros	Jan.	cs
Com. Napier		run	down	by the	Camilla	———	Jan. 9	
Druid	120	Liverpool	———	Wrkintn	Ireland	R. Fleet	Jan. 25	cs
Dunn		———	———	Lithmptn	Sundrlnd	Seaford	Jan. 10	cs
Eden and Crown		S. Shields	———	———	———	Scilly	Feb. 11	
Eliza		Craigs	Gray	———	———	Tynmoth	Jan. 26	cs
Endeavour		———	M'Donld	St. Johns	Antigo-	nish foun	der'd Dec. 3	
Erin	125	crew and	passngrs	brought	home	off Abaco	byCanchano	
Fancy		Sunderland	Noble	Sundrlnd	———	founder'd	Dec. 26	cs
Fleurs		Liverpool	Thomson	Liverpool	P. Rico	C. Irelnd	Dec.	cs
Flora		———	Watkins	Ancona	London	Otranto	Dec. 31	
Germ		Yarmoth R.	———	Yarmoth	———	Cmbry H	Jan. 12	cs
Glengary	130	———	———	———	———	Turks I.	Dec. 13	
Henry Davies		Wisbeach	Wilson	Seaham	———	Docking I	Jan. 4	cs
Harvest		———	Wilkin	Newcastl	Brest	Co. Rock	Jan. 24	cs
Henry		Wisbeach	Davies	———	———	Nrth. Sea	Jan. 4	
Honor		St. Ives	———	———	———	Wexford	Jan 26	
Isabella	135	Wick	Rogers	———	Wick	Hebrides	Jan. 8	cs
James and Ellen		———	Manger	Shields	Cadiz	Calais	Jan. 23	
Jolly Tar		———	———	London	Galvest'n	Jourdein	Jan.	cs
Kent Steamer		Gravesend	Lakeman	Torquay	South'ton	Christch	Feb. 19	cs
Kirton		Sunderland	———	———	———	Cort'n Sd	Jan. 27	cs
Lavinia	140	———	Romain	London	Amona	Reconate	Jan. 30	cs
Lee John		Glasgow	———	———	———	Douro R.	Jan. 14	cs
Liberty		Harrington	———	———	———	Limerick	Jan. 26	cs
Louisa		London	Harrison	———	———	B. Islnds	Oct. 2	30D
Malton		———	Fox	Bombay	London	Walkrs B	Aug. 21	cs
Mary	145	Yarmouth	Garwood	———	———	C. Sndrld	Jan. 14	cs
Mary Ann & Martha		Dundalk	Roddick	run down	by Royal	Willm St	Jan.	cs
Niger		Bristol	Merritt	———	———	R Msrado	Oct. 28	
Perseverance		Newcastle	Thompsn	London	Newcastl	Blyth	Jan. 14	cs
Peruvian		———	Curry	Shields	London	FlmbroH	Jan. 29	cs
Queen	150	———	Huggins	Liverpool	St. Johns	Seal Ids.	Dec. 9	
Reporter		Richmond	abandond	fallen in	wth 36°N	59°W. on	Dec. 19	
Reward		———	———	Plymo'th	M. Video	run foulof	Jan. 12	cs
St. Oswald		Sunderland	———	Rotrdam	Sundrlnd	founder'd	Dec. 20	cs
Sarah		Waterford	Rossiter	Llanelly	Bannow	Wxfrd C.	Jan. 26	4D
Secret	155	———	M'Kinon	———	N. York	Scatterie	Dec. 6	cs
Simon Bolivar		———	Wick	Plymo'th	Tyne	Dog Bank	Dec. 12	cs
Sophia Pate		———	Harrison	Auckland	B. Islnds	Kiapara	Aug 20	21D
Spero		Sunderland	Dagg	Sundrlnd	Calais	off Dnkrk	Jan.	
Topaz		———	Lee	Jamaica	Sydney	W Bear B	Oct. 22	1D
Trident	160	———	Flint	———	———	Holyhead	Jan. 24	cs
Trusty		Waterford	———	———	———	Crokh'vn	Jan 25	cs
Vermillion		S. Shields	———	———	———	FlmbroH	Jan. 29	
Victoria		Berwick	Daglish	Newcastl	Dunlin	C. Irelnd	Jan. 15	cs
Walmer		———	Robins	———	London	Bouro	Aug. 3	cs
William		Kinrdne	Turcan	Alloa	W.Indies	RatrayH.	Jan. 9	
William Hall	166	Sunderland	———	———	———	offSndlnd	Jan. 15	cs

(To be continued.)

Her Majesty's Visit to Portsmouth.

The surpassing brilliancy and all-absorbing interest of the scene, produced in this important Port on Monday and Tuesday last, by the visit of our beloved Queen, with her Royal Consort and illustrious guests, will never be forgotten by the inhabitants; nor can the affectionate loyalty and enthusiasm with which her Majesty was welcomed by them ever be effaced from the Sovereign's memory. It has been already stated that, immediately the gratifying intelligence respecting the Queen's visit reached the Municipal Authorities, the latter assembled, and determined upon addresses to her Majesty and Prince Albert. These addresses were forwarded to her Majesty at Brighton, and on Monday intimation was received, by letter from the Hon. Mr. Anson, that her Majesty would on Tuesday, immediately previous to her departure for Brighton, receive the addresses at the Admiralty-house.

The zeal with which the inhabitants entered into a manifestation of their affectionate loyalty on this interesting occasion,—and of the profound sense they entertained of the honour conferred on the town, was not only marked by these addresses, and the splendid preparations made for a general illumination on Monday night, but by the tradesmen of Landport having erected three triumphal arches, beautifully decorated with laurels, flowers, &c., over the line of road by which her Majesty passed. These arches extended from one side of the footway to the opposite. The first was at Mile End, and was surmounted with the inscription "Welcome Victoria and Albert," and the Royal Standard. The second was at the west end of the Union-road, and upon the banner was "Peace to the Queen, and Prosperity to the People." The third triumphal arch was erected at the east end of the Union-road, and in addition to two blue banners bearing inscriptions in gold of "The Queen and Constitution," there was a large banner, in which were "England's Hope," the whole being surmounted with the Prince of Wales's feathers, and "Ich dien." These arches were brilliantly illuminated at night.

The first distinguished personages, who arrived preparatory to her Majesty's visit, made their appearance here on Sunday.—The Earl of Haddington, the first Lords of the Admiralty, Sir George Cockburn, and the Hon. Sidney Herbert, the Secretary of the Admiralty, arrived a few minutes before 4 o'clock in the afternoon, from London by railway, and alighted at the George Hotel, where apartments were engaged for them, and were immediately saluted by the garrison. Earl Haddington soon afterwards, accompanied by Lord A. Fitzclarence, visited the Royal George yacht; at a late hour in the evening the Admiralty forwarded to Admiral Sir E. Codrington, their orders relative to the arrangements for her Majesty's visit to the dockyard, and her trip to the Queen, 110, (the flag-ship of Vice-admiral Sir E. Owen,) at Spithead. His Grace the Duke of Wellington arrived at the George Hotel also, on the same evening, at about half-past 9 o'clock, from Strathfieldsaye; but did not leave the hotel that night. The Earl of Liverpool arrived from Brighton at the same hotel on Monday morning at 7 o'clock; at which early hour the Duke of Wellington was walking, unaccompanied by any one in the dockyard. At about that hour the Lords of the Admiralty hoisted the Admiralty flag on board the Alfred, 50, Captain Purvis, at Spithead, under the customary salute. At a quarter to 10 o'clock, the Duke of Wellington left the George Hotel in an open carriage, to meet her Majesty, and join the Royal cortege as the Lord Lieutenant of the county. His Grace was attired in a field Marshal's uniform, and wore a cloak. He was most enthusiastically received by the assembled populace, to gratify whom, the Duke stood up in the carriage for a minute or two before he started, and then slowly proceeded up the High-street, still standing up, until the carriage was out of sight. Previous to his departure the Lieut.-Governor had an interview with his Grace at the George, and soon after Sir E. Codrington arrived, accompanied by his flag-lieutenant; and after remaining a few minutes with

the Board of Admiralty, he left the George with Earl Haddington, who returned with the Admiral to his residence in the dock-yard, whither his Lordship was followed by the other members of the Admiralty, to await her Majesty's arrival.

Her Majesty's plate was received on Monday morning by the Inspector of Palaces, who immediately superintended its removal to Sir E. Codrington's.

From an early hour in the morning the leading streets presented one continuous line of flags, exhibited in every way it was possible to display them, and one continued stream of visitors from the surrounding country, continued to pour into the town up to the hour of her Majesty's entrance.

At twelve o'clock the troops (including the 73d regt. and the depot of the 19th, which moved over from Gosport, for the purpose) lined the streets through which her Majesty was to pass; the depot of the 19th resting on the Lion gate, and 32d, 34th, and 73d regts. taking their position along St. James-street, St. George-square, and the Common Hard to the dock gates, in files at about four paces interval. A guard of honor, consisting of the grenadier companies of the 32d, 34th, and 73d regts. and a company of Royal Marines, with their band and colours, under the command of Major Vander Meulen, of the 73d regt. was formed on the Grand Parade, at eleven o'clock, and marched by him into the dock-yard, where he took up his position, close to the Admiralty-house.

Soon after eleven o'clock, the Earl of Hardwicke, the lord-in-waiting, and Capt. Meynell, the equerry, arrived at the Admiralty-house; and shortly afterwards Admiral Lord Amelius Beauclerk, the senior naval aid-de-camp to the Queen. At twenty minutes past twelve o'clock, her Majesty arrived at the first triumphal arch at Landport, preceded by outriders, and an escort of the Scots Greys, and immediately upon the royal cortege being seen, the most deafening huzzas were set up, and here thirty-nine of the ropemakers, dressed in white jean jackets and trousers, and wearing blue silk scarfs, on which were inscribed "God save the Queen," met her Majesty, and, as is their privilege, formed in procession immediately before the escort of Scots Greys; upon this occasion they were under the superintendence of Mr. Mortimer, who accompanied the Allied Sovereigns into this town, on their memorable visit.

At All Saints' chapel, the children of the Seamen and Marines Orphan School, having been placed in wagons, and headed by the band of H.M.S. Winchester, kindly lent for the occasion, by Capt. Carter, commenced singing "God save the Queen," in which the assembled crowd joined with much spirit.

The children accompanied by the band, playing popular airs, returned through Landport to their school-room, where, by the liberality of E. Carter, Esq., they were regaled with plum cake, &c.

Upon the arrival of the royal party at the Lion gates, Sir H. Pakenham, the Lieut-Governor of the Garrison, delivered the keys to her Majesty, who graciously returned them; the cortege then entered, when the royal standard was hoisted, and a salute fired from the battery, and the ships-of-war in the harbour and at Spithead, the latter with their yards manned. Every window from which a view could be had of the royal cortege was crowded with ladies; every nook from which a sight could be enjoyed was occupied, and the streets were thronged with persons. The cheering was most enthusiastic; all ranks and grades being anxious to testify their loyalty and affection to the utmost of their power. On entering the gates of the dock-yard her Majesty and Royal Consort were greeted with the hearty cheers of the workmen, and the carriages drove up in front of the Admiralty-house (the steps of which were covered with scarlet cloth), the guard of honor presenting arms, and the band playing the national air. The suite of apartments fitted up for the Queen were in a chaste and unostentatious style, and a small sitting-room, due west, which overlooks the shipping in the harbour, was appropriated (it is understood at the express desire of her Majesty), for her use. Upon the illustrious party alighting from the carriages they were received by Admiral Sir E. Codrington, the Earl of

Haddington, the Earl of Liverpool, the Earl of Hardwicke, Admiral Lord A. Beauclerk, Admiral Sir G. Cockburn, Vice-Admiral Sir E. Owen, Rear-Admirals the Hon. D. P. Bouverie, the Hon. J. Percy, and Sir T. Cochrane; Captains Sir C. Sullivan, Lord A. Fitzclarence, H. Purvis, Rich, Meynell, Lord G. Paulet, Nicolas, Sir T. Hastings, &c., the Hon. S. Herbert, and the Master-shipwright of the yard, the Master-attendant, &c. The royal party upon entering the Admiralty-house, partook of a dejeuner.

At one o'clock, Prince Albert, the Duke of Saxe Coburg, and his sons, the Princes Leopold and Augustus, the Lords of the Admiralty, and Vice-Admiral Sir Edward Owen, proceeded in the royal barge, steered by Captain Codrington, (on board of which the standard was hoisted and saluted by the ships), to visit the Excellent, gunnery ship. Her Majesty did not accompany them in consequence of over-fatigue, but took some repose during the absence of her Royal Consort. At a quarter to two o'clock the royal party again landed, and returned in three of the royal carriages to the Admiralty-house, and were loudly cheered by those who were fortunate enough to receive permission to enter the yard, and by the workmen.

Shortly after three o'clock her Majesty left the Admiralty-house, accompanied by Prince Albert, the Duke of Saxe Coburg, and his two sons, the Duke of Wellington, and other distinguished personages, in three of the state carriages to the King's Stairs, where her Majesty embarked on board the state barge, to visit the St. Vincent, 120, the flag-ship of Admiral Sir Edward Codrington. As soon as her Majesty stepped into the barge which was again steered by Captain Codrington, the royal standard was hoisted and saluted by the ships with their yards manned. Next to, and immediately astern of the royal barge, was the Admiralty barge, with the flag of the Lord High Admiral; 2d, barge with the flag of Sir Edward Codrington; 3d, barge with the flag of Vice-Admiral Sir E. Owen; 4th, barge with the flag of Rear-Admiral the Hon. D. P. Bouverie; 5th, barge with the flag of Rear-Admiral the Hon. J. Percy; 6th, barge with the flag of Rear-Admiral Sir T. Cochrane; and the boats or barges (with their pennants flying) of the several captains and commanders, according to their respective seniority.

On her Majesty reaching the St. Vincent, the flag of the commander-in-chief was transferred to the Carysfort, and the royal standard hoisted, which was again saluted by the other ships. The royal party remained on board half an hour, and visited every part of the St. Vincent; and on the standard being again transferred to the barge, the salutes were repeated. The weather, which was unpropitious when her Majesty left the shore, became now more unfavourable; the rain fell in torrents, and the wind increased. It was anticipated that this would induce her Majesty, upon leaving the St. Vincent, to return to the Admiralty-house, but her Majesty signified that it was her pleasure to visit the royal yacht, lying up the harbour. The state barge was accordingly steered in the direction of the yacht, on board of which her Majesty remained a short time; on visiting and quitting it the salutes were repeated. The state barge was afterwards pulled quickly to the shore, and her Majesty returned to the Admiralty-house. Her Majesty was enthusiastically cheered, both on landing and disembarking, and courteously acknowledged these greetings with the most winning smiles.

Prince Albert, the Duke of Saxe Coburg, and his sons, immediately afterwards went to inspect the Block Machinery, where a ten-inch single block, was taken in its rough state, and perfected in a few minutes in their presence. Thence they proceeded to the Blacksmiths' Shop, and there saw an arm put on the shank of an anchor, weighing four tons and a half, belonging to an 80-gun ship; this was done in about six minutes. They afterwards visited the Copper Foundry, whence they proceeded to the Admiralty-house.

The dinner party in the evening consisted of most of the officers who received her Majesty in the morning. Lord Hardwicke and Lady Portman were the Lord and Lady in Waiting upon her Majesty. Lord Liverpool, his Grace the

Duke of Wellington, the Earl of Haddington, Lord A. Beauclerk, Sir G. Cockburn, Hon. S. Herbert, Sir Edward and the Misses Codrington, Sir H. and Lady Pakenham, Major-General Arnold, Rear-Admiral the Hon. D. P. Bouverie; Hon. J. Percy, Sir T. Cochrane, and the Earl of Liverpool, were among the guests who dined with her Majesty. The band of the Royal Marines attended during the evening.

As soon as it was dark the illuminations of the houses of the inhabitants were very general. Among them were numerous ingenious and elegant devices in variegated oil lamps and transparencies. The rain and wind that prevailed were a sad disappointment to a large number of those who had taken immense pains to emulate their neighbours in the splendour of their illuminations. Many were the lamps that the rain extinguished, and the wind blew out, and in some of the houses where the boisterous state of the weather rendered the perseverance of the occupiers altogether fruitless, the latter withdrew their lamps, and composed a smaller illumination, within the windows. In the High-street, St. Thomas-street, Broad-street, Queen-street, &c., were several transparencies extremely appropriate to the occasion. They did great credit to the ingenuity and loyal feelings of the inhabitants. The Common Hard presented to the inhabitants of Gosport a very brilliant appearance. At nine o'clock the ships at Spithead, the Queen, 110, Formidable, 84, and Albert, 50, were beautifully illuminated, and fired superb rockets; and at ten o'clock the yards of the St. Vincent, 120, and the Victory, 110, in the harbour, were manned, and the ships splendidly illuminated with blue-lights and port-fires. The effect was extremely grand. Her Majesty witnessed this illumination from the Admiralty-house, and expressed herself greatly pleased with it. The illuminations, as may well be imagined, proved highly attractive. So numerous were the crowds that congregated to witness them, that the leading thoroughfares were almost impassable in many places. Added to the attractions of the evening was a variety of fireworks let off from the Semaphore, different parts of the town, and the shipping. From the latter a considerable number of rockets were fired off.

Her Majesty retired at the usual hour (eleven o'clock,) and rose shortly before seven on Tuesday morning.

On Tuesday morning the wind had somewhat abated, but the weather was still rainy and foggy; notwithstanding which, between eight and nine o'clock, Prince Albert, accompanied by Duke Ferdinand and his two sons, left the dock-yard in the Admiral's barge, and crossed over to the Gosport side to inspect the Victualling Department at Weovil. He was attended by the Admiral Superintendent, and Captain Codrington. On his embarking at the dock-yard the ships fired a royal salute, which was repeated on his re-embarking at the Victualling-yard. The royal party went over the whole of this establishment, and were much gratified at what they had witnessed. They particularly examined and tasted the biscuits made for the Royal Navy, which they relished very much, and Prince Albert directed that some of them should be placed in the barge for the royal table. Upon their return from the Victualling-yard they drove to the Admiral's house and breakfasted with her Majesty.

At nine o'clock the Lords of the Admiralty proceeded from the George Inn to the Admiralty-house.

A few minutes before ten o'clock the Queen embarked on board the Black Eagle, under salutes, to visit the Queen, 110, the flag-ship of Sir E. Owen, at Spithead. Her Majesty was accompanied by his Royal Highness Prince Albert, the Duke of Saxe Coburg and his two sons, Prince Augustus and Prince Leopold, the Duke of Wellington, Lord Liverpool, Lord Haddington, Count Schomberg, Capt. Zaitsch, Lady Portman, Hon. Mr. Anson, Hon. Sydney Herbert, Sir G. Cockburn, Admiral Sir E. Codrington and the three Misses Codrington, Col. Buckley, Col. Wylde, Sir H. Pakenham, Capt. Codrington, and nearly the whole of the distinguished dinner guests at the Admiralty-house the previous evening.

Notwithstanding a thick drizzling rain fell at the time of her Majesty's embarkation, the distinguished party remained upon deck. Her Majesty occupied a prominent seat upon deck, and was greeted with repeated bursts of most enthusiastic cheering from those who thronged the jetty and every available space skirting the harbour.

The band of the Royal Marines struck up "Rule Britannia," as the Black Eagle quitted the harbour for Spithead, and royal salutes were fired from the platform and fort Monckton. Astern of the steamer were the Admiralty barge, with the flag of the Lord High Admiral; Admiral Codrington's barge, and other barges.

Upon arriving at Spithead, the royal party proceeded round the Queen, 110, Formidable, 84, and Albert, 50, which had their yards manned. Her Majesty was immediately afterwards steered alongside the Queen, in the Black Eagle steamer, without the trouble of getting into a boat, by the skill and ability of Mr. Purdo, and walked without difficulty into the entering port of the ship, whence she was ushered to the quarter-deck by Capt. Rich, and received by the marines as a guard of honor, under the command of Capt. Fynmore. After visiting the cabin, her Majesty was shewn the store-rooms, and the tiers and cockpit of the ship, which were brilliantly illuminated with lanthorns and variegated lamps, and the novelty of the scene excited the astonishment of her Majesty and the illustrious foreigners. The bulkheads of the gun-room, having been previously triced up, the lower deck was seen from the stern to the bow ports to the greatest advantage, and this splendid battery of 32 and 68 pounders (having only the mess tables with the mess things, in the highest order, between them), drew from the Queen several times the remark "This is grand, this indeed is very fine."

On her return to the quarter-deck, her Majesty expressed a wish to see the ship's company at their dinner. As soon as it and the grog were served out, the royal party went below. As her Majesty stepped on the lower deck, the men stood up, and although her Majesty kindly desired that they might be seated, they continued standing during the progress round the deck. On arriving opposite to the table abreast of the mainmast, her Majesty desired Captain Rich to let her taste the grog. The gallant Captain ordered a glass to be brought, but the Queen said, "No, I wish to taste it as the men have it." A mess basin was filled from the grog can on the nearest table, and presented by Capt. Rich, on his knee; having tasted it, her Majesty smilingly remarked "that it was very good," (not as formerly stated in the daily papers—that it was very weak,) and taking a second sip, returned the basin. At another table further forward she enquired what they had for dinner; on being told beef and soup, she desired to have some of the latter, which was also presented by Capt. Rich, in a basin, with one of the iron spoons of the mess. Her Majesty after tasting it once or twice, remarked that "It was very good, though rather hot;" and as she returned it said, "It smelt well." At this moment the boatswain's call announced "attention," which was instantly answered by every man giving—"Her Majesty's health—God bless her." Three British, truly British cheers, from the middle and lower decks, on which were 1,000 seamen and marines, told their beloved Sovereign, that the toast was not an empty compliment, and the tear in her eye, followed by the smile upon her countenance, when she recovered her feelings, assured them that she felt she was "Old Ocean's youthful Queen," and that she was surrounded by those who would uphold that title in "the Battle and the Breeze." When passing aft, on the larboard side, the "Health of her beloved Prince Albert" was given, and hailed in the same enthusiastic style.

After the inspection of the ship her Majesty was invited to partake of refreshments in the Admiral's cabin, which she declined. The table had been laid out in a style, reflecting the highest credit on Mr. Sartain, of the Globe Inn, who furnished the whole at only a day's notice. Immediately on her return from the ship, her Majesty received the Corporation address, and then quitted

for Brighton, preceded by the Duke of Wellington, who at the boundary of the county bade her Majesty adieu, as Lord-lieutenant of Hampshire.

After the departure of the Queen, the Admiralty Board visited the rope-house, and saw a large-sized cable laid up, preparations having been previously made for the purpose, in anticipation of a royal visit to the building. Among the objects which attracted Prince Albert's attention were the two barges belonging to Dr. Burney's school, pulled by the boys, who ranged up alongside the Black Eagle, on her return from Spithead, and tossing up their oars, gave him three cheers; his Royal Highness crossed over to the Queen and brought her to the quarter to see the boys, and she was much amused on their renewing the cheers. In addition to the presents she made the bargemen and ropemakers, her Majesty left 20*l.* on quitting, to the domestics of the Admiralty-house, and gave an excellent watch to Jane Parsons, of the Ship and Castle Tavern, who acted as stewardess in the Black Eagle steamer.

On the occasions of her Majesty going afloat, the boats of the Admiralty, the Flag Officers, and the Captains, were ordered to follow according to seniority, carrying their respective flags and pennants, and a boat from each ship, under the direction of Lieut. Beaufoy, of the Speedy, kept the line of procession free from interruption.—*Hants Telegraph.*

The following ships and vessels were at Portsmouth and Spithead on this occasion.

Alfred, . .	Captain J. B. Purvis,	1809
Formidable, .	Sir P. Sullivan	1814
Vindictive .	J. T. Nicholas	1815
Victory . .	W. W. Henderson	1815
Queen . .	G. F. Rich	1823
Royal George	Lord A. Fitzclarence	1824
Excellent .	Sir T. Hastings	1830
Winchester .	T. W. Carter	1831
Carysfort . .	Lord G. Paulet	1833
St. Vincent .	H. J. Codrington	1836
Black Eagle .	Commander J. A. Blow	1826
Ringdove . .	" Sir W. Daniell	1826

The flag of the Lord High Admiral was hoisted on board the Alfred, and on striking it on Tuesday, Capt. Purvis was directed to hoist his blue pennant as a Commodore of the second class.

We understand that the entire arrangements on this occasion were in every respect most perfect, and that even the unpropitious state of the weather did not prevent her Majesty from enjoying her visit. On the second day when the weather admitted her Majesty to go to Spithead, the embarkation on board the Black Eagle and Queen, was effected by a gangway prepared for the purpose, on which her Majesty passed on these occasions, thus rendering boat-work unnecessary. The Black Eagle was brought alongside the Camber jetty for this purpose, and placed alongside the Queen at Spithead, by Mr. Purdo, the master-attendant of Portsmouth Dockyard, with his usual seamanlike management. That command of presence of mind which it is well-known her Majesty possesses in a remarkable degree was severely put to the test by the salutes which were fired close to the Black Eagle, as she was proceeding down the harbour from the dockyard On this occasion, so trying to female nerves, it was evident to those around the Queen, that her Majesty stood fire better than the ladies in attendance. The whole scene occasioned by her Majesty's visit was of the most exciting description, the happy faces everywhere seen indicated that joy was the order of the day, and many were the hopes expressed that her Majesty would soon again enliven the port with her presence.

The Navy and Merchant Service.

The statement made by Mr. Sidney Herbert in the Committee of Supply on Monday night with regard to the numbers and increase of our merchant marine is one of considerable value at this moment. It contrasts, in a short and certainly a most satisfactory manner, the state of the naval nursery of this country with that of France and America, and we recommend it to the notice of those alarmists who think that with impressments we have lost the power and the means of manning our fleet. Since 1835 there has been an increase in the Royal Navy of 15,000 men; but so far from increase being made at the expense and to the injury of the merchant service, it appears that there has been, in the same period, a contemporaneous increase in the latter service of 30,000 men, making a total increase in the two services in the course of five years of more than 45,000 men—no inconsiderable increase, by the way, for a country, the commerce of which, we are daily told, is so crippled, and its exports so curtailed, that trade is well nigh extinguished.

Many feared that the introduction of steamers, and the consequent displacement of the Leith smacks, Margate hoys, &c., would diminish the nursery for seamen by diminishing the number of sailing vessels. So little, however, have these apprehensions been justified by the event, that it appears that the introduction of steamers, by increasing the demand for coal, has greatly multipled the number of sailing vessels, and that there is half a million of tons more employed now than in 1814, when the first steamer was registered, in bringing coal to the port of London alone. In 1814 there were 6 steamers registered, and 24,412 sailing vessels; there are now 940 steamers and 28,022 sailing vessels, being an increase of 934 steamers and 3,610 sailing vessels.

"Since the Registration Act of 1835," says Mr. Herbert, "39,310 apprentices have been added to the 5,429 then on the register. Of these 18,000 have merged into seamen, and 26,800 remain in different stages of their apprenticeship, the merchant service being thus recruited by about 5,000 men trained in the best school in the world, the total number of men and apprentices on the register being now 258,000, besides many thousands unregistered."

Now compare this with France. The number on the French register is 98,706, out of which 31,653 are landsmen and boys. From the remainder again a further deduction would be made—1st, for those who are between 18 and 20, who in France are reckoned as men, and with us as boys; 2dly, for infirmity; and lastly, for desertion. But as our own register is of course subject to similar deductions, let the numbers stand as they are. All the men on board the King's ships in France are on that register. The majority man-of-war's men with us, on the contrary, are not registered, and were never in a merchant ship in their lives, and may, therefore, be taken in addition to it. Why, more than half the French seamen, and more than a third of the men and boys on the inscription, are on board the fleet.

The merchant service is, therefore, exhausted; the merchants protest against this armament, which drains the register, which leaves their ships high and dry for want of men, and paralyzes their coasting trade.

The French are destroying, by overtaxing, their resources, and ruining the ultimate prospects of their navy for the sake of a present demonstration. A fleet raised at this cost—at the cost of that merchant marine without which no navy can long maintain itself—if once destroyed, cannot be replaced. Living thus upon the capital instead of the interest, they have no reserve, no resource, nothing to fall back upon.

In America we hear the same complaints. Seamen are not to be got, and their ships lie for months in port, unable to go to sea for want of men.

Here, on the contrary, we have manned since September last upwards of 50 sail, and that upon full complement; and the Agincourt, says the Secretary of the Admiralty, a line-of-battle ship, has been nearly manned in three weeks.

Surely this statement is most conclusive and most satisfactory. We rejoice to see the Admiralty bestowing so much attention on these matters. The steps they have taken by increasing the complements of the ships, and by permitting pensioners to serve instead of driving them into foreign navies, will greatly facilitate the manning of our fleet. Men will not enter when each is expected to do the duty of two, when they are required to navigate our larger ships and fight our heavier guns with no corresponding increase of strength. But treat the British sailor fairly—consult his comfort—his prejudices, if you will—and we shall never be wanting in men of the right sort to man and fight our ships, and maintain, as of old, the supremacy of our flag.—*Times.*

We understand the Crocodile troop-ship, Mr. T. Elson, commander, now fitting at Plymouth, completed her crew of seamen and petty officers the third day after being put into commission, and that a great number of good seamen were obliged to be refused, a circumstance scarcely on record.—*Shipping Gazette.*

The Examination of Masters of Merchantmen.

The important subject of determining whether the master of a ship is capable of navigating her or not appears to be in a fair way of being decided. Most of our readers are aware that Capt. FitzRoy, of the Royal Navy, has brought a Bill into Parliament for this purpose, and in our next we shall report its progress. No one can wish the gallant member success with his measure more sincerely than we do, and we also trust he will go on in the good work which he has begun. In our avocations we generally preserve some account of the wrecks which take place in our merchant shipping; he has taken hold of one of the fruitful causes of those wrecks,—but there are plenty more enumerated in our last volume. Leaving these for the contemplation of the reader, we shall conclude with the following extract from the *Glasgow Mercantile and Shipping List*, most of which we have said over and over again for the last ten years:—

While every city, hamlet, and hut, has either its college, collegiate school, academy, or other seminary of learning, there is still a blank—a desideratum—in British education, we mean a nautical college, or collegiate mercantile marine school for the training of masters and mates destined to take charge of British merchantmen trading to foreign parts; and where degrees and diplomas may be had by them as well as by others, according to their merits. In this college,

models of ships, with all their appurtenances, might be seen and lectured upon by the professors, as in the natural philosophy, or other classes, so that the practice only would be wanting when the young man went to sea. Let such be endowed or not by Government, as might seem most proper to those judges set apart for the office. Why should British seamen be behind the other nations in Europe in nautical skill and education, when they so far surpass their seamen in the other necessary accomplishments of good seamanship—hardiness and bravery? It is a stain upon the name of a British sailor. Have not France, Holland, Denmark, Sweden, Hamburgh, Portugal, and Austria, their marine colleges, courts of inquiry, and boards of examinators, for granting licenses to their mariners as well as to their students of law, divinity, and medicine; and very properly, the one being of as much importance as the other? Were our legislators to contemplate but one minute the evils that are hourly arising from uneducated and unskilful masters and mates in charge of our merchantmen, and of the yearly loss of thousands of valuable lives and millions of property, they would at once adopt some healing measure for the relief of such a crying evil under which our enlightened and enterprising nation has been so long and is presently groaning. Can it be said, or the idea entertained for a moment by any one not callous to the cause of humanity, that professors of agriculture, divinity, law, or medicine, &c., in our colleges, are more necessary for the well-being and commercial interests of our country, than would be a nautical professor for the instruction of our merchant seamen in the various departments of navigation, &c., &c., and on whom so much of our prosperity and national honor depend? Can it also be maintained that it is more necessary for the officers of the navy to be better trained at such seminaries provided by Government, than for the officers of our merchantmen trading to countries scarcely yet explored? We say nay. The one has his instructions from his admiral, and must shape his course accordingly; but the other is entirely left to his own resources, skill, and judgment, in the time of peril and danger. Institutions for the education and improvement of mechanics have been formed in various parts of our land, particularly in the manufacturing districts, which have been proved to be of the utmost importance to our manufactures and trade. Why, then, are not maritime and marine institutions established in the principal shipping ports of Britain for the education and instruction of our mariners? Surely, as much depends upon the skill and intrepidity of our seamen, and as necessary for our national prosperity, as upon the arts and sciences of our artizans.

In the examination of Mr. J. Ballingall, a surveyor of shipping, and long a shipmaster, before a select committee of the House of Commons, in 1836, on the qualifications of masters and mates of British merchantmen, sad disclosures are brought to light. One instance is given of a boy of fourteen years of age, having been appointed to the command of a vessel, and another of a shipowner having made a captain of one of his porters taken from his warehouse. But these are not solitary instances. We remember, in early life, when sojourning in the far east of Scotland, to have known shoemakers, weavers, butchers, coopers, and carpenters, in the charge of ships, and no one daring to call their seamanship in question. We also knew two men who had the command of ships that could neither read, write, or even knew a letter of a book. One of the ships was upwards of 300 tons burthen, with a crew of at least 50 men, and often out on a 9 months' voyage to Davis' Straits. These may seem startling, but they are facts no less strange than true. And, it is not an uncommon thing to see the same person going as master one voyage, and being in the humble capacity of cook the next. Such is the mutability and tenor of their lives and office. But a remedy for these existing evils, we trust, is now at hand. It gives us much pleasure to see that associations are now forming, and meetings being held in the principal maritime ports, for the purpose of petitioning government to bring in an act of parliament for the enforcing and enactment of such laws as are necessary for the better qualification of persons navigating merchant vessels.

About thirty years ago, the same subject was agitated by the merchants and underwriters at Lloyd's, which had the sanction of all classes but that of the shipowners. Through them the bill was subsequently lost, having been but once read in the House of Commons. In January, 1840, the subject was again revived in Glasgow—meetings held, committees appointed, and printed circulars issued—but as yet little has been done. But we do not despair. We were assured by one of the agents, last night, that the matter is rapidly progressing, and that meetings will be held in a few days in Liverpool, Newcastle, London, and other places, for devising the best method of carrying these salutary measures into effect. Memorials and petitions have already been presented to government from Liverpool and Edinburgh; and Belfast is following in the walk. On the 14th instant, Viscount Melbourne presented the Edinburgh petition to the House of Lords, praying for a law compelling masters and mates of merchant vessels to pass an examination as to their competency, &c. The necessity of such a law must be obvious to all who know the important trust committed to their care. In the report to the House of Commons, to which we have just alluded, such accounts of the loss of life and property are brought forward as to paralyze the heart of the most obstinate person to its necessity; for, during the short period of sixteen months, say from January 1, 1833, to May 1, 1834, on Lloyd's books alone, no less than 1425 lives, and 760,000*l.* in sterling property, were lost. We do not ascribe the whole of these losses to the incapacity of the masters and mates in charge of such, but in many cases, they are highly culpable. Many instances could be brought forward to substantiate this opinion, but we forbear to name them at present. The gross ignorance of the commander of the "Prince Rupert," lately wrecked on the Mouille Point, was shown at his examination, is one, and another is in the example of the Cecilia, from Calcutta to Bombay, which, when found by an American, the captain was dead, the ship dismasted, and the mate incompetent to carry her safely into any port. The result was, the American put on board a mate, and several hands, and carried her to Batavia, there to be sold for salvage. We do not wish to speak disparagingly of our British seamen; far from it; but, on the other hand, we must not conceal facts. And, such has been the case in many instances, that foreign ships have been preferred to British, owing to the superior nautical education of their commanders!

Much has been done in the way of improving the hulls and rigging of our naval merchantmen within these few years; but the rapid strides these are taking, are, in a great measure, useless, unless a corresponding improvement in the education of those in command keep an equal pace. Let us then earnestly impress upon the minds of our shipowners, merchants, and underwriters, the early necessity of a reform in the system of our merchant marine education. Then shall we have more efficient officers to command our floating *hives*, and officers to whom we can with safety and confidence entrust our lives and fortunes on the deep.

EDWARDS' PRESERVED POTATOES.—The following extract of a letter from the surgeon of the Wilberforce, confirms the opinion we have already expressed of this invaluable article to seamen.

Extract of a letter from H.M. steam-vessel Wilberforce, Niger Expedition, Ascension, 7th January, 1842.

Gentlemen.—I feel pleasure in bearing testimony to the value of your preparation of Preserved Potato, which I have found serviceable in restoring the convalescents after the destructive fever, which has prevailed in the vessels of the Niger Expedition.

I consider them to be a most valuable adjunct, from their highly nutritive properties to the usual restoratives, made use of by invalids in all tropical climates, where the English potato must be esteemed a rarity.

M. PRICHETT, M.D., Surgeon.

To Messrs. Edwards and Co.

Nautical Notices.

Shoal in the Inner Passage.—*Australia.*

Report of the Lord William Bentinck, Crow.—Left Port Nicholson (New Zeeland,) for India on the 18th of June, and in proceeding through Torres Straits by the inner route, I discovered a shoal, which, to the best of my knowledge, has not before been seen. Capt. King's charts, No. 2 sheet, gives seven and eight fathoms water on the site of it; nor is it mentioned in extracts from King's directions,, contained in the *Nautical Magazine* for April, 1834;—the work itself is not in my possession. It is singular it has not been seen before, for it is dry at low water in two distinct places; but in making the same passage in 1839, in the same ship, with the same chart, I saw nothing of it, although it lay near in mid-channel; and in consequence of the glare of the sun, it being P.M. when I first saw it, I could not make out distinctly the clearest side to go pass it, but brought the ship up, thus losing half a day's run in consequence. I would then have examined it, but the boat leaked so much that I was obliged to return on board.

The following bearings were carefully taken from the ship when anchored, with which, and a reference to No. 2 chart, the position may be pretty well ascertained; the bearings are all by compass. Noble Island, W.b.N. ½ N; the Hillocks upon Howicks Group, N.E. ½ E.; Lizard Islands, E. ½ S.; and the shore then N.b.E. ½ E., about a mile and a half distant.

It appeared to consist of two strips of dry land, but it was covered long before high water. At daylight in the morning it again showed very plain, when I passed between it and Coles Island in seven fathoms water, and the channel betwixt No. 4 of Howicks Group of Isles, and the shoal appeared be equally good as far as we could make out from the colour of the water. I would also observe, for general information, that the Youngs Island of No. 3 sheet, Captain King, is now nothing more than a small patch of dry sand, and no signs of vegetation to be seen on it.

James Crow,
Master of the barque Lord William Bentinck.

[We insert the foregoing from the *Shipping Gazette*, and although the bearings are of but little use, we may say that by keeping the islands of Howick's Group on board, ships will avoid the shoal seen by the Bentinck. What business she had to be only a mile and a half from the land seems quite unaccountable.—Ed. N.M.]

Discontinuance of a Sea Mark.—*Coast of Holland.*

Amsterdam, March 1.—The Director-General of Marine has given notice that the grain mill of Ballum, on the Island Ameland, which at times used to serve as a land-mark, has been recently broken down, and therefore this mark is no more to be depended upon.

Point Chauveau Light, *on the south-eastern extremity of the Ile de Re.*

(Communicated by the French Government.)

Hydrographic Office, Admiralty, March 18, 1842.

Navigators are hereby informed, that on the 1st of this month a fixed light was established on Point Chauveau, the south-eastern extremity of Re Island, in latitude 46° 8′ 2″ north, and longitude 1° 16′ 17″ west of Greenwich.

The light is 72 feet above high water of equinoctial springs, and may be seen at the distance of four leagues, and therefore from the entrance of the Pertuis d'Antioche.

As this new light must always be in sight whenever the harbour light of La

Rochelle can be seen from seaward, they will be readily distinguished from each other by their appearance and bearings.

The mariner is reminded that the harbour light of La Rochelle is so placed, that the Chauveau Rocks and the Lavardin Reef will be avoided, by keeping the light open to the southward of the Lanterne Tower, which stands 23 yards to the westward of it.

A white stone beacon, 33 feet above high water, has been erected on the Lavardin Reef.

Cape Grinez Light.

(Communicated by the French Government.)

Hydrographic Office, Admiralty, March 18, 1842.

The fixed light established on Cape Grinez in November, 1837, in latitude 50° 52′ 10″ north, and longitude 1° 35′ 9″ east, will, on the 1st of July next, be converted into a revolving light, which will re-appear every half minute.

The additional flashing light, established in 1838, near the above fixed light, will then discontinue.

The new revolving light will be visible eight leagues, and will be distinguished from that of Calais by the difference of their respective intervals, that of Calais being 90 seconds, and that of Grinez only 30 seconds; and further, the bright glares of Calais light are separated by perfect darkness, while in the intervals between those of Grinez, a faint light will be visible to vessels within the distance of four leagues.

Light on Point D'Alpreck.

On the same day the fixed light on Point Alpreck, in latitude 50° 41′ 37″ north, and longitude 1° 33′ 54″ east, will every two minutes change into flashes of red light, which are to continue for three seconds.

This light will not be visible more than four leagues.

Shoals *in the Strait of Madura.*

The commission for correcting and improving the sea charts of Netherlands India has published the following observations for the guidance of mariners:—

1. Lieutenant Fschauzier, of the Royal Navy, has discovered a shoal (droogde) in the Straits of Madura, of which the north-westerly point, a white sand hill, is nearly three to four feet above the water, and may perhaps always be visible. The whole shoal he supposes to be about three cables' length in circumference, covered with stones, and quite flat, and so perpendicular that near it no soundings could be taken. The invisible part is situated in lat. 7° 25′ 30″ S., long. 113° 8′ 34″ E. of Greenwich distance about 2¼ leagues south-west of Bucks Island (Bokken Eyland).

2. By the master of the barque Eendragt, Deuling, on the 7th Oct., several blind rocks were discovered W.b.N. of the Swans Flat (Zwaantjis Droogte,) distance about half a league N. ¼ E. from Bucks Island (Bokken Eyland), on which not quite four fathoms water was found. Near another cluster of rocks, where there appeared to be no more than two to three fathoms water, after sounding he could find no bottom at sixteen and seventeen fathoms water, but trying a heavier lead, he ascertained that near those rocks the depth of water was 23 feet.

3. By several correct observations, it has been proved that the fortress on the east side of Kalemaas, near Sourabaya, it situated in 112° 48′ 10″ E. long. of Greenwich, supposing the tide ball at Batavia to be at 116° 52′ long. of Greenwich.—*Shipping Gazette.*

Guayaquil Light.

Washington, Feb. 12.—The following notice was received on the 11th inst. from the United States Consul at Guayaquil:—

The light-house which has been for some time in course of erection on the Island of Santa Clara, or Amortajado (Gulf of Guayaquil,) being now completed, notice is hereby given that a fixed light, above the level of the sea, will be exhibited every night from sunset to sunrise, and may be seen in clear weather from twelve to eighteen miles.

Santa Clara is fifty miles distant from the town of Puna, where the pilots live, and about ninety from the city of Guayaquil.

A beacon buoy has been placed on the Payana Shoals (black, with a staff and ball,) another buoy (white) on the shoal off Punta Arenas, and a white buoy on the northern port of the Mala bank (sand), in four fathoms water; Puna Bluff bearing N.b.W. about seven miles.—*Shipping Gazette.*

We shall be thankful for the position of the above light.—Ed.

Merope Shoal.—*Mindoro Strait.*

The following is an extract of a letter from Capt. George Blaxland, dated the 5th of May, 1841, received by the Mumford:—

As a piece of nautical news or information, which Capt. Ross and his coadjutors in the survey of the China Sea will hardly credit, W.N.W. from the island off the outer edge of Appoo Shoal, ten or twelve miles, lies a rocky patch, with quarter less three fathoms on the shoalest part with a line of soundings of ten fathoms for some distance, the whole length about one mile, the boats of the Merope and two London whalers have been on it several times. How it has never been seen by the numerous ships passing up and down is extraordinary, it lying in the fairway outside Appoo Shoal.—*New Zeeland Gazette.*

[The foregoing extract from the *Shipping Gazette* is a most important information for seamen using the Strait of Mindoro. Capt. Ross's surveys had nothing to do with it whatever, nor had any ships passing up and down the China Sea. —Ed.]

Knoben Light, *off Anholt.—Cattegat.*

Elsinore, Feb. 26.—The General Board of Customs and Trade at Copenhagen have issued an order under date of the 22d inst., according to which the light-vessel hitherto stationed in the "Grounds" off Dragoe, will in the course of next spring be removed to the reef extending in an eastern direction from the Island of Anholt and called the Knoben, while the floating-light thus withdrawn from the Grounds, will be temporarily replaced on the 1st of March next by a common galliot-rigged vessel without painted sides, which will show a red flag on the top of her fore-mast whenever the light is not burning.

The Danish Government, besides, have it in contemplation to change the Anholt light, from a fixed to a rotary one.

Buoy *of the Bianco Shoal.*

Downing Street, 14th March, 1842.

Sir.—Referring to your letter of the 15th of January last, I am directed by Lord Stanley to acquaint you, for the information of the Lords Commissioners of the Admiralty, that a report has been received from her Majesty's Lord High Commissioner at Corfu stating, that the black buoy which had disappeared from the Cape Bianco Shoal, off the south end of Corfu, was replaced in its berth by persons in the employment of the Ionian Sanitory authorities, so far back as the 30th November last.

I am, &c.

To Sir J. Barrow, &c. G. W. Hope.

Kentish Knock Light Vessel.

Trinity-House, London, 3d March, 1842.

Notice is hereby given that, on or about the 20th April next, the ordinary ball upon the mast of the light-vessel at the Kentish Knock, will be surmounted

by a second ball of smaller size, whereby that light-vessel may with certainty be distinguished, under all circumstances during the day time.

By Order, J. HERBERT, *Secretary.*

CONCUSSION SHELLS.—Under instructions from Admi. Sir George Cockburn, experiments took place on South Sea Common, the 3rd instant, with Captain Norton's Concussion Shells, discharged from an 8-inch mortar, at a range of 500 yards, six shells were fired with a perfectly satisfactory result. Captain H. Stevens, Royal Marine Artillery, directed the practice. These experiments were made preparatory to others, that are to take place on board the Excellent with the 8 and 10-inch guns at horizontal ranges, under the direction of Capt. Sir Thomas Hastings, R.N., when the season of practice arrives.—*Naval and Military Gazette.*

LOCAL ATTRACTION.—The very great importance of the deranging effects of local attraction exerted on the compasses of steam-vessels, has induced the Admiralty to direct that, no vessel, in future, is to go to sea before the experiments have been made on board of her. We understand that Capt. Johnson, R.N., has been appointed the superintendant, to see that this is properly done, and also to effect gradually a general revision of the compasses supplied to her Majesty's Navy, as well as to establish a proper place for the instrument in the ship. We recommend this subject to the attention of ship-owners, and also to the attention of our readers, a concise set of directions, published long ago in this work.—See our volume for 1837.

NEW BOOKS.

TIME AND TIMEKEEPERS *by Adam Thompson.*—T. and W. Boone, New Bond Street, London.

There is much information conveyed in a concise and clear manner in this little handy book of not 200 pages. It defines the natural divisions of time, the modes of arriving at them from the earliest ages to the present time, by the use of sun-dials, sand-glasses, clepsydræ, and common clocks, and gives a general view of the different parts of clocks, watches, and chronometers, down to the present time, illustrated by drawings. It is not only an interesting but a useful little work.

TRIGONOMETRICAL SURVEYING, *Levelling, and Railway Engineering.—By W. Galbraith, F.R.S., &c.*—Blackwood and Sons, Edinburgh and London. 1842.

This is no elementary work, but is intended for the practiced surveyor, giving him several problems not found in other treatises, such as the reduction of spherical excess in deducing latitudes and longitudes geodetically, and several other useful problems which are required in extensive surveying operations. The railway surveying will be found very valuable by engineers, and the tables at the end of the work are essential to the problems to which we have alluded. We perceive that it is dedicated to the Nobleman who presides at the Admiralty Board. On every account, therefore, we recommend it to the attention of our naval surveyors.

SIR HENRY MORGAN, THE BUCCANEER.—*By the Author of "Ratlin the Reefer," &c., Three vols.*—Colburn.

One of the most effectual ways of rendering fiction useful is to found it on historical facts. They impart to it a stability to survive that loss of interest which follows the author's loss of his readers' attention, when the plot of his work is no longer a secret. Sir Henry Morgan is the very prince of heroes for a clever author—a buccaneer of Cromwell's time, one fit to imagine, and to execute the most daring projects,—at one time on the highest pinnacle of fortune, at another, the criminal for execution. From this our readers may infer that the work is full of interest. Excitement is in every page of it, from beginning to end, and it is just such a work as the lovers of good romance will devour.

GEORGE CRUIKSHANK'S OMNIBUS; *illustrated with one hundred Engravings on Steel and Wood.*—Tilt, Fleet-street.

Desipere in loco is an excellent motto after all, and no less excellent is our own more homely adage,—"A time for all things." As an Omnibus generally is, that before us is replete with varieties; but these have the advantage of being illustrated by the inimitable pencil of Cruikshank, enticing the reader to a deliberate overhaul. As a further attraction too, we have a nautical tale, and sketches it may be truly said "here, there, and everywhere," *de Omnibus rebus et quibusdam aliis!* Our readers may translate all this as they please, but with a full conviction of the truth of our motto we can assure them they will find the best translation of it in George Cruikshank's Omnibus.

OBSERVATIONS ON THE UTILITY OF FLOATING BREAKWATERS, &c.—*By Captain J. Groves.*—J. Bohn, Henrietta-street.

We shall leave the "National Breakwater and Refuge Harbour Company" to finish the work they have undertaken, having already ventured our opinion on the result. We have seen no reason to alter that opinion, but if we were inclined to do so we should be more in favour of Capt. Groves's iron cylinders than Capt. Tayler's timber jetties.

TREATMENT ON THE IMPROVEMENT OF THE NAVIGATION OF RIVERS; *with a new Theory on the cause of the existence of Bars,—by William Alexander Brooks, M.Inst.C.E.*—Weale, Holborn.

WE will now pursue the investigation into the actual condition of bar rivers. "*On bar rivers.*"—"An accurate examination of the state of a bar river, will exhibit a great irregularity of its surface at low water; in lieu of the river presenting at that period a longitudinal section of a succession of inclined planes, described in the preceding account of rivers free from bars, as becoming more and more gentle in proportion to their proximity to the ocean, it will be often found that the declination or slope of some of the upper reaches, is less than those nearer the ocean, and the fall at low water in the lower reaches of the river is always so great, as to produce a striking difference in the vertical rise of tide, even at a short distance from the sea; and attendant upon this defective state of the section presented by the surface of the river at low water, is a great extension of the duration of the ebb, beyond that of the upper current of the flood tide."

Mr. Brooks then shows, that in these bar rivers a conflicting action takes place between the river and marine currents, or until the latter has flowed to a sufficient height to turn back the current of the ebb, and that it is during the period of this conflicting action, that the deposit of the bar takes place, and he adds, "We may easily extend the illustration to prove, that while the formation or increase of the bar takes place at this period, or during the first part of the flood tide, the direct tendency of the whole period of the ebb, when unobstructed by the tidal current, must be to reduce the extent of the bar in all its dimensions. The same useful effect in keeping down the bar, must also attend the action of the flood tide, after it has attained a true run up the channel."

Here then, according to our author's observations, is the solution of the cause of the existence of bars at the mouths of some rivers, and not at others, and we need no longer be surprised at observing bars at the mouths of many almost transparent streams, like the Thames and Humber, and to find others free from bars, although they discharge, at every ebb, immense quantities of alluvions.

According to the old popular theory, it is shewn by our author that all rivers must have bars, because, in every river the velocity of the current is diminished as it emerges from the channel, and unites with the oceanic currents or tide.

By the theory propounded by Mr. Brooks, it is manifest that a conflicting action can only exist at the mouths of those rivers to whose features are due the formation of bars, and that at *their* embouchures, the observations of Col. Emy does not apply where he says, "For the repose supposed to take place at the meeting of the currents cannot exist," because, "in the ocean one of the two currents overcomes alternately the other."

(To be continued.)

New Charts.

The North Sea.—*Sheet* I.—*From Dover and Calais to Orfordness and Scheveningen.—Surveyed by Capt. W. Hewett, R.N.*, 1831-40.

In the course of the last ten years it has fallen to our lot to announce to seamen, and to all interested in maritime affairs the publication of numerous beautiful charts and plans of our own coasts, as well as of different parts of the world, not only by the British, but by the French, Austrian, Dutch, Swedish, Danish, and Prussian Governments. Yet amidst all these publications we do not remember to have noticed one more remarkable than that before us; not only as representing a portion of the sea more frequented by shipping than any other on the face of the globe, but especially so, as shewing a mass of soundings chiefly out of sight of land, over a surface of upwards of 5,000 square miles in extent! These soundings are not "few and far between," as in many of our older charts, but are crowded as closely as the figures can be engraved, shewing with the greatest accuracy all the undulating features of the wide, but shallow valley (in no part exceeding forty fathoms in depth,) which separates our island from Holland and Europe.

This first sheet of the North Sea Chart, the result of ten years' labour of that indefatigable surveyor the lamented Captain Hewett, requires from us some analysis. It extends from Dover Straits northward, to the parallel of Orfordness and Scheveningen, and is engraved on the scale of three-tenths of an inch to a nautic mile (or $\frac{1}{240,000}$, nearly, of nature,) the original drawings being on the scale of an inch to a mile, and containing upwards of 100,000 soundings, shewing the quality of the bottom at every fifth cast of the lead.

It is something new to speak of the *trigonometrical* survey of a *sea*, but that of the North Sea is essentially so. There being anchorage in all parts of it, as we explained in a former number,* whenever shore objects were in sight they were made use of to determine the sounding vessel's position. But the greater part of the survey being out of sight of land, it became necessary either to carry a line of floating beacons across from the coast of England to Holland, (a distance of about 100 miles,) or, which was preferred by Capt. Hewett, to determine that position by the angle subtended by a small vessel's mast, the *Fairy's* tender, which formed a vertical base. Therefore around this central vertical base the *Fairy* ran in all directions, till the circle of its horizon was closely examined with the lead. This done the vessel was removed about 7 or 8 miles further on, always in the same latitude; and in this manner the tender took up the necessary stations in the North Sea, through the different parallels, her position being checked by astronomical observation for latitude, and with the aid of six chronometers for longitude, these being subject to the closest examination of rate about every fortnight by returning to Harwich.

But on foreign coasts this examination did not extend within three leagues of the shore. The coast of France, therefore, inside this limit from Cape Grinez to Zuydcoote, and the adjacent banks are from the French survey, under the direction of M. Beautemps Beaupre, published in 1841; that of Belgium from Adinkercke to Sluis from M. Vandermaelen's unpublished map of that country, now executing by M. Gerard; that of the Netherlands and its rivers from Cadzand to Scheveningen and the adjacent shoals, are from the surveys of M. M. Ryk and Keuchenius, published in 1825, with additions to 1841, by Lieut. A. Van Rhyn.

We gladly avail ourselves of this opportunity to record the readiness with which Admiral Wolterbeck, Minister of Marine, acceded to the request of the Admiralty, and through the medium of Lieutenant Baron G. A. Tindal, supplied all the secondary points of the triangulation along the coast from the Hoek of Holland to the Texel; a duty which was executed by this latter officer with his characteristic zeal and ability.

The Downs, the Goodwin Sands, the entrance to the Thames, including the Long Sand and Kentish Knock are from a survey by Captain Bullock, R.N., and

* Vol. for 1840, page 122.

the vicinity of the coast of Suffolk, and the position of the Galloper and Gabbard shoals by Mr. Thomas in H.M.S. *Mastiff*; the two latter being determined by a most rigid triangulation, for the accuracy of which, the long experience of this officer is ample authority. In consequence of the unfortunate loss of the *Fairy* in the storm of November, 1840, some unfinished portions in the neighbourhood of Harwich; in Dover Straits; off Blankenberg, Schouwen, Goeree, and the northern limit of the chart, have been completed by the officers of the *Shearwater*, in the summer of 1841, under the direction of Capt. Washington, R.N. But while we assign to these officers the merit which is their due, it is no less our duty to acknowledge that we are indebted to the persevering exertions of the late Capt. Hewett for the chart before us. The anxiety attending the duties of such a survey, through ten long years, can only be appreciated by those who know its navigation, its dangerous sands beset by currents, and its uncertain climate, and with such knowledge they can well appreciate those labours, the result of which is a chart differing so widely from everything hitherto published of the North Sea. Indeed we could not desire a more satisfactory proof of our surveyor's labours in the North Sea, than a comparison of the present chart with those which have appeared before it, including the old "sea-cards," and all the "tobacco charts," which have successively appeared as "new and correct," ever since the days of Admirals Blake and Van Tromp.

A glance at the chart will shew better than any description can do, the remarkable direction in which the different sandbanks, or rather ridges which skirt the entrance to the Thames, and the coasts of Holland and Belgium, are distributed in lines radiating from the Strait of Dover. It seems natural to suppose, that their direction is caused by the unceasing action of the tides,—but will the geologist be satisfied with such a solution, when we find that many of the banks are as steep as a wall, especially on their eastern sides, where the lead drops at once from three to thirty fathoms? We have not here either space or leisure to speculate on the subject; but, thus much is certain, that now for the first time, we have an accurate representation of these banks; for the best charts hitherto published, have merely consisted of the patch-work improvements of successive corrections, or of the reports of pilots and fishermen, who, however valuable their local knowledge, were without the means of giving precision to their discoveries.

A remarkable fact relative to the tides, is noticed on the chart before us as a caution to mariners,—namely, that about the middle of this part of the North Sea, there appears to be little or no rise or fall, thus corroborating the truth of Professor Whewell's theory, who predicted that such would probably be found to be the case. The experiments by which this fact was established, will be found in our last volume.

The quality of the bottom, as before-mentioned, was noted at every fifth cast of the lead; 12,000 of these specimens have been preserved, and the greater part are laid out in their correct positions on a large chart, delineated on the floor of a store-house in Deptford dockyard. The bottom consists of sand, fine sand and black specks, and occasionally broken shells, yet too irregularly disposed to enable the navigator to profit by them. But the banks themselves, as strikingly illustrated in the several sections here given, form excellent points of departure, so that by the aid of this chart, the mariner in the thickest fog, may boldly cross from England to the coast of Holland, if he will but attend to his lead, and especially if he have on board that invaluable instrument Massey's lead, without which no ship should navigate the North Sea.

We cannot close our brief notice of the valuable result of Capt. Hewett's labours without alluding to the lamented loss of that officer, with his gallant crew in the *Fairy*. His experience after eighteen years' service in these seas we cannot replace; but we may point with pride to this, and the several charts of the Eastern Coast of England, which he left behind him; and, however, much we may deplore his loss, we must not forget that he perished, as an officer

would desire to do, in the path of duty. The *eclat* which is attached to the memory of those who fall in battle may not be the lot of the more peaceful hydrographer, yet who can doubt which confers the more lasting benefit on the human race? and a grateful nation, by its liberal subscription in support of the widows and orphans of those who were lost in the *Fairy*, has already borne ample testimony to the value of the services on which they were employed. Yet these will be more fully appreciated as they become better known, for it is manifest that no pains or expense can be too great to ensure the safety of the skilful and hardy seamen who traverse the North Sea, or to facilitate the extensive traffic which it is the means of supporting between the active and industrious nations that inhabit its shores. In the calm and sunshine of fine weather it is just possible that their labours may be thought lightly of; but in the hour of need, when misty storm darkens the ocean,

"When night and the hurricane come mingled on;"

and neither star nor light can be seen, the mariner will refer with confidence to this chart, and profiting by that ample store of information which it lays open to him, will gratefully invoke a blessing on the memory of its author.

ARROSSAN HARBOUR.—*West Coast of Scotland.—Surveyed by Commander C. G. Robinson, R.N.* 1840.

AMOY HARBOUR.—*By Commander Collinson, and Mr. W. T. Bate, Mate, R.N., in her Majesty's ship Bentinck.* 1841.

We have devoted so much of our space to the North Sea, that we must reserve them for our next.

ADMIRALTY ORDER.

Admiralty, Feb. 26th, 1842.

The Lords Commissioners of the Admiralty are pleased to direct, that the commanding officers of her Majesty's ships and vessels shall insert on their respective muster books and prize lists, the words—"doing duty by order," —against the name of each supernumerary borne for victuals only, but actually employed, by competent authority, on the ordinary duties of the ship: and unless such notation shall appear against the name of the supernumerary on the muster book, thereby shewing the class in which he is placed according to the prize proclamation of the 3rd of February, 1836, he will not be permitted to share in any higher class than the sixth.

By command of their lordships,
SIDNEY HERBERT.

To all Captains, &c.

PROMOTIONS AND APPOINTMENTS.

(From the Naval and Military Gazette.)

Downing Street, Feb. 24th, 1842.—The Queen has been graciously pleased to nominate and appoint Admirals the Hon. Sir John Talbot, Sir Robert Barlow, and Sir Henry Digby, Knights Commanders of the Most Honourable Military Order of the Bath, to be Knights Grand Cross of the said Order.

[The following are the Promotions contingent on her Majesty's late visit to Portsmouth.]

Alfred, the Admiralty flag-ship on that occasion.

Commander J. B Woodthorpe, (1838) to be Captain.

Lieutenants G. J. Hirtzell, (1831) first lieut., and J. St. John (1808) flag do.,' to be Commanders.

Messrs. R. D. Aldrich (1830), and R. Wilcox (1839). Mates, to be Lieutenants.

St. Vincent, bearing the flag of the Commander-in-Chief.

Commander J. Hallowes (1837) to be Captain when he has served his time.

Lieutenants F. Blair (1830) first lieut., and — Grey (1839), flag do., to be Commanders.

Messrs. H. L. Griffith (1833), A. Young (1834), E. J. L. Cooper (1836), and W. Horton (1839), Mates, to be Lieutenants.

Assistant-Surgeons J. Caldwell (1838), and J. D. Burns (1835), to be Surgeons.

Queen, flag-ship of Vice-Admiral Sir Edward Owen.

Commander J. P. Hay (1839) to be Captain.

Lieutenants Graham, flag lieut., — Caffin (1838), gunnery, and H. J. Willington (1834) to be Commanders.

Messrs. J. Franklin (1836), W. Mould (1834), and E. A. T. Lloyd (1841), Mates to be Lieutenants.

Royal George, yacht.

Lieutenant W. S. Thomas (1828), first lieut., to be Commander.

Messrs. W. D. Carroll (1838) and J. P. Palmes (1838) to be Lieutenants.

Victory.

Lieutenant F. W. P. Bouverie (1839) flag lieut., to be Commander.

Black Eagle.

Commander J. A. Blow (1826) to be Captain.

Lieutenants T. S. Brock (1827), and W. J. C. Clifford (1838) to be Commanders.

Messrs. E. J. Voules (1827) and F. B. P. Seymour (1840), Mates to be Lieutenants.

PROMOTIONS.

COMMANDER—T. Fisher of *Winchester*.

LIEUTENANTS—T. Molesworth, of the *Queen*, for his great coolness and seamanship in the late disaster of the *Mercury* tender, H. F. Elliot and J. Hamilton of *Winchester*—H. J. Giles.

SURGEONS—J. Andrews, E. Davies, H. F. Osman, W. White, W. Chatres, J. H. Carruthers, O'Neil Ferguson.

SECOND-MASTER—J. Scarlet to *Mercury*.

APPOINTMENTS.

Rear-Adml. Sir S. Pym, KCB., to be Superintendent of Plymouth dockyard—The Hon. J. Percy to *Winchester* to proceed as the Commander-in-chief to the Cape of Good Hope.

CAPTAINS—H. W. Bruce, (1821) to *Agincourt*—Sir C. Sullivan (1814) Bart., to *Formidable*—C. Eden (1841) to *Winchester*.

COMMANDERS—J. A. Blow (1826) for promotion, to *Black Eagle*—J. Paget (1827) to *Magnificent*—E. B. Tinling (1841) to *Camperdown*—T. Carpenter (1841) to *Scout*—R. Sharpe (1826,) and P. G. Haymes (1815) to *Fantome*—E. J. Carpenter (1827) to *Geyser* steam-frigate—N. Robilliard (1841) to *Seaflower* (new establishment)—A. Darley (1827) to *Electra*—E. J Parry (1830) to *Sapplio*—H. Lyster (1841) to *Agincourt*—C. G. E. Patey (1840) to *Resistance*—W. Kelly (1831) to *Winchester*—G. H. Seymour (1841) to *Wanderer*—W. H. Kitchen (1827) to *Queen*, v. Hay, promoted—N. J. C. Dunn (1814) to the Ordinary at Sheerness.

LIEUTENANTS—A. J. Græme (1842) to *Queen*, v. Boyle promoted—D. Elliot (1839) in *Queen* to *Ringdove*—T. L. Gooch (1827) to command *Kite*—F. A. Campbell (1837) to *Cornwallis*, and to take passage in the *Driver*—W. C. Coffin (1841) to *Scylla*, v. Giles—J. Rawstone, F. P. Egerton (1836,) T. M'Gregor (1838,) F. C. O. D. Whipple (1840,) J. A. Paynter (1841,) and A. Lavie (1830) to *Agincourt*—C. Hamilton (1840) to be Flag Lieut. to Rear-admiral the Hon. J. Percy—T. S. Brock (1827,) and W. J. C. Clifford (1838,) on promotion to *Black Eagle*—J. B. Kinsman (1841) to *Scylla*—S. Morrish (1841) for rank, to *Royal William*—G. Pigot (1841,) v. Gennys; W. C. Nowell (1828,) v. Leary superseded; F. S. M'Gregor (1838,) v. Lavie, and R. O'Brien (1838,) v. Williams to *Vindictive*—H. F. Elliot (1841) to *Comfort*—R. D. Fowler (1837) to *Formidable*—R. T. Bedford (1841) of *Vanguard*, to *Queen*—W. R. Smith (1841,) and W. G. J. Cunningham (1841) to *Alfred*—A. M. Noad (1838) to *Isis*—J. Bellairs (1813,) to be Admiralty Agent to her Majesty's West India steam-packets—E. Keane (1815) to command *Merlin*—Leigh to *Cornwallis*, to take passage in *Driver*—J. St. John (1808,) for promotion as Admiralty Lieut. to *Alfred*—P. H. Somerville (1840,) additional to *Caledonia*—E. Little (1837) to *Scylla*—J. B. Kinsman (1841) to *Wolverine*—R. B. Æ. Meland (1841) to *Vanguard*, v. Bedford to *Queen*—H. S Hawker (1838) to *Royal George*

—J. M. Boyd (1841,) additional to *St. Vincent*—C. Knighton (1841,) and H. T. Smith (1841) additional to *Caledonia*—J. W. L. Shields (1814,) to *Raven* as Lieut-com—J. Moore (1841,) T. C. Woodman (1839,) H. Temple (1841,) Oliver, T. H. Christian (1839,) and J. C. Snell (1841) additional, for service in the Mediterranean to *Queen*—W. C. Aldham (1822,) J. Wainwright (1819,) W. E. A. Gordon (1841,) G. B. B. Collier (1841,) J. H. Cockburn (1840,) and R. D. Aldrich (1811,) additional, to *Winchester*—W. H. Leaver (1815) to *Jaseur*—D. P. Dumaresq (1841) to *Isis*—J. M. R. Ince (1841) to *Fly*—J. F. Slight (1841,) and H. St. J. Georges (1838) to *Resistance*—J. Compton (1838) to *Rose*—F. Cannon (1832) to *Camperdown*—J. T. Paulson (1822) to *Royal George* yacht, for service in *Nautilus*—G. G. Phillips (1838,) and H. Lloyd (1841) to *Ringdove*—M. Connolly (1841) to *Calcutta*—P. Gubbins to *Scylla*—C. C. A. Kane to *Royal William* for rank—E. Malone to be one of the Lieutenants of Plymouth Hospital, v. Jeans, dec.—J. J. Robinson (1834) to be Flag Lieutenant to Sir E. Owen.

MASTERS—J. Browning to *Agincourt*—W. Miller of *Victory*, to be master of the fleet in the Mediterranean—T. Elson to *Victory*—J. Brown to *Winchester*—J. Huntley (1829) to *Resistance*.

MATES—C. Bromley, and J. Simpson to *Driver*—M. Lowther, J. C. Bailey, G. Kerr, W. W. Turner, T. Miller, J. Reid, W. H. Haswell, A. F. Kaynstone, and C. J. Austen to *Agincourt*—G. H. Richards to *Caledonia*—E. J. Poules, for promotion to the *Black Eagle*—R. D. Aldrich for promotion, as Admiralty Mate to *Alfred*—P. F. Shortland to *Excellent*—S. Apthorp to *Alecto*—W. W. Rees to *St. Vincent*—H. G. Williams, and C. Bromley to *Vindictive*—W. B. G. Johnson, in *Wolverine*, to *Ringdove*—F. B. P. Seymour to *Royal George*—G. K. E. Wright to *Avon*—G. Wilkinson's appointment cancelled—H. B. Hankey to *Agincourt*—H. R. Foote, in *Winchester* to *Madagascar*—E. J. Hornby and J. Patterson to *Magnificent*—J. Franklin and J. Wilson to *Queen*—W. T. Lower to *Excellent*—T. Berry to *Serpent*—R. Wilcox, and G. Durbin to *Alfred*—W. E. Fisher to *Howe*—C. Bromley to *Driver*—J. O. F. Carmichael to *Winchester*—T. Townshend to *Agincourt*.

MIDSHIPMEN—E. Nicholls to *Lightning*, v. Collier promoted—C. M. Shipley to *Thunderer*—J. A. Sandford to *Carysfort*—R. Hallowes to *Belvidera*—Messrs. Percy and Hornby to *Winchester*—S. T. Skerrow to *Vernon*—Hon. F. Pellew to *Rodney*—F. Woolcombe to *Snake*—J. Christie to *Monarch*.

SECOND-MASTERS—R. Fuller to *Kite*—H. Johns to *Implacable*—S. Johns to *Agincourt*—G. S. Wilkinson to *Queen*—S. Baggs to *Emerald* tender—H. Hunter to *Apollo*.

VOLUNTEERS 1ST CLASS—G. D. Gordon to *Isis*—H. Raby to *Monarch*—H. Hawkes to *Ringdove*—F. Symonds, and F. W. Haydon to *Impregnable*—W. Robinson to *Rodney*—J. J. Hornby to *Magnificent*—F. F. Ormond, and J. W. Pike to *Jaseur*—G. G. Osborne, W. Burdon, R. B. Pearce, Shewell, and J. B. Lethbridge to *Winchester*—R. Horner to *Magicienne*—J. Jerdan to *Vindictive*.

SURGEONS—J. W. Reid to *Agincourt*—J. McBain to *Mastiff*—W. Jameson to *Winchester*—H. G. R. Page to *Resistance*—W. H. B. Jones, MD., Surgeon Superintendent to the *Elphinstone* convictship.

MASTER'S-ASSISTANTS—C. Paget to *Volcano*—H. Balliston from *San Josef* to *Scylla*—T. Huss to *Vindictive*—J. M. Clune to *Belleisle*.

ASSISTANT-SURGEONS—G. C. Campbell to *Scylla*.—A. Anderson to *Romney*—P. Hudson from *Champion* to *Dolphin*—J. J. Martin to *Queen* v. Mackey—J. Brown to *St. Vincent*—G. Sizey to *Ringdove*—R. M. Isbell, and R. Anderson to *Agincourt*—A. Sibbald, MD., to *Fly*—A. Patterson to *Poictiers*—C. R. Brien, MD., to *Royal George*—W. Rogers (b) to *Ferret*—D. Thomson (c) act. to *Minden*—T. M. Castello to *Driver*—J. Reid to *Lucifer*—J. King to *Kite*—G. Yeo (act. add.) to *Caledonia*—M. T. West to *Winchester*—W. C. Hancock, MD., to *Resistance*.

PURSERS—S. Wadland to *Agincourt*—W. B. Farror, and W. Drury to *Ringdove*—J. Lean to *Winchester*—J. E. Key to *Resistance*.

CHAPLAINS—Rev. J. Campbell to *Belvidera*—Rev. J. Edwards to *Vernon*—Rev. W. S. Parish to *Agincourt*—E. A. Morgan to *Vindictive*—Rev. M. Steel to *Winchester*.

NAVAL INSTRUCTOR—J. C. Bond to *Winchester*.

CLERKS—E. H. Spry to *Agincourt*—J. Z. de Montmorency to be Clerk in Greenwich Hospital, v. Anderson retired—S. W. Sadler to *Ringdove*—J. Funter (additional) to *Formidable*—V. A. Haile, Secretary's Clerk to Rear-admiral Hon. J. Percy—Mitchell to *Vindictive*—G. A. Stewart (in charge,) to *Kite*—C. Saunders (in charge,) to *Fearless*, v. Robertson—Mr. F. H. Spry (late *Powerful*,) add. to *Implacable*—J. Paine, Secretary's Clerk to *St. Vincent*—W. Gibson to

Vesuvius—Fauquier to *Impregnable*—S. Spark to *Belvidera*—W. H. Richards to *Geyser*—J. W. Sadler to *Ringdove*—J. Hunter to *Formidable*—C. E. Coleman, and C. Barnes to *Queen*—J. Roberts to *Winchester*—E. A. Smith, Secretary's Clerk to Rear Admiral Percy.

SECRETARY—Com. E. T. Crouch to be Secretary to Vice Adml. Sir E. Brace, KCB., v. T. Woodman, Esq., who having completed twelve years' actual service as Secretary, is entitled to twelve shillings per diem.

CLERK's-ASSISTANT—W. L. G. Drew to *Cambridge*.

COAST GUARD.

Lieutenants J. P. Branch, and D. Young to be Chief Officers.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ATHOL, 15th March arrived at Portsmouth from Barbados.

BLAZER, Lieut. Com. J. Steane, 13th March arrived at Portsmouth from Barbados.

CROCODILE, 26, commissioned at Portsmouth as troop ship.

DRIVER, (st. v.) Com. Harmer, 13th March left Portsmouth for China, 16th put into Plymouth to repair engines.

FORMIDABLE, Capt. Sir C. Sulivan, 19th Feb. arrived at Portsmouth from Sheerness.

GORGON, (st. v.) Capt. W. H. Henderson, 16th Mar. arrived at Portsmouth from Malta.

HECLA, (st. v.) Lieut. com. J. B. Cragg, Mar. 16 arr. at Plymouth from W. Indies. 15th Mar. left Plymouth for China.

MINDEN, Hospital ship, Capt. M. Quin.

RAPID, 10, Lieut. Earle, 14th Feb. sailed for Africa from Falmouth.

RESISTANCE, 42, commissioned at Plymouth as troop ship.

REVENGE, 76, Capt. Hon. W. Waldegrave, 25th Feb. paid off at Sheerness.

STYX, Capt A. Vidal, arrived at Portsmouth from the Azores.

VINDICTIVE, 50, Capt. J. T. Nicholas, 15th March left Portsmouth for Canton.

WINCHESTER, 50, Capt. J. Parker, 21st Feb. arrived at Portsmouth from West Indies, 4th Mar. paid off, 9th recommissioned by Com. Kelly for Capt. C. Eden, and flag of Hon. Rear Admiral Percy, Cape Good Hope station.

WOLVERINE, 16, Com. Johnson, 21st Feb. arrived at Plymouth, 5th March sailed for China.

AT PORTSMOUTH—*In Harbour*—St. Vincent, Victory, Excellent, Winchester, Royal George, Carysfort, Nautilus, Athol (troop ship), Gorgon, Adventure (naval transport), Echo and Lightning steamers, and Raven cutter.

At Spithead—Queen, Formidable, Alfred, Candahar convict ship, and Wilmot passage ship for New Zealand.

AT PLYMOUTH—*In Harbour*—Caledonia, San Josef, Agincourt, Resistance, Crocodile, Fly, Scylla, Bramble. *In the Sound*—Spy.

ABROAD.

ALECTO, (st. v.) Lieut. com. W. Hoseason, 25th Feb. at Malta from Gibraltar

BELVIDERA, 42, Capt. Hon. G. Grey, Mar. 3d arrived at Leghorn from Naples.

CALCUTTA, 84, Capt. Sir S. Roberts, C.B., 27th Feb. arrived at Malta.

CAMBRIAN, 36, Capt. H. D. Chads, 27th Dec. arrived at Cape on way to India.

CHARYBDIS, 3, Lieut. De Courcy, 25th Jan. arrived at Jamaica from Carthagena.

CLEOPATRA, 26, Capt. Wyvill, 14th Feb. arrived at Antigua.

COMUS, 18, Com E. Nepean, 25th Dec. left Port Royal for Carthagena.

CURLEW, 10, Lieut. com. J. C. Ross, 12th Dec. 21°S. 29½W. spoken on way to Rio from Cape.

FLAMER, (st. v.) Lieut. com. W. Robson, 14th Feb. arrived at Antigua.

HORNET, 6, Lieut. com. R. B. Miller, 17th Dec. at Jamaica from Chagres, 4th Jan. sailed for Chagres.

ILLUSTRIOUS, 72, Capt. T. Erskine, 6th of Feb. at Bermuda, 13th sailed for Barbados and Jamaica.

LARNE, 18, Com. J. P. Blake, 25th Dec. arrived at Madras from China.

PILOT, 16, Com. G. Ramsay, 4th Jan. arrived at Jamaica from Havana, 14th Feb. at Antigua.

PIQUE, 36, Capt B. Forbes, 6th of February, at Bermuda, 23d sailed for Jamaica.

RACEHORSE, 18, Com. Fitzgerald, 24th Jan. arrived at Jamaica from Bermuda.

RACER, 16, Com. Harvey, 17th Feb., at Nassau.

RHADAMANTHUS, (st. v.) Master-com. T. Laen, arrived at Corfu from England.

SAPPHO, 16, Com. T. Fraser, 14th of Feb. at Antigua.

SOUTHAMPTON, 50, flag of Real Admi. King, 23d Dec. arrived at the Cape, 26th Nov. left Monte Video.

SULPHUR, (st. v), Capt. E. Belcher, C.B., 20th Nov. left Macao for England.

TORTOISE, M. J. Wood, 26th Dec. arr. at the Cape.

VERNON, 50, Capt. W. Walpole, 27th Feb. at Malta.

VICTOR, Com. W. Dawson, 17th Jan. left Jamaica for Carthagena.

VOLAGE, 26, Capt. Sir W. Dickson, 6th Feb. at Bermuda, sailed 23d for W. Indies.

WASP, 15, Com. G. Mansell, Feb. 19, at Malta from Corfu, 24th ad. for England

WIZARD, Lieut. J. Somerville, Jan. 3, arrived at Cape, 8th Dec. left Rio.

In Simons Bay—Lily, Southampton, Cambrian, Tortoise, Fawn, Wizard.

SHIPS IN PORT.—*Malta, March* 1.—Howe, 120, Impregnable, 104, Rodney, 93, Thunderer, 84, Calcutta, 84, Vanguard, 80, Benbow 72, Vernon, Falcon, Premier (tr. sh.), Scout, Ariel, Weazle, Magpie, Prometheus, Alecto, Vesuvius, Locust, Devastation, Therese, Stork.—French steamers Tancrede and Dante.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On 10th Mar. the lady of Rear Adml. the Hon. M. J. Henniker, of a son.

At Norham, 20th Feb, the wife of Dr. A. S. Allen, surgeon R.N., of a daughter

On 4th March, at Biddicombe, Devon, the lady of Lieut. R. Parrey, R.N., of a daughter.

On 16th March, at Formosa Cottage, the lady of Capt. Sir G. Young, Bart., of a son.

Marriages.

At Florence, Lieut. H. D. Story, R.N. to Marion daughter of G. Baring, Esq.

On the 15th of March, at Budock, Mr. Thomas, master R.N. to Martha, youngest daughter of R. Rimmel, Esq., solicitor, Falmouth.

At Bishops Tawton, A. Jukes, Esq., B.A., of Trinity College, Cambridge, to Augusta, third daughter of Capt. Lewis Hole, R.N.

C. D. Steel, Esq., surgeon R.N., to Mary, daughter of W. Farmer, Esq., of Tudor street, New Bridge street.

At Falmouth, on the 15th March, G. Stephens, Esq., R.N., to Miss M. Chapple, of Plymstock, Devon.

At Devonport, on the 17th March, J. D. Macnamara, Esq, of Ayle, Ireland, to Jane Louisa Mary Ann, only child of Capt. Grant, R.N, of Stoke Damerel.

On 16th Nov. last, at Harwich, Lieut. J. Wood, R.N., to Mary, second daughter of John Sansum, Esq., solicitor.

Deaths.

On the 1st March, at the house of Admiral Sir George Martin, in Berkeley-square, deeply regretted, Lady Martin.

At Langton Grange, Darlington, 10th March, Agnes Elizabeth Malvina, eldest daughter of Capt. G. E Watts, R.N.

At Greenwich Hospital, D. Woodriff, C.B., R.N., at an advanced age, having been made a lieutenant in 1780.

At Dover, Feb. 25, Rebecca, the wife of Rear Admiral Collin, in her 67th year.

At Cheltenham, Mrs. Hare, the only surviving daughter of Admiral Sir Thos. Frankland, Bart.

At Rhuddlan, Capt. S Popham, R.N., aged 62, nephew of the late Sir H. Popham.

On the 21st Feb., Mrs. Urmston, in her 87th year, relict of the late Capt. J. Urmston, of the Hon. East India Company's Maritime Service, and of the Grange, Chigwell, Essex.

At Somerset-place, Somerset House, Mrs. Ross, widow of the late Captain D. Ross, R.N.

At Guyanas, South America, J. R. Hutchings, esq. purser, H.M.S. Actaeon.

At Chelsea, W. Pearce, Esq., many years chief clerk of the Admiralty, in his 91st year.

At Key Dell, near Horndean, Hants, aged 54, Mary, the wife of Capt. R. D. Pritchard, R.N, universally esteemed and regretted.

At Brompton, on the 21st Feb., Wm. Payne, Esq, many years master attendant of Portsmouth yard

On the 19th Feb., of inflammation of the lungs, Augustus William, second son of Capt. E. L. Rich, R.N., aged 10 years.

At the Naval Hospital Macao, on the 26th Oct., of dysentry, Lieut. J. Astle, late of H.M.S. Alligator.

In December last, at sea, from the effects of fever, caught on the Coast of Africa, Mr. H. Ford, mate of H.M.S. Champion, son of W. Ford, Esq., Yeo Cottage, Yealmpton.

On the 20th Nov., from the effects of the climate on the Coast of Africa, on the passage from the Mauritius to the Cape of Good Hope, Thomas Kidd, Esq. surgeon of H.M.S. Lily.

At Plancoat, Britanny, Lieutenant W. Edwards, R.N.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of February to the 20th of March, 1842.

Month Day	Week Day	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9 AM	3-PM	Min	Max	A.M.	P.M.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	M.	29·74	29·68	38	45	30	47	S	SW	4	5	o	bcr3)
22	Tu.	29·76	29·66	39	47	32	49	S	SW	2	4	bcp(2)	o
23	W.	29·43	29·30	44	48	40	49	S	S	3	4	o	bcr4)
24	Th.	29·14	29·10	41	48	40	49	SW	S	4	3	op(2)	o
25	F.	29·15	29·28	37	43	33	44	W	W	4	5	osr(2)	bcphr(3)
26	S.	29·34	29·46	37	45	27	46	SW	SW	3	6	op(2	bcp(4
27	Su.	29·53	29·36	39	41	30	43	SW	SW	6	6	qo	qoprh(3)(4
28	M.	29·54	29·62	39	46	35	47	SW	SW	5	5	b	gcqr4)
1	Tu.	29·23	29 36	51	48	44	52	S	W	5	3	qod(2)	o
2	W.	29·73	29 63	44	49	33	51	SW	SW	4	8	qor2)	qr(3)(4)
3	Th.	29·86	29·90	52	56	48	57	W	SW	7	8	qor(1	qbc
4	F.	29·95	29·94	43	47	40	48	W	W	4	2	o	od4)
5	S.	30·01	30·05	38	48	33	51	SW	W	2	4	b	bc
6	Su.	29·96	29·89	40	51	29	52	SE	SE	1	2	b	b
7	M.	29·71	29 64	43	50	30	51	S	S	3	5	go	bcr(4
8	Tu.	29·49	29·51	45	54	45	55	SW	SW	2	2	bc	bcp4)
9	W.	29·62	29·57	41	42	35	47	SW	SW	4	8	bc	qprh(3)(4)
10	Th.	29·47	29·80	39	46	37	47	NW	NW	10	6	qr(1)	qbc
11	F.	29·98	29·88	47	51	32	52	S	SW	2	4	bc	od3)
12	S.	30·04	30·04	43	55	34	56	SW	SW	2	2	bc	b
13	Su.	29·89	30·06	44	50	39	52	NW	W	2	2	bcm	bcm
14	M.	30·22	30·24	44	53	40	54	S	S	1	2	od(2	o
15	Tu.	30·33	30·34	50	52	45	55	S	S	2	2	od2)	o
16	W.	30·31	30·25	53	51	48	54	SW	SW	2	2	o	o
17	Th.	30·12	30·05	49	53	44	54	W	SW	2	5	o	qor(4)
18	F.	29·73	29·69	46	50	43	53	W	W	6	6	qbc	qop(3)
19	S.	29·52	29·40	40	42	36	45	W	W	7	7	qbc	qprs(3)
20	Su.	29·22	29·42	39	45	38	46	NW	N	6	5	qp(1)(2)	qbcp(3)(4

FEBRUARY—Mean height of barometer = 29·944 inches; mean temperature = 40·3 degrees; depth of rain fallen = 1·04 inches.

*** March 9th, the evening and night were very rainy, with a boisterous southerly wind, and the barometer fell rapidly; at 12 P.M. it was at 29·00 inches. March 10th, at 2 A.M. 28·72, when the wind changed, and blew strong from the north-west, the barometer then rose. At 7½h. A.M. it had attained 29·35 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

Our best thanks to a Subscriber at Launceston, Van Diemen Land, for the Port Philip Gazette.

We have no space to devote to the "discussion" of "S" on the merits of the weed!

A FRIEND OF MERIT is no doubt just in his complaint; but the "constitution" of the service! what have *we* to do with it?

CAPT. JOHNSON'S letter (ship Recovery,) in our next. The views received.

To keep up the current matter we have added an extra half sheet to this number.

Mintey Rock.—*South of the Falkland Islands.—Atlantic.—Ship struck.*

Another instance of the difficulty of discovering the sunken dangers of the ocean has just occurred, in a rock being found to the southward of the Falkland Islands; the neighbourhood of which is passed and repassed every year, by ships frequenting the Pacific. The following letter transmitted to the Secretary of the Admiralty, by Rear-Admiral Ross, the Commander-in-Chief, on the South American station, contains an account of it, and its position.

Port Louis, 22d August, 1841.

Sir.—I beg to inform you that, on the morning of the 15th inst., being on my passage from Liverpool bound to Lima, the ship under my command struck on a sunken rock to the southward of Beauchene Island, the compass and binnacle being washed away from the deck. As near as I could judge from the direction of the ship's head, by a compass in the cabin, it bore S.S.W., distant about three miles and a half.*

The rock was not laid down in any of my charts; and I, therefore, trust you will have the goodness to transmit without delay, this information to the Commander-in-Chief, for the benefit of other mariners.

I remain, &c.

[Signed] George Mintey.

On the Navigation of the River Congo.—*By Capt. Tucker, R.N.*

The following extract of a letter to the Hydrographer of the Admiralty from Capt. Tucker, R.N., while in command of H.M.S. Wolverine, will no doubt be found useful by our cruisers on the African station, in addition to our scanty knowledge of the navigation of the Congo.

The passage up may be made at all times of the day, with the flood tide, or against the ebb, if the sea breeze be strong enough. The best time for a stranger to make it is certainly with the first of the sea breeze, though, on taking H.M.S. Wolverine to the shoals a second time, I went up in the afternoon, and on the third time I went up in the evening, passed the lower shoals, and anchored at 8 P.M. close to a slave vessel lying between the two lower shoals.

The passage up should be made on and close to the left bank,† until you arrive at the lower shoal, about twenty miles from the mouth of the river, where a spit with 2, 1¾, 1½, and 1 fathom on it runs off the left bank,‡ about a cable's length, which shews itself at low water by the smoothness of the water on the lower part of it. From thence you should steer diagonally across the river, keeping her head well up for a low sandy and green island on the right bank, keeping close to the lower edge of the lower shoal in 7, 8, and 9 fathoms, until you arrive

* We suppose from Beauchene Island, but shall be glad if Capt. Mintey will confirm this.—Ed.

† The right and left banks are alluded to, as they always are in reference to a river, i.e. according to the stream.

‡ The upper point of an opening, called Ma Foucha, in Capt. Tucker's sketch.

near the island, when you must steer up close to the right bank, carrying your lower studding-sail-booms over the bushes, having 6, 7, 8, 9, and 10 fathoms, except at a small shoal, marked on the chart, with four fathoms, when you must edge off a little, so as to pass it about a vessel's breadth from the bank. Then you must steer along the bank again until you arrive off Ponta da Linha, and anchor in four and four and a half fathoms, a mile above which the river is not navigable for vessels.

The passage down is rather dangerous, but I think by attention and prudence it may be always made with safety. The usual passage down the river is crossing to the left bank above the shoals, and passing between them and the bank, but should only be attempted with a commanding sea breeze, with which even, it is necessary to keep the ship's head well up the river, and allow the stream to set you gradually down until you gain the left bank, when you must drop down close to the bank in 4, 3½, and 3 fathoms, either by kedging or under sail: I prefer the latter.

The danger of crossing the river in coming down arises from the wind falling or lulling, and the vessel, in consequence, (if not brought up very smartly with her anchor,) being set by the stream, upon the upper edge of the shoal, which has caused the total loss of many vessels, and the loss of rudder of many others. In light winds, I should, therefore, recommend the vessel to be taken down by the sweeps, on the right bank, with the kedge ready to be dropped, and the boats down ready for towing, until you arrive on the lower edge of the lower shoal, when, if there be no sea breeze, it will be necessary to bring the vessel up with a bower anchor, in 7, 8, or 9 fathoms to avoid the shoal running along the right bank, over which the stream directly sets with great force. But if the sea breeze be commanding, you may cross over to the left bank, by keeping the vessel's head well up the river, until you get well over, when you may either back, or fill, or work down, standing from four fathoms on the left bank into not less than seven fathoms on the right bank, until past Boolembenda Point and Spit, when you must not stand into less than four fathoms.

With respect to the shoal of 3½, 3¼, fathoms on the Mona Mazea Bank in the mouth of the river, which I have laid down, I am of opinion that it is of a very late formation, and will prove very dangerous to vessels crossing the river as I did. Steering well up the river from the southward to cross over to Cape Padron, carrying seven and eight fathoms, I suddenly got into 3½, 3¼ fathoms, along which I ran, carrying seven and six fathoms on the port side, and 3½ and 3¼ fathoms on the starboard side, for about more than three ships' lengths.

I am of opinion the whole of the Mona Mazea Bank is rising fast from the deposit of mud out of the river, and from the sand thrown over by the heavy swell which often sets upon it.

It is high water at full and change 4h. 30m.; variation one point and three quarters.

Instructions for Ships from the Cape to the South-west Coasts of Australia —*By the Hon. J. S. Roe, Surveyor-General.*

(Concluded from p 168.)

At the south-east end of Garden Island is a snug land-locked cove called Port Royal, three-quarters of a mile across, and half a mile deep, in which vessels of any size may heave down to the beach, close to which are three fathoms water, with five and six fathoms at two cables' length. Fresh water is to be had by digging,—fish is plentiful, and the island affords abundance of firewood. Here her Majesty's ship Success hove down in 1829, and had some serious damages well and effectually repaired with the valuable naval timber of the country, which was cut down and fashioned in the woods on the main, and towed across by the ship's boats.* Jervoise Bay, in the north-east part of the Sound, also affords good anchorage in four to six fathoms water, well protected from north-west gales by Woodman Point and Spit. A vessel may lie in the northern part of this bay in three fathoms water, to discharge and take in cargo, within a cable's length of the beach; but a fetch of five or six miles for the south-west swell would render such a position not always safe. A bank of five to three and a half fathoms water, and probably less, extends from Woodman Spit in a southerly direction, a long mile from the shore, until it joins a spit of two and a quarter fathoms, (least known depth,) which extends two miles N.N.W. from Point James, abreast of Port Royal. Inside this bank of sand and weeds, the depth is five and six fathoms to within a quarter of a mile of the main, and the bottom is good holding ground of mud and clay; this space has, however, not yet been minutely surveyed, and should be approached by a vessel with caution.

The navigable approaches to Cockburn Sound are from the north, across Parmelia Bank;—from the west between Carnac and Garden Islands, and from the south between Garden Island and Cape Peron. That across Parmelia Bank (which extends from Woodman Point in a westerly direction to Carnac Island,) is fit only for vessels drawing twelve or thirteen feet water, who will find the deepest part of the bank three-quarters of a mile wide, and one mile and a half from the island. But this passage should not be attempted by a stranger without a pilot, the leading marks being such as cannot well be described without endangering confusion and mistake.

The space between Carnac and Garden Island, usually termed the Garden Island Passage, has many channels among the reefs which encumber it. That which has been found the easiest, safest, shortest, and best, and possesses sufficient depth for any ship, has been several times buoyed off, as shown on the published charts,—by which the Challenger Rock and Stag Reef were to be left close to the south, and Middle Shoal and Flat Ledge to the north.† Challenger Rock is very

* An account of this proceeding, illustrated with drawings, will be found in our early series, vol. 1834, page 330. The event, we believe, occasioned the name of Jervoise being given to the bay, from Capt. W. Jervoise, at the time commanding the Success.

† We recommend the navigator to refer to the beautiful chart of Cockburn Sound, published by the Admiralty, in which all these shoals and their intersecting channels, are sufficiently apparent.

small, with three or four feet water upon it, and lies at the north-west extremity of Sea Reef, which extends one mile and a quarter north 30° west, (magnetic,) from the north-west extremity of Garden Island. The black buoy or pole beacon which has generally denoted its position, has hitherto been placed close to its east side, in six and a half or seven fathoms water; but as the situation is much exposed, and the permanency of a mark cannot in consequence be relied upon, a ship should approach the channel with caution. On standing in for the land, it is advisable to bring a small remarkable hill called the Haycock, near the north end of Garden Island, to bear abont N.E. $\frac{1}{2}$ E. (magnetic,) until within one mile and a half of the island, when the outer five-fathom bank will have been passed over, and the depth will be nine to eleven fathoms. Steer then north for three miles, and you will be half a mile westward of the Challenger Rock, but do not let the summit of Cape Peron shut in behind the west end of Garden Island. Should the beacons in the channel be complete, (which at present they are not,) they will be four in number within the space of half a mile, and the passage may be effected with safety by leaving the two black beacons on the right hand, and the two white ones on the left, while steering about E.S.E. After passing them, bring the two black in a line, and keep them so astern until the small high rocks called the Stragglers, five miles and a half to the N.N.W., are seen round the north-east end of Carnac; you will then be clear of the north-east Spit from Garden Island, and may proceed to any part of the Sound. Should the beacons in the passage not be complete, an anchor must be dropped outside of the Challenger Rock,—the rock must be found out by boat, and a boat or cask anchored near it. It is to be sought for in a line between the south extremity of Carnac (not the small rocks near it,) and the jail at Fremantle, and with the summit of Cape Peron eight miles distant, over the outer extremity of Garden Island, the Haycock appearing also a little to the eastward of the island's summit. Being of a light brown colour, and so near the surface, it is easily discerned, and should be left close on the right hand sailing in eastward, care being taken to avoid a shoal *rocky patch* one cable and a half to the south-west of it. The channel between the Challenger and Middle Bank to the N.E.b.E. of it is two cables wide. From the Challenger to the Stags, a small cluster of sunken rocks with six or seven feet water upon some of them, the course is E.S.E. nearly half a mile, in four and five fathoms water. One cable and a half north from the Stags lies Flat Ledge, a small single rock with a broader surface, over which are usually six or seven feet water. The channel is between the two in six fathoms, and for vessels drawing under eighteen feet water all the dangers are then past; large ships must, however, prolong the E.S.E. course a quarter of a mile inside the Stags and Flat Ledge, to avoid a small patch of three fathoms lying a long quarter of a mile E. $\frac{3}{4}$ N. from the former. There is at present no pilot establishment either at Carnac or Garden Island, and until arrangements can be made for permanently buoying the channel between them, the pilots are prohibited using it. The pilots usually reside at Fremantle, and are instructed to board every vessel, except coasters, which visit the port.

The South Channel, between Garden Island and Cape Peron, may be used by vessels drawing less than twelve feet water, but has some rocks in it, which render care necessary in a stranger. The distance is one mile across from the north extremity of Cape Peron, called John Point, to the south end of Garden Island, called Collie Head, but the southern half of this space is occupied by rocks and foul ground, having at their north end a very small rock just awash, and a small detached rock, on which are only two or three feet water, one cable and a half east from it. Between these two rocks and the head the depth is four to five fathoms. Collie Head consists of three low rocky cliffs, with intermediate sandy bights. From the outer cliff, a reef projects a quarter of a mile to the south-west,—the middle one is apparently bold and clear, and from the inner cliff project the Southern Flats, an extensive sandy shoal one mile and a half in length E.S.E., with six to ten feet water on it, and ten fathoms close to its well-defined margin. The bar in this channel will be found three-quarters of a mile inside of John Point, and the deepest water over it about a quarter of a mile from the edge of the Southern Flats. The course is about S.E. $\frac{3}{4}$ E., and a look-out must be kept for a small sunken rock, with a few feet water on it, a quarter of a mile S.E.b.S. from the inner cliff of Collie Head, and the same distance north 35° east from the small detached rock already mentioned. Inside the bar, which is one-fifth of a mile wide in its narrowest part, the water deepens quickly to eight and eleven fathoms, clear sandy ground, in Mangles Bay, and a vessel may then proceed with safety round the Southern Flats, to any part of Cockburn Sound.

John Point and Cape Peron* are fronted by rocky ground to the distance of one-third of a mile, and several small rocky islands, connected mostly by reefs, extend south from the Cape for four miles and a half to the Sisters, which are seven or eight small rocks close together, standing well out of the water, and lying two miles from the main, with which they are said to be connected by a shallow sandy bar. Two miles south from Cape Peron lies Penguin Island, with a conical summit of equal elevation, and a sandy bar, nearly dry at times, joining it to the main land one-third of a mile distant. Half-way between the Sisters and Penguin Island, is Passage Rock, lying close on the north side of the best entrance into Warnbro' Sound. It is the nearest dry rock to the Sisters, stands about twenty feet out of the water, and may be distinguished by a temporary beacon which has been erected on its flat summit. To enter Warnbro' Sound by this channel, bring Passage Rock to bear east, and then steer for it. From ten fathoms at three-quarters of a mile off, the water will shoal to six and five, amongst weeds, at one-third of a mile from the rock, when it will again deepen as quickly to seven and eight fathoms, and you are over the bar, which is the only danger to be avoided in this part except a reef extending a cable's length to the north-west, west, and S.S.E. from Passage Rock. The latter should be approached as near as prudent, in order to avoid

* In our number for October last, will be found a chart of the part of the coast here alluded to, to which we were then unable to add any description. We recommend our readers to transfer it to the present number, as well as a plan of Peel Harbour, on a large scale, which followed it in the month of November.

a two and a half fathom rock, which lies one-third of a mile south 72° west (magnetic,) from it,—and when Passage Rock appears to seaward of the various small dry rocks between it and Penguin Island, you are clear of all the small reefs which lie detached from the north side of the Sisters, and may haul up E.N.E. and north-east for Peel Harbour, or anchor in any depth between three and eleven fathoms. It should be borne in mind, that the bar, one-third of a mile outside of Passage Rock, which extends also to the Sisters and Cape Peron, has not been minutely examined, and may have other small rocks amongst its dark weeds than those referred to. The channel recommended above appears however to be clear, and to be the only good one into the Sound, except for boats, which may find numerous others among the reefs by keeping a good look-out. Coventry Reef lies off this part of the coast, and will be found nearly three miles south 64° west (magnetic,) from the conical summitof Penguin Island, and two miles and a half north 89° west (magnetic,) from Passage Rock, with no other known danger near it.

Warnbro' Sound, three miles in length north and south, and two and a half miles wide, is defended from any very heavy westerly sea by the chain of rocks and reefs which extends from Penguin Island to the Sisters;—on the south it is secured by a shoal bar, with reefs beyond it, which joins the Sisters to the main at Point Becher; and on the north by another sandy bar of twelve to four feet, which extends E.N.E. to the main land from the small dry rock half a mile north from Passage Rock. The best anchorage in the Sound is one-third or half a mile within the chain of rocks and reefs in front of it, where the shelter is more complete, and the depth varies between five and seven fathoms, on clear sandy ground; whereas the main beach is bold and steep, with eleven fathoms within a quarter of a mile of it.

Peel Harbour, a great resort for American whalers during the black whaling season of winter, is in the north-east corner of Warnbro' Sound, and affords abundance of room for three or four ships to swing at moorings, perfectly landlocked; but many more might be secured to the south shore of the harbour, in four to seven fathoms water, within half a cable's length of the low sandy beach. In steering for this valuable little port through Warnbro' Sound, there is no obstacle in the way, the northern sand-bar in the latter being steep to, from eleven fathoms to four feet, and therefore easily seen. The low sandy projection, called Point Shelter, which forms the harbour, has ten fathoms close to its east extremity, and in the entrance, which is 300 yards wide, there are eight and nine fathoms. This shoals to six and five fathoms inside, and the northern half and upper end are occupied by a bank of sand and weeds, on which are two fathoms, gradually decreasing to the shore. The whole length of this harbour being three-eighths of a mile east and west, and its breadth one-fifth of a mile, the necessity for mooring or securing to the southern shore is obvious. Firewood is scarce near the beach, but good water is abundant in wells behind the first sand-hills, north from Point Shelter, where shipping fill up by rolling casks from the beach.

The deep bay formed between Point Becher and Point Robert, near the mouth of Peel Inlet, is fronted by sunken rocks to the distance of four miles from the shore, with six and seven fathoms inside of them.

The offing between Swan River and Geographe Bay, is thus described by Lieutenant J. L. Stokes, of her Majesty's ship Beagle:—"The soundings gradually decrease to the shore, and are therefore of material service in finding a ship's place. Near Rottnest Island the water is deep, being thirty fathoms three miles west of it, with twenty-five and twenty-two irregular, at the same distance on the south side of the island; again, to the northward of it the soundings are more regular after passing the western point; five miles north of the north point the depth is twenty-two and twenty-one fathoms, fine grey sand, shoaling very gradually to the main land; the quality of the bottom on the south, west, and north-west sides of Rottnest is generally rocky, with coarse white sand,—rocky alone off the west end. The Beagle, running for Swan River in a thick hazy night, had thirty-five fathoms, rocky bottom. Five miles north-west from the west end of Rottnest, (steering north-east,) the water shoaled in five miles to twenty fathoms, coarse white sand, then in an E.N.E. direction towards the main, the depth decreased very gradually to nine fathoms two miles and a half from the beach."

Koombana Bay, off the mouth of Leschenault Inlet, is one mile and quarter wide, and half a mile in depth, affording good anchorage for two or three ships, and as many small vessels, in two to five fathoms water. Point Casuarina, which forms the west point of entrance, is in latitude 33° 15′ 15″ south, and is composed of sand-hills partially covered with a low scrubby vegetation. Off its extremity a covered reef extends upwards of one-third of a mile to the N.N.E. ½ E., breaking always with a moderate sea, and giving good protection to the shipping in the bay. This reef is bold on the outer side, having eight and nine fathoms water within a quarter of a mile to the westward, and four to five fathoms one-eighth of a mile to the north and eastward. To clear its north extremity, bring Mount Lennard (the highest hill on Roe Range, and about five leagues from the coast,) a little open to the north of two remarkable sand-hills, on the east side of the bay, standing near each other, and resembling a saddle, the seat being formed of dark green bushes. The bearing will be E.b.S. ½ S., (magnetic,) and will lead one-eighth of a mile north of the reef, in four fathoms water. When the outer coast line to the southward of Point Casuarina shuts in, you may haul up south-east into the bay. The best berth for a ship is in four to four and a half fathoms, with Point Casuarina bearing west, and the entrance to the inlet (between two low sandy points,) S.S.W., the distance from each being about three-eighths of a mile, and the extremity of the reef at the same distance bearing N.W. ½ N. Small vessels will lie better sheltered in two and a quarter to three fathoms, a quarter of a mile east from Casuarina Point, where the reef will furnish protection as far as N.b W., but the ground in that position appears rocky, under a covering of sand. In the absence of regular moorings, vessels should always moor on arrival, not only on account of the limited space, but to prevent drifting over their anchors with an under-current or outset, which is always experienced when strong north-west winds throw much water into the bay.

The tides here are, as usually found along this coast, very irregular and uncertain, depending apparently on the strongest or most prevalent

winds; hence gales from seaward raise the water along the coast, whilst a prevalence of land-winds, although light, is found to depress it. The usual rise and fall does not exceed two feet.—Variation 5° west.

Leschenault Inlet has its entrance and bar in the south-west part of Koombana Bay, whereby it is well protected from all except northerly winds, and is in consequence generally practicable for boats of three feet draft, but the channel in, is continually shifting, and in winter the bar extends much farther into the bay than in summer. Firewood may be had by sending boats up the inlet, and there is abundance of good water in wells just within Point Casuarina, near which there is always good and safe landing in the heaviest weather.

Vasse Inlet, on the south-east side of Geographe Bay, has its shallow bar entrance in latitude 33° 35½′ south, at the distance of seven leagues south 31° west (true,) from Point Casuarina, and three-quarters of a mile south-west from the somewhat deeper entrance to Wonnerup Inlet; both are, however, adapted for boats only, and have not their channels always in the same place. The coast hereabouts is low, sandy, and wooded, the hills of the interior rising to the height of 6 or 800 feet, six leagues to the eastward. There is good anchorage off it during the summer months in three fathoms, within three-quarters of a mile of the shore, the depth gradually increasing to six fathoms at two and a half miles off. A white cask has been erected on a pole near the beach, about three miles and a half south 66° west (true,) from the entrance of the inlet, to distinguish the landing-place used by the colonists who are established on the Vasse River, and near Wonnerup,—at both which places abundance of fresh supplies may always be obtained, on a gun being fired to announce a vessel's arrival. Half a mile to the north of this cask-beacon is a narrow strip of weeds, on which the depth is only nine feet, with three fathoms close on its north side, and two and a half fathoms between it and another weedy bank which extends from the shore. Wood and water may be obtained here, but the best place for taking in both is six or seven miles westward of the beacon.

Although Geographe Bay is open to the northward and north-west, vessels have frequently rode out strong north-west gales while at anchor off the Vasse, in three and a half and three fathoms, the sea appearing to lose its force amongst the weedy beds before it reaches the shipping in the usual anchorage. The whole bay is also effectually protected by the promontory of Cape Naturalist, from the long ocean-swell from the south-west, which is at all times experienced outside. There are no regular times of high water in the bay, and the rise and fall of the tide does not generally exceed two feet.—Variation 5° west.

Flinders Bay, round the east side of Cape Leeuwin, affords good winter anchorage off the small town of Augusta, which is situate at the mouth of Hardy Inlet, in the north-west corner of the bay, shipping being protected from all northerly and westerly winds by the main land, and by a chain of rocky islands and reefs which extends four or five miles S.S.E. from the land of the Cape. The islands are called St. Alouarn. The southernmost dry rocks are two which lie close together, and present a bluff face to the south-west, and slope to a point in the opposite direction. A sunken ledge extends a short distance from their south-east side, and another a mile to the W.S.W., from

which, in the direction of Capes Leeuwin and Hamelia to the north-west, the ground is foul and rocky. There are no visible dangers beyond a quarter of a mile from the east side of the islands, and the best anchorage, recommended by the master of her Majesty's ship Sulphur, is in seven fathoms, stiff brown clay, with the Barracks or flag-staff bearing W. $\frac{3}{4}$ N., extreme point to the south-west (Point Mathew,) S.W. $\frac{1}{2}$ S., and centre of the princpal island S. $\frac{1}{4}$ E. Since that period, however, Captain John Cole, of an American whaler, has reported the existence of a narrow rocky ledge "bearing S.E.b.E. $\frac{1}{2}$ E. from the Barracks, and north-east from the south-west extremity of the land, steep and pointed, not above three yards over, but of some extent, with twenty-two feet water on the shoalest part, seven fathoms close on the east side, and six fathoms on the west side of it." This should prevent a ship of heavy draft of water proceeding northward of the Barracks, until Point Mathew bears to the southward of south-west, or until this danger is better known. From Barrack Point to the entrance of the inlet, a long mile to the north, the shore is fronted by reefs nearly awash, between which are boat-channels to the sandy beaches on the main. Good water is to be had from a running stream on the north side of the flag-staff. Fresh provisions may, generally, be procured from the few remaining inhabitants, and firewood is abundant within the inlet; but the bar at its mouth is very shallow, having seldom more than two or three feet water on it, except in winter, when the freshes from the river deepen it to six feet, independent of a rise of three feet more, occasionally caused by north-west gales. There appear to be no regular tides in the bay, and their usual rise and fall not to exceed two or three feet.—Variation 5° west.

During the summer months land and sea breezes prevail, interrupted occasionally by smart gales from the south-east, blowing directly into the bay, and distressing vessels not well found in ground tackle.

King George Sound,* on the south coast of Australia, is a noble sheet of water six miles in length and breadth, defended at its entrance by Breaksea and Michaelmas Islands, and having two inner harbours. It is the most convenient resort on this part of the coast for refitting, wooding, and watering a ship, or refreshing her crew; vegetables and fresh provisions being procurable at the settlement of Albany, on the northern shore of Princess-Royal Harbour. For a ship requiring only wood and water, there is a convenient sandy bay of small extent in the south-west corner of the sound, being the second bay westward of a low flat rocky islet which lies a long mile S.W.b.S. from Seal Island. Here there is good anchorage in five and six fathoms, sand and weeds, at one-third of a mile from the beach, over which two or three small streams of good water run into the sea, and must be collected by digging wells. Firewood may also be had at the same place, but not in abundance. During the summer months, when easterly winds prevail, and sometimes blow strong, even as late as March, the best anchorage in the sound is in six and seven fathoms, sand and weeds, eastward from the low flat rock, and south from Seal Island, where the sea horizon may be shut

* Some useful remarks on King George Sound will be found in our last number, by Capt. Drinkwater Bethune, of her Majesty's ship Conway.

in entirely, with the exception of one point in the direction of E.b.N., and the watering bay will not be more than one mile distant.

Bald Head, the south point of entrance to King George Sound, is the eastern termination of an elevated peninsula of bold and striking appearance, and is visible twelve leagues from a ship's deck in clear weather. Its extremity, which is in latitude 35° 6′ 15″ S., longitude 118° E., is a round smooth mass of granite rock, almost entirely destitute of vegetation, and appearing from the eastward like an elevated island of white and sterile aspect. With the exception of a rock even with the water's surface, close at the south foot of the extremity, there are no outlying dangers near the shore, which is very steep, with ten and twelve fathoms close to it.

Peak Head is a bold rocky projection four miles W.S.W. from Bald Head, and presents to the southward a rugged sloping bluff, resembling a human face in profile. On the summit of Castle Hill, three-quarters of a mile to the north of Peak Head, are some large base masses of granite resembling ruins.

Vancouver Breakers lie two miles and a half E.S.E. ½ S. from Peak Head summit, and nearly three miles S.W. ½ W. from the extremity of Bald Head. They are small in extent, and steep all round, with a small rock in the middle which is sometimes uncovered. They should be avoided in the night, as the soundings give no warning of their vicinity.

Maude Reef, about a quarter of a mile in diameter, is nearly in a line from Vancouver Breakers and Bald Head, at the distance of six miles and a half from the latter, and four miles S. ¾ E. from Peak Head. This reef appears to have three or four fathoms on its shoalest part, and does not always break. The nearest land to it is Eclipse Island, the summit of which is distant three miles and a quarter to the W.b.N. ½ N. The soundings do not indicate its vicinity, being forty-five fathoms, two miles and a quarter E.S.E., forty-four fathoms at the same distance S.E.b.S., and forty-seven fathoms at three miles and a quarter S.b.E. ¼ E. from it, the bottom coarse sand with coral and stones. A ship passing outside the Eclipse Islands, may avoid this danger, and Vancouver Breakers by keeping the islands to the northward of west, until the west end of Breaksea opens of Bald Head (N. 19° E. magnetic). There is a good clear channel inshore of both these reefs, by borrowing towards Peak Head: the only known danger in it being a patch of sunken rocks, which lie three-quarters of a mile off the north-west side of Eclipse Island; but this passage should not be used during very light winds, as the swell is usually heavy near the shore, and there is no anchoring ground.

Nearly three miles N.N.E. ½ E. from Bald Head is Breaksea Island, an elevated mass of rocks one mile and a quarter in length east and west, with a small round islet close to its east end. A passage on its north side more than half a mile wide, with fifteen to seventeen fathoms water, separates it from Michaelmas Island, which is of the same description, but somewhat smaller and more elevated, neither of them having more than a few tufts of vegetation near their summits. To the north of Michaelmas Island there appears a clear channel of one mile and a half, with a bar of five to six fathoms at its west end. Between

Breaksea Island and Bald Head there is also a good channel two miles wide, but a sunken rock in it, which has long been known to the sealers on the coast, has been seen to break recently by Lieutenant P. Belches, R.N, in the Colonial schooner Champion; on which occasion it was considered to lie about two miles E.N.E. from the extremity of Bald Head. and the same distance south from the centre of Breaksea Island. It may, therefore, be avoided in running in, by borrowing towards either of those shores, until the west end of Breaksea bears north. This rock having been so very seldom seen, has probably two and a half or three fathoms water over it, and is the only known danger in the sound or its entrances.

Princess-Royal Harbour, on the west side of King George Sound, is the most convenient of its inner ports, on account of the greater depth of water in its narrow entrance, and having no bar. On its north shore is situated the town of Albany, where refreshments and supplies of all kinds may be obtained, and a ship be refitted in perfect security. The entrance, which is only a quarter of a mile wide, is round the north side of Point Possession, due west from Michaelmas Island, and the deepest water is on the north side of it, where four and five fathoms are found, deepening to six and eight within the narrows; but the greater part of the harbour being occupied by shoals which extend from its shores, and commence immediately within the entrance, the passage should not be attempted by a stranger without a chart or pilot. A shoal spit projects from the north side of the harbour, just within its entrance, and a ship without a pilot may clear it by keeping the north entrance-point in a line with the high steep rocks at the extremity of Steep Head, in King George Sound (one whitened for the purpose), until Mount Clarence, which rises to the height of 500 feet over the east side of the town, bears N.b.W.; she may then haul up to the westward and north-west round its extremity. A good berth for a small vessel is in fourteen or fifteen feet at low water, one-third of a mile from the shore, with the north side of Breaksea Island in a line with the extremity of Point Possession, and Mount Clarence bearing N.N.E. ½ E.; but a ship would lie more secure in seventeen or eighteen feet, with Mount Clarence as above, and Point Possession in a line with the south end of Michaelmas Island. The holding ground is sand and weeds, and a ship should moor. For the purpose of rating chronometers the Commissariat Store near Point Wakefield may be considered in latitude 35° 2′ 10″ S., longitude 117° 52′ 48″ E.; variation 5° 5′ W.

The tides are very irregular, and in the Sound have no perceptible set; they nevertheless run with considerable strength in the narrow entrances of both its harbours, making high water once in twenty-four hours, which Capt. Flinders considered always took place between six and twelve at night, "for after, by gradually becoming later, it had been high water at twelve, the next night it took place soon after six, and then happened later by three-quarters of an hour each night as before. The greatest rise observed in Princess-Royal Harbour was three feet two inches, and the least two feet eight inches."

Oyster Harbour, in the north-west corner of the Sound, has a very narrow entrance, with a bar, somewhat rocky, a quarter of a mile outside of it. Capt. P. P. King who surveyed it, writes "over the bar

there is not more than ten feet and a half at low water, and in the maps twelve feet at high water; but it is likely that, at spring tides, there may be fourteen feet, or perhaps more if the wind is blowing into the harbour; but during the springs, high water always takes place at night, and it would not, therefore, be prudent to attempt to pass the bar at that time.

"A vessel intending to go into Oyster Harbour, should anchor off the sandy beach immediately to the eastward of the entrance, that is between the breakers off the point and the bar, in three fathoms, sand; bringing the summit of Green Island, in the harbour, on with the extremity of the bushes of the west point of entrance (Emu Point), and the highest part of Breaksea Island in a line with the outer point of the bay:—a boat should then be sent to sound the bar. The mark for the deepest part is when the western summit of some flat-topped land at the back of Oyster Harbour is a little open of the rocks off the east side of the entrance. After the bar is passed, the channel is deepest when the centre of the flat land is kept midway between the points of entrance, avoiding a spit of rocks that projects from the rocky point at the west end of the watering beach. The strongest winds being from the westward, bower anchors should be placed to the south-west and north-west; warps and the stream cable will be sufficient to secure her from easterly winds, as the hills rise immediately over the vessel on that shore. If the run of water on the eastern shore outside the bar should fail, holes may be dug at the edge of the grass, about three feet deep, which will yield a sufficient quantity in two or three days, for any vessel, that can pass over it. The flood tide in the entrance generally runs sixteen hours, and ebbs eight hours. High water at full and change takes place at 10h. 10m. at night; but on the bar the rise and fall is very irregular, and a vessel going in should pay great attention to the depth, if her draft is more than ten feet, for it sometimes rises suddenly two feet. The spring tides take place about the third or fourth day after a new or full moon."

Champion Bay,* on the north side of a low sandy projection of the west coast, called Point Moore, in latitude 28° 47½′ S., longitude 114° 33½′ E., is the best known anchorage between Swan River and Shark Bay, and lies nearly east from the south extremity of the extensive shoals and islands, named Houtmans Abrolhos, which are nine leagues distant in the offing. A recent partial survey of this anchorage by H.M.S. Beagle, shews it is well sheltered from all winds except those between north-west and N.b.E., from which direction it must be remembered the winter gales blow strong two degrees farther south. The shelter from all west and southerly winds, which prevail in summer and blow fresh, appears good, the sea being broken off by a covered reef that extends nearly half a mile to seaward of Point Moore, and one mile and a quarter to the north of it, having fourteen fathoms water a mile to the westward, and six fathoms close to its north end. Half a mile N.N.W. from the north end of the reef, is a small rocky patch, which was observed to break occasionally as the Beagle worked in between

* Some further remarks on Champion Bay, by Capt. Wickham, of her Majesty's ship Beagle, will be found in our last volume, page 413.

them, in four and a half to six fathoms. It lies one mile and three quarters N.b.W. from the extremity of Point Moore, and until the bay is better known, cannot be pronounced the only danger to be avoided. Inside the end of the reef, the depth is five and a half to six fathoms, shoaling to five and four, on rather uneven sandy bottom, half a mile from the eastern shore of the bay, which is two miles across its mouth, and a long mile in depth. The Beagle anchored in four fathoms, in about the centre of it, being then nearly three-quarters of a mile from the shore, with Point Moore bearing S.W. ½ W., a mile distant, and the north end of the reef N.W.b.W. ½ W. A small covered rock was then two-thirds of a mile to the W. ¾ N., and halfway over to Point Moore the water shoaled to less than two fathoms. Towards the main, in a south-east direction from the Beagle's anchorage, the depth gradually decreased to two fathoms at a quarter of a mile from the beach, which was free from rocks, and presented good landing. A more sheltered berth than the above may probably be found nearer to the main reef, but the ground will be rocky, and should previously be examined by a boat. The rise of tide was found to be from twelve to twenty-four inches, making high water on full and change days about 9h. 10m. A.M. Variation 4° 55′ west.

Reports on Lighting Bass Strait.

H.M.S. Beagle, Port Jackson, Mar. 2, 1841.

My Dear Sir.—I have attentively looked over the accompanying papers respecting the proposed light-houses in Bass Strait; but with regard to those intended to be placed on the north and south sides of Bank Strait I cannot offer an opinion, as that part has not yet been visited by the Beagle. Still I am glad to find that steps are being taken for facilitating the navigation of so dangerous a channel; as every seamen who is at all acquainted with it must long felt the want of lights on eligible situations, as no doubt those chosen will prove to be.

As only one light is at present proposed as a guide to ships in the western entrance to Bass Strait, it seems to be a question worthy of consideration weather Cape Otway should have the preference to the north end of King Island. Sir John Franklin appears led to think so, merely in consequence of the distance at which the Harbinger Reef is from the land; viz., six or seven miles. But as the position of those rocks has been carefully ascertained by the officers of the Beagle, and their distance off shore found not to exceed four miles and a half, I am induced to consider the hill near the north point of King Island the most desirable situation for this light.

The Harbinger Rocks, although dangerous, are by no means so formidable as they are generally supposed to be, as, instead of being a continuous reef some miles in extent, they are two single detached rocks, with a clear passage between them, through which the Beagle sailed, and did not find less than sixteen fathoms water, being then in a line between the rocks, but nearer to the western one.

The following are the positions of the Harbingers and Navarin Rock with respect to the north point of King Island; the bearings are magnetic:—

The Western Harbinger bears west 4° north, four miles and four-tenths from the north point of King Island, and north 4° east, six miles and three-quarters from the highest part of the northernmost New Year Island. The Eastern Harbinger bears west 18° north, three miles and four-tenths from the north point of King Island and north 60° east, one mile and a quarter from the Western Rock.

Navarin Rock bears north 27° east, one mile and six-tenths from the point of King Island, and east four miles from the Eastern Harbinger.

The hill I would propose for the situation of a light-house is only three-quarters of a mile from the north point of King Island: it is about 590 feet high, and can be seen from a ship's deck about nine leagues.

From this hill the Western Harbinger bears west 73½° north, four miles and three-quarters.

I think a light-house in such a position would be more advantageously situated, with respect to ships sailing to the east or west, than if it were placed on Cape Otway.

With regard to a light-house being placed upon one of the islands in the eastern entrance of Bass Strait, there can be but little doubt that Sir Roger Curtis' Island is the most desirable situation as far as regards ships passing from west to east, but a light so placed would be of little use to those entering the Straits from the eastward; and, as it frequently happens (particularly during the summer months) that easterly winds prevail for several days at a time, and are mostly accompanied by thick weather, I am inclined to think that if a light were placed upon the highest part of King Group it would be more generally useful, as the southern half of the space between those islands and Flinders or Great Island, is said to be more or less occupied by rocks, leaving little more than nine miles of clear sea to the south-eastward of the Group, and thereby making it a matter of great risk and anxiety in running for the Straits in such weather. During westerly and south-west winds, the weather is generally speaking, sufficiently clear to admit of Curtis Island being seen before a ship would be in danger, as they are high steep rocks with deep water close to them; and, from the elevation of a light placed upon Kent Group, it would, in all probability, become visible during tolerably clear weather in time to give ample warning of the vicinity of those islands. Should it even appear that Curtis Island and Kent Group are equally desirable positions for a light-house, it might be well to bear in mind how much more easily communication can be had with the latter island in consequence of the anchorage and shelter they afford, whereas I doubt if a boat can at all times land upon the former.

A light upon Cape Howe, although of minor importance to those at the east and the west entrances to Bass Strait, would still be of the greatest service, as a single bearing would point out whether a ship were to the northward or southward of the Cape, and thereby enable her to shape a course accordingly; whereas it now frequently happens that much time is lost, and great anxiety caused to those in command, besides

a serious risk of property by too near an approach to the Long Beach, in endeavouring to gain sight of the Cape during thick and unsettled weather.

I have delayed answering your note until now, being unwilling to offer a hasty opinion upon a subject of so much importance; and am sorry not to have had a opportunity of consulting Captain P. P. King, whose opinion upon such matters I consider of far more weight than any one I can offer.

I have the honour, &c.,

J. C. WICKHAM.

To His Excellency Sir George Gipps, &c.

Memorandum from Captain P. P. King, R.N.

I have carefully read and considered the several papers communicated to me relating to the erection of light-houses in Bass Strait, and beg to offer the following remarks upon this most important subject.

There can be no doubt as to the advantage that will accrue to the shipping interests, and the commercial advantage of the country, by the erection of those beacons; the only question to be considered is, their number and their proper locality.

With respect to the lighting of Bank Strait, this has already been determined upon by the Government of Van Diemen Land; and I think that the situations of the light stations have been every judiciously selected. I must heartily congratulate His Excellency Sir John Franklin upon having matured a plan of such vast importance to both the Colonies.

With respect to the proper situation for the eastern light in Bass Strait, I am decidedly of opinion that it ought to be placed on the summit of the eastern island of King Group, for the following reasons, viz:—

1st.—Ships bound for the westward through Bass Strait, usually pass to the northward of the Group, in order to avoid the low rock in the centre of the passage, and the rocky ledges which are strewed between the rock and the north point of Great Island. As on this route they generally pass between Curtis Island and Judgment Rock, a light-house on the former would certainly be very desirable; but if it were placed on Kent Group, it would be quite as useful for the passage both to the north and to the south of the Group, the latter being, as I think, more convenient—certainly more direct—and equally safe.

2nd.—For vessels bound through the Straits from the eastward, and for those passing to and from Van Diemen Land and Sydney, a light on Curtis Island would be almost useless; but if placed as above proposed it would be very serviceable.

3rd.—The light on Kent Group would be visible sufficiently far, if required, to lead a vessels clear of Curtis Island. All the dangers that exist here being to the eastward of it, and the current and tides to the westward being of little importance, but both uncertain and strong amongst the island and rocks in the neighbourhood of Kent Group, a light would be very desirable.

4th.—To the remark of Captain Wickham, of the facility of landing

on the Group, and the difficulty of doing so on Curtis Island, I may add, that whilst the latter is barren and destitute of water the former possesses some fertile valleys producing timber enough for fuel, soil for gardens, and a sufficiency of water, for the use of the people attached to the light establishment.

5th.—To Bass Strait on the west there are two entrances, one between Cape Otway and King Island, and the other between King Island and Hunter Isles, off the North West Cape of Van Diemen Land.

6th.—The first or northern channel is more frequently used, and is attended neither with difficulty nor danger; the width being forty-three miles, and, with the exception of the Harbinger Reefs close to King Island, perfectly clear. The southern channel is more contracted in width, and has several dangerous rocks on it, and in my opinion requires the aid of a light more than any other part of the Strait. The most proper position for one is on the extremity of the south point of King Island, which is very low, and extends to a considerable distance from what is laid down on the chart as its south extremity. (The error, however, has been corrected on the survey made by H. M. sloop Beagle.) An objection to its being placed so low preventing its being seen at a great distance may be raised; but, as the intention of the light is to carry a ship clear of Reid rocks on the one hand, and the low extremity of King Island on the other, it ought to be erected where, for that purpose, it would be most serviceable. On the high land it would serve as a mark for ships to make the land, but would not carry them through the South Channel. It was on the south point of King Island that the Isabella, from India, lately went on shore and was wrecked. The tide sets across the channel towards Reid rocks with great strength, so that, if the night be so dark that the land be obscured, it would be impossible for the navigator to know how the ship has been affected. This I know to be the case from personal experience.

7th.—With a light placed here I think the southern Channel as available as the Northern one. I do not consider the necessity of a light to point out the Northern Channel to be very great. It would be very satisfactory for a ship entering the Straits by night to make it, in order to satisfy her of her actual position, and enable her to steer a course for Port Philip, or Curtis Island; but as the distance to the latter is too great to run between the dark and daylight, no danger need be apprehended by running on a certain parallel, and occasionally sounding.

8th.—If, however—and it would be more complete if it was so—a light-house were erected to point out the Northern Channel, I agree with Captain Wickham that the north end of King Island is the proper place. I do not attach much importance, to the necessity for a light on Cape Howe,* whilst there are other places where it is more required. If a fourth (for I have recommended three) were erected, the most desirable place, in my opinion, is on Point Perpendicular, at the entrance of Jervis Bay, and for the following reason:—

* Ships emerging from the Strait, ought not to pass the meridian of Cape Howe nearer to it than thirty miles, both to avoid the indraught towards Long Beach, and to have a good offing in the event of the wind veering to the south-east, which, if nearer to the land, might prevent their weathering the Cape.

During easterly gales on the coast there is no place of refuge for ships between Botany Bay and Cape Howe, if unable to work off the land, except Jervis Bay and Twofold bay. A light, therefore, that would direct a ship to a safe anchorage on such an occasion would be most serviceable; nor would that be the only service it would render. Ships passing up the coast ought to keep near the land, to avoid the strong southerly current that is experienced in the offing. In doing this, the projection of Jervis Bay being comparatively low, many find themselves either within it, or closer to it than is prudent. With a light the head may be passed close to, and a direct course be steered clear of the heads of Botany Bay.

I am, therefore, of opinion that there should be three lights to assist the navigator of Bass Strait; and if a fourth could be afforded, one at the entrance of Jervis Bay would be very desirable. Those for Bass Strait should be placed as follows:—

On the summit of the Eastern island of Kent Group.
On the hills at the north end of King island.
On the *low* south extremity of King Island.

(Signed) PHILIP P. KING,
Port Stephens, March 9, 1841 *Captain, R.N.*

THE SURVEYS OF GRÆME SPENCE.

SELF-AGGRANDIZEMENT is one of the first laws of nature, employing the mind of man from the cradle to the grave. It is no doubt right, that he should follow the great precept of religion, "to learn and labour truly to get his own living, and do his duty in that state of life to to which it shall please God to call him." And many there are, who nobly persevere in this Christian duty, in the various walks of society, and many besides who care not, either to learn or labour, being content to take the world as they find it; unhappily for them the means of their own living having been previously prepared for them. There can be no question as to which of these classes is really the happiest, or which realizes the intentions of the great Author of the Universe; but those whose good fortune it is, while following up the principle of aggrandizement, to leave to posterity the benefit of their labours, are after all the most useful labourers of the vineyard. True it is, they reap the present reward of those labours, be that reward small or great; but they leave behind them the monuments of their industry, to remain as undeniable proofs of their right at least to that reward which they may have gained. Hence, while benefiting themselves, they have the additional satisfaction of knowing that they will also hereafter benefit posterity. The nautical surveyor is justly entitled to be included among this valuable, and happily extensive class of persons. His works are of a most useful nature. They remain after he has passed away, the faithful records of the faithful performance of his duty. He leaves behind him an ample return for any reward which he has gained, and his is the grateful feeling that he indeed labours not for himself alone, but for the good of his fellow-man.

Of the various nautical surveyors whose works have occasionally

formed the themes of this journal, few have more right to the gratitude of posterity, than the subject of the following pages. Engaged in the harassing labours of nautical surveying at an early period, when this useful science was but little understood, and, we might also add (judging from the instance afforded by him,) less appreciated, it was his lot to reap but a poor reward for his great industry; and while he assisted materially in extricating the art of nautical surveying from its original vague character, and paving the way towards its present advanced state as an *exact* science, he had the mortification of seeing those exertions coldly received, and himself rewarded with the bare pittance of existence. There is much to interest the nautical surveyor in the following account of the services of Græme Spence, and it is a duty that we owe to the memory of this excellent man, now no more, to inform the nautical world, how largely they are indebted to him.

Having at the age of fifteen years finished that sort of education which was thought most fitting for the business he was intended for, he was bound apprentice to Mr. Murdoch Makenzie, jun., (his first cousin, they being sisters' children) for seven years, to learn the business of Maritime Surveying, on the 6th of April, 1773; Mr. Makenzie was then upon the survey about the Lands End of England; and as he had succeeded his uncle Mr. Murdoch Makenzie, sen., as head-surveyor in the service of the Admiralty, two years before, or in the year 1771, it was then, and ever afterwards, held out to Mr. Spence, that he should succeed him in like manner.

With this stimulus Mr. Spence's application, and progress in a very little time, was so uncommonly great, that he was entrusted with the duty of surveyor's-assistant, in the summer of 1775; and in the course of which year, and the beginning of the next, he drew the chart of the North Coast of Kent, from the North Foreland to Yantlet and Lee, in the river Thames, which was the first clean chart he ever drew in his life, and it gave great satisfaction.

The survey of the North Coast of Kent being finished, Mr. Spence assisted Mr. Makenzie in the year 1777, in the survey of Plymouth, Falmouth, Torbay, and other parts of the channel to the westward, and no sooner had the survey of Plymouth Sound been completed than the combined fleets of France and Spain appeared off it, in the summer of the year 1779. On this occasion, by order of Admiral Lord Shouldham, the buoys were scuttled and removed, boats with flags flying being placed at all their several situations, whenever any of our own ships came in, or went out,—a service on which Messrs. Makenzie and Spence were employed during the whole of the ensuing winter, and till the next spring. This duty, although not immediately connected with the survey, was carried on under the principal direction and management of Mr. Spence, because Mr. Makenzie being that year first made a lieutenant (he had been formerly round the world as midshipman, with Commodore Byron,) Lord Shouldham sent him upon various services in a custom-house cutter, particularly to Jersey and Torbay; thus, the management of the buoys became entrusted to his assistant, Mr. Spence, in the surveying-vessel. The surveys of Plymouth Sound and Torbay, were very serviceable to the engineers employed in erecting batteries for the defence of those places; and in consequence of the discoveries

made in Plymouth Sound, in the course of the survey, several new buoys upon the new shoals there were recommended and laid down.*

In part of the year 1780, and while upon the survey to the westward, Messrs. Makenzie and Spence were ordered up, by land, leaving the surveying-vessel at Plymouth, to survey the channel between the Isle of Sheppy and the Main, as there were suspicions of the Dutch, with whom we were then at war, getting into the river Medway, through this back channel; and consequently out of the reach of the guns of Sheerness.

In the latter part of the year 1777, and the beginning of the year 1778, or about two years before Mr. Spence had completed his apprenticeship, Mr. Makenzie thought him so perfect a master of his business, that he entrusted the whole of the survey of Falmouth harbour to him, as well the surveying part as the planning and drawing part of the work, without his doing anything whatever, in either. Indeed, Mr. Makenzie's eyes now began to fail him, and he was well satisfied with Mr. Spence's execution of the above survey.

About the year 1781, Messrs. Makenzie and Spence were ordered, at the request of the Trinity-House to survey the Needles Channel, and afterwards from thence up to the Owers, with a view to fix upon the best mode of lighting it.

From this time, till Mr. Makenzie was paid off in the year 1788, his eyesight was so bad that he took no part whatever in the survey, for it was as much as he was able to write his own letters, much less to survey, plan, or draw. And as two observers were absolutely necessary to take the proper angles on the survey of the water work, according to their own new and accurate mode of surveying, which exploded compass bearings, and as he could not see to take any, Mr. Spence was consequently obliged to teach the mate, or midshipman, who had joined them, for the time being, to take the necessary angles with himself. While this survey of Spithead was going forward, the first of these young men getting tired of, to him, such unprofitable life, left them, and afterwards became a Post-Captain in the navy. The other never being very clever at it, and Mr. Spence seeing no prospect of getting any one to assist him in his laborious business, and fearful lest Mr. Makenzie would be obliged to drop the survey on account of his bad eyesight, about the year 1784, invented and constructed an instrument, to which he gave the name of the "Double Sextant," by which both angles could be taken by one observer; or, in other words, the work of two observers could be done with it, by one at the same time. He also made a model of a New Station-pointer, as a counterpart to this double sextant, by which the business of maritime surveying was still farther facilitated.†

* The same service has been performed in the St. Lawrence by Capt. Bayfield, the buoyage of which river was very imperfect until his survey was completed; and at Portsmouth we find the buoyage of the entrance of the harbour, materially improved by the recommendation of Commander Sheringham, arising from his survey last summer.

† Our nautical surveyor will be much interested in this account of the invention, (from motives of necessity,) of one of the most useful instruments he employs. No surveyor ever thinks of being without the station-pointer, which, by the expertness of our instrument-makers, has been brought to great perfection both in its division and in applying lengthening legs. Had Mr. Makenzie's eyes not failed him, Mr.

The rough models of these instruments were shewn by Mr. Makenzie to Lord Howe, then first Lord of the Admiralty, and his lordship was so pleased with them, that he ordered them both to be made at the expense of Government, and they were put into Mr. Troughton's hands, who accordingly made them. But notwithstanding the utility of these instruments, and the double duty the inventor thus entailed upon himself, he never received one penny in reward from Mr. Makenzie for the same, nor any addition to his small pay, £45 a year, from the Admiralty.

While surveying the coast from the Needles to the Owers, which occupied them till the year 1786, the want of buoys at Spithead, and the bad situation of the few that were there, could not fail of attracting the attention of the surveyors. They proposed a new, and infinitely better scheme of buoys, which was approved of by the Admiralty, adopted, and put into execution, under their immediate direction. A plan of Portsmouth harbour was made on a large scale, in order to show how many more moorings that harbour would hold than were already in it.*

From the year 1786 till 1788 Mr. Spence carried on surveys for Mr. Makenzie, from the Needles Channel down to the westward to Exmouth in Devonshire, including a particular survey of Pool Harbour, a survey of Weymouth, Bridport, and Lyme Cobb, on a large scale also. But at Exmouth, in the spring of the year 1788, the Admiralty thought fit to drop the survey suddenly, and to pay off Messrs. Makenzie and Spence, without giving the latter the least hopes of employment again, or one shilling of half-pay, although he had then been in their service about sixteen years.

Spence's ingenuity would not have thus been put to the test, and the honour of inventing the station pointer might have been claimed by some other person. The double sextant being only prized by those who are accustomed to its use, and familiar with its great advantages, is not so generally employed as the station-pointer. We have not been so fortunate as to have met with the instrument as invented by Mr. Spence, but that of the late Capt. Hewett, Capt. W. Owen, and Mr. D. Rowland, are no doubt well known to our readers. The two former possessed one radical fault, that of the two index glasses being placed one above another, both moving on a common axis, whereby the plane of reflection, common to the two exterior objects passed between the glasses. Hence, there is no reflection of those objects to the third between them, but by applying the power of the telescope, sufficient of their rays is collected to enable them to be seen. We apprehend this defect was not to be found in Mr. Spence's double sextant. Nor was it in Mr. Rowland's, whose application of the second index-glass, with its horizon-glass in the same plane as the first, is very ingenious, and has long since been described in this journal. We perceive, also, that the use of *compass-bearings* was here discontinued,—we believe for the first time. No doubt Mr. Makenzie's (sen.) experience in his survey of the western coasts of Scotland, had amply proved their fallacy.

* The scale of this survey is 8 inches to the mile, about three times that on which it was published, and no doubt it enabled the officers alluded to, to lay down the moorings as required. Another most important fact it has also established, in connection with Commander Sheringham's survey of the same place, made in the course of last summer, on the scale of 20 inches to the mile, shewing the great advantage of such surveys. They have proved that no change has taken place in the depths of water in the harbour, no accumulation of silt or filling up as had been feared by some. The depths have been pronounced by Commander Sheringham to be precisely the same as in Spence's survey, and he has added his high opinion of the extraordinary accuracy of Spence's survey generally. Considering, we may add, the very limited means of the surveying party of 1786, the work which they have left behind them reflects honour on the names which it bears.

During the year Mr. Spence was unemployed by the Admiralty his mind was fully occupied with schemes for the benefit of navigation. One of these was a floating light on the Owers, and another the Portland lights; and he went with some of the Elder Brethren of the Trinity-House in their yacht, in July 1788, and placed the Owers light at her proposed situation.*

In February 1789 he accompanied one of the Elder Brethren to Portland, and planned out upon the spot, the situation and height of the Portland light, near Portland Bill; and contracted with Mr. Hamilton, the mason, to build it, agreeably to the elevations and sections of it in the scheme which he had proposed the year before. He was also at Portland assisting in the experiments making on the new Argand lamps, plano-convex lenses and reflectors.

On the 11th of August, 1789, when Mr. Spence was about thirty-three years of age, he received orders from the Admiralty to survey the Scilly Isles.† This survey, together with a particular report on the situation of the light-house there, was finished in February, 1793, or in about three years and a half. During this interval, Mr. Spence was called away from the work, to survey Fishguard Bay, in South Wales, and to make plans of and report upon an intended Pier Harbour there, which he accordingly did. He was also employed for a considerable time during this period, in drawing a clean copy of Mr. Makenzie's chart of Plymouth Sound, for the Honourable Trinity-house. But while on the Scilly survey, he had an opportunity of rendering an important piece of service. On the evening of the 8th of June, 1790, during a very thick fog, he heard several signal guns of distress to the southward,—and by pursuing the sound, for he could not see the vessel, he got on board of the Pegasus frigate, Capt. Sawyer, then on shore among the rocks of the Isle of Annet. He assisted in getting her off, and anchored her in a place of safety for that night, and the next day saw her safe out to sea again, without receiving any material damage, except the loss of an anchor. Perhaps, but for this timely assistance, she might have been lost among the rocks off those islands.

In the beginning of August, 1793, Mr. Spence was sent to Galloway-shire, in Scotland, (leaving the surveying-vessel at Plymouth,) to survey Garliestown Bay, Port Yarrock, Port Nessock, and Whitehorn Harbours, and was ordered to project, plan, and report upon intended Pier Harbours at each of those places, which he accordingly did, and on the 10th of February, 1794, he received orders from the Admiralty to survey the Downs, and afterwards the Owers, beginning at the North Foreland. He was directed to report upon the best situation for the intended Goodwin floating-light, and also upon the best situation for leading lights through the Gull Stream. The survey of the Downs was finished in the year 1796, and he placed the Goodwin Light on the 25th of August, 1795, off the North Sand Head. Mr. Spence then reported on the leading-lights through the Gull Stream,—also several

* The old yacht was here laid down as a temporary light. He laid the proper light-vessel in the month of October afterwards.

† This piece of work is another of Mr. Spence's productions, which has stood the test of time. It confirms the well deserved reputation of this excellent surveyor for correctness.

additional buoys for that navigation, all of which were approved of, and in July, 1796, he laid them at the proposed positions. While upon this survey, Mr. Spence also recommended several improvements at Ramsgate Harbour, and gave the trustees, (by order of the Admiralty,) a very long report upon, and sailing directions for, that harbour, for which services he received their public thanks more than once. At this time also, by Mr. Pitt's desire, he made out a plan of, and a report upon the proposed situation of the Goodwin Light, for his private use, and in March, 1796, he was ordered by the Admiralty, at Mr. Pitt's particular desire, to make out a plan of, and report upon the then intended London or West India Docks, which he accordingly did.

The Downs and its neighbouring coasts being completed, the survey of the coast (without the water work,) was carried on from the South Foreland to Beachy Head, including Dover and Rye Harbours, which occupied till May, 1797, at which time Mr. Spence was directed to make a nautical military report, upon the coast between Dungeness and Beachy Head, as to its accessibility to the enemy, and the most proper places to erect batteries at for its defence, and also to make out a plan and report upon the best mode of improving Rye Harbour.

These services being performed in May, 1797, Mr. Spence received orders from the Admiralty to survey the Swin, and the coasts of Essex and Suffolk, from the Nore to Orfordness, which he finished in July, 1803. Nothing very remarkable happened while he was upon this survey, except that on the 10th of August, 1801, he carried the late Lord Nelson, in the Medusa* frigate, which drew eighteen feet and a half water, over what is commonly called Harwich Naze, when no pilot would take charge of the ship; for which service, his lordship promised him his friendship, in a letter expressive of his high obligation. Mr. Spence at this time was also ordered by the Admiralty, to make out a nautical military report upon the coast of Essex, as to its accessibility to the enemy, and the most proper places to erect batteries at for its defence.

In Oct. 1803, Mr. Spence concluded his surveying labours, being paid off in the surveying-vessel, having petitioned the Admiralty (on account of bad health and bad eyesight,) eight months before, for leave to resign the survey, and for the same half-pay which his two predecessors in the survey had allowed them. He was ordered to make out a clean chart of his survey of the East Swin, and to return all his charts and instruments into office. He accordingly did so, and finished and gave in the said clean chart to the Admiralty in March, 1804. He was then ordered to stay in London, and employ himself daily at the Admiralty in compiling and writing out nautical descriptions and sailing directions, for all Mr. Mackenzie's jun. seventeen years' surveys, (these being left undone by him,) as well as his own survey of the Swin, from the Nore to Orfordness, all of which great work he finished himself, without any clerk or person whatever to assist him, in about four years, or from March, 1804, to April, 1808. He corrected Mr. Makenzie's jun. surveys of the Bristol Channel, from the grand trigonometrical survey in bearings and distances, and also his nautical description and sailing directions, which, with other employment at the Admiralty, lasted till 1811.

* The Medusa Channel still bears the name of Lord Nelson's frigate.

This last work, after a period of thirty-eight years, closed his long services, (in the 54th year of his age,) during which time, he had allowed no personal consideration to interfere with his duty. Many of the implements and articles he made use of, during his engagements in surveying, were of his own invention; and a small clasped volume, containing drawings of the said implements, instruments, &c., with descriptive particulars, in respect to his mode of proceeding, was submitted to the inspection of Lord Viscount Melville, after the surveyor's death, by desire of his widow. Thus passed away after a life of useful labour, a man who has justly entitled himself to be considered the parent of modern nautical surveying, whose works are still used by the Royal Navy.

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.—*Port Royal and its associations.*

PORT ROYAL on the south-east side of Jamaica, is unquestionably one of the finest anchorages to be found on its shores; affording sufficient space for a large fleet to lie conveniently in,—a moderate depth of water, and comparatively excellent shelter. During hurricanes, indeed, should the wind veer to the southward, the harbour would be exposed to its force, but with the advantage of smooth water. There are few ports, however, so snugly enclosed,and surrounded by high land as to be entirely exempt from the effects of a circular storm; and the examples of ships being driven on shore and wrecked, from stress of weather in this port are few. The town and works, however, have suffered considerably from the swell thrown up outside, during hurricanes from the south-east,—a proof that even when breasted by shoals running parallel with the external shore, places thus naturally guarded, are, still subject to the battering violence of the undulatory action.

A memorable instance of this has been recorded, some portion of which is worth quoting as being very curious. It appears, that during the furious storm of the 28th of August, 1722, the devastating elements had nigh swept the entire town away. Fortunately the height of the raging wind continued only four hours and a half, or that assuredly would have happened. As it was, the damage done in that short time was amazing. A fleet of merchantmen, homeward bound, was destroyed within the harbour, and four ships-of-war at anchor, were dismasted, and nearly shared the fate of the other vessels. Along the sea-face of the town, there was a solid stone wall nine feet high, and six or seven feet broad. This was erected as a shield to the houses; the strip of land on which the town is built, being only a few feet above the level of the water. The narrator of the storm says,—"the sea scorned to be restrained by so mean a bulwark, for the wind having raised it very much above its ordinary height, it broke over the wall with such a force as nothing was able to withstand. Two or three rows of houses that were next to the wall, and ran parallel with it, were entirely taken away,—among which was the church, a handsome building, and very strong, which was so perfectly demolished, that scarcely a brick was left upon another."

"Who would think that gaz'd upon calm unruffled water,
Its *power* could deal such havoc on brick and mortar?"

The citadel or castle at the fort was partly destroyed, and the fort itself was in danger of being swept away. The foundation here is stated to be of *rock*,—a circumstance few persons, I believe, are aware of, as the entire surface of the point is covered with sand and shingle, no doubt hove up by the action of the waves, during the continuance of these storms, as on ordinary occasions there is no surf. It is highly probable, that had this hurricane continued a few hours longer from the southward, the entire town would have disappeared. Its position is by no means enviable, and it is not improbable, but for the extensive shoals which form a natural breakwater to the impetuous rush of the waves during tempests, the entire spit would be swept bare. The most remarkable effect, however, of this storm, was the amazing quantity of huge stones thrown *over* the wall into the town, from the bottom of the sea outside. "Such a prodigious number were forced over it, that almost an *hundred* negroes were employed for nearly *six weeks* together, to throw them back again into the sea; and some of these stones were so vastly big, that it was as much as *nine* or *ten* men could do to heave them back over the wall!" *

It is questionable whether the authorities acted judiciously in casting these stones into the sea again at the same place; because, under similar circumstances of wind and weather, at any subsequent time, the same undesirable effect must be expected, and probably would follow; whereas, if carried away and thrown upon the shoals, abreast of the town outside, the benefit would be two-fold: the prevention of such a vast heap of solid materials being cast into the town, and the raising of the natural breakwater without. It may, indeed, be said, that the presence of this accumulated heap of stones at the base of the beach, shields it from abrasion, and that during the height of a storm, directly on shore, the mechanical action of the surge, in lifting the stones and casting them over the wall, breaks its force and impetuosity; and, therefore, in this respect, the store of stones under water is really serviceable than otherwise. Such an effect may be expected, but it must be accompanied with its attendant evil just described. If the wall† were properly formed,—not being so at present, the first plan proposed would be the best; although it is possible the pebbles would be renewed in due course of time, if those now there were removed, for, as there are no cliffs very near, it seems reasonable to believe, that they have migrated from some other locality higher up the coast to windward. A very clear conception of the surprising power and energy of the waves and surge, when urged on by a vehement gale, may be formed from the above interesting fact, which it must be recollected occurred on a defended shore. Some idea may also be formed of the prodigious quantity of rain which accompanies these tempests, from the circumstance related by the Rev. Mr. Scott, of the Rio Cobre, at Spanish Town, having

* We have recorded similar instances of the power of the sea, in throwing stones over the breakwater at Plymouth into the Sound, for the satisfaction of those who delight in *floating!* breakwaters.

† The present wall is only a common one, and being such, serves merely to guide the waves into the town. A curve outward is necessary to throw off the water.

risen *forty* feet perpendicularly above its ordinary mark, and doing incredible damage to the estates bordering upon it.

Port Royal has often been visited by hurricanes since that year, but none of these seem to dwell in the memory of the inhabitants so indelibly as that of 1780. The town has also suffered from fire, and from earthquake. The disposition of the lines of houses appears to be injudicious; these are, and I believe always have been, erected in rows parallel, or nearly so, with the sea-face of the strip of land. It seems obvious that if the houses had been placed transversely to the line of the beach, they would, in all probability have stood secure against the fury of the wind and sea, because to these their butt ends would have been presented; and the streets would have served as aqueducts to carry off the influx of sea water into the harbour. Such an arrangement would not interfere with the free circulation of the sea breeze, which is so essential to the comfort and health of the residents. These storms are not regular in their periods of recurrence, but they have always appeared seasonably; several years have intervened between the transits; and they vary much in their character of severity, which seems to depend principally upon the line of path pursued by the centre; for when the margin of a meteor merely brushes the island, the wind's violence will not be so great as if the whole diameter passed over it, and the duration will be very much shortened. Generally the weather is very fine; and whilst the refreshing sea breeze blows, the temperature is not unpleasantly warm, and is often delightful; the evenings and nights are sometimes close, but generally cool and agreeable.

The town, not only from being circumscribed, but from its isolated position is a wretched place; and chiefly of importance as forming a store for the navy, and a near place of recreation. It is visited however, more from necessity than from choice by officers, as may be supposed, from its confined space and hot atmosphere; the city of Kingston, where pleasant society may be found, and an enlarged space for exercise, being too far off to be visited conveniently by the majority who are on short leave.

The tract of land is altogether a very curious one, and claims the attention of the geologist as being an extraordinary miniature peninsula. Its extent from Rock Fort to the extreme point bounding the harbour is between eight and nine miles, and very narrow. At a remote era it was probably of much greater lateral extent than at present, perhaps, occupying the whole of the Middle Ground and other shoals without, to the inner margin of the sub-marine banks within, and which were submerged by an earthquake.

The entire remains appear to have been broken into pieces by some convulsion of nature acting unequally, for such phenomena in their effects upon this island, at least externally, do not seem to be of that violent and destructive character, that those on the continent to the southward display—at Caraccas for instance. Although the cays and islets, and the united portion of the peninsula may be of little value, if it were worth while, they might be reclaimed, and rose some feet above the level of the water. At present they are overgrown with mangroves, and, for the most part, in a state of morass; and whatever miasma may arise therefrom, is wafted by the sea breeze directly into the harbour,

and upon the shipping. It is doubtful whether there is, or, is not, any deleterious quality in these exhalations; whilst the surface is covered with water, it is considered that no harm arises from their presence: but where there are tides, although weak, and the surface becomes alternately covered and exposed to the rays of the sun, then such places are said to be dangerous; at all events, we may conclude that, the air cannot be improved by the admixture.

It is surprising that in a place of so limited an extent as Port Royal is, these spaces, which would add considerably to the surface for building purposes, should have been allowed to remain, not only in a state of nature, but in that condition, which in so hot a climate, some medical writers suppose to be productive of fevers.* In the possession of almost any other civilized people, unprofitable as the spaces seem to be, they would have been turned to some account or other beneficial to the community. I believe it is practicable to form a road the whole of the distance along the peninsula; at present the only mode of communication with Kingston is by water.

If the lands belong to Government, the wood at least, might be periodically cut down; it would probably answer for steam fuel, as it is close-grained and hard. Why these "drowned" islets have been called the Palisades I do not know, but the cause, perhaps, has some connexion with the early Spanish settlers. One part has been used for many years as a cemetry, to receive the remains of the officers and seamen who fall victims to the diseases of the climate; and on that account the name inspires a sort of dread among new comers; the mind associating it with the grave and solemn ideas usually entertained of pestilence and death. This is natural enough, for the eyes of the officers and seamen are often constrained to rest upon the dark green foliage of the mangrove which waves over this damp and lonely dormitory of many a brave companion, and to regard it, during the raging of the Yellow disease, as likely to be the final goal to *their* earthly career! Yet, it is at other times, with an apparent stoical indifference, made a jest of by the old stagers, who have become inured to the climate, and whose minds have imbibed the impression of the poet, that "the paths of glory lead but to the grave."

The channels between the islets have two or three feet of water in them, with a bottom of soft sand and turtle grass. I have passed through some of these in a canoe several times, on my trips to Kingston. The object for so doing, was to avoid pulling against a fresh seabreeze, in the more open and more exposed part of the Sound, and otherwise to get sufficiently to windward under cover, with less effort, so as to be enabled to fetch the city upon one tack, with the light sail which is used. Those persons, however, who have not faith in the ability of the canoemen, and in the stability of their frail bark, make their transit in a wherry,—a large sailing boat with great beam, and

* Although the *statistics* of military disease seem to throw considerable doubt on the generally received opinion of the deleterious nature of swampy lands; yet, the facts produced, would appear not to be decisive of the question, although it is difficult to account for the variations. The Pontine marshes, and the jungles of India, are noted examples,—in proof, that in some cases, such places are productive of disease, principally fever and ague.

sharp at both ends. These "skimmers of the sea," as they may be called, are remarkable for their swiftness. I think that in the run through the smooth water of the Sound, with a "spanking" sea breeze, there is not a man-of-war's boat that could compete with, much less distance them. Their extreme rapidity,—the great inclination which they make from the pressure of the vehement breeze upon their large sails, occasion an opportunity for the trial of weak nerves; but, however apparent, there is in reality no danger, an instance of their being upset never having, to my knowledge, occurred. Their build is fine, —somewhat after the model of Sir William Symonds' ships,—wedge, with great beam, a mode of construction well adapted for smooth water sailing. The semi-spherical bow, however, in my opinion, seems to be indispensable for rough seas. The originator of these fine boats, whoever he may have been, could not have fixed upon a more excellent model for the navigation of this inlet. The rig also is complete, both with respect to the vessel, and the powerful breeze which fills the sails; these are shoulder-of-mutton, or *lateen* vertically set. Even, however, with reduced top-pressure, they heel the hull over to such a degree, as often to let the water in over the gunwhale. Of the various modes of rigging boats, this is unquestionably the best.

During the war, there were many circumstances which created a pleasing excitement among all grades here, and tended to soften the effects of climate, and make life pass agreeably,—in some instances not apart from the more arduous duties of the profession. Among others, emulation gave a buoyancy and elasticity to the spirits, that materially assisted in the preservation of health and good humour. But this, like other principles of action, may be stretched too far, when, instead of effecting a wholesome purpose, a re-action takes place, and reversed consequences follow. Indeed, it is not every officer who knows how to stimulate those under his command to the endeavour of excelling. He must be a proficient in the study of the workings of the human heart and mind, and he must be able to exercise a control over himself, and be in possession of generous and humane feelings, before he can expect to light up that voluntary and energetic principle, which we call emulation, among his followers. In this very matter, I have had occasion, during my career, to notice with a degree of surprise and regret, bordering on absolute distress of mind, the erroneous and ultra-severe system exercised to effect a *semblance* of this, in its pure, free, and unforced action—most commendable principle. For some of the parties following such strong and objectionable measures, I entertained both respect and regard; but, although I could never reconcile their plans with my ideas of "right and wrong," yet, I am thoroughly satisfied that most, if not all, were not actuated by the passions of a bad heart, but erred partly from ignorance of the tact and skill necessary in the management of a large body of men, as well as from a too eager encouragement of self-love, by which *the absolute supremacy of rank had a little muddled the judgment*. In truth, it is not every man who knows how to deal with prosperity,—how to bear his honours, or carry his rank with the dignity, but at the same time, with the becoming humility of a human being,—a mere *mortal*,—nothing more, that must one day or other unrevealed, resign the "trappings of office," and co-mingle his "dust

aristocratic," with the dust of the vulgar; for, "thus passeth away the world's glory!" In fact, Young was right when he said,

> "May Heaven ne'er trust my friend with happiness
> Until it has taught him how to bear it well."

I have seen the gallant "first"* of the old Leviathan, enjoying with delight the superintendence of a regatta of ships' boats, whilst performing the evolutions of a miniature fleet about the harbour; the young mids, proud of their commands, and striving heart and soul to gain his approval, and as happy as school boys let out to play. The men too seemed to enjoy the pastime with great satisfaction, and the lookers on were as much excited and weaned from their immediate cares, as the performers. Indeed, so contagious was the spirit of peace and happiness which spread around on such occasions, that even the convalescents were aroused, and gazed upon the animated scene with an air of delight, that seemed to afford them more real service than all the drugs the *materia medica* could produce.

It was not, indeed, often that the other ships in Port Royal could afford the leisure for such agreeable relaxation, from the necessary duties of equipment; but, whilst visiting other ports, occasions would offer when there was little to do, and these were eagerly seized upon for that purpose,—a sham fight or a race; and I am sure the relief the pastime afforded, was so agreeable a break in upon the ordinary ship affairs, that every officer who has grown grey in the service, will count these boat-sailings among the few indulgences which brought relief and pleasure to his mind.

The seaman's connexion with the rest of the world being only occasional, the turn of his ideas necessarily varies from that of the shore man; and his feelings from the peculiar mode of life he is constrained to follow, become, as it were, concentrated on the objects immediately within the sphere of his isolated habitation. Hence the extraordinary degree of attachment which he feels for his ship, and everything connected with her,—an affection which is the main-spring of that emulation he displays, especially in his duties aloft, and is closely allied to, if it be not identical with the *esprit de corps*, which has such a wonderful effect in fostering and upholding discipline. This point should be rationally encouraged,—that is in the absence of severity and stern command, by the adoption of a system of personal rewards. This conviction has happily forced itself upon the consideration of the authorities since the peace, and, I feel quite convinced, that the good effects arising from it, will prove of incalculable benefit to the service at large.

Equally attached are crews of ships to their officers after a lengthened servitude; indeed, in well regulated vessels, where the seamen are properly treated, and remain for some years together, it would be extraordinary if they were not so. For, however rough in manners a sailor may appear to the landsman, he is, nevertheless, not without the finer qualities of the heart. Of course, I speak, generally, of the thorough-

* The present Sir N. I. Willoughby, K.C.H., and aid-de-camp to her Majesty. He was not the senior lieutenant, although performing the office by the admiral's order.

bred tar,—exceptions there are, but we must leave these to be dealt with by the merchant skipper, who, unhappily for his peace and comfort, is too often plagued with the *mauvais* of the profession.

I recollect the first time I landed at the Sally Port, at Portsmouth, as a youngster, to have experienced a recognition from some old shipmates in a very characteristic way. As we pulled in towards the beach, I observed a group of tars standing together at the head of their boat. The moment I rose, two of these men started off at full speed towards me, and just as I was in the act of jumping upon the strand, they seized hold of me, each by an arm, and in a trice I was seated upon their shoulders, and in this position was conveyed up to the gate. They had been main-top men in a frigate with me in the West Indies, for nearly four years, and were most valuable men.

In all these impulses of a thorough Jack, there is apparent so much of real meaning and sincerity, although, as in the above case, the display may be extremely sudden, as to convince every witness that he is no dissembler. The hearty "God bless you, sir," of these two genuine "sons of the wave," were words of force and meaning, and the earnestness with which they were uttered, showed that they came warm from the heart. I was as much delighted to see the poor fellows again, as they could be in beholding their old mid-of-the-top. For many a smart gale,—a pelting shower,—and a vivid flash of lightning, had we endured together in that circumscribed rocking place.

The general impression upon my mind, at the time these reminiscences refer to, was, that a universal cheerfulness pervaded the "blues" on the Jamaica station, arising, probably, in a great measure from the delightful weather so prevalent there, as also from the varying round of events, —some of an inspiring nature, which kept the mind of all constantly employed, so that little time was allowed it for brooding over its cares. A few *growls*, indeed, might occasionally be heard, but these proceeded principally from the young and over-ardent, whose anticipations of advancement were not so speedily realized as expected, and not from the irksomeness of the duties necessarily imposed upon them, as upon all successively in their different capacities. The good old admiral used to speak very feelingly to these youths, and would gently check their impatience, by reminding them that "Rome was not built in a day!"— a fact, that would not of course admit of a denial; and furthermore, as a consolation, and which always proved irresistible, he (the admiral,) had himself served twelve years as a midshipman!

Of the port duties, to me the most disagreeable was, that of drawing stores from, or returning those condemned to the dockyard. On most occasions, it was a severe trial during the fervour of the day, especially to the men who had to work hard,—with the thermometer often as high 110°. The effect was so powerful on the iron-work exposed to the full blaze of the sun, that the hand could not rest on it for a second, without a very painful sensation of heat.

(To be continued.)

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(Continued from p. 244.)

These various shows seem pretty nearly to exhaust all that can be said of the recreations permitted to the Dezima Dutch at Nagasaki, unless the earthquakes and volcanic eruptions, that occasionally vary the monotony of their existence, be reckoned as such.* The former, indeed, though general and frequent throughout the empire, and causing quite sufficient damage in both town and island, as for instance, in the year 1825 when Dezima suffered materially, seldom appear to engage the thoughts of the Europeans, if they are not combined with volcanic eruptions. They afford, nevertheless, the grounds alleged for the restrictions imposed upon the architectural taste of the Japanese, with respect to both the height and solidity of their buildings. Volcanic eruptions, and the formation of the islands is generally volcanic; the number of volcanos, extinct or active, considerable, appear to be, in their estimation, more important. So recently as the year 1792, a new volcano manifested its formidable character in the island of Kiusiu. The first eruption, or rather series of eruptions and earthquakes, of this mountain, named the Unzen, spread terror and desolution around; and, according to the description given of this terrific display of volcanic nature, by Siebold, might well fill every bosom with dread.

"At five o'clock in the afternoon of the 18th of the first month, the summit of the Unzen suddenly sank, and smoke and vapor burst forth. On the 6th of the following month, an eruption occurred in the Biwa no Kubi mountain, situate on its eastern declivity, not far from the summit. On the 2d of the third month, a violent earthquake, felt all over Kiusiu, so shook Simabara, that no one could keep his feet. Terror and confusion reigned; shock followed shock, and the volcano incessantly vomited stones, ashes, and lava, that desolated the country for miles around. At noon on the 1st of the fourth month, another earthquake occurred, followed by reiterated shocks more and more violent. Houses were overthrown, and enormous masses of rock, rolling down from the

* We add here a few particulars concerning the Chinese factory at Nagasaki. The Chinese are allowed much more liberty than the Dutch, walking through the streets of the town at their own convenience, and as individuals carrying on a petty trade in some articles. They are under the control of four Chinese captains or headmen, who also manage the trade of the junks as they arrive. The trade with the Chinese is, like that of the Dutch, an imperial perquisite. The usual number of Chinese residents is about one hundred, who all reside within the walls of their inclosure, which is commonly called To jin yasiki, or the premises of the Chinese. M. Titsingh has given a plan of the place copied from a Japanese drawing. It is divided by narrow streets into twelve blocks of buildings, and may contain in all 150 houses; about 75 of which are storehouses. The number of junks is about seven, which make two voyages annually, bringing medicines, broadcloths, and other woollen fabrics, and other articles, and carrying away biche-de-mer, copper, lackered-ware, &c. Interpreters, custom-house officers, door-keepers, &c., are similarly appointed by the governor to the Chinese factory, as they are to the Dutch, but much less oversight is exercised over the everyday movements of the former. We are told that Chinese beggars are to be met with in the streets of Nagasaki. The Chinese perform no journey to Yedo, nor is the time of the departure of their junks fixed by law.

mountain, crushed whatever lay in their way. When all seemed quiet and the danger was believed to be over, sounds, like the roar of artillery were heard in the air and underground, followed by a sudden eruption of the Miyoken yama, on the northern slope of the Unzen dake. A large part of this mountain was thrown up into the air, immense masses of rock fell into the sea, and boiling water, bursting through the crevices of the exploded mountain, poured down, overflowing the low shore. The meeting of the two waters produced a phenomena that increased the general terror. The whirling eddies formed water spouts, that annihilated all they passed over. The devastation wrought in the peninsula of Simabara, and the opposite coast of Figo, by these united earthquakes and eruptions of the Unzen dake, with its collateral craters, is said to be indescribable. In the town of Simabara, every building was thrown down except the castle, of which the cyclopean walls, formed of colossal blocks of stone, defied the general destruction. The coast of Figo was so altered by the ravages, as to be no longer recognizable. Fifty-three thousand human beings are said to have perished on this occasion." This formidable mountain is apparently within two days' journey of Dezima and Nagasaki, though nothing is said of material ravages wrought there at the time in question; and it must be supposed to have remained since the year 1792 in a state of moderate action, if not of complete quiescence, or some of the Dutch residents would assuredly have spoken of the alarm excited by its terrors.*

Journey to Yedo.

To offer homage and presents, or tribute, annually to the siogoun, or military chief of the empire, at Yedo, his habitual residence and the actual seat of government, is, if not the highest duty of every prince, dignitary, and noble throughout the Japanese realm, certainly an act, the neglect of which would be deemed most unpardonable; and it was as a sort of dignitary, being the governor of his own countrymen resident in Japan, that this duty was imposed upon the head of the Dutch factory, when the charter, permitting them to establish a factory, was first granted. This charter, obtained from the successful usurper, Gongen sama, whilst they were settled at Firado, gave them as before intimated, great privileges, which they afterwards forfeited by their ignorance of Japanese laws and customs. Upon Gongen sama's death, they petitioned his son and successor for a confirmation of his father's grant. Such an application was unprecedented in Japan. It was not merely a volation of the respect due to the siogoun, but a positive insult,

* This volcano is situated in the peninsula of Simabara, in latitude 32° 40′ north, and longitude 153° 18′ east, in an easterly direction from Nagasaki, just across a small bay, about twenty-five miles distance; Nagasaki is situated on the southern extremity of one peninsula, and Simabara forms another opposite to it. At present the volcano is quiescent, but the constant emission of smoke shows that its internal fires are rather slumbering than extinct. Hot springs gush out at its foot, and are used by the inhabitants for baths. The Unzen dake is the name of one peak; the Biwa no Kubi or Guitar's Neck, is a mountain contiguous to the Unzen, consisting of three peaks of different elevations; and the Miyoken yama, or mountain of Miyoken (name of a deity) is a third summit. Since the great destruction of life by the eruption in 1792, the peninsula has again become peopled, and villages now cover the base of the mountains.

since asking him to confirm his father's act implied the apprehension that he might alter or rescind it,—an offence against filial piety and reverence, such as no Japanese son conceives to be even possible. The Dutch were accordingly punished for their distrust. Their petition was not rejected, but the new charter granted them very greatly reduced their privileges.

For upwards of a century, the head of the Dutch factory repaired annually, with a large retinue of Dutch as well as of Japanese, to Yedo, and offered his tribute and his homage at the foot of the throne. But gradually the trade between Japan and Batavia fell off, and those annual journeys were felt burdensome; they were, consequently, rendered less frequent, and since the year 1792 have been limited to every fourth year. But the presents of the Dutch, being esteemed of more value than their homage, were not to be so easily dispensed with; and these are duly transmitted during the three intermediate years by means of the interpreters, at a much less expense. Since the restoration of Java to the Dutch upon the general peace, however, it appears that the trade of the factory has much revived; whereupon opperhoofd Blomhoff solicited permission to visit Yedo every alternate year, but his request was rejected by the siogoun's government.

The preparations for the Yedo journey are long and formal. When the regular time of departure draws near, the president (opperhoofd) makes a communication to the governor of Nagasaki, through the proper official channel, respectfully inquiring whether a visit from him will be acceptable at Yedo. The governor replies that the opperhoofd's homage will be accepted, and desires him to provide for the maintenance of order in the factory during his absence. The warehouse-master, as next in rank and authority to the opperhoofd, is always the person selected to supply the place of the absent head; and as deputy-manager of the factory, is always presented to the governor by the opperhoofd at his audience of leave, prior to his departure.

Originally, the head of the factory was attended to Yedo by twenty of his countrymen; a goodly train which, it is needless to say, can no longer be supplied by a factory reduced to its present scale. The numbers of the retinue have been gradually reduced, probably in proportion with the factory; and, since the journey has been rendered quadrennial instead of annual, the Dutch visitors have been limited to three, namely, the president, his secretary, and his physician.

The number of the Japanese who accompany the Dutch are not thus confined. At the head of the whole is a principal police-officer (a gobanyosi,) with whom rests, in every respect, the whole conduct of the expedition. The purse, however, is not in his hands, but in those of the chief interpreter, who receives a sum of money sufficient to defray the whole expense of the expedition, which sum is, like other factory debts, deducted from the proceeds of the next sale, or rather from a lot of goods specifically appropriated to this object, but never producing what is sufficient to cover the expense. The remainder is supplied by the Japanese government, a circumstance that may explain the refusal to admit of more frequent visits to Yedo. Of persons of inferior rank, there are under police-officers, under interpreters, clerks, baggage-masters, superintendents of bearers, &c., in all, about thirty-five persons,

all appointed by the governors. Then there are attendants to wait upon all these, Dutch and Japanese; to wit, three cooks, two for the Dutch, one for the Japanese; two upper and five under servants; besides, thirty-two servants, of whom six are likewise for the Dutch. These last are usually called spies. In addition to these, and the native attendants allotted them, each of the Dutchmen may, if he pleases, at his own private charge, take a Japanese physician, a private interpreter, and more servants. Accordingly, Dr. Siebold, when, in the year 1826, he accompanied opperhoofd, Col. Van Sturler to Yedo, added to the train a young native physician, an artist, and six servants, to aid his naturalist researches. A Japanese pupil of the German doctor, not being permitted to attend his instructor in that character, followed him as a servant to one of the interpreters. In fact, no restrictions appear to exist respecting the number of Japanese that may, upon this occasion, be engaged and supported by the foreign traders; but the name of every individual must be previously submitted to the governor of Nagasaki's approbation, one object of which arrangement may be, to insure there being a due proportion of spies amongst the servants.

Every sort of convenience and comfort required by the principal travellers during the journey they must take with them, such as linen, bedding, tables, and chairs for the Europeans, table service, batterie de cuisine, &c. They likewise take some provisions, as wine, cheese, butter, and the like, which, not being in use in Japan, are sent from Batavia to the factory; and also sweetmeats, cakes, and liqueurs, of which an immense stock appears requisite to entertain Japanese visitors. When to these indispensables are added the wardrobe of the whole company, the presents destined as well for the siogoun as for the several great men entitled to such a tribute of respect, and the goods carried for underhand trading; and when it is further understood that, the Japanese roads not always admitting of wheel-carriages, carts are not used for the conveyance of all this baggage, but every thing is carried by men, or on pack-horses and oxen, some idea may be formed of the immense number of bearers, attendants upon beasts of burden, &c., required for this journey. Part of the baggage is, indeed, sent by sea from Nagasaki to a port of the larger northern island, Nippon, in which are the residences of both the autocrat by right divine, the mikado, and his vicegerent, the siogoun; but when the Dutch deputation likewise lands on Nippon, this portion of the baggage joins the rest, and upon the subsequent land journey to Yedo, the train often amounts to two hundred persons. Such a retinue sounds abundantly grand and cumbrous to English ears, and may induce the reader to think that the position and dignity of the factory president has been unduly depreciated. Far different is the effect of his travelling-array to Japanese eyes. The trains with which the princes of the empire visit Yedo amount in number to ten thousand men for those of the lowest rank, and twenty thousand for those of the highest; whence he will see that his retinue of two hundred persons do not very extravagantly exalt the mercantile foreigner.

The journey to Yedo is, nevertheless, the occasion upon which the dignitary enjoys the most honourable distinctions ever conceded to him, and the least liberty, a privation which, in Japan, invariably accom-

panies honors, and all the writers who describe it concur in asserting that, upon the road, he is treated with the full complement of respect shown to princes. He travels in a norimono; but, to enable the English reader to estimate justly the honor, it must be explained that there are in Japan two kinds of palanquins, the one called a norimono, for the higher, and the other a kago, for the lower, ranks; and that these again, especially the norimono, are subdivided, and allotted to different classes of dignities, according to the length and shape of the poles, the mode of carrying, the pace and number of the bearers, and the like: the whole being in themselves, in shape and form, something between a palanquin and a sedan chair; less roomy and commodious than the former, inasmuch as they are too short to admit of the traveller's lying down, but far more so than the latter. The sides are lackered, the windows can be closed with blinds, and the top is in the shape of a house roof, under the ridge of which the pole appears to be passed.* Now, the opperhoofd travels in a norimono of the kind confined to very high rank, besides which is borne the tea-equipage already described, an indulgence restricted nearly, if not wholly, to personages sufficiently exalted to be entitled to use a norimono of this description. He remains in his norimono, where all others, princes and imperial governors excepted, are obliged to alight and walk. The gobanyosi every morning asks the opperhoofd's pleasure as to the halts for dining and sleeping; although these being fixed by invariable custom, the answer is immaterial; and Siebold says, that were any change desired, it must be arranged beforehand at Nagasaki. The three Dutch travellers are lodged in inns of the first class, frequented by princes, governors, and nobles, or, where there are none at the halting-place, in temples; whilst the Japanese officials, even those most consequential, occupy second-rate inns, except at such large towns as Ohosaka and Miyako, where, probably, for the closer custody of the foreigners, the police-officers are quartered in the same inns with the Dutch. Everywhere the opperhoofd is received by his host in full dress, with the national compliment of welcome; and, finally, men, women, and children, upon the road either perform a salutation closely resembling the Chinese katow in honor, or turn their back upon him, a somewhat singular Japanese demonstration of reverence, designed to intimate that the person so turning away is unworthy to look upon the person turned from. This last mark of reverence is described by the Swede Thunberg, who adds, that the highest possible expression of respect is first to make the katow, and then turn the back.

These are asserted to be the identical honors paid to princes; but lest too lofty a conception of the station of a Dutch factory president should be formed from this statement, it becomes necessary to explain, from Siebold, that these honors are paid him, not in that character, nor, as Fischer would fain persuade his readers and himself, as the representative of the Dutch nation, but simply as somebody, however lowly, about to be glorified by admission into the presence of the siogoun.

* Each of these different kinds of sedans have particular names; norimono or kago are general terms for them, which seem to be indiscriminately used in common parlance. The person carried sits on his feet, in Japanese style.

The journey is divided into three portions, to wit, the land journey across the island of Kiusiu, which occupies about seven days; the sea voyage, through a sort of archipelago of small islands to Nippon, occupying from four or seven to fourteen days, partly as the wind favors or opposes, partly as the travellers are disposed and suffered to loiter at their nightly island quarters; and the second land journey, across Nippon to Yedo, occupying twenty-two or twenty-three days of actual travelling, besides those spent at Ohosaka and Miyako. The whole journey from Dezima to Yedo is usually performed in about seven weeks. The itinerary is very circumstantially given by every writer who has been of the party, but can only in a very few of the details be interesting to European readers. The form and appearance of the body of travellers is from its dissimilarity to anything European, one of these points, and is described by Fischer and Siebold, who respectively visited Yedo in 1822 and 1826.

The presents lead the way, duly escorted, and are followed by the baggage. Then, at a proper interval, comes the living procession. A baggage master and superintendent of bearers go first, and are followed by two inferior police-officers, or banyosi, in norimono of the lowest class, (Doeff says in kago), but each attended by his servants, and two bearers of clothes-chests. And here it may be stated, to avoid prolixity and repetitions, that every norimono and kago is accompanied and attended by all the servants belonging to its occupant, and the number of bearers of clothes-chests and rain-cloak baskets appropriate to his rank; a clerk of the interpreters, the vice under-interpreter, and the under-interpreter, in their kago, properly attended; the Dutch physician, preceded by his medicine-chest, and borne in a norimono of somewhat superior character to those before-mentioned; the secretary in a similar norimono; a superintendent of norimono; two superintendents of bearers; the Dutch president, with eight bearers, who relieve each other, and whose dresses are adorned with the initials of the United Netherlands' (*i.e.* Dutch,) East India Company, V. N. O. C., servants, interpreters, police-officers, &c. follow.

At all the regular stages throughout Japan, there are, we are told, supplies of bearers to be hired by travellers after the manner of post-horses; but upon the Dutch journey to Yedo, these relays are not used. Bearers are engaged for certain fixed portions of the journey; *e. g.* one set carries the party and the luggage across the island of Kiusiu. They perform their day's work, which is occasionally of not less than seventeen hours, without any appearance of over-fatigue, take a hot bath upon reaching the sleeping-station, and are ready by day-break next morning to resume their burdens.

In the days of Kæmpfer, it seems that the governor of Nagasaki was in the habit of visiting or meeting the Dutch president at the moment of his departure, to wish him a prosperous journey. He now contents himself with sending him a message to that effect; but if numbers can compensate for dignity, the want of his personal presence can be but little felt, as every Japanese officially connected with the factory, or acquainted with any of the travellers, meets them at a temple just without Nagasaki, or accompanies them thither, there to drink a farewell cup of sake with them.

During the journey through Kiusiu, the whole party are entertained by the respective princes whose dominions they traverse. A detachment of the troops of each prince meets them on his frontiers, compliments the Dutch president in the prince's name, and escorts him across the principality. At Kokura, a seaport of Kiusiu, where they embark, they leave their own palanquins of all descriptions, to await their return. On the voyage, they land every night to sleep; and here again they are entertained at the cost of the several princes to whom the islands belong. The wind was unfavorable to Fischer's voyage, in consequence of which he was long detained amongst these small islands, and saw more than usual of the inhabitants, who endeavoured to make the time of the Dutch travellers pass as agreeably as the orders of the gobanyosi would allow. Indeed, this officer himself, and the chief interpreter, appear to be generally disposed to indulge their charge as far as they can, and to do the honors of their country to them, by showing the lions, as it is familiarly called; and Siebold expresses his conviction, that the dissatisfaction and complaints of the Dutch originate, almost invariably in either their ignorance or their economy. As the sum of money received by the interpreter for the journey is calculated precisely to defray it as prescribed by custom, it is evident that any extra expenditure, incurred by a deviation from the road, or by a prolonged stay, where the party is not entertained by a prince, would fall upon himself, if not provided for by the Dutch. That he should voluntarily incur such expense, it would be absurd to expect; but the German physician is satisfied, by his own experience, that, if so provided for, and mentioned in time, many indulgencies of this kind might be enjoyed. Yedo must, however, be reached by a fixed time, the reason of which will be seen.

The roads, are, generally speaking, good, and sufficently wide for the passage even of such travelling retinue as have been described. It is the frequency of mountains to be crossed, over which the road is led up and down steps, that impedes the progress of wheel-carriages. The roads are commonly bordered by trees. They are constantly swept clean, as much by the diligence of the peasantry in collecting manure, as in honor of distinguished travellers; and the sides are thronged with manufacturers and sellers of straw shoes for horses and oxen, and sandals for travellers; the price of the former is about twelve copper cash each. This is the only kind of shoe used for these animals, and its rapid consumption affords ample occupation to numbers.

It may be added, that road-books, containing every species of information important to travellers, down to a very minute and accurate table of rates, charges, and prices, for bearers, at inns, ferries, &c., abound in Japan.

The sights exhibited to the European travellers on their way to Yedo are usually natural curiosities, hot and mineral springs, with their respective bathing establishments, temples, fine prospects, &c.; the last of which are very commodiously enjoyed, as wherever any prospect celebrated for its beauty, if there be no temple, a tea-house is almost certain to be found. Interesting and agreeable as all these objects may be to travellers in Japan, a very few of them, will, probably, satisfy the European reader.

Nothing in the journey across Kiusiu appears to have impressed Siebold more than his visit to a Budhist temple of the Ikko-shyu sect, at Yagami, where the party dined the day they left Nagasaki. It presented a rare instance of a Budhist temple, that may be called exempt from idols, containing only a single image, designed to represent the One only God, Amida. The bonzes of this sect are the only Budhist priests allowed to marry and to eat meat. Siebold considers their faith to be pure deism.

A camphor-tree, mentioned by Kæmpfer, A.D. 1691, as already celebrated for its size, hollow from age, and supposed to measure six fathoms in circumference, though from its standing on a hill it was not then actually measured, was visited by Siebold in 1826. He found it still healthy, and rich in foliage, though 135 years older. He and his pupils measured it, and gives 16·884 metres (about fifty yards) as its circumference, adding, in confirmation of this enormous size, that fifteen men can stand in its inside.

At Tsuka-sake is a celebrated hot spring, with a bathing establishment for invalids. Col. Van Sturler and his party were permitted to bathe in the prince of Fizen's own bath, and were much struck by the superlative cleanliness of the whole; as an instance of which, the doctor states, that the water although clear as a crystal, was made to pass through hair sieves into the bath, to guard against the possible introduction of an impurity. Whilst speaking of princely establishments, it may be added, that the same party passed a night in a country palace of the prince of Chikuzen, where his highness' own apartment was assigned to the colonel. This apartment consisted only of an ante-room and a bedchamber, which last, like most others in Japan, became a sitting-room when the bedding was stowed away in a chest for the day, an operation of no great difficulty, said bedding consisting only of a thin mattress for each person; except, indeed, a wooden pillow, or rather bolster, upon which a wadded pillow or cushion is laid, which bolster is fashioned into a tiny chest of drawers, the receptacle of small and highly valuable articles. The walls of the prince of Chikuzen's rooms are of cedar-wood, highly polished and coloured; the division is made by screens, of gilt paper, in gilt and lackered frames, removable at pleasure. The apartment opens into a garden, containing as usual, a small miya, or chapel. But the chief peculiarities of the apartment were, first, a cleanliness and neatness perfectly luxurious; and next, its great modesty and smallness, considered as destined for the occupation of a reigning prince; but principally, a large closet, much resembling a cage, formed out of a corner of the ante-room, in which the chamberlain in attendance is condemned habitually to pass his hours alone; there, unseen and unobtrusive, waiting and watching for his highness' commands.

But, perhaps, the most important object mentioned by any traveller in Kiusiu is the coal, of which Siebold speaks as in use. At Koyanosi he saw a coal fire, which must have been most acceptable, as the journey is always begun in February, when the country, he says, wore its winter garb; and he frequently mentions frost. He visited a coal-mine at Wukumoto, and though not allowed to descend the shaft more than half-way, or about sixty steps, he saw enough to satisfy him that the

mine was well and judiciously worked. The upper strata which he saw were only a few inches thick, but he was told the lower beds were of many feet, and he says that the blocks of coal drawn up confirmed the statement. The coal, being bituminous in its nature, appears to be made into coke for use; and perhaps independent of this reason, it may thus be more agreeable to people whose more general fuel is charcoal.

(To be continued.)

THE EAST COAST OF YUCATAN.—*By Lieut.-Com. T. Smith, of her Majesty's ship Lark.*

THE east coast of Yucatan has been called by the English Bacalar, but if we admit that British Yucatan is a portion of it, there is certainly no reason for changing the original name. What now actually fronts the Bacalar province, is the small portion of the coast, north of the Rio Honda, a distance of about thirty miles. I, therefore, propose naming the extensive sheet of water leading to it "Bacalar Sound."

The north and east coasts of this extensive peninsula are very similar, appearing like an immense swamp, surrounded by a belt of sand from ten to thirty feet high. Little is known of the interior. From what I can learn, the lagoons and swamps run fifty miles to the westward of Ascension Bay, then flat lime-stone barrens, gradually increasing in height to within a few leagues of Campeachy.

I have not seen any rivers until approaching land of primitive formation,—the first is the St. Joseph, running out of Bacalar lagoon. Between this and the Rio Honda, are several red loam cliffs, with tolerable high land, and spots are seen on the whole of British Yucatan. The mouths of the rivers nearly all appear now on prominent points. The Belize is the largest, and is seven miles north of the ancient line of pine barrens, which are never overflowed.

The reason it does not at present accumulate more near the town, is the great body of the waters coming out at the Haul Over, and the quantity taken up yearly to raise the banks. The space between the Haul Over, and the Hen and Chicken Cays, is rapidly filling up. The mangrove trees run up quickly, but it remains drowned land for very many years. The mouth of the Sitte is now about three miles from the pine barrens. The surface is covered with sand and grass, and the trees being far apart, it has a park-like appearance,—with wild deer nearly as plentiful as tame ones in England. All that is wanting, is a few frosty mornings, to brace up the sportman's nerves. When horses can be procured, the riding over these pine barrens is delightful.

The River Ullsa, to windward of Omoa, now loads more ships with mahogany then all the coast of British Yucatan. Good coasting charts, on a tolerable large scale, (probably half an inch,) would enable commanders of ships to navigate this coast, independent of the pilots, who, if the water is thick, actually go miles out of the way, to avoid the few shoals there are off the prominent points,—and the lead gives sufficient warning to avoid those even in the darkest night. A vessel leaving

Belize in the evening, will generally get to the Placentia Narrows by daylight, and this is the only part that requires it.

The best watering-places are the North and South Standing Creeks, named from having constant running streams all the year round. The amazing increase in the population of the former place, now upwards of 1,000, and their frequent bathing and washing high up the creek, has evidently much injured the water. The South Standing Creek is therefore recommended, having also many advantages,—discharging a greater quantity,—having deeper water close to the mouth, and no grog shops,—not the least consideration where time is of consequence. The best way of finding it, is to run down with Sitte Island bearing N.N.E. Anchor in four fathoms and a half, about half a mile from the creek, where there is generally some temporary sheds, with Indians hunting wild bullocks and deer. The first or short rainy season may be expected about the middle of May, which is the warmest month in the year. It continues incessant for about a week, then generally fine mornings with heavy squalls;—thunder, lightning, and rain, in the afternoon to the end of June. I do not think there is much difference (say twenty-four hours,) in the commencement of the rains throughout the West Indies; more rain falls in the mountains of Jamaica, than either on this coast or the Bahamas. July, August, and September, are fair, but it is said to rain heavily in the interior.

Shamrock Bay is formed by Smith Point, and Haul Over Point, lying N. ½ W. eleven miles; nearly halfway between, is the tongue of blue water, leading to secure anchorage, either in the north or south arm. The latter is the most convenient for watering, when the cocoa-nut tree, under which the wells are, may be brought to bear W.b.S. two miles, and both anchorages are well sheltered by the dry reefs. The bar between Owen Island and Lawrence Point, is very intricate for vessels drawing eight feet only, and with a heavy swell, it is dangerous to cross in boats. From Haul Over, the bay runs up about S.W.b.S. twenty miles, gradually decreasing in depth from Owen Island to the head. One mile and a quarter south of the wells is the fishing establishment; ten is about the average number at each, so that there are only forty inhabitants from Ambergris Cay to Cape Catouch. They are constantly passing to and from Belize in bungalos, the greater part of the way inside the reefs. This bay cannot well be mistaken for Ascension. When on soundings outside the reef, the entrance between the north-west point of Owen Island and Lawrence Point, will not subtend a greater angle then 22° off Ascension. The opening between Luckcraft Cay and Allen Point, will nearly double that angle. The detached spots of dry reef,—their trend and less depth of water at Ascension, is sufficient to determine one from the other. should thick weather prevent the lands being seen. A very large portion of the neck between these bays is lagoons and swamps, but the fishermen always taking the Haul Over, proves there is no other passage, even for a dory. Fresh water may be found by digging wherever the cocoa-plum or sea-grape are found growing; but it is almost useless to try without finding one of these plants. The tides are extremely irregular in both these bays; from what we saw two nights on shore, it appeared to be high, full and change, about 8,—rise one foot. This bay was named

by the Spaniards, Espiritu Santo, but as there are several still in the gulf, this is an improvement.

Ascension Bay is formed by Wilson and Allen Points, lying N. b.W. ¼ W. eight miles and a quarter; this also runs up S.W.b.S. eighteen miles, gradually decreasing in depth and width. The entrance between the reefs being more than two miles broad, it is not so effectually sheltered as Shamrock Bay, but it is a secure anchorage with the prevailing winds from north-east to east, and the southern branch with south-east winds. It is rather more convenient for watering than the other, as vessels can anchor within one mile and a quarter of Allen Point, where there are several wells and ponds of fresh water. W.b.N., three miles and a half from Allen Point, is the largest fishing establishment on the coast,—the huts are high and conspicuous, seen a considerable distance off. Luckcraft Cays abound with spoonbill, large white curlew, snipe, golding, and plover. I was also very successful with the seine at Allen Point,—one night taking a large jew fish, 150 lbs. All vessels should have a seine, if it is only for the exercise and amusement it gives the people, which they would never think of otherwise. I obtained more bone-fish and mullet than we could consume, although when barbacued, (roasted over a slow fire,) they kept a week or ten days. I have not ventured to send a sketch here, as a strong blow levels all to a low sandbank, and the few trees that remain are stript of their leaves, and generally die. These gales may be expected in June, but are never equal to a regular hurricane.

Currents on the east coast are variable, but generally set with the wind; it is constantly to the northward when in the parallel of the south end, and inside Chinchorro, from one mile to one and a half per hour, gradually increasing in strength towards Cozumel, where it is from two to two and a half N.b.E., and off Mugeres from three to three and a half, about the same direction. De Mayne must have been in eddy when he found it setting to the south-west, (see West India Directory, vol. I, page 219). I have frequently found this strong eddy, when within one mile of the west side of Cozumel.

The numerous stone buildings on this island and the main, were evidently intended for watch-towers, and from the resemblance to several old buildings at the Havana, it seems probable, the materials were brought from thence and erected by the Spaniards.

Chinchorro Bank.

The original Spanish name, and certainly much more appropriate than what the English have given it, the cays are nearly in a straight line, and I have not been able to make out what forms the triangle. The name can be very well dropped, as there are two triangles at no great distance. The anchorages can be taken by eye, with the enlarged plan; the northernmost is a very secure harbour. The interior is intricate, and the rocks very numerous, but it appears worse than it really is. I beat the Lark up, (with a north-east wind,) drawing eleven feet six inches, from the Sand Bore to within two miles of the North Cays. A larger vessel could not accomplish it,—the worst part is with the Great Cay bearing N.E. ½ N. six miles.

The Sand Bore is much larger than when here in 1830, being now forty-eight fathoms long, and twenty-seven broad. We have planted several cocoa-nut and mangrove trees, and raised a large log of mahogany on its end, to make it more conspicuous. It is chiefly formed of branches of dead coral stones and shells, now petrified some distance round its base into rock; as all on the surface is bleached white, it has a sandy appearance from seaward. Great Cay is two miles and a half long, and nearly one broad in the widest part; being from fifty to sixty feet; it appears a large island, but it is like all the others, merely a belt of sand round a salt water pond. The trees are chiefly cocoa-nut, button-wood, and black mangrove. Here is excellent shooting,—duck and teal in the winter months, pigeon in summer, curlew, golding, and plover, all the year round. Fish are also abundant,—king-fish, baracoota, Spanish mackeral, towing, and grouper, and market fish on almost every head. The dangerous bight, (named from several portions of her wreck being found here), Firefly Bight, runs within half a mile of the Great Cay, and is an alarming place to be caught in. It must be a very superior sailing vessel to beat against the constant current and heavy sea that sets down on this reef. I could not pull a gig out through the Small Cuts, even in moderate weather. It is, therefore, not so complete on the outside as we could wish, but it is really not worth the risk in a dull sailing vessel. We had two very narrow escapes from the winds falling light.

Many vessels have been lost here lately. The great evil is in ever attempting to weather it in a slow sailing ship from Mauger Cay, with the prevailing winds. A course should be shaped invariably to make the Sand Bore, or go inside it, where there is a more certain current to the northward, and smooth water with convenient anchorage, should bad weather come on. There is no fresh water on this group; and as several tarred casks were found in the huts, on the east side of Great Cay, the fishermen must bring a stock with them in the turtling season.

Dollar Harbour is the only port of refuge from westerly gales, on this part of the Bahama Bank. I was convinced of its importance in the hurricane last year, when two vessels were wrecked close to it. The Victory actually struck on the cay forming the south channel,—the wind was then to the westward, and either at all under command, with a knowledge of the shelter it affords, may have been saved. Any vessel of thirteen feet or under, may sail or beat in by the enlarged plan, keeping within half a cable's length of the Little Cat Cay. Should the wind be between N.W.b.W. and N.E.b.E., it will be necessary to warp up the deep lane of water, observing to moor tort with about fifty fathoms on each cable.

Andros Island.

Wide Openings Mouth has barely nine inches at low water, close to the north shore. The deep river I have named after the present Chief Justice, whose valuable meteorological observation are well known. I explored this on the anniversary of Trafalgar. I have, therefore, named the Sound after one of its heroes, (master of the Defence in that

action). The rush of the water through the creek may be heard at some distance, and there is great difficulty in getting a boat through, being not broader than it is deep—five feet. Extensive pine barrens surround the fresh water lake,—from 70 to 100 feet high, and the depth of the lake is from seven to three feet. I found several tracks of former wood-cutters, but no wood of any size near the margin. Ducks and geese very plentiful:—ran out to the southward for the Cabbage Coppice,—named the river from a hawk killing a goose, while we were passing. These geese appear to come in northers from America, are of white plumage, and so much like the domestic ones in England, that it seems likely these are the originals. The domestic ones are much larger, differing from the turkey; for, however well fed, they never equal their wild brethren on the Spanish main.

Shoals in Macassar Straits.

As there is no correct chart of this Strait, the following will serve as a caution to vessels.

Bristol, Feb. 27th, 1842.

Sir.—Having on my passage from China, by Macassar Straits, found the coast of Borneo between Donderkom Point and Bassier, very erroneously laid down in the charts, and discovered four very dangerous shoals in the fairway, I take the first opportunity of giving you an account of them, so that through your valuable work, it may be a caution to others.

On the 21st of August, 1841, I anchored off Bylapan Bay, in six fathoms and three-quarters, with the north point of the bay bearing N.b.W. ½ W., (both sides of this bay, I consider, are laid down three miles too far north, and eight miles too far eastward). I observed a shoal, with the water breaking on it, two miles from the shore, on the south side of the bay. At daylight of the 22nd, I wayed and beat to the southward, in from twenty-five to thirty fathoms, and at 7 P.M., anchored in nine fathoms and three-quarters, with *a point bearing* S.W.b.S. ½ S., and the land about the west side of Bylapan Bay bearing N.E. ½ N. Now, this point bearing S.W.b.S. ½ S., differs very much from the charts, as no part of this coast can be brought to that bearing by them. Next morning, I wayed and steered south-east seven miles, and south ten miles, and on passing the point at a distance of four miles, carrying soundings 7, 8, 9, and 10 fathoms—deepening one fathom every mile south, till noon in sixteen fathoms, observed the lat. 1° 45′ south, and the point bearing W.N.W.,—the farthest land in sight to the westward W. ½ S. On looking at the chart, you will see that there is no such point, or any form of the land like it, but the coast called low land and low point.

August the 25th, at 6 A.M., Ragged Point S.W.b.W. ½ W.,—at 9 abreast of the North Shoal, (so called in Mr. Norie's chart, and South Shoal to the southward of it, but they are called by Horsburgh, Inner and Outer Shoals,) bearing W.S.W. half a mile,—weather very unsettled and squally, with rain, sounding thirteen fathoms. Steered S.S.E., till South Shoal was seen half a point on the larboard bow.

At 10 steered S.E.b.S., and passed South Shoal at a distance of one mile, in twenty-one fathoms water, the sea breaking very high over it, but to my astonishment, the hand at the masthead called out, another Shoal half a point on the larboard bow, and one directly over it at some distance, both of which were soon seen from the deck, having all three, the South Shoal and these two, in sight at the same time. Steered E.S.E. On passing the nearest of the new shoals, when abreast of it, another shoal was seen ahead; steered east and passed it a mile distant, and then another shoal was seen and passed, about one mile east from it. We passed the last of these shortly before noon, when a heavy squall came on, with rain and a heavy sea from south-east. As we opened the shoals, nothing could be seen half a mile off. I steered east while it was so very thick, for half an hour, in case of any more shoals lying in that direction. I had just hauled to the S.b.E., when the man at the masthead called out, high breakers close to, about two points on the larboard beam. It then cleared away suddenly, and this was observed to be a long sandbank, with breakers running a long way to the southward of it, and a few bushes growing on the north end. I hauled up S.S.W.,—the wind then veered to westward and moderated, but finding we were drifting fast by the current to the sandbank, I wore the ship close to breakers, on a rock between us and the sandbank, and stood to the north-west. The wind veering more southerly, enabled me to haul up W.b.S. on the larboard tack,—saw a great number of shoals on our larboard beam. At 4h. 20m. P.M., while standing to the westward, the South Shoals were again seen on the lee bow, and after getting close up to them, could see all four quite clear at the same time. Finding I could not weather them, made a short bound to south-eastward,—tacked and passed about half a mile to windward of them; stood in towards Paul Point, and anchored at 9h. 30m. P.M. in sixteen fathoms, the land about Paul Point seen bearing W.S.W.,—much thunder, lightning, and rain.

These four shoals near the south shoal are very dangerous, as they stretch out across the Strait, and there is no mention of them in any book or chart that I have seen. The first shoal next to the south shore lies about S.E. ½ E., from it two miles, and is nearly a mile long east and west; the next bears due south from the last, about two miles, and half a mile long; the third bears from first of the two latter, east, one mile, and is three-quarters of a mile long; the fourth bears east from the last one mile, and about a quarter of a mile long.

There are two shoals marked in Horsburgh's chart, ten miles to the E.N.E., (position uncertain), and one south-east about twelve miles from these, with two fathoms and a half, doubtful, it is very possible these shoals may have been seen in the night, or sounded near, by ships running through, and not knowing their position from the very strong set of the current in those Straits.

The sandbank and shoals which I fell in with to the eastward was that marked in Norie's chart, dangerous rock, in longitude 117° 15′ E., and latitude 2° 33′ S.; and the rock and small shoals to the westward of it, which I think are very well laid down, so far as I had time to make out their posttion on so small a scale; if they are out at all I should say they were rather nearer to the south shoals than laid down,

as I went so soon over to them; but that might have been the current, as I found it setting towards the sandbank.—I am, &c.

THOS. JOHNSON,
Commanding ship Recovery.

To the Editor, &c.

RECOVERY ISLET, *Gillolo Passage, and* DANGERS NORTH OF BATAVIA.

Bristol, Feb. 17th, 1842.

SIR.—On my passage through the Gillolo Passage I discovered a rocky islet, not laid down in the charts, or, mentioned by Horsburgh, at noon Jan 5th, 1841, on my way from Bombay to China. I took the following bearing in Gillolo Passage, viz. Catherine Isles N.b.E., rocky islet, as above mentioned, N.b.W. ¼ W., Moar Island S.b.W. ¾ W., Cape Jabo S.W.b.S. ¼ S., east point of Shanpee Isles W.b.S. ½ S.; by these bearings Catherine Isles are laid down too far eastward, six miles. These bearings were carefully taken, weather very fine and clear to get the correct position of Catherine Isles, as a cloud came over and prevented my getting the sun. I stood to within a mile of the islet above mentioned, when quite between it and Catherine Isles; the former bearing S.W.b.W. ½ W., and the latter N.E.b.E. ½ E.; then stood to Catherin Isles, and measured the distance, which I made seven miles.

Therefore, this rocky islet bears S.W.b.W. ½ W. seven miles from Catherine Isles, and is steep to all round, as I saw all sides of it, and not a ripple to be seen. I passed close along the south side of Catherine Isles, and had a good opportunity of examining them. They are about one mile and a half long, lying W.b.N. and E.b.S., are low and steep to on the south side, as there is not a break to be seen, and I passed them at three-quarters of a mile distant. This side of the island, appears as steep as a wall, except a small sandy cove near the east end. The west islet is a flat barren rock, about ten feet high, fifty yards long, separated from the main isle only about ten yards, with deep water between. The eastern end has a high bluff covered with scrub to the waters' edge, which it overhangs, it is not divided from the main isle, but the sea breaks through an opening over the rocks, about thirty yards from the east end.

I may as well take this opportunity of mentioning to you that, the shoal marked, Nasonver Droogte, doubtful, bearing S.E.b.E. ½ E. from the South Watcher, distant six miles, really does exist, as I passed close along the side of it, and do not think there can be more than two fathoms and a half over it; this is in the Farea Sea, south end of Thousand Isles; and that Pulo Ayer the southernmost of these islands bears S.W.b.W. from the South Watcher in place of W.b.S., as laid down in the charts, and it bears nearly due east from the Horn Islands, which makes the channel through a very crooked one, in place of being straight, as it appears by the charts.—I am, &c.,

THOS. JOHNSON,
Commanding ship Recovery.

To the Editor, &c.

[With respect to the islet, we are quite content to take Captain Johnson's position, the charts being so bad that we can make nothing of his bearings. But the information on the Nansonver Droogte, and the erroneous position of Pulo Ayer, is most important.—ED. N.M.]

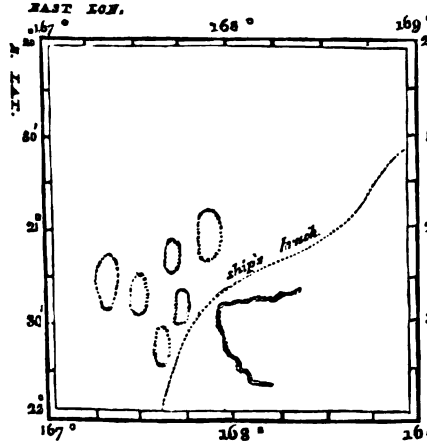
SERINGAPATAM REEF,—*north-west of Australia; and* CRICHTON ISLAND, *Loyalty Group.*

Lee, 15th April, 1842.

SIR,—During my recent voyage in the Indian and Pacific Oceans, in the whaling ship "Seringapatam," I fell in with a very dangerous reef in the former, and a group of islands, or rather a continuation of the Loyalty Islands in the latter, to the eastward of New Caledonia. Having no account of either in Norie's charts, by which I was sailing, corrected to 1836 and 1837, I feel I am only performing a duty to my brother mariners in making them generally known, should you deem an account of the same worthy of insertion in your valuable publication —the *Nautical.* The subjoined is a description.

Bound from Timor Straits on a cruise off the north-west coast of New Holland, at 9 A.M. August the 23rd, 1839, breakers were reported from the masthead. I went aloft, and saw an extensive reef on the west bow, on which the sea was breaking heavily. I at first took it to be Scott Reef; but at 11h. 15m. A.M. saw Scott Reef from the masthead bearing S.S.W., the south end of the other reef then bearing E.b.N., distant about four miles. Noon,—latitude by observation, 13° 46′ south, longitude by two chronometers, 121° 54′ east. The north end of Scott Reef S.S.E. seven miles,—south end of the other twelve miles north-east. This reef, to the best of my judgment, from the view I had from the masthead, runs N.b.E. and S.b.W., from three to four miles long, bearing from the north end of Scott Reef N.N.E., eighteen to twenty miles. Should you consider it as something new, I have called it after the ship,—viz. Seringapatam Reef.

The other islands were seen on the 6th of September, 1841, while standing to the southward with a fresh trade wind at E.S.E., 1h. P.M. land was reported from the masthead,—bearing south-west, took for the Loyalty Islands. 3h. P.M. saw another large island ahead. No account of its position in the charts, being forty-five miles south-east of the Loyalty Islands. Not being able to weather it, worked to windward during the night, but the wind baffling in the morning, bore up. In running along to leeward saw another, and rose five more in succession, lying between the parallels of W.N.W. and W.S.W., with the exception of the one first seen, which bore N.b.W., about twenty miles from the south-west point of the easternmost island. Hauled close round the south-west point of the large island, and passed between it and a smaller one west, four miles.



The easternmost island, the one I sailed along, runs E.b.N. and W.b.S. about twenty-five miles, is uniformly level, and covered with brushwood, with here and there a single, and in some places, a clump of trees, which I at first took to be the Norfolk pine, but, on a nearer view, found they were not. They appeared about sixty feet high, growing mostly on the edge of precipices, being of a dark green colour, with short stunted branches, and a tuft on the top. The branches so short, that unless seen so close as we were to them, they might readily be mistaken for dead trees surrounded with creepers.

This island (as the others apparently are,) is steep to, rising from the water's edge in perpendicular cliffs of from 200 to 300 feet high. Here and there were small ledges under the cliff, about half a mile in length,—these are mostly covered with cocoa-nut trees. We saw several natives on the rocks, and canoes passing from one island to another. They are of a different rig to any I have ever seen in the Pacific Ocean, carrying two large sprit sails. The natives are quite black, with woolly hair, and some of them chinammed, similar to the New Ireland natives. The centre of the large island is situated in latitude 21° 25′ south, longitude 168° 5′ east. South end in latitude 21° 40′.

The Loyalty Islands are laid down as three small islands. Instead of which there are seven, and the easternmost island not less than twenty-five miles long. This island, should you have no account of it, I called "Crichton Island," after B. T. Crichton, Esq., the owner of the ship. The accompanying sketch are the bearings of the island, taken from the south-west point of the east island.

I am, &c.,

To the Editor, &c. EDWIN COURTENAY.

In page 586 of our last volume, it will be found that Capt. Wickham in the Beagle, saw the same reef as is reported by Capt. Courtenay, on the north-west coast of Australia, and the accounts satisfactorily confirm each other. The Loyalty Islands appear to be quite unknown. Since the foregoing was in type, we have received the following :—

Lee, 16th April, 1342.

SIR.—When I first saw that reef on the north-west coast of New Holland I sent an account of its situation to the owner. I saw him last evening, and mentioning to him that I had written an article to you to be inserted in the *Nautical Magazine*, he told me that he had seen Mr. Norie, and that he had noted it in his charts.

I have merely made you acquainted with this circumstance, in case you should see it in his charts, and think it strange I had not mentioned it to you.

I beg to remain, Sir, &c.,

To the Editor, &c. E. COURTENAY.

[We think the "owner" alluded to would have done more for the benefit of navigation, had he forwarded the account of the above most dangerous reef to the Hydrographer of the Admiralty, instead of to Mr. Norie, or any other solitary chart dealer. By sending it to the Admiralty it would have become more generally known, by means of Admiralty charts, and the extensive circulation of this journal. We merely allude to this, because we think that, while the results of those important surveys going forward in many parts of the world (we may instance all parts of our own coasts at home, and the St. Lawrence, the

West Indies, the coasts of China, and Australia abroad,) are embodied in charts, and placed within the reach of merchant seamen, at a price so low as to be accessible to all,—we do think, that, a corresponding return should be made by the transmission of such information to the Hydrographer's office, the chief source of correct charts, rather than to a single chart dealer, the foundation of whose resources in hydrography must be obtained from that office. We say that they are published at so low a price as to be accessible to all. We will instance the last published, namely, the southern sheet of the North Sea, which sea is passed over by more shipping than any other in the world, and the price is *four shillings*. We repeat that a return is with justice to be expected from the merchantile shipping for these great advantages. Such communications as that to which we have alluded would each be a due acknowledgment for thus extending "the benefit of the maritime surveys which have been made for the use of Her Majesty's Navy, more generally among the mercantile shipping of the empire," honorable to the parties who made them, and more likely to benefit seamen generally than the course pursued by the "owner" in the present instance. We are, however, glad to observe that this feeling is abroad, as our own pages amply testify, by the many useful notices which they present, from the pen of the merchant captain, and, we now hold up the good example of these gentlemen for the imitation of their owners. As there are, no doubt, very few who can form any idea of the vast mass of work which is performed in the Hydrographic Office, and there are those, we believe, who think that nothing is done, because their own immediate wants are not supplied, we place the following important fact on record. Between the first of January and the middle of April, the number of charts of all sizes printed for the use of the public, as well as Her Majesty's navy amounts to twenty-two thousand one hundred and fifty!—Ed.]

Directions for Shipmasters visiting the Port of Riga.

On arrival.

1. Every shipmaster who arrives through the Sound must bring with him a quarantine pass, or a receipt for the Sound duties on the voyage. All vessels from Spain, Portugal, and other still more westerly ports, must bring a quarantine pass, or a receipt for Sound duties, from the Russian Consul at Elsinore; and if unprovided with these documents will be subject to a fine of 140 roubles silver. Every shipmaster must have duplicate, exactly corresponding, bills of lading of the cargo. If a vessel arrives at the Bolderaa in ballast, or with a cargo on speculation, and may purpose proceeding, without breaking the same, to any other port, the master must not come to anchor any nearer Riga than the white church on Magnus Holm; and it is also ordered, that in such case the vessel's pass, as well as the corresponding bills of lading, without specifying any particular port, should have these words inserted, "*To a port in the Baltic.*" If, on the contrary, *Riga* is named as the destination of the ship or cargo, either on the pass or the bills of lading, the ship and cargo are jointly bound for the payment of all the legal dues of the place.

2. On arrival in the roads no one, with the exception of the pilot can be permitted to come on board, or go ashore without special permission from the guard ship. If the master desires to leave the vessel, he must first produce the necessary documents, as prescribed in No. 1.

3. A pilot comes to the vessel in the outer roads. *Russian Merchant Ensign* In stormy weather the course is shown from the telegraph. If, however, the Russian Merchant Ensign is not hoisted, it is advisable to keep under sail. Should the master, however, wish to anchor, he must use every proper precaution.

WHITE.
BLUE.
RED.

4. The pilot money for bringing in or taking out a vessel is to be paid by the consignee at the place of lading, and at the time of clearing out, according to number of feet which that vessel draws. It cannot be increased or diminished. The pilot is not permitted to ask for any fee for his personal use. Pilotage can in no case be avoided.

On entering in the stream.

1. Every shipmaster is bound to bring to abreast of the guard ship; if he be prevented by circumstances, he is required afterwards to declare the same. For every shot fired five roubles silver will be demanded.

2. To the officer of the guard ship who comes aboard must be delivered, the quarantine pass, or the Sound toll receipt; the muster roll or shipping articles must also be shown; and, in case of any change having occurred during the voyage, it must be particularly pointed out; and, if there are passengers, their names must be stated, as also where they have been taken on board. A severe punishment will be inflicted on those who allow any one to be secreted in the vessel. The custom-house pass, register of measure, and bills of lading must be produced. The penalty for disobeying the orders of the commander of the guard ship is not less than 500 roubles.

3. The custom officer on duty in the guard ship takes from the before-mentioned ship's papers those destined for the Riga custom-house, seals them, and delivers the packet to the shipmaster.

4. So soon as the vessel is in the river a custom-house officer will come on board, who is to receive the packet which has been sealed up by the officer in the guard ship, to send it to Riga by the post. He places a searcher in the vessel, seals up the hatches and other passages, and gives a certificate of the number of these seals. This the captain must take for entry to the Harbour-Master's office, near the bridge. He then takes it for declaration to the custom house, and from thence it will afterwards be carried to the Harbour-master.

5. Before the seals are put on at Bolderaa, none of the crew or passengers are permitted to leave the vessel, and no one can be allowed to come on board.

6. For every seal either accidentally or intentionally broken the fine is 100 roubles silver.

7. All letters, opened or sealed, which the master, crew, or passengers may have with them, must be given up forthwith to the custom-house officer who takes the ship's papers; but such letters may be returned, if required, after being sent to the Bolderaa post-office, the postage paid, and the letters stamped. For every letter found secreted a fine of five roubles silver will be incurred.

8. The master must repair to the pilot office, answer the questions put to him relative to the vessel and voyage, and receive from the Port Commandant the direction where to discharge his ballast, and with the first fair wind may proceed to his destination.

9. Within twenty-four hours after the Harbour-Master has sealed up the ship at the Bolderaa, the master must make his declaration at the custom-house in town, there producing his measure bill (register) from abroad. For this purpose a printed sheet is laid before him, in a language which he understands, and in which the questions must be answered in writing: he is at liberty to ask any explanation of the officers. He may also, within the next twenty-four hours, without incurring penalty, rectify any error, and if he has omitted any thing in his declaration, correct it. If a shipmaster has reason to believe that his cargo is in any way damaged, he must, within twenty-four hours after his arrival, make his protest before a Notary Public, and state his having done so in his declaration at the custom-house.

10. Under particular circumstances the captain may immediately make his declaration at the Bolderaa, but only when he might incur danger by delay.

11. As soon as the Harbour Master has received the declaration from the custom-house, the cargo may be discharged; and when the vessel is entirely unloaded, the inspection takes place. This must be done in presence of the

captain, and with his concurrence. A fine of 100 roubles silver will be exacted if any thing is found concealed in the hold, &c. After this the captain takes the ship's register to the measurer at the Harbour-Master's office, near the bridge, to show the size of the vessel, which may then commence loading.

12. Previous to taking on board provisions, dunnage, or other ship's necessaries, the captain must obtain through his consignees two permits from the custom-house, which in the first place have to be entered at the Harbour-Master's office, near the bridge. The searcher notes on the same whatever is taken on board, and when the captain wishes to clear, he gets both these certificates, called *Ierlike*, attested first by the searcher under whose superintendence he may be placed, and next by the Harbour-Master; he then gives them to his consignee, who delivers them into the custom-house.

13. When a ship is obliged partly to discharge at the Bolderaa to enable her to come to town, and when it is desired to return again to the Bolderaa, either with full or part of her cargo, the captain must in every case inform the Harbour-Master, that he may affix the seals, give a certificate of their number, and note down the number of them. The shipmaster is not permitted to take his vessel unsealed from one place to another, except when empty; and after having undergone inspection, he can then do so, taking care previously to acquaint the Harbour-Master. The seals can only be removed by the custom-house officer.

14. Shipmasters coming from the North Sea can bring with them, duty free, as stores, for each man, master included, the following articles:—

3	Ankers of porter or beer.	10	lbs. of coffee.
2	— of rum, or any other spirituous liquor.	40	lbs. of sugar.
		1	lb. of tea.

1 Anker of wine.

For any excess of this quantity the legal duties will be levied, while on the contrary, all necessary provisions for the use of the crew, without restriction as to quantity, may be admitted duty free. Shipmasters arriving from this side of the Sound are only allowed to bring duty free, for the use of the crew, *one half* of the quantity of the above-mentioned articles.

15. It is forbidden to give money, presents, or the promise of such.

16. Before the ship is inspected, no stranger can be suffered to come on board, without the permission of the harbour-master.

17. A watch must remain day and night on the vessel, and no anchor must be out without a buoy.

18. No vessel can be made fast to the bridge, but must have an anchor out forward.

On discharging ballast.

1. Ships in ballast must be governed by the preceding regulations, the same as those with cargoes.

2. Shipmasters must only discharge their ballast at the appointed places. Any departure from this regulation, will subject them to a fine of 140 roubles silver for each shovel-full. Even at sea within Domesness, or in sight of the harbour, it is forbidden to do so under a penalty of 100 roubles silver, but in the latter case urgent necessity may authorize it, which however must be satisfactorily proved by the log.

3. Shipmasters in discharging their ballast must, by making use of sail-cloths, take care that none falls into the river; in the event of their neglecting to do so, they will incur a fine of 29 roubles silver.

4. The master is forbidden, under a fine of 10 roubles silver, to discharge ballast without the knowledge of the port-commandant.

5. A fine of 140 roubles silver is incurred for discharging ballast during the night.

6. Shipmasters must particularly state their quantity of ballast, under a fine of 9 silver roubles, 80 copeks.

7. Shipmasters must be careful that no sand or trash are thrown into the river. The doing so will be punished under article 2.

8. To take in ballast, permission must be obtained from the magistracy, and notice also given to the harbour-master.

With regard to the use of fire and lights.

1. From the outlet in the river, opposite the town, to the citadel, and across the river, above or below the bridge, also in the stream, and at the quays, no fire must be on board, either in the cabin or in any part of the vessel. It is, however, allowed in the cabin to use close lanterns, or lights in vessels filled with water; but then not later than 9 o'clock at night. Smoking on deck is likewise forbidden. Penalty for violation of this law, 28 roubles silver.

2. Vessels lying at the hemp and oil wharfs, cannot burn lights even in the cabin, and smoking is equally forbidden.

3. Vessels lying further down the river, or near to its mouth, may have fire on board until 9 o'clock at night, except when before or abreast of the fortress of Dunamunde. The same regulation as to smoking.

4. Boiling tar on board a vessel is, without exception, strictly forbidden from the entrance to the river. Proper places are designated on shore for this purpose.

5. Only in case of urgent necessity, at those places where fire is allowed, can a light be permitted to be carried about on deck. The captain on board of whose vessel a fire breaks out is punishable by fine, and must besides make good all damage occasioned.

On departure.

1. The shipmaster obtains his custom-house pass from his consignee, and shows the same, as well at the harbour-master's office in town as at that at the Bolderaa, and also at the guard-ship at the Bolderaa. For the latter he receives for delivery a paper, with particulars of his destination, &c. He further gets a pilot-note, which must correspond with the actual depth of water drawn by the vessel, and which he will be required to hand over in the Roads to the pilot who takes the vessel to sea. As the vessel passes the guard-ship, an officer musters and inspects the crew, &c., from which inspection no one must be absent or secreted on board, under a heavy penalty.

2. A vessel which is thus cleared must afterwards take no one on board, and none of the crew can leave the vessel without permission from the guard-ship.

Summary of the regulations in port.

1. No shipmaster can bring his vessel to anchor in such part of the river as will prevent other vessels from proceeding up or down. Whoever does not follow this direction, is compelled to repair all damage caused by such neglect.

2. If a vessel has to pass through the bridge, the master must apply to the toll-taker, and on going through must implicitly obey the orders of those appointed to raise the flaps; he must also be particularly careful that the yards are safely secured, as well as that the booms and anchors are raised and taken in. In proceeding to the floating bridge, it is particularly forbidden to do so with sails set; even at a proper distance from it, anchors must be let down and the sails taken in.

3. When a vessel is ready to sail, the master must previously bespeak a pilot at the Pilot-office, and insert his name in the book there.

4. If a shipmaster has discharged a sailor, or in case a seaman has absconded, he must communicate the same to his consignee, that in clearing, such occurrence may be stated. If a seaman leaves after the ship has cleared, the shipmaster must report the same to the consul of his nation, who will give him a certificate for the guard-ship.

5. If a shipmaster has lost his anchor in the roads, or in the river, and before departure does not recover the same, he must report to the Port Captain and Pilot Master with description of the lost anchor, when and how it was lost. Without such a report, the owner cannot afterwards reclaim his property should it be found, the same being subject to the payment of the customary salvage.

6. Shipmasters are particularly forbidden, on arrival or departure, either in the river or the roads, to make fast to the buoys, or pilot poles, or to affix lines to the same for the purpose of warping.

7. It is an express rule for the port of Riga that ships, lighters, &c., ascending or descending the river with a side-wind, keep the starboard side of the channel, and are not to anchor in the narrow parts, nor on the bars. In beating up or down, every captain or pilot on the starboard tack has the right to keep the wind, whereas those on the larboard tack must fall off. Those who do not follow these rules must repair all damage caused by neglecting to do so.

8. Every shipmaster is bound, under his own responsibility, to make known these port regulations to his crew.

9. In going up or down the river the pilot cannot under any pretext leave the vessel. If such an event occurs, the shipmaster must communicate the same either to his consignee or to the port commandant.

10. While the vessel lays in port, the captain and mate cannot both be absent at the same time. Good order must be maintained on board.

11. In summer after 10 o'clock, and in autumn after 9 o'clock at night, no seaman is allowed to be found in the streets, &c., or in taverns. In case of being so found, he is liable to arrest and punishment by the police.

Military and General Governor,
(Signed) Baron Von Der Pahlen.

Riga, 17th July, 1841.

The Variation of the Compass.

(Continued from p. 272.)

Royal Observatory, Greenwich, April 1st, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Variation for February 1842—23° 15′ 23″.

Mean Magnetic Dip for February 1842.

At 9 A.M.	At 3 P.M.
68° 38′	68° 44½′

G. B. Airy, *Astronomer-Royal.*

Draft of a Bill for the Examination of Master Mariners and Mates in the Merchant Service.

Whereas the great increase of our mercantile marine, and the sudden as well as varying demands often made on the shipowner, render it at present extremely difficult, if not impossible, to ascertain whether each vessel is properly commanded:—and whereas many vessels have been wrecked, and lives as well as property have been lost, in consequence of ignorance or misconduct:—and whereas an increased degree of skill in the management of vessels would ensure their making shorter, as well as safer voyages, whereby the value of property and security of life would be augmented:—and whereas no means are now generally available for the professional instruction and examination of seamen employed in the merchant service; and whereas foreign ships are sometimes employed to carry cargoes in preference to British ships; not merely because

they charge a lower freight, but because they are considered to be better commanded, and to make quicker passages: and whereas steam is now much used at sea, and requires certain additional information and precautions:—

May it therefore please your Majesty that it may be enacted—and

1. Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present parliament assembled, and by the authority of the same, that from and after the period of twelve calendar months having elapsed from the passing of this act, it shall not and may not be lawful for any person to serve as master or chief mate of any British vessel whatsoever employed, or to be employed, in trading oversea; or of any British vessel above 60 tons burthen employed, or to be employed, in the coasting trade, unless he shall have been duly qualified to serve according to the provisions of this act hereinafter made and specified: or unless he shall be specially exempt in consequence of the provisions set forth in this act.

2. And be it further enacted, that from and after the period of twelve calendar months having elapsed from the passing of this act, no British vessel above 60 tons register tonnage, nor any oversea trader whatsoever, shall be allowed to clear out at any custom-house or port in the British empire, until the master of such vessel shall have exhibited his certificate of qualification, or exemption, and likewise his chief mate's certificate of qualification, or exemption; or, in lieu thereof, his own declaration that his chief mate is duly qualified or exempt —to the collector of customs.

3. And be it enacted, that any master or mate who has been employed in such a capacity not less than six calendar months at the time of this enactment coming into operation, shall be exempt from the operation of this act; and that any person employed as master or mate in the merchant service, at such a distance from Great Britain that he can have no opportunity of being examined, shall be entirely exempt from the operation of this act during the existence of such grounds for exemption.

4. And be it enacted, that no person shall be examined touching his qualification to act as master, or mate, unless he can produce satisfactory proof of his general conduct, integrity, and sobriety, such proof being usually in the handwriting of a master or owner, under whom the aforesaid person has lately served.

5. And be it further enacted, that no person, however well qualified in other respects, shall act as master unless he shall be at least 21 years of age, and shall have served at least two years as mate; nor as chief mate of an oversea trader unless he shall be at least 19 years of age, and shall have been at least five years at sea; nor as chief mate of a coasting vessel above 60 tons register tonnage unless he shall be at least 18 years of age, and shall have been at least three years at sea; except in cases hereinafter specified.

6. And be it enacted, that from and after the passing of this act, boards shall be constituted and appointed for the examination of persons who desire to fill the office of master or mate of a merchant vessel; one of which boards shall sit at each of the following ports—that is to say, London, Liverpool, Bristol, Newcastle, Hull, Plymouth, Glasgow, Dundee, Cork, and Belfast, and shall consist of three, or (in London) four, experienced men, who will be the examiners, a secretary (in London) and a clerk, or a clerk only, of which examiners aforesaid one shall have commanded a vessel or vessels in the merchant service at least seven years, and shall have been in the Pacific and in the Indian Ocean; another shall have been at least seven years in the coasting trade of Great Britain, and shall have commanded a vessel or vessels in the merchant service at least seven years; another of the said examiners shall have commanded a steam-vessel or steam-vessels at least three years, and also shall have been four years at sea in a vessel or vessels not worked by steam; and another, who shall be the principal examiner, shall have an accurate knowledge of practical as well as theoretical navigation, and shall have been at sea at least ten years;—pro-

vided always, and be it further enacted, that the number and locality of such boards, and the qualifications of examiners, may be altered from time to time, if necessary for the public advantage, at the discretion and by the direction of the Board of Trade.

7. And be it further enacted, that the principal examiner and the secretary shall be selected by the corporation of Trinity-house of Deptford Strond, London; and, if approved of, appointed by the Board of Trade; if not approved of, another selection shall be made by the Trinity-house, and so on until the Board of Trade approves: and that the other examiners and the clerk of the London board shall be selected by the shipowners of the London district, as hereinafter specified; also that the examiners and clerks of the other boards shall be selected by the shipowners of the districts for which the said examiners and clerks are respectively to act, each and every person so selected to be examined by elder brethren of the Trinity-house, and the principal examiner aforesaid; and, if found duly qualified, to be so represented to the Board of Trade, by whom, if approved of, such person or persons will be appointed.

8. And be it enacted, that the managing owner of any British vessel shall be entitled to vote for a candidate for the office of examiner, or clerk to a board of examiners, in the following manner:—

Each vessel trading oversea, and each coasting vessel above 60 tons burthen, shall be taken and considered to qualify her managing owner to give one vote, at one place only, namely, that to which the said vessel belongs—in selecting a person supposed to be fit for the office of examiner, or clerk to the examiners.

Provided always, and be it hereby enacted, that due and sufficient notice is to be given by the mayor, or chief magistrate, after receiving a communication from the Board of Trade, that a meeting of shipowners will be held, at a convenient time and place, for the purpose of selecting a certain number of persons supposed to be fit for examiners, or clerks: and be it further enacted, that at such a meeting each managing shipowner may vote personally or by proxy—provided that his proxy be tendered by a shipowner; and that each managing shipowner may vote at any port where a vessel, under his direction as managing owner, is registered, provided that his vote be given only once for the same qualification.

9. And be it enacted, that the coasts and ports shall be divided into districts; and that the several districts shall be as follows:—

London—From Cromer to Portland Bill.
Plymouth—From Portland Bill to Ilfracombe.
Bristol—Ilfracombe to Strumble Head.
Liverpool—Strumble Head to Longtown.
Glasgow—Longtown to Cape Wrath.
Dundee—Cape Wrath to Dunbar.
Newcastle—Dunbar to Flamborough Head.
Hull—Flamborough Head to Cromer.
Belfast—North of 53° north latitude.
Cork—South of 53° north latitude.

10. And be it enacted, that a chairman shall preside at each board,—that two members, with a clerk, shall form a quorum,—and that the principal examiner shall be chairman, for the time being, of any board of examiners at which he may be present to superintend the proceedings; provided always that the selection of the chairman of each board shall rest with the Board of Trade.

11. And be it further enacted, that the fees hereinafter specified shall be paid to the clerk, at each examination; one-fourth of such fee to be paid to the clerk when a request to be examined is given to him, namely,—

For a Master.

A first-class certificate	. .	£1	0 0
An oversea certificate	. .	3	0 0
A coasting certificate	. .	2	0 0

For a Mate.

A first-class certificate	.	£1	10 0
An oversea certificate	.	1	0 0
A coasting certificate	.	0	10 0

12. And be it enacted, that of the above specified certificates of qualification, the attainment of those called first-class certificates shall be optional, being intended chiefly for the encouragement of professional attainments, in addition to proving general competency; while those described as oversea certificates shall be sufficient to prove a master's or mate's fitness for being employed in or to go to any part of the world: but that the coasting certificates shall be sufficient only for short voyages.

13. And be it further enacted, that the short voyages for which coasting certificates are granted, shall include or refer to voyages between two or more European ports—lying without the Strait of Gibraltar.

14. And be it enacted, that the secretary shall give security, by two sureties, for the faithful discharge of his trust, to the amount of 1,000*l*; and that the clerks shall each give security, by two sureties, for the due performance of their respective duties, to the amount of 200*l*. sterling.

15. And be it enacted, that the several amounts of fees, fines, and forfeitures, paid to the various Boards of Examiners, shall be divided and applied by each board, as follows:—

One-half of each total amount is to be shared by the examiners and clerk, as hereinafter specified; one quarter is to defray contingent expenses: and the other quarter is to be transmitted monthly, to the secretary:—also that,—

Of the one-half abovementioned—the chairman shall be entitled to receive four-tenths; the other examiners and the clerk two-tenths each; and that of the one quarter transmitted to the secretary, the salaries of the principal examiner and secretary, and contingent expenses shall be defrayed.

16. And be it enacted, that any master, or mate, or other seafaring person, whose good conduct is certified, may be examined; and if found qualified shall receive a certificate, according to his proved qualification, upon payment of the fees stated in this act; although he may be exempt from the necessity of being examined.

17. And be it enacted, that if a master, or mate should become unable to execute the duties of his office, or should die, it shall be lawful for the managing owner to appoint any person to act in is place until the cargo then on board is discharged; or, if such cargo be discharged in a foreign port, until the vessel arrives at and has discharged her cargo in a British port.

18. And be it enacted, that a register of masters, mates, and other seafaring persons, who have obtained certificates of qualification or exemption, shall be made, and copies of it transmitted monthly to each board of examiners.

19. And be it enacted, that any master or mate, who has received a certificate of qualification, which has subsequently been damaged or lost, may obtain a renewed certificate on proper application being made, and a small fee paid, which fee shall not exceed one-fifth part of the fee paid by such master or mate, when he obtained the original certificate above-mentioned: provided always that the board to which he applies is satisfied of the correctness of his statement, and the propriety of thus renewing his certificate.

20. And be it further enacted, that each candidate for examination shall give notice by letters, in his own hand-writing, of his wish to be examined, two clear days, at least (exclusive of Sundays, Christmas-days, and Good Fridays), before one of the days appointed for examination to be held, and that his letter shall be preserved as a record.

21. And be it enacted, that the nature and times of the examination shall be clearly laid down and described, and that they shall include so much of seamanship, navigation, and general professional knowledge, as shall from time to time be deemed necessary by the elder brethren of the Trinity-house.

22. And be it further enacted, that accounts of all money received and dis-

bursed, all the proceedings of each board, and the results of each examination shall be recorded by the clerk; and that each person found to be duly qualified shall receive a certificate describing his qualifications, authenticated by the signatures of all the examiners present at his examination, after been signed by the secretary.

23. Be it further enacted, that the principal examiner shall visit the several boards occasionally, when he can be spared from the London board, with a view to assimilate their proceedings, and check any irregularities which he may observe, by representing the same in writing to the chairman of that board, and also to the Board of Trade.

24. And be it further enacted, that if any one of the examiners shall be absent from his duty at the time of attendance, as specified in the rules made by his board, he shall forfeit and pay such sum, not exceeding ten shillings for each hour of absence, as may be determined by the said board: and be it enacted, that if from ill-health, or any other cause, an examiner becomes unable or unwilling to attend to his duties satisfactorily, the Board of Trade shall request the shipowners of his district to select a person as a candidate for his place, which he shall vacate; and his claims may be considered, with a view to compensation, by donation or pension, according to the merits of the particular case.

25. And be it enacted, that any person or persons appointed under the provisions of this act, shall be removable at the discretion of the Board of Trade, upon sufficient cause being shown to that board by the elder brethren of the Trinity-house assembled at a court; also that any certificate of qualification granted by any board of examiners may be revoked and cancelled by the Board of Trade, at any time, provided that due and sufficient proof be given to the corporation of the Trinity-house, and by them to the Board of Trade, that the person holding such certificate has been guilty of gross misconduct, and is unworthy of employment as a master or mate (as the case may be).

26. And be it enacted, that if any person or persons shall evade or counterfeit, or shall endeavour to evade or counterfeit, any provision of this act, or any rule, provision, or instrument legalized by this act, or shall in any way pretend or assume to be duly qualified, or exempt, according to the ordinary meaning of this act,—such person not being so qualified, or exempt, shall forfeit and pay to the secretary, on behalf of a pension fund, such penalty (not exceeding 50*l.* for evading, nor exceeding 200*l.* for counterfeiting) as shall be decided on by the Board of Trade: provided always that such penalties shall be recoverable, with full costs, by action of law.

27. And be it further enacted, that the Board of Trade shall be authorized to superintend, direct, and control the proceedings of the principal examiner, secretary, and boards of examiners:—to make, alter, or rescind bye-laws, rules, orders, regulations, or ordinances, provided that none of the provisions of this act be thereby evaded or counteracted; and to be responsible for the due and efficient execution of the enactments herein specified.

28. And be it enacted, that the term managing owner, &c., &c., (a clause to define the expression "managing owner.")

29. And be it further enacted, that this act shall be deemed and taken to be a public act, and shall be judicially taken notice of as such, by all judges, justices, and others, without being specially pleaded.

30. And be it enacted, that this act may be altered, amended, or repealed by any act, or acts, to be passed in this present session of parliament.

Admiralty Orders.

Regulations for Granting Allowances for the Loss of Clothing, Instruments, &c.

Admiralty, 14th March, 1842.

Her Majesty having been graciously pleased, by her orders in council of the 10th

of August, 1840, and 11th inst., to direct that officers of all ranks and classes in the royal navy and marines, and also seamen, and the privates of royal marines, shall receive a compensation for the loss of their instruments, clothing, and other effects, subject to such rules and regulations as the Lords Commissioners of the Admiralty may think fit to establish; provided they shall be acquitted of all blame as to the cause of any such loss, their lordships are pleased to give notice, that the following regulations shall be observed in respect to the granting of compensation for such losses,

1. That the principle upon which allowances for articles lost on service are granted, shall be, that of enabling individuals to re-equip themselves for service—and allowances are therefore not to be considered as given for the purpose of making good the full amount of loss sustained.

2. Allowances are to be only made for losses which have been altogether unavoidable, such as losses in action with the enemy; by accidental fire; by shipwreck; by capture at sea; provided that in all these cases, every exertion was used to prevent the loss, and that it was not incurred by the neglect or fault of the applicant for relief; and in no case will an allowance be made exceeding the maximum sums stated in the schedule attached hereto.

3. If the admiral or commanding officer of the squadron on the spot, shall be satisfied on inquiry that losses have been unavoidably sustained, which in his opinion may admit of compensation on the principles laid down in the foregoing regulation, though not precisely specified therein, he shall be at liberty to make a special representation thereof, transmitting the necessary proofs to the secretary of the Admiralty for final decision.

4. No claim will be admitted from the representatives of officers or men slain in action, or dying in consequence of wounds.

5. Whenever baggage or articles of equipment are sent by a vessel, in which the officer to whom they belong is not himself a passenger, it is incumbent upon such officer to protect himself against loss, by effecting an insurance thereupon; and if he has an opportunity of doing so, and neglects to avail himself of it, no compensation will be given by the public for any loss that may happen.

If any loss shall occur under circumstances which give the officer a claim to indemnification from the party through whose fault it happened, no allowance for such loss will be made by the public: but should the officer desire it, and lose no time in making application to the officer commanding her Majesty's ships on the spot, an inquiry will be ordered, to afford every possible assistance in substantiating the claim, by making the necessary inquiries, and obtaining proper documents to prove the facts of the case.

6. When losses occur on service, the admiral shall order, with all convenient dispatch, an investigation of claims arising from those losses, which inquiry is to be conducted on the principles laid down in this regulation, and the several proofs to be produced in the forms hereinafter described; and the whole of the proceedings, or certified copies thereof, are to be transmitted to the officer commanding the squadron, for his observations and opinion, and by him forwarded to the secretary of the Admiralty, for their lordships' final decision.

7. In all cases which are not attended with the entire loss of clothes of an officer, seaman, or marine, no claim is to be allowed, unless the loss extends to the value of one-fourth the amount allowed as compensation for the whole in each rank; and a list of the articles lost shall be delivered, and the investigating officer shall report whether he deems one-fourth, one-half, or three-fourths of the sum allowed for the whole, a sufficient compensation for the loss so sustained.

8. If an officer, seaman, or marine, shall have neglected to bring forward his claim for a period exceeding one month from the date of his loss, this delay shall be considered a sufficient reason for rejecting the claim, however valid it may be in other respects; unless the claimant can prove that he was unavoidably prevented from making an earlier claim.

Personal Losses of Officers.

9. The whole equipment of officers of the several ranks, including the articles in wear, shall be valued according to the scale No. 1.

10. The claims of all officers to allowance for articles lost on service, shall be made out, and certified according to the form No. 2; and separate lists shall be transmitted of all instruments and books, subjects strictly professional, shewing their original cost, and the amount of the damage they may have sustained.

11. If losses should occur in other situations where a greater extent of equipment is absolutely required by the nature of the service, the actual amount of loss suffered, and the circumstances attending it, may be specially stated at any inquiry appointed for the investigation of losses; such inquiry proceeding in the investigation of the claim upon the same principle as in the preceding article.

The opinion of the officers assisting at such inquiry, will be forwarded for the consideration of their lordships.

12. Losses of necessaries incurred by the purser, shall be made the subject of a special application and decision in each particular case.

13. No allowance shall be granted for losses sustained by officers when proceeding on, or returning from leave of absence.

14. No claim shall be admitted on account of the loss of money, being the private property of individuals.

Losses of Petty Officers and Seamen, and of Non-Commissioned Officers and Marines.

15. Claims on account of losses on service by petty officers, non-commissioned officers, seamen, and marines, individually, are to be made out and certified according to form No. 3.

16. All admissible claims of this description shall be settled by allowing for the whole, or for a certain portion, or rate, of a complete set of bedding or clothing, according to the circumstances of each case.

By command of their Lordships,

SIDNEY HERBERT.

FORM No. 1.

Maximum value to be allowed for the articles of equipment of officers, according to their respective ranks.

Flag Officer.	£
Uniforms and appointments	80
Body linen	40
Boots and other necessaries	10
	130
If private property.	
Table linen £40	
Bedding and sheets 30	170
Plate 60	
Furniture 40	
	£300

Captain of the Fleet.	£
As a flag officer, as to clothes, &c.	130
Bedding and furniture	20
	£150

Commodore and Captain.	£
Uniform, &c.	60
Body linen	30
Boots and other necessaries	10
	100
If private property.	
Table linen £30	
Bedding and sheets 10	100
Plate 40	
Furniture 20	
	£200

Captain of a Flag Ship	£
Clothes, &c.	100
Bedding and Furniture	20
	£120

Commander & Field Officer of Marines.	£
Uniform and appointments	55
Body linen	25
Boots and other necessaries	10
Bedding and sheets	10
	100
Commander, when in command of a Sloop.	
If private property.	
Table linen £20	
Plate 25	60
Furniture 15	
	£160

Lieutenant, and Master in Command.	£
Uniform and appointments	40
Linen, &c.	20
Bedding, &c.	10
Boots and other necessaries	10
	80
If private property.	
Table linen £15	
Plate 15	40
Furniture 10	
	£120

Lieutenant, Master of the Fleet, Master, Secretary to Flag Officer or Commodore, Chaplain, Surgeon, Purser, and Captain, and other Officers of Marines.	
Uniform and appointments	40
Linen	20
Bedding	7
Boots and other necessaries	8
Mess articles	5
	£80

Mate, Second Master, Assistant Surgeon, Naval Instructor, and Clerk in charge.	
Uniform and appointments	25
Linen	20
Bedding	6
Boots and other necessaries	6
Mess articles	3
	£60

Midshipman, Clerk, and Volunteer, and Master's Assistant..	
Uniform and appointments	15
Linen	12
Bedding	6
Boots	4
Mess articles	3
	£40

Gunner, Boatswain, Carpenter, and Warranted Engineer.	
Uniform	10
Linen	8
Bedding	6
Boots and other necessaries	4
Mess articles	2
	£30

Petty Officers and Seamen, and Non-Commissioned Officers and Privates of Royal Marines.	£ s.
1st class Petty Officers and Serjeants of Marines	3 0
2nd ditto and Corporals	2 15
Seamen and Private Marines	2 10
Boys	1 10

Form No 2.

To be used by all Officers of the Royal Navy and Marines.

Return of articles of clothing, &c., lost on service, belonging to of her Majesty's ship on the 184

The several articles with the value thereof, according to the best of claimant's judgment and belief, to be stated.	Amount. £	s	d.	The nature of the duty on which the officer was employed, with the date, place, and particular circumstances which occasioned the loss, to be distinctly preferred; and if the claim be made in England, the reason of its not being preferred at the station where the loss occurred, should be stated.

I do hereby certify that the foregoing is a true and correct statement of my loss on the occasion referred to; that I was not at the time deviating in any respect from the orders of the commander-in-chief, (or senior officer,—and that I have neither received, nor applied for indemnification on account of the above loss, through any other channel than that in which the present claim is submitted.

To be signed by the officer making the claim.

I hereby certify that I have particularly examined and inquired into the facts and circumstances of the before-mentioned loss, and that I have every reason to believe the same to be correctly and justly stated.

To be signed by the commander-in-chief, senior officer, or captain of the ship, according to the circumstances of the case.

N B —Duplicate returns are required in all cases.

Form No 3.

For the loss of necessaries of Petty Officers and Seamen, and Non-commissioned Officers and Privates of Marines.

Return of petty officers and seamen, and non-commissioned officers and privates of royal marines, who actually lost, without any fault of their own, the proportions of a set of necessaries specified against their respective names, on service in the year 184

Names.	Rating.	Proportion of necessaries lost.	Amount. £	s.	d	Date, place, and particular circumstance of each man's loss; whether taken prisoner, if so, how long he remained in captivity; and in case the claim be made in England, the reason why it was not preferred at the station where the loss occurred, should be stated.

I hereby certify, that I have particularly inquired into the facts and circumstances of the losses sustained by the several petty officers and seamen, and non-commissioned officers and privates of royal marines, as specified in the above return; that I believe the same to be, in every instance, correctly stated; that the claimants were, in no respect, deviating from my orders at the time the loss was sustained; and that no indemnification on account thereof has been received, or applied for, through any other channel than that in which the present claim is submitted.

Captain,
[or Officer commanding ship.]

I hereby certify, that I have particularly examined and inquired into the facts and circumstances of the above-mentioned losses, and that I have every reason to believe the same to be correctly and justly stated.

Commander-in-chief.

N.B.—Where losses have been sustained on different services, they are to be made out in separate returns.

Duplicate returns are required in all cases.

Regulations for the Qualification, Pay, and Half-pay of Naval Instructors.

Established by orders in council of the 22nd Dec. 1836, 10th Aug. 1840, and 11th March, 1842.

Admiralty, March 16th, 1842.

Naval Instructors and Schoolmasters are hereafter to be designated "Naval Instructors," and Chaplains on being appointed to act as Naval Instructors are to be designated "Chaplains and Naval Instructors."

No layman will be considered eligible for a warrant as Naval Instructor who is under 20 years of age or more than 35.

Before any layman can hereafter receive an appointment as Naval Instructor he will be required to produce a certificate of his age, and testimonials of good character; and both laymen and clergymen, when appointed to act as Naval Instructors, must pass an examination as to their qualifications to instruct the young officers in the following branches:—

1. Common arithmetic, including vulgar and decimal fractions.
2. The first six, the eleventh and twelfth books of Euclid; their application to the measurement of planes and solid bodies.
3. Algebra, progressing to the highest order of equations, and its application to the solution of geometrical problems.
4. Plane and spherical trigonometry, and the various problems in surveying, the measurement of heights and distances, navigation, and nautical astronomy, particularly the principles on which the various formulæ for ascertaining the longitude are constructed; and practical astronomy, so far as may be required for determining the latitude and longitude in all cases.
5. The uses of mathematical and nautical instruments, the quadrant, sextant, compasses, and chronometers.
6. The theory of projectiles, and its application to gunnery.
7. The classics, to such as enter with some knowledge of Latin and Greek.

Although the knowledge of French, as well as of other modern languages, and of the principles of drawing, will not at first be required as indispensable qualifications, it is very desirable that Naval Instructors should be able to give instruction in these branches of education; and preference will always be given to such as possess these attainments.

The full pay of Naval Instructors is to be upon their first entry in the service, 7s. a day,—after three years service on full pay, 7s. 6d.,—after seven years, 8s. 6d.,—after ten years, 10s.

And £5 a year for each young gentleman who shall receive instruction from them; but the bounty of £30 a year heretofore allowed is to be discontinued.

The half pay of Naval Instructors is to be after their first entry, 2s. a day,—after three years' service on full pay, 3s.,—after ten years' service on full pay, 4s. 6d.,—after twenty years' service on full pay, 5s. per day.

But no Naval Instructor who shall retire from his employment without the approbation of the Lords Commissioners of the Admiralty, or who shall refuse or avoid service, if found capable of serving, shall be allowed to receive half pay; and his name in such case will be removed from the list of Naval Instructors.

In the event of a Chaplain of a ship being appointed to act also as Naval Instructor, he will be entitled to £5 a year from each young gentleman instructed by him, in addition to his pay as Chaplain, and to three-fourths of the amount of the full pay of Naval Instructors, according to the length of their service as such, but the bounty of £30 a year is to be discontinued.

The half pay of Chaplains and Naval Instructors, after 15 years service on full pay is to be one half of the highest rate of half pay of Naval Instructors, in addition to the half pay to which they may be entitled as Chaplains.

By command of their Lordships,

SIDNEY HERBERT.

Admiralty, 3rd April, 1842.

The rating of "leading stoker" having been added to the establishments of her Majesty's steam-vessels, by Order in Council of the 2nd of February, 1842; the commanding officers of all such vessels are hereby acquainted, that the object of this rating is to improve the practice of "stoking," to which too little importance has been hitherto attached; so as to combine with the greatest possible efficiency in the raising and maintaining of the steam, the utmost economy in fuel, whether considered as a constant and heavy item of expense, or as affecting the resources of her Majesty's steam-vessels in this important particular. With this view, their lordships are pleased to direct that the commanding officers shall be at liberty to recommend to them, for this rating, such stokers as they shall have good reason to consider deserving of, and qualified for, the situation, on account of their steady conduct, experience in this particular business, and superior ability in conducting it. Their lordships strictly forbid any such recommendation, until men can be obtained possessing the qualifications above-mentioned; and if, on trial, any man so rated be found unfit to fill the situation, either on account of character or ability, he is to be dis-rated, and a report thereof made for their lordships' information.

The leading stokers are to be under the immediate direction of the engineers of the respective watches, and to be responsible, during their watches, for the due performance of the duty committed to their charge. Their names, characters, (especially as to sobriety,) and qualifications, are to be inserted, immediately under the engineers, in every monthly report of the engines, &c.

The number of leading stokers in each vessel's establishment being the same as that of the engineers, their lordships recommend to the commanding officers so to arrange the several watches as to create an emulation in the performance of this very essential duty; and special mention is to be made, in the reports, of any leading stokers who may display peculiar zeal and ability in carrying out the desired improvement in this department of the service; with a view to their future employment in preference to others.

A list of leading stokers will be kept in this department, and at Woolwich dockyard, containing an account of their services, character, qualifications, &c., and when a steam-vessel is paid off, the leading stokers, if of good character, may be retained, if they desire it, as supernumeraries on the books of the William and Mary, for future employment, as is now the case with certain other classes of petty officers who are borne on the books of the guard ships for that purpose.

By command of their Lordships,

SIDNEY HERBERT.

Admiralty, 13th April, 1842.

Regulations under which seamen, when paid off, are to be allowed to deposit their hammocks, clothes, &c., in the dockyards during their temporary stay on shore.

The day before, or on the morning of the day the ship is to be paid off, all articles intended to be deposited are to be examined by the officers of the ship, who are to

be enjoined to take especial care that they are properly washed, and that no articles of flannel, canvass, or linen, impregnated with oil, are on any account sent on shore.

The property is to be securely lashed up in bundles, and labelled with the owner's names, and a clear list made out in the following form :—

To be filled up on board.					To be filled up by Storekeeper.	
Name.	Ship	No. of Sack.	Bedding only or Bedding & Clothes	Address.	No. of Rack	Date of Admission.

Shewing the names of the men, and whether the bundles contain bedding only or bedding and clothes, with a certificate at the foot thereof signed by the examining officers, that the articles have been carefully inspected and found in a fit state to be deposited.

This list is to be sent to the storekeeper of the dockyard, who will return it with a corresponding number of numbered sacks to receive the men's bundles, and a ticket, with a corresponding number to that on the sack, to be given to each man, (which must afterwards be produced, when he claims his bundle,) and the number of his sack to be likewise set down against his name on the list.

The articles with the list so made out are then to be sent on shore in charge of an officer, and placed in the custody of the storekeeper, who will mark against each man's name on the list the number of the rack in which his goods are deposited, and the date of their admission.

Each depositor to give an address, in case of its being necessary to call upon him to remove his goods.

Notice to be given to each depositor that this accommodation will not be afforded beyond three calendar months from the date of his being paid off; at the expiration of which period he will be called upon to remove them, and provided that is not done within another month, the articles will be sold, and the proceeds given to the Seamen's Hospital Ship; this notice to be printed on the tickets.

Should any man re-enter the service at another yard from that in which his kit is deposited, the commanding officer of the ship is to demand the same, sending the depositor's name and number, in order that the articles may be forwarded from the yard in which they may have been placed.

By command of their Lordships,

SIDNEY HERBERT.

VEERING OF THE WIND.

Newcastle, April 7th. 1842.

SIR.—Knowing you are desirous, (and also your correspondent—Stormy Jack,) of having any information that is possible to be obtained as to the veering of the wind, I therefore beg to lay before you the following.

March 9th, 1842.—The greater part of which day I had the wind W.S.W., with passing squalls and rain. In each succeeding squall, the wind would fly from the west, and in the lulls would return W.S.W. or more southerly.

About 7 P.M., running through Yarmouth Roads, the wind was S.S.W., blowing fresh with a heavy shower of rain, and an appearance I thought of the wind again flying from the west:—8h. wind south,

and very light, accompanied with drizzling rain:—10h. off Hasborough, wind S.S.E., and commenced blowing a gale, with heavy rain, and continued so after midnight.

March 10th.—About 2 A.M. it was more moderate, the rain also partially abated, wind south-east:—4h. the Dudgeon Light bore east, about five miles distant, wind E.S.E. and again commenced blowing, with continued rain:—5h. 30m. wind E.b.N., increasing in violence: 7h. wind N.E.b.N., blowing a perfect storm, with short intervals of lulls which lasted about half-an-hour. 9h. wore ship's head to the eastward, wind more moderate, wind north:—10h. saw Chequered buoy of the Docking Shoal; wore ship with head to the west, wind N.N.W., and at the same time the rain had entirely ceased, with the wind rapidly passing to the southward. At 1h. P.M. wind north-west, and continued steady from that point the remaining part of the day.

I have been informed there was no such storm about this locality; was also informed it blew strongest about south, upon the coast of Essex, and likewise veered by west to about north-west. I cannot vouch for the truth of these last statements. I also consider it necessary to state, that the ship was not hove to during the storm; it was also an ebb tide. I make this statement, that you may not be surprised at the ship not drifting more to the south.

A. DONALANIAN.

To the Editor, &c.

CAPTURE OF THE CARTHAGENIAN FLEET.

THE following are the particulars of the capture and destruction of the Carthagenian fleet by the British man-of-war brig Charybdis, from the *Royal Gazette*, Feb. 15.—Her Majesty's brig Pilot, Commander Ramsay, arrived here on Friday last from Jamaica and Barbados. She brought some highly interesting news from Carthagena, no less than the capture and destruction of the Carthagenian fleet by her Majesty's brig Charybdis, Lieut. M. de Courcy, Commander. We cannot find that the Pilot has brought a single newspaper giving the particulars of the action; we therefore, are compelled to resort to oral information, though we have no doubt of its correctness. The particulars, as far as we can ascertain, are, that a Colonel Gregg and some other British subjects, either for some real or imaginary offence, were incarcerated by the Carthagenian Government. The Colonel having applied to the British Consul resident there for protection, that functionary interested himself on his behalf, but his intercession proving unsuccessful, he communicated the particulars to Lieut. De Courcy, of her Majesty's brig Charybdis, then in the neighbourhood. Lieut. De Courcy, despatched an officer with a letter to the Commodore of the squadron at anchor in the port, demanding the release of Col. Gregg and the other British subjects. This letter, because it was not written in Spanish, was treated with contempt, and the bearer with much hauteur. On the officer's return to the Charybdis, and reporting these circumstances to his commander, Lieut. De Courcy immediately entered the port; and when proceeding to an anchorage he was fired into by the commodore's vessel, a corvette, and the forestay of the Charybdis shot away. Lieut. De Courcy then took up a position, and, however desperate such a proceeding may have appeared on his part, in so small a vessel against so apparently overwhelming a force, he did not overrate the bravery of his little band, for after a short fight the corvette surrendered, the commodore and twenty-five of his men having been killed. A brig and three schooners, that came to the assistance of the corvette, were attacked in turn by the Charybdis.

In five minutes after the Charybdis brought her guns to bear on the brig she was sunk, and the schooners soon after surrendered.

The Charybdis carries but three guns, one long gun amidships, and two carronades, and her full complement of officers and men is but 55.

Whatever offence the Carthagenian Government had received from Colonel Gregg (who, it appears, was shot immediately after Lieut. De Courcy's application for his release was made,) and the other British subjects whom they had imprisoned, and however informal the Consul's proceedings may prove to have been, nothing could justify the contempt offered to Lieut. De Courcy's application by the commodore, who, poor man, paid dearly for his temerity. We are told that Lieutenant De Courcy intends to remain at Carthagena, with his prizes, till he hears from the admiral on the subject of their capture, &c.

The cause of the fight above alluded to was, that the brig Jane and Sarah, whilst lying at Sapote, in company with the sloop Little William, was, on the 6th ult., boarded by General Carmona's squadron, both vessels plundered to a large amount of goods and specie, crew imprisoned, and Col. Gregg and three other passengers of the Jane and Sarah shot.

Lieut. Michael De Courcy, (1836,) has been promoted to the rank of Commander.

The Minerva.—*Wrecked off Calais.*

Sir.—On the 9th inst., about 8 or 9 o'clock P.M., a heavy storm arose, and in the offing this morning was discovered a brig, with all her sails in shivers. About 11 o'clock A.M. to-day, she let go her anchor to the eastward of the pier, about a mile from the shore, a most tremendous heavy sea running. About 3 o'clock the life-boat of this place was, after great persuasion, and after a reward of 50*l.* was offered, sent to the assistance of the vessel. From some great mismanagement on the part of the French authorities, the launch was not affected. At half-past 6 o'clock the vessel in the mean time cut away her anchors, hoping to drift ashore. She struck, and no further attempt was made by the French. The tide was coming in, and the sea breaking over her. The cries for help of the unfortunate crew were dreadful. She was within a quarter of a mile at that time of land (half-past 6 P.M.) The French, to their disgrace, in every way opposed all succour. At half-past 7 o'clock P.M., Mr. Slater, second master of the Widgeon steam-packet of Dover, with a crew of six men, five of whom were of the Widgeon, with the assistance of Lieut. Scriven, commander, procured from the Harbour-Master, after two applications and immense difficulty, a boat belonging to the Humane Society, and then only upon Mr. Slater guaranteeing the payment of any damage that might accrue, boldly, with his small crew, manned the boat, 200 Englishmen in the lace business, under the superintendence of Lieut. Scriven, nobly assisted in launching the boat, a most tremendous sea running. They started from the westward, and had to pass the head of both piers, a very dangerous service even in mild weather; it took them half an hour to get through the bar; and but for the gallant intrepidity and dexterity of this noble officer and his crew, they must have been all lost. Two hours elapsed before they succeeded in their gallant enterprise; they reached the vessel, and saved from a watery grave seven human beings; ten minutes more, and every soul must have perished. The brig was the Minerva, of Jersey, bound from Sunderland, the master, William Percy, laden with coals; tonnage 163. The vessel is a perfect wreck; her mainmast was at the time of the rescue swinging backwards and forwards, and Mr. Slater expected every moment she would go over, and had she done so, the gallant boat's crew must have all met with instantaneous death.

As an Englishman, I feel called upon to say a few words to the evident want of humanity and feeling, evinced by the French authorities: a more cowardly callous system I never before witnessed.

Two English gentlemen, at 3 o'clock, offered them 50*l.* for the boat, and they

refused the loan of it, as it belonged to the Humane Society, &c. And why! Because the boat was to be manned by Englishmen! They absolutely turned the men out of the boat! Some considerable time afterwards she was manned by six young men, principally boys—six rowers only! Instead of putting her head close to the pier, they launched her in the middle of the breakers; after half-an-hour's vain and foolish attempt they gave it up, and returned; the boat, they say, is injured—that remains to be proved. The crew of the vessel were left to their miserable fate, within, at that time, a quarter of a mile of dry land. The Humane (?) Society, instead of procuring another boat, were dressing themselves to go to the theatre. But for the immense and meritorious exertions of Mr. Slater, (who went twice to the Harbour-master to procure the boat they embarked in, and he would not then give up the key of the boat-house, unless assured of being paid for any damage it might receive,) these poor fellows would now have been corpses, and their wives and families destitute. That the French authorities ought to have a most severe reprimand, there cannot be, I conceive, two opinions; and that a proper and efficient lifeboat of twelve oars should be furnished, instead of the slight ricketty machine now in use, miscalled a "lifeboat!" and to which the English here have subscribed, is absolutely requisite.

I hope and trust that the Lords of the Admiralty will not lose sight of the service that has been performed by Mr. Slater, of the Widgeon, for I find it is not the first time this active young officer has evinced it. The names of those brave men who manned the life-boat are Richard Canney, quarter-master, Thomas Sinclair, Thomas Lawrence, Watkin Edwards, and Daniel Trim, able-bodied, all of the Widgeon; and Nicholson, of the Frederick, of Sunderland, a collier, a young man whose intrepidity and gallant conduct throughout ought to meet with a high reward. It is not for me to propose reward to those whom merit is due, it is enough to have the honour of being the humble channel of bringing the case to the notice of those who, I feel quite satisfied, will carry out the old war cry of the immortal Nelson, that "England expects every man to do his duty." A more gallant action since the time of Grace Darling, I believe, has not been performed, and I sincerely hope that the gallant men to whom so much credit is due, will be handsomely rewarded. The well-conducted portion of the French here are disgusted with the pusillanimity evinced by their countrymen; and well they may be.

I have the honour, &c.,

R. W. Powell,

March 10th, 1842. *Late Hon. East India Company's Service.*

P.S.—The Harbour-master asked Lieut. Scriven this morning, who was to pay the expense of taking the boat round from the harbour to its former birth! Was ever anything so monstrous? A padlock is lost, and they are talking immensely about that.—*Times.*

The Lords of the Admiralty have been pleased to testify their sense of the gallant conduct of the crew of Her Majesty's packet Widgeon, by presenting the sum of 5*l.* to each of the seamen engaged, under the directions of Mr. Slater, in rescuing from a watery grave seven human beings, during a tremendous storm, from the wreck of the brig Minerva, stranded off Calais on the 10th inst. We have much pleasure in adding that, the Municipal Council of Calais have voted a silver cup, worth 300f., to Mr. J. Slater, mate of the Widgeon packet, for his conduct in saving the crew of the Minerva. The Humane Society of the same town have also decided on applying to the General Shipwreck Society for a gold medal for Mr. Slater, and silver ones for the English sailors who assisted him on that occasion; also gold medals for the pilots, and silver ones for the French sailors who attempted, though in vain, to save their countrymen.—*Dover Chronicle.*

A public dinner was given on the 30th of March at Calais, to Lieut. Scriven,

R.N., commander of the Widgeon, and to Mr. Slater. Five of the crew have been presented with 8l. each by the inhabitants of the town for their gallantry on the occasion of the saving the lives of seven of the crew of the Minerva. Quarter-master Canning has been presented with a piece of plate to the value of 12*l.*; and Mr. Slater has been presented with plate to the value of 20*l.* The town-council of Calais have also voted the last-named gentleman a silver cup valued at 300f., and ordered medals to be distributed amongst the crew of the Widgeon in testimony of their gallant conduct. Mr. Scott, R.N., presided at the dinner, which was attended by almost all the *elite* of Calais.—*Dover Chron.*

Nautical Notices.

The Fox Rock, *Bay of Plenty, New Zealand.*

Sir.—You will oblige me by inserting, for the benefit of parties trading on the coast, the bearings of a reef on which my vessel touched in the Bay of Plenty. The west point of Flat Island bearing N.b.W., and the east point north-east, the island distant about one mile and a half. The least depth around was ten feet, but in several places two fathoms and a half.

I remain, &c. H. Fox,
Master of the brig Julia.

[The foregoing from the *Auckland Herald*, will place seamen on their guard until we have charts on which we may lay down such dangers.]

New Light at Alexandria.

Hydrographic-Office, Admiralty, April 13th, 1842.

Notice is hereby given that on the 1st of this month a Fixed Light was by order of the Viceroy of Egypt, established on the extremity of Point Eunostos, in the old harbour of Alexandria, in lat. 31° 11′ 31″ north, and long. 29° 51′ 28″ east of Greenwich.

The light is 180 feet above the level of the sea, with the Point of Marabout bearing south-west by compass, distant four miles, and the old light-house, or Pharos, N.E. ½ E., one mile and three-quarters, within which bearings it will be visible from a ship's deck at the distance of about six leagues.

[The foregoing is the official notice of the light alluded to in page 202, in which 27° east longitude should be 29°.—Ed.

Light off Calshot Spit, Southampton Water.

Trinity-House, April 13th, 1842.

Notice is hereby given that, in compliance with the request of the merchants, shipowners, masters of vessels, and other persons using or interested in the navigation of Southampton Water, a Floating Light Vessel will be moored off Calshot Spit, at the western side of the entrance to the said water, and a light exhibited on board the same on the evening of Monday, the 16th of May next, and thenceforth continued every night from sun-set to sun-rise.

Mariners are to observe, that the Light at this station will be exhibited from a single lantern, and that it will revolve.

Further particulars in respect to the exact situation of this light vessel will be published in due time.

By Order, J. Herbert, *Secretary.*

Lights of Anholt in the Cattegat.

Hydrographic-Office, Admiralty, April 18th, 1842.

Notice is hereby given by the Board of Trade and Customs at Copenhagen, that during this month a Light Vessel will be moored in eighteen fathoms, about a mile to the eastward of the Knoben Reef, which projects from Anholt Island E.S.E. (magnetic) four miles and three-quarters.

This light vessel, which will be rigged as a schooner, and painted red with a

white cross, will carry the light on her main-mast, at an elevation of about twenty-five feet above the level of the sea. She will shew a red flag in fine weather, and in bad weather a jack at her fore top-mast head; and in foggy or rainy weather, a bell will be kept ringing for five minutes with intervals of the same duration.

This light vessel will hereafter take her station in the month of March, and will remain until the 21st of December. Her crew will be forbidden to have any intercourse with passing vessels, except in cases of distress.

The present Fixed Light on the Isle of Anholt will be immediately converted into an Intermitting Light, the bright flashes of which will continue for about five seconds, and the succeeding intervals of darkness will last twenty seconds.

When the light vessel is not at her station a Fixed Light, on the eastern side of the Light-house Tower will be kept burning.

Elsinore, April 5.—The Light Ship will this afternoon be towed to her new station off the Knoben of Anholt, and in from eight to ten days more the lights of all the light-houses will be lighted at one and the same time.—*Shipping Gazette.*

H.M.S. Lily, Simons Bay, 7th Jan. 1842.

Sir.—I beg leave to acquaint you with the situation of two dangers, discovered by me in this sloop.

The reef on which the Lily struck on leaving Zanzibar;—from the centre of the reef, the south point of Choomby Island bears N. 40° W., one mile and one-eighth. The northernmost part of Ukomby or Nut Island, N. 68° E., two miles and a quarter. The reef extends a full mile from north-west to south-east, and dries at low water.

Shoal in the fairway to North-west Bay of Nos Beh, Madagascar.

Square Island, N. 23° E., two miles and three-quarters.

West Point of the Bay, S. 64° W., two miles and one-third.

About four feet at low water. All the bearings are true, and both reefs are very dangerous.

(Signed) J. J. Allen,
Commander.

To Rear-Adml. Sir E. D. King, &c.

Admiral Sir David Milne.

From his earliest years Sir David was distinguished as one of the most gallant and enterprising officers in the navy; most passionately attached to his profession, and embracing every means of obtaining knowledge in the practical and scientific pursuits of a sailor and navigator.

In Rodney's action in 1782, just sixty years ago, Sir David was mate of the Canada, which ship bore a conspicuous part in the action. His conduct at the capture of the West India Islands, in 1794, gained his lieutenancy; and among the most chivalric and enterprising feats of our gallant navy may be recorded, the swimming from the Blanche to the Pique, with ten of the brave seamen, to take possession of the prize. No action during the war was more ably sustained than that of La Seine, and the Vengeance; one of the largest and best disciplined of the French frigates, who were flushed with supposed victory over a British frigate of much larger size than La Seine, which proved afterwards to be the Constellation, American frigate, which also claimed the victory, and were feted at Port Royal; the Vengeance had been completely equipped, and was full of soldiers as well as picked seamen; yet she struck to the little Seine, after a sanguinary conflict of nearly five hours. The brave Admiral Chetham was then first lieutenant of the Seine. The courage and promptitude of this active sailor was also most conspicuously displayed when in command of the Pique, which ship unfortunately went on shore in the heat of the battle, when Sir David captured La Seine and removed his ship's company to the prize, and, after indefatigable perseverance, brought out the prize, from under the French batteries. While on shore his active mind was always employed in the advance-

ment of his profession, in the scientific application of means of improvement in stowage, flotation, and propulsion. At the battle of Algiers the gallant admiral was severely hurt, yet he would not allow himself to be reported among the wounded!

It is gratifying to the navy to find modest merit at last rewarded. May the gallant Sir David be long preserved as one of its brightest ornaments.—*Hants. Advertiser.*

Launch of an Iron Steam Frigate.

On Tuesday last, a beautiful iron steam frigate, for her Majesty's service, was launched from the iron-shipbuilding yard of Mr. John Laird, North Birkenhead.

The day was fine, and the curiosity excited to witness the launch of a large vessel of war, built of a material which has comparatively but recently been introduced in the construction of our national marine, but which has already been found to be admirably adapted for an important branch of the service, drew to the spot a large and respectable assemblage of spectators, from the vicinity, on this as well as the Cheshire side of the Mersey. Much admiration was expressed by connoisseurs of the beauty of her model, which seems to combine all those requisites in form that delight the eye of the mariner, giving the utmost promise of safety in all weathers, adaptation for carrying a press of sail when required, and speed whether under steam or sail, or both. She has a most insinuating entrance, and a run so gradually fining away from the fulness of the bilge, that it is difficult to detect where it begins. Her bottom, as is usual in iron-built vessels, is put together with lapped or clencher joints, in smooth plates, gently sheering from stem to stern; her top sides, with carvel or flush joints; and she resembles, on the whole, a light and elegant yacht. The following are her dimensions and steam power:—

Length on deck 190 feet; Beam 30 feet; Tonnage 800 tons.

She will carry two 68-pound pivot guns, one forward and the other aft. These were in the yard, preparatory to mounting, and are truly "murderous" looking pieces of artillery. Before the launch, many parties had an opportunity of minutely inspecting the hull, the faithful workmanship and high finish of which, in the plating, mouldings, &c., was the theme of general remark. But for the lapped joints, indeed, (and these have a pleasing appearance,) there was nothing to indicate that her sides were not each formed of a single huge plate. The interior was an object of not less curiosity. She has six water-tight bulkheads, dividing her into seven compartments. The deck and paddle beams are all of iron, and the whole of her fastenings ingeniously contrived to impart strength with comparative lightness of material. The fittings and accommodations will be the same as those on board her Majesty's steam frigates of a similar class; and we shall furnish some details of them, when they are completed. She is the first iron vessel regularly built and equipped as a steam frigate; and her masts and rigging (all of which were fitted before the launch) are adapted for carrying more sail than is usual in vessels with steam power. She was gaily decorated with numerous national and other flags, and a large assemblage occupied her deck. Lady Cust, of Leasowe Castle, undertook the office of "christening" the vessel; and about half-past eleven o'clock she went off in beautiful style, taking the water with the lightness and grace of a swan. She is rigged as a two-masted schooner, with a large fore topsail, &c., and looked, when afloat, exceedingly rakish and mischievous; such a craft, indeed, as though acknowledged to be beautiful by our countrymen, will doubtless, like the Nemesis, be considered "an ugly customer," by those of their enemies who may have the misfortune to fall in her way. Before launching, a sight was put up at each end of the vessel, and a third one between them, to ascertain if she at all altered her shape when afloat. It appeared there was not the slightest deviation, thus proving the great strength and firmness of her build. This vessel makes the forty-second built of iron by Mr. J. Laird, besides canal-boats and other craft. May she be as successful in her ocean adventures as she is creditable to that gentleman in her construction!—*Liverpool Standard.*

DEVONPORT, April, 13, 1842.—In consequence of the increase of correspondence between this country and China, persons have been allowed to send letters for the latter place *via* India and Egypt; and the Treasury has now allowed ship letter-bags to be sent by her Majesty's ships going to China. A bag will be made up in London for China, to be sent by her Majesty's ship Agincourt, Capt. Bruce, which will sail from this port in a few days.

BIOGRAPHICAL MEMOIRS.

CAPTAIN DANIEL WOODRIFF, R.N., C.B., late of Greenwich Hospital, entered the navy on the 12th of August, 1762, and after serving diligently, honourably, and faithfully in the junior grades, became captain on the 28th of April, 1802, thereby placing himself above all others in the extensive naval promotion of the following day. He was made lieutenant in 1783, and commander in 1795. He was placed in Greenwich Hospital in 1839. When in command of the Calcutta, in 1805, while convoying a fleet of East Indiamen, he was, after a most gallant defence, captured by a French squadron (two of which were 74-gun ships), but enabled the Indiamen to escape during the unequal contest. The East India Company rewarded him with a liberal pension for his valourous services; and when afterwards most honourably acquitted by a court-martial, the Court pronounced him a "brave, cool, and intrepid officer." After his capture he was placed at Verdun, where he did all he could to alleviate the sufferings of his fellow-prisoners. On his return to England he was appointed resident agent for prisoners of war at Forton, and afloat in Portsmouth harbour, he was then made resident naval commissioner at Jamaica, which office he resigned, and afterwards refused his "flag" in 1837, on accepting Greenwich Hospital, in which institution he will be long and deservedly regretted. Having thus stated some of the public services of the gallant captain, which will be handed down to posterity in the naval annals of his country, it is but justice to state that in the various duties of private life, he was the best of husbands and parents and warmest of friends, and has left the world loaded with honours and years, sincerely regretted by all who knew him.

SIR WILLIAM BEATTIE (see Obituary,) was chief medical officer to Lord Nelson, and was with him at the battle of Trafalgar. He possessed the bullet which killed that celebrated hero, which he kept in a chrystal case mounted in gold. He was physician to the channel fleet, and afterwards to Greenwich Hospital, which appointment he resigned from ill-health, in 1840. Sir William was much esteemed by a wide circle of professional and naval friends. His brother, Col. Beattie is at present commandant at Plymouth.

CAPTAIN T. T. HARRINGTON, Master-Attendant at Calcutta, was a truly worthy old seaman—a good British Tar in the true sense of the words,—"always ready to give a helping hand," jovial, and kind to every one—never out of humour—a smile or a laugh constantly on his countenance. In the discharge of his public duties he was zealous in the extreme,—quick,—determined, and considerate in all he did—constantly on the alert; indeed a more thoroughly efficient officer there seldom has been. He received the thanks, a few years back, of the merchants of Calcutta, for his exertions as Master-Attendant of this port, and he has been repeatedly eulogized by the Government authorities, for his able conduct in the discharge of the many important duties of his office. It is nearly 50 years since he first entered the maritime service of the Hon. East India Company. This excellent old sailor's loss will be deeply regretted by both the rich and poor of this presidency, as well as by very many friends in his own native isle! and in other parts of the globe. To sum up his character, he was a true Briton at heart. Well did he shew his skill and courage when in command of the Ganges, of 1,600 tons,—one of the largest Indiaman ever built. She went down stern foremost off the Cape; he was the last person to desert the sinking ship, and all hands were saved.—*Madras Paper.*

PROMOTIONS AND APPOINTMENTS.

(From the Naval and Military Gazette.)

PROMOTIONS.

CAPTAIN—J. Hallowes of St. Vincent, when he has completed his sea time.

COMMANDERS—W. H. Symons, and H. Dumaresq.

LIEUTENANTS—W. Moorsom, F. P. Porteous, T. Tickell, L. R. Place, and B. P. Priest.

MASTER—W. Mills.

SURGEON—F. Sharp (dated 8th June, 1841,) confirming a warrant of that date, given by Sir G. Bremer, v. Wallace, deceased.

APPOINTMENTS.

CAPTAINS—E. J. Johnson (1838,) to superintend the fitting of the pillar for Azimuth compasses in all ships and vessels, and also the application of rules prepared by the Magnetic Committee for ascertaining the deviation of the compass—J. Simpson (1809) to Greenwich Hospital, v. Woodriffe, dec.

COMMANDERS—R. B. Watson (1841,) to *Modeste*—W. L. Sheringham (1841,) to *Sylvia*—W. H. A. Morshead (1841,) to *Columbine*—G. H. Coulson (1841,) to *Alfred*—J. Pearse (1841,) to *Cruiser*—L. S. Tindal, (1841,) to *Pylades*—L. Maitland (1841,) to *Algerine*—C. M. M. Wright (1841,) to *Alfred*—B. J. Sullivan (1841,) to *Philomel*—W. H. Symons (1842,) to *Blossom*, for rank.

LIEUTENANTS—J. Lodwick (1837,) and A. J. Woodley (1840,) add. to *Growler*—J. R. Thompson (1841,) H. L. Griffiths (1842,) to *Ringdove*—R. J. Smith, and G. B. B. Collier (1841,) to *Alfred*—F. G. Leigh (1842,) to *Driver*—C. Seaver (1830,) to *Joseur*—F. B. P. Seymour (1842) to *Thalia*—W. E. A. Gordon (1842,) to *Vindictive*—W. G. Everest (1842,) to *Royal William*, for rank—M. Dwyer (1842,) to *Fearless*—J. Hancock (1841,) to *Excellent*—J. Franklin (1841,) and W. Mould (1841,) add. to *Queen*—W. C. Nowell (1828,) to *Formidable*—L. B. McKinnon (1841,) H. Lloyd (1841,) and W. Horton (1841,) to *St. Vincent*—J. L. Young (1813,) to *Resistance*—J. W. L. Shiels (1814,) to *Raven*—P. Cracroft (1841,) to be Flag Lieutenant to Rear-Admi. the Hon. D. P. Bouverie—C. Cleaveland to *Styx*—Wood to *Sylvia*—H. E. S. Winthrop (1839,) to *Spitfire*—H. W. Baugh (1841,) to *Sappho*—E. A. Glynn (1840,) to *Volage*—A. Lavie (1830) to *Winchester*—E. J. L. Cooper (1842,) to *Illustrious*—G. Williamson 1807,) to charge of Portsmouth Semaphore station—J. P. Palmer (1842,) to *Thunderer*—J. C. Robinson (1833,) to *Scylla*—C. W. Wilkinson (1841,) to *Ringdove*.

MASTERS—Taylor to *Sylvia*—J. Belam to *Blossom*—Woodyer to *Scylla*—J. S. Pritchard to *Fearless*—C. H. Dillon to *Geyser*—J Aylen to *Victory*—J. Brown to *Winchester*.

MATES—P. W. May to *Crocodile*—F. S. Tremlett to *Growler*—J. A. Pritchard to *Royal George*—H. T Veitch to *Styx*—F. J. Hornby to *Formidable*—A. O. Hansard to *Geyser*—F. Robinson to *Sheerwater*—H. R. Foote to *Kite*—J. F. Ross to *Devastation*.

SECOND-MASTERS—W. S. Luke to *Winchester*—J. Soper, (act.) to *Fly*—G. A. McBean to *Mastiff*—A. J. Barnard (act.) to *Queen*—E. J. H. Tucker, (act.) to *Alfred*—R. T. Saunders to *Lightning*.

SURGEONS—W. Chatres to *Philomel*—J. Anderson *(b,)* M.D., to be Deputy-Inspector, and appointed to the Royal Haslar Hospital.

MASTER'S ASSISTANTS—S. Braddon to *Resistance*—E. Jory to *St. Vincent*—T. S. Anderson to *Styx*—H. Pennington to *Mastiff*—T. Bourchier and E. Brooken, from the Upper School, Royal Hospital, Greenwich, to *Shearwater*.

ASSISTANT SURGEONS—H. Sloggett to Haslar Hospital—W. Dickson, M.D., to *Winchester*—A. Borthwick, MD., to *Mastiff*—A. Armstrong, MD., and A. Brown to *St. Vincent*—J. Brown to *Alfred*—H. Macfarlane to *Crocodile*—R. R. Risk to *William and Mary* yacht—A. Sibbald, M.D., to *Fly*—D. N. Tucker, (act.) to *Caledonia*.

MIDSHIPMEN—R. G. Tuffnell, and E. Leeds to *Winchester*—W. F. G. Fead to *St. Vincent*—A. Sudgen to *Caledonia*—H. Graham to *Formidable*.

VOLUNTEERS 1ST CLASS—A. M. Brock to *Magpie*—G. H. Burnaby to *Agincourt*—W. Fenwick to *Cambridge*—G. Parker to *Carysfort*—W. K. Bush to *Mastiff*—W. Spark to *Monarch*—G. F. Burgess, and J. Black to *Vanguard*—G. S. Briggs, and R. Bradshaw to *Thunderer*—R. Rawlins, and H. C. A. Cooper to *Howe*.

PURSERS—H. B. H. Long, and M. Scott to *Agincourt*—J. Milner to *Geyser*—T. McKnight, Naval Storekeeper and Agent Victualler at Hong-kong.

CLERKS—E. Cheeseman to *Cleopatra*—B. Scott (in charge,) to *Sylvia*—E. W. Pickthorne (in charge,) to *Philomel*—C. F. Boswarva (ass.,) to *Resistance*—F. J. Fegan to be Secretary's Clerk to Admi. Codrington—J. C. Paine to *Royal George*—C. H. Elkins to *Victory*.

COAST GUARD.

Lieut. J. B. Clark to be Lieutenant of the Coast Guard at the Kingston Station, Essex—W. H. Hood, F. P. Couil, and R. B. Creyke, Mates, R.N., have been appointed as Acting Chief Officers of the Coast Guard, preparatory to their receiving permanent appointments when qualified, under the Admiralty regulation, by length of service, viz. 5 years as Mate in the Royal Navy—J. Toms, (civilian,) Chief Mate of the *Tartar*, removed to the *Dove* R.C.—Lieut. R. Combault to Langstone Harbour, v. Pritchard, resigned—Lieut. J. Clark to Hayling Island—M. F. P. Coull to Alum Bay.

AT HOME.

ALFRED, 50, Com. J. W. Purvis, 5th April left Plymouth for South America.

BRAMBLE, Mr. C. B. Yule, 3rd April left Plymouth for Falmouth.

CLEOPATRA, 26, Capt. E. Barnard, 7th April arr. at Spithead from Barbados,—sailed for Sheerness to pay off.

FLY, Capt. H. P. Blackwood, 3rd April left Plymouth for Falmouth.

GANGES, 84, Capt. B. Reynolds, C.B., 1st April left Spithead for Sheerness.

GROWLER, Com. C. H. M. Buckle, 1st April left Plymouth for South America.

PHILOMEL, 10, 4th April commissioned at Plymouth by Com. J. Sulivan, for surveying.

RHADAMANTHUS, (st. v.) 3rd April arr. at Sheerness from Mediterranean, and proceeded to Woolwich.

RINGDOVE, 16, Com. Sir W. Daniell, 4th April sailed for Bermuda.

STYX, Capt. A. T. E. Vidal, 5th Mar. arr. at Woolwich,—refitting for survey of the Azores.

TALBOT, 26, Capt. H. J. Codrington, 1st April arr. at Spithead, and sailed for Sheerness.

WIZARD, 10, Lieut.-Com. T. F. Birch, 13th April arr. at Plymouth from the Cape.

AT PORTSMOUTH—*Ships in Port*—Victory, St. Vincent, Excellent, Royal George yacht; Winchester, Nautilus, Speedy, and Sylvia in harbour. Cornwall at Spithead.

AT PLYMOUTH—*In Harbour*—Caledonia, San Josef, Agincourt, Resistance, Crocodile, Philomel, and Kite and Alban steamers—*In the Sound*—Scylla, Ætna, Wizard, Spy, and Raven.

COMMISSIONED.

PHILOMEL, 4th April, Plymouth.

SYLVIA, surveying vessel, Portsmouth.

SPIDER, April, Chatham.

TALBOT, 16th April, Sheerness.

PAID OFF.

ALERT, Plymouth.

ATHOLL, Mr. C. P. Bellamy, Portmouth

BLAZER, Com. J. Steane, Woolwich.

CLEOPATRA, Capt. C. Wyvill, Chatham.

GANGES, Capt. B. Reynolds, Sheerness

GORGON, Capt. Henderson, Woolwich

HECLA, Lieut.-com. J. B. Coag, Woolwich.

LYRA, Plymouth.

SEA-GULL, March, Plymouth.

SNIPE, Lieut.-com. G. Raymond, Plymouth.

ABROAD.

ACORN, 16, Com. J. Adams, 6th Feb. at St. Helena,—to sail next day for Cape.

ACTAEON, 26, Capt. R. Russell, 15th Jan. at San Blas,—to sail 25th for Rio and England.

AIGLE, 24, Capt. Right Hon. Lord C. Paget, 26th Feb. arr. at Smyrna.

BEACON, (s. v.) Com. T. Graves, 14th March arr. at Malta.

BELVIDERA, Capt. Hon. G. Grey, 28th March arr. at Malta from Leghorn.

BENBOW, 72, Capt. H. Stewart, 21st March left Malta for England.

BRITOMART, 10, Com. O. Stanley, 20th Jan. at Moulmein.

CALLIOPE, 21, Capt. T. Herbert, 20th Jan. at Moulmein.

CAMBRIAN, 36, Capt. H. D. Chads, 21st Feb. touched at Madras on way to Calcutta.

CAMBRIDGE, 78, Capt. E. Barnard, 29th March arr. at Malta, with stores from Tribune's wreck from Tarragona.

CHILDERS, 16, Com. E. P. Halstead, 20th Jan. at Moulmein.

COMUS, 18, Com. E. Nepean, 20th Feb. at Savanilla.

CORNWALLIS, 72, Capt. P. Richards, 22nd Dec. arr. at Hong-kong, and sailed for Chusan.

CYCLOPS, (st. v.) Capt. H. T. Austen, 27th March arr. at Alexandria and sailed for Beyrout.

DAPHNE, 18, Com. W. F. Dalling, 20th March left Malta for England.

DUBLIN, 50, Capt. J. S. Tucker, 17th Dec. daily expected at Callao.

ELECTRA, 18, Com. Darley, 1st March at Port Royal.

ENDYMION, 38, Capt. Hon. W. F. Grey, 8th Feb. at Bombay.

EREBUS, Capt. J. C. Ross, 22nd Sep. at Bay of Islands, New Zeeland, to sail about the end of Oct. for the south.

FAIR ROSAMOND, 2, Lieut.-com. A. G. Bulman, 9th March at Barbados.

FAWN, Lieut.-com. J. Foote, 31st Jan. at the Cape.

FORMIDABLE, Capt. Sir C. Sulivan, 28th March arr. at Gibraltar.

GRECIAN, 16, Com. W. Smyth, 31st Jan. arr. at Cape from Mozambique.

HAZARD, 18, Hon. C. G. J. Elliott, Jan. touched at Tenerife on way to China.

ILLUSTRIOUS, 72, Capt. T. Erskine, 9th March at Barbados,—to sail next day for Jamaica.

INCONSTANT, 36, Capt. F. F. Mitchell, 4th Mar. at Beyrout.

IRIS, 28, Capt. H. Nurse, 24th Nov. arr. at Acera.

JUPITER, (tr. s.) Master-com. R. Fulton, Dec. on way to Chusan.

MAGICIENNE, 24, Capt. Warren, 14th March at Soudan.

MONARCH, 84, Capt. S. Chambers, 24th Feb. arr. at the Piraeus.

PEARL, 18, Com. C. C. Frankland, 25th Dec. arr. at Monte Video.

PERSIAN, 18, Com. Eden, 9th Nov. arr. at Accra and sailed on cruise.

PIQUE, 36, Capt. Forbes, 1st March arr. at Barbados.

PRESIDENT, 50, Capt. W. Broughton, 19th Dec. at Callao.

QUEEN, 110, Capt. G. F. Rich, 28th Mar. passed the Straits, Ap. 2, at Malta.

RAPID, 10, Lieut. Earle, 28th Feb. touched at Tenerife, 1st March sailed.

ROVER, 18, Com. Keele, 20th Feb. left Barbados for Antigua.

SAPPHO, 16, Com. Parry, 7th March left Barbados for Jamaica.

SAVAGE, 10, Lieut. J. H. Bowker, 1st April arr. at Malta from Alexandria.

SIREN, 16, Com. W. Smith, 18th Jan. arr. at Cape, 30th sailed for China.

SOUTHAMPTON, Capt. Ogle, 31st Jan. at the Cape.

SPARTAN, 26, Hon. Capt. Elliott, 7th March left Barbados for Jamaica.

SULPHUR, (s. v.) Capt. E. Belcher, 21st Jan. arr. at Ceylon, 27th sailed for England.

THALIA, 36, Capt. C. Hope, 18th Jan. touched at Tenerife on way to China.

TORTOISE, Mr. Wood, 25th Dec. at Cape.

VIPER, 6, Lieut. J. Curtis, 28th Jan. at Rio.

WANDERER, Com. Troubridge, 20th Jan. arr. at Cape.

WATERWITCH, 10, Lieut.-com. H. J. Matson, 6th Feb. at Cabinda, on coast of Africa.

WEAZLE, 10, Com. J. Simpson, 25th March arr. at Malta from Beyrout.

AT MALTA, *April the 5th*—The Queen, 110, bearing the flag of Vice-adml. Sir E. Owen; Howe, 120, bearing the flag of Rear-adml. Sir F. Mason, KCB.; Ceylon, 6, bearing the flag of Rear-adml. Sir J. Louis; Impregnable, 104; Rodney, 92; Vanguard, 84; Thunderer, 84; Calcutta, 84; Cambridge, 78; frigates Vernon, 50, and Belvidera, 24; corvette Scout, 18; brig Weasel, 10; surveying-vessel Beacon, 8; cutter Magpie, 4; steam-frigate Devastation, steam-packets Polyphemus, Prometheus, and Locust.

AT HONG-KONG, *Dec. 24th*—The Clio, Alligator, Herald, Royalist, Nimrod, and Camelion.—The Clio had been on shore.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 15th inst., in London, the lady of the Right Hon. Lord Colchester, Capt., RN., of a son and heir.

On the 29th March, the lady of Lieut. Spurin, RN., chief officer of the Coast Guard Station for this district, of a daughter.

On the 11th inst., at Bury-road, the lady of Com. Charlewood, RN., of a son.

At Southsea, on the 11th inst., the lady of J. Gain, Esq., RN., of a daughter.

Lately, at Cork, the lady of Lieut. W. D. Bridge, H.M.S. Southampton.

Marriages.

On the 15th March, at Charlton, Kent, J. Charles, of the Inner Temple, third son of J. Templar, Esq., of Bridport, to Hannah Frances, eldest daughter of Rear-adml. Sir J. A. Gordon, KCB.

On the 15th inst., at Plymouth, J. D. Macnamara, Esq., of Aye, county of Clare, Ireland, to Jane Louisa Mary Ann, only daughter of Capt. Grant, RN., of Stoke.

Deaths.

On the morning of Good Friday, 25th of March, Sir W. Beattie, MD., physician to her Majesty's Fleet, and Greenwich Hospital.

At Calcutta, on the 29th of Nov., in the 61st year of his age, Capt. T. T. Harrington, Master-Attendant at Calcutta.

At her residence, Kensington, in the 78th year of her age, Mrs. Catherine Matcham, relict of the late G Matcham, Esq., and daughter of the late Rev. E. Nelson, and only surviving sister of the late Adml. Lord Viscount Nelson, KB.

Capt. T. Vivian, RN.

Lately, at Blackheath, Capt. C. Nixon, RN., aged 63.

On the 22nd inst., at Newton Abbot, Devon, Com. D. Mapleton, aged 62.

On the 12th inst, at Cheltenham, Mrs. Hare, the only surviving daughter of Adml Sir T. Frankland, Bart.

On the 7th inst., at Prussia Cove, Mr. C. Ludlow, RN., chief officer of the Coast Guard at that place.

Mr. John Bruce, Master, RN.

Lieut. Durham, RN.—He is succeeded in his estates by his uncle, Adml. Sir P. Durham.

Mr. H. Plowman, surgeon, RN.

Lieut. J. Antle, promoted in 1841, for services in China.

At Gibraltar, Mr. Lukin, third class Volunteer, and son of the Rev. Mr. Lukin, of Nurseling Rectory, near Southampton. Mr. Lukin fell from the shrouds upon the deck and died instantly, both his thighs being broken, and otherwise dreadfully bruised.

Capt. W. Picking.

Retired Commander R. Forbes.

Lieut. W. M. Smith.

LAUNCH OF H.M.S. TRAFALGAR.—Our readers will no doubt remember the imposing spectacle, presented in the course of last summer, by the launch of the Trafalgar, at Woolwich; which, in consequence of the presence of her Majesty, drew together a mass of spectators, scarcely ever surpassed on any former of these interesting events. Mr. W Ranwell, of Woolwich, has completely succeeded in representing this animating scene, in a lithograph, executed with a great deal of good taste and judgment, and with the best assistance of Mr. Day's first-rate establishment in Gate Street, Lincoln's-Inn-Fields. The moment seized by the artist is, that, in which the Trafalgar is entering the Thames, and it is no more than justice to add, that, he has succeeded in imparting to his picture all the traits of that busy and active curiosity, which forms the prominent feature of a launch, and which tells at a glance that something important is going forward. Those who were present, will immediately recognize the picture as faithful in all its detail, and will be glad to preserve it as a pleasing and interesting record of a most interesting event.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of March, to the 20th of April, 1842.

Month Day.	Week Day.	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9 AM	3 PM	Min	Max	A. M.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	M.	29·83	29·98	38	42	37	44	N	N	6	6	qbcphr (2	qbcphr (3)
22	Tu.	30·08	29·98	38	43	34	44	N	N	2	4	bc	or 4)
23	W.	30·06	30·09	35	39	30	42	NE	NE	4	4	b	bcps (3)
24	Th.	30·17	30·15	38	41	28	42	N	NW	2	2	bc	ogd (3
25	F.	30·08	29·98	47	52	36	53	SW	SW	2	4	bc	bcp 4)
26	S.	29·60	29·58	41	48	35	49	W	W	5	6	bc	qbcphr (3)
27	Su.	29·72	29·76	41	50	32	51	NW	NW	4	6	bcm	qbc
28	M.	29·70	29·73	50	59	42	60	SW	SW	4	6	o	bc
29	Tu.	29·88	29·94	49	56	47	57	NW	W	3	3	bc	bc
30	W.	29·86	29 81	49	51	48	56	SW	SW	4	4	or (1 2)	bcp (3
31	Th.	29·70	29·60	49	54	43	55	SW	SW	6	6	qor (1)	qor (3 4)
1	F.	29·30	29·31	43	41	40	44	NW	NW	5	6	qo	qbcph (3)
2	S.	29·54	29·65	41	41	33	43	NW	NW	3	6	bc	qphr (3
3	Su.	29·78	29·86	36	43	31	34	N	NE	6	4	qps (2)	bc
4	M.	30·13	30·20	41	44	33	46	N	NE	4	4	bc	bc
5	Tu.	30·33	30·32	41	49	31	50	NE	NE	3	2	bc	bc
6	W.	30·16	30·05	38	51	26	52	NE	NE	1	3	b	b
7	Th.	29·85	29·81	43	53	35	57	NE	NE	2	4	o	b
8	F.	30·02	30·13	45	53	33	54	NE	NE	2	4	bc	b
9	S.	30·27	30·31	43	47	31	48	E	E	3	4	bc	b
10	Su.	30·33	30·28	41	45	33	46	E	E	2	2	o	bc
11	M.	30·20	30·13	42	47	31	48	NE	NE	1	4	bc	bcph (3)
12	Tu.	30·06	29·99	40	46	34	47	NE	NE	6	6	qbc	qbc
13	W.	29·93	20·93	39	42	36	44	NE	N	6	5	ops (2	opr 4)
14	Th.	29·88	29·93	39	46	34	47	NE	NE	3	4	bc	bc
15	F.	30·02	30·04	44	47	38	48	NE	NE	6	4	bc	bc
16	S.	30·10	30·11	41	48	34	49	NE	NE	6	6	b	b
17	Su.	30·14	30·13	45	47	30	48	NE	NE	2	2	o	o
18	M.	30·15	30·15	44	48	40	49	NE	NE	2	3	o	o
19	Tu.	30·17	30·17	42	51	40	52	NE	E	2	4	og	b
20	W.	30·14	30·14	46	57	32	58	NE	NE	2	2	b	b

March—Mean height of barometer = 29·844 inches; mean temperature = 44·7 degrees; depth of rain fallen = 2·15 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

"A Subscriber." The chart is in progress,—its appearance uncertain.

The great extent to which our Hydrographic matter has run, will be compensated for in our next.

Loch Eil.—*The southern approach to the Caledonian Canal.—By Commander C. G. Robinson, R.N.*

[To accompany the Admiralty chart just published.]

The total want of information for the guidance of vessels using the Caledonian canal, respecting its southern approach, induces us to make the following extracts from the report of Commander Robinson, who visited it in the latter part of last summer. The important directions which they contain will be of great service, in conjunction with the survey of that officer just published, from the hydrographic office of the Admiralty.

The Narrows.—On standing up Loch Linnhe, and approaching the Corran Point, or Narrows, where the channel is about a quarter of a mile in width, no danger exists until within about half a mile above Sallachan Point, where there is a long flat extending from the north shore, and is the first to be guarded against by lighting and buoying.

The southern shore of the Narrows is bold and rocky, and may be approached within fifty feet from Bunrie Point, until abreast of the south ferry slip. This shore has also the strongest tide setting along it, both flood and ebb, though no danger need be apprehended beating through on either side of the Narrows; the larboard low water shore is stoney, but tolerably bold to.

Tide in Narrows.—There is as much as fifteen fathoms in the narrowest part, and the tide runs sometimes with such rapidity that it is impossible for a vessel, even with a good breeze to stem it; after heavy rains it causes so much fresh in the Loch, and so great an artificial velocity is given on the ebb, that it is said to arrive at seven and eight knots. This great strength does not extend for more than three-quarters of a mile, or whilst in the immediate influence of the Narrows, when it expands and slackens; the same also when to the eastward of the Narrows on the flood: for the rate at the various parts—vide accompanying chart.

In corroboration of the strength of the tide in the Narrows, I quote a pilot's observation; viz., that "on one occasion on standing through with a strong westerly breeze against the ebb, though going eight knots the vessel did not alter her position."

With a contrary wind few merchant vessels would be enabled to beat through the Narrows, consequently it is obvious from its exposed position, the most desirable neighbourhood to accelerate a vessel's progress by steam tug; and for the purpose of rendering them every facility of ingress and egress, both by day and night, I should recommend that two efficient steam tugs of about 90-horse power, should be stationed at the Corran Roads, ready for all purposes; so that with south-westerly winds they might be enabled to tow vessels down towards Lismore Island, where there is plenty of working room in moderate weather, with bold shore on either side: on the other hand, with north-easterly winds to be ready to run down towards Lismore, according to circumstances, and tow ships bound through the canal. It should be borne in

mind that from the nature of the high land forming the shores of the Loch, the wind generally blows direct *up* or *down*.

Corran Bank.—The Corran Roads, which are immediately on the larboard hand running in, on rounding the Corran Point affords the best shelter in the Loch, with a westerly gale. There is a gravel bank with only four feet water, low springs, forming the east side of the roads, which is only about one-fifth of a mile in extent, running in a north and south-east direction, and not a cable's length in width; pretty bold all round. A vessel on taking the anchorage on coming through the Narrows, must luff up close round the Corran Point, and anchor about a cable's length N.N.E. from the ferry-house, in three or four fathoms, sandy. The proposed barrel buoys,* mark the northern and southern extremes of the shoal, which has a channel at either end, and bold to; the southern one black, and the northern red. The proposed light at the Corran Point will also be a good guide for rounding the Point, as well as pointing out the anchorage.

Should a vessel be caught in the neighbourhood of the Narrows on coming from the westward, with a north-easterly wind, and night coming on, it would be advisable for her to bear up for Sallachan Bay, (about two miles below the Narrows on the north shore,) where good anchorage may be found in from twelve to eight fathoms, muddy ground, and shelter afforded from north-west (northerly,) to south-east; but care must be taken to be ready to turn out in case of the wind setting in from the south-west.

Black Rock.—The whole of the navigation of Loch Eil from the Corran Ferry to abreast of Fort William has no danger or difficulty existing more than a cable's length from the shore. The Black Rock, and a sunken rock about a quarter of a mile W.b.S. of it, with eighteen feet at low water, are the only things to be the least apprehended. They are both on the south shore, and only about 500 feet from high water mark, with six and seven fathoms inshore of them. The Black Rock always shews itself, it bears N.E.b.E. ½ E. of Corran Point, two miles and two-thirds, and S.E. ½ S., one mile from the islet called Eilran na Gaul, at the north-east end of Inverscardale Bay.

Inverscardale Bay, affords anchorage with north-westerly winds to stop a tide in eight and ten fathoms, about east of an old jetty, or shipping place, about a cable's length from the shore. This bay is on the larboard hand on running up, and about two miles and a quarter above the Corran Point. Between the southern point of Inverscardale Bay, and the north point of the Corran Ferry there is a *constant ebb stream* running along the north shore, and through the Corran Roads. This should be kept in mind in case of vessels working down for the roads against the flood-tide.

Cambus na Gaul Bay.—There are several places where a vessel may drop anchor in fine weather, in case of the tide making against her; particularly to the eastward of Inverscardale Bay, where a flat extends off shore with six and seven fathoms only. All is clear ground from this to the anchorage off Fort William, where there is good holding

* The positions of these proposed buoys, as well as that of the light on the Corran Point, are marked in the original plan for consideration.—Ed.

ground in four and eight fathoms, mud and clay, about one-fifth of a mile off the pier, on a bank that is very steep to. A very heavy sea sometimes sets up the Loch when blowing strong from the westward, which exposes the anchorage off Fort William, when it is advisable either to run into the snug bay of Cambus na Gaul, and anchor in six or eight fathoms sand, perfectly sheltered, about a cable's length E.N.E. of the cottage in the bay, or run up off the entrance of the canal.

Above Fort William the navigable channel becomes much contracted (*i. e.* under a quarter of a mile,) by the Lochy Flat; it is about this neighbourhood the difficulties to the canal entrance exist.

Tides.—The general rate of the tides may be thus considered; about two miles below the Narrows the velocity varies from three to five knots.

In the Narrows it is sometimes as much as seven knots, with above five knots on neaps.

From the Narrows to Eilean na Creiah it seldom exceeds three knots in any part; from thence, to about the Middle Islets, it reaches nearly four knots, and arrives at about five knots (sometimes more, with much fresh in the Loch,) in the narrow by Annat Point.

The set of the tides and eddies are expressed in the plans.

It is high water, full and change of the moon, at the entrance of the Caledonian canal, about 5h. 30m., about a quarter of an hour earlier at the Corran Ferry; the rise on springs fourteen feet, and neaps about nine feet. No doubt, at the same time much influenced by prevailing winds; westerly accelerating, and easterly retarding the tide.

Proposed Lights.—The abstract of the lights and buoys proposed for the improvement of the navigation, is as follows:—

A bright fixed light (to be lighted from sunset to sunrise,) on the larboard side of the Narrows on Corran Point, to be eclipsed, by the Natural Bank, when brought to the eastward of N.E.b.E. ¼ E., thereby affording a good leading mark when standing towards the entrance whilst just in sight, or bearing N.E.b.E., which will keep clear of the buoys off Chlavoulin Flat. It will also be a guide for vessels having entered the Narrows and seeking anchorage in the Corran Roads; as well as being visible the whole range of the Loch up to abreast of Fort William.

A small bright fixed light, twelve feet altitude, also on the south-east end of the islet, called Eilean na Creiah, to act in conjunction with a red light at the canal entrance, (the present one to be altered,) which on standing up the Loch at night, and keeping towards the north shore until the red light opens about a quarter of a point to the eastward of the bright light, at which time haul up for the red light on the bearing of N. ¼ E. (giving the bright light a pretty good berth,) until abreast of it, when either anchor, or make fast to warping buoy ready for entering the canal, as circumstances may require, about a cable's length west of the red light, which is on the larboard hand of the sea-lock.

The proposed lights in one, will keep clear, to the eastward of McLean's Rock.

Proposed Buoys.—The following buoys are also requisite for defining the channel below the Narrows, extremes of the Corran Bank, and also

the boundary of the Lochy Flat above Fort William,—for positions vide chart.

One red can to mark the edge of Culchenna Spit, two-thirds of a mile S.W. ½ W. of the point, in about three fathoms, to be marked N. 1, (Narrows 1).

Two black nun buoys, marking the edge of the flat off Chlavoulin Bay, the western one about W.S.W. of the Corran Point, one mile and a quarter; and the eastern two-thirds of a mile on the same bearing, relatively marked N. 1, and N. 2, in about two fathoms and a half at low water.

Two barrel buoys denoting the northern and southern limits of the Corran Bank, (which has only four feet on it at low water,) the southern one a black, and the northern red; both of which may be passed eastward or westward.

The next four red cans (marked in the plan,) as a boundary to the Lochy Flat, which is very extensive, curtailing the navigable channel between it and the McLeans Rock to less than a quarter of a mile: the buoys are placed one-third of a mile apart, as the flat is steep to; and therefore, requiring every precaution.

McLeans Rock.—I should also propose a larger barrel buoy than the present being placed on McLeans Rock.

These suggestions, together with two efficient steam tugs (as before mentioned,) of about 90-horse power, to be solely used for towing vessels from the canal to below the Narrows, and vice versa, I deem quite sufficient to render the navigation as safe and easy as could be desired.

A vessel on working down Linnhe Loch from the Narrows, or Corran Ferry, towards the Sound of Mull, can always find safe anchorage in case of night coming on, and a south-west wind, either of the following places affording shelter. About four miles from the Corran Point is the Island of Balnagowan on the south shore of the Loch, where anchorage may be found under the east end in ten and twelve fathoms. The Sound of Shuna affords very good anchorage, which is also on the south shore, with Loch Achori on the north side. From either of these two last named places it is only about ten miles to Castle Duart, at the south point of the Sound of Mull, under which there is good anchorage with a south-wester.

Before concluding these remarks, I must express my acknowledgements to that highly esteemed and intelligent gentleman, Col. McLean, of Ardgour, for the various information afforded, and for the ready access to the plans of his extensive estates, where the correct names of the various points used in the survey were procured.

Also, to Messrs. Thomson and McConnell, (of Glasgow,) and the gentlemen connected with the firm, for the very handsome manner in which they despatched a steam vessel round (gratuitously) for the purpose of facilitating the survey, whereby I was enabled to procure in one week, what it would have occupied three with the ordinary means I possessed; a great desideratum at the advanced season the survey was undertaken.

In conclusion, I must remark, that should things improve with respect to the Caledonian canal, and encouragement offered to facilitate vessels transit, it would be most desirable to establish a pilot station,

with efficient smacks. Near the eastern entrance of the Sound of Mull, would be found a good rendezvous; and good cruising stations for intercepting shipping in the neighbourhood of Colonsa and Gia, or Gigha Islands, both of which afford good anchorage.

GULF OF NICOMEDIA.—*By Mr. G. Biddlecombe, late Master of H.M.S. Talbot.*

PASSING the Princes Islands the large town of Mattapeh is observed close to the waters' edge, with a village on the rising land at the back of it. Tongla, a village, is situated close to the beach, and in the bight of the land. From appearance the two smaller islets (described in the chart off the low cape,) lie much more to the northward, and are about forty feet in height; the village of Tongla bears N.E. ½ E., magnetic, when seen between the two islets.

In the bay formed between Tongla and Cape Bianco, there is anchorage the whole distance, with northerly and easterly winds in from eight to twelve fathoms, near a mile off shore.

Cape Bianco on the northern shore, at the entrance to the Gulf of Nicomedia, is about ninety feet high, with white cliffs on its western side, and a few trees on its height; but at its extremity there is a single cypress tree, which may be seen at a considerable distance, both from the eastward and the westward.

The village of Diredga is situated about two miles to the eastward of Cape Bianco on the rising land. A few straggling houses continue down to the waters' edge, with deep water close to, but a small bay is formed just to the eastward of Cape Bianco, where vessels may anchor in eight to thirteen fathoms with the Cape, N.W.b.W., and the village of Diredga N.N.E.

To the eastward of Diredga is another cape of a yellow appearance about thirty feet high, off which a shoal extends a short distance. From the Yellow Cape, the land which is moderately high, forms into a deep bight, after which it trends to the south-east. In the bight are the remains of an old Genoese castle, called Eski Serail, with a village just to the northward of it; another village is situated on the rising land, called Stomalullen. The river described in the chart lying to the westward of that village is merely a water course, nearly dry. Between it and the south-east extremity of the bight there is a small bay in which coasting vessels anchor, it being the place of communication with the southern shore, and particularly with Dit Bouroun, which is nearly opposite.

From the south-east extremity, before mentioned, the land trends to the north-eastward, with a village or two near the waters' edge, and the large village of Erhen on the heights, from which, to the eastward, the shore continues high and barren, as far as the village of Yarendga, from whence the land runs down to the low point of Kilier Bouroun, off which a shoal of ten feet extends nearly half channel over.

When abreast of Cape Bianco you can see the rising land of Dit Bouroun on the southern shore, which runs out to the northward in a very low point with a few huts near its extremity, and off which shoal

water extends to the north-eastward. At three-quarters of a mile off shore there is only four fathoms, when it immediately falls into deep water, consequently you should keep the northern shore on board passing it.

On passing Dit Bouroun you open the village of Karamousa on the southern shore, which is situated near the waters' edge, at the back of which the land rises abruptly to about 200 feet all wooded, and continues so along to the eastward. The anchorage of Karamousa is close to, and not less than fifteen fathoms, sand; but the village is extensive, and some trade is carried on, as a great deal of raw silk, is shipped for Constantinople. Good anchorage may be obtained with westerly winds inside Dit Bouroun.

From Karamousa the northern shore makes nearly a direct east line (with several villages close to the waters' edge) up to the narrow passage of Kilier Bouroun, which is very low; where you open the basin, or anchorage of Nicomedia, the coast is generally cultivated with vineyards, orchards, and an immense quantity of vegetables: inland it is a perfect forest.

The anchorage of Nicomedia is very extensive, as you may anchor in safety any where inside Kilier Bouroun perfectly protected from all winds; but the general anchorage is about half a mile off shore abreast of the arsenal in five fathoms mud. Small coasting vessels go alongside the wooden moles to take in and deliver their cargoes, as the moles run out about 150 feet, and are numerous.

The town, or rather city of Ismid, rises gradually from the waters' edge, and surrounds the whole of the southern face of a high hill, at the top of which are remains of walls about twenty feet thick, composed of granite, no doubt the ancient citadel. The houses are built of wood, each having its particular garden.

An arsenal is situated just to the westward of the town, where Turkish men-of-war are built; the surrounding country supplying plenty of wood for that purpose.

The view of the extensive plain of Nicomedia from the top of the hill is something magnificent, being surrounded by rising hills covered with extensive forests of oak and beech. An immense quantity of salt is made at the head of the Gulf, and is one of its exports, as also copper and tobacco. Vegetables and meat are very good and very cheap. The people appear industrious, and the principal part of the population are Turks, enumerating about 15,000.

The Admiralty chart of the Gulf of Nicomedia appears (from the opportunity I had of observing) very correct, except the situation of the two islets off Tongla, and, as a chart, on a small scale, answers every purpose.

SOUTHERN SHORE OF THE BLACK SEA.—*By Mr. G. Biddlecombe, late Master of H.M.S. Talbot.*

ON leaving the Bosphorus for the Black Sea you pass the two lighthouses one on the eastern, the other on the western shore, which lights are seen in clear weather at the distance of fifteen miles, and are of much

importance to vessels entering the Bosphorus, and more particularly from the northward, as those coming from the eastward can only see the western light when close to the entrance in consequence of its being on a point which is situated inside the northern headland, and is consequently shut in by it.

From the Bosphorus to the eastward, as far as Cape Kirpeh, the land is moderately high, and it is said that anchorages with southerly winds are to be found both to the eastward and westward of that Cape.

On passing Cape Kirpeh the land becomes low, and continues so nearly to Penderahlia, at which place there is an anchorage protected from easterly, but open to all westerly winds: a lighthouse is situated on the high land near Cape Baba, which is generally lighted and may be seen eight miles distant, which forms the north-west part of the anchorage; it is about a mile in extent, and you may anchor in nine to eleven fathoms sand, with the outer part of the high land N.W.b.N., and the remains of the old Mole east.

The Turkish government have a line-of-battle ship building at Penderahlia. Water is easily obtained at a fountain on the northern shore of the bay.

From Cape Baba to Amasserah the land rises irregularly, the whole distance forming numerous points or low capes. The river Bartin lies about five miles to the westward of Amasserah, and may be known by a deep hollow gap in the land just to the westward of it; and some white cliffs about a mile to the eastward: the river is navigable for some distance to vessels not drawing more than ten feet.

Amasserah is known by a small islet off its northern extreme; it has two anchorages, one on the east, the other on the west side, but from its being necessary to anchor very close to the shore, renders it almost useless to large vessels. The town of Amasserah is in a state of ruin and decay.

Being abreast of Amasserah you have an excellent view of the part of Mount Sagra, which sunk about 1,500 feet in the eruption fifteen years since: its appearance is that of half the mountain having fallen, leaving a perpendicular face to the northward.

A few miles to the eastward of Amasserah, on a rising hill near the shore is a large palace built by a revolutionary pacha, where he resided several years; it appears in good repair, and has a great deal of cultivation around it.

From Amasserah to Cape Kerampeh the shore continues high, with undulated hills in the interior, covered with trees.

Cape Kerampeh is bold, with a white mark of a torrent, and a high peak a little to the westward of it; the whole of the Cape is wooded; the peak is situated near Karagatch, with another peak a little inland, more to the westward; the only peaked hills I observed the whole distance from the Bosphorus. The peaks are good marks for making Karagatch; the easternmost of which bears S.E.b.S., magnetic, when in a direct line with Karagatch, and there is a red cliff on the eastern side of the anchorage with an appearance of white cliffs a little more to the eastward.

The village of Karagatch is small, but vessels of considerable size are

built there, and at different small villages along the coast; the anchorage is open, but frequented by coasting vessels.

On passing Cape Kerampeh the coast continues bold, covered with wood and Indian corn the whole distance to Cape Ingeh; between these Capes there are several villages, but none of importance, except Ineboli, and it is fast going to ruin: there are several anchorages for coasting vessels in the summer season; and one under the eastern side of Cape Kerampeh, where you may be sheltered from westerly winds.

Cape Ingeh is high and rugged, off which rocks are said to exist a considerable distance; passing it the high peninsula of Sinope, (or Boy Topeh,) comes open, inside of which is the extensive bay of Sinope, decidedly the best and safest anchorage on the whole of the southern shore of the Black Sea; as you may anchor in ten to sixteen fathoms, oaze and sand, half a mile off shore, perfectly protected from the north-east and westerly gales, which are the only winds of importance in the Black Sea.

The town of Sinope is situated on the peninsula, and is a miserable place, but improving at present in consequence of the weekly steam communication with Constantinople; yet its exports are inconsiderable, except in timber. The fortifications are extensive, but in a state of ruin. Some of the finest Turkish line-of-battle ships are built at Sinope, where there is an arsenal. Water is good and easily obtained.

From Sinope, or Cape Boy Topeh to the eastward, the land forms a deep bight, and extends north-east to the low point of Kizil Ermak, all of which is thickly wooded to the waters' edge, and continues so nearly down to Samsoon. A great deal of tobacco is grown on the low land, which is exported from Samsoon to Constantinople.

Abreast the river Kizil Ermak, which is of considerable size, the shoal water extends off the land a great distance, and the land on the eastern side of the river no doubt lies farther out than described on the chart, as the course N.W. ½ W., magnetic, from Cape Samsoon, only passes three-quarters of a mile off shore. All other parts of the coast appear well laid down for a general chart; but there are numerous anchorages undescribed.

Cape Samsoon may be known by two remarkable clumps of trees like hay-cocks on the rising land at the back of the town, bearing W.S.W. from the town. The Cape is formed in a low point with a reef, or remains of a mole extending to the eastward 300 fathoms under water, on which the sea breaks heavily at times; and on which several vessels have been wrecked. The low point has a battery of six guns erected, from which situation the Cape rises abruptly to the height of about 150 feet, when it continues level to a considerable distance inland: on the outer or northern part of the Cape there is a great deal of cultivation.

The town of Samsoon is situated in the bight formed between the Cape and the southern shore, at the eastern part of which are remains of an ancient walled fortification now in a state of ruin. The town is very small and unhealthy, from the swampy ground surrounding it. A British Vice-Consul resides there, as the trade is considerably increased since the opening of the line of steamers from Constantinople; and but for the idle and detestable character of the Turks there, may yet increase to a place of some importance.

The best anchorage is with Cape Samsoon north, and the east extreme of the old fortification S.W.b.W., in five to eight fathoms sand; it is comprised between the Cape and another point, bearing from it S.S.E., distant about two miles. From being open to all northerly winds a heavy swell generally sets in, which renders it exceedingly difficult to ship and land goods; yet it is done in an extraordinary quick manner. Immense quantities of tobacco and silks are exported.

From Samsoon to the eastward, as far as Eunich the coast is exceedingly low, covered with wood. Soundings extend out a considerable distance; but the low land renders it difficult to steamers bound to Samsoon in the night, and when the fogs are dense.

From Eunich to the eastward, as far as Trebisond, the land is generally high, interspersed with villages, and a country thickly wooded; which together with several beautifully cultivated spots render it very picturesque. There are several small villages, but none of importance until you arrive at Platina, which is about six miles to the westward of Trebisond, where the Greeks moor their vessels for the winter, during which time they seldom navigate.

Cape Zoros lies N. 59° 12′ W. true, from Cape Trebisond distant about fifteen miles, and is high rugged land. It forms a deep bay to the eastward, in the bight of which is Platina, bearing N. 84° 15′ W. true, from Cape Trebisond, which gives an idea how much the anchorage is protected by Cape Zoros from north-west winds. It is certain vessels lie secure the whole of the winter; but the inconvenience of landing or shipping goods, together with the land carriage to Trebisond renders it next to useless as a port. From Platina the bay takes an easterly direction up to the church of St. Sophia, which is situated near to the shore at the western extreme of Trebisond.

The town of Trebisond is very considerable, the Turkish part of which is surrounded by a high wall with a citadel, its former fortification; but now in some parts quite in ruins. It occupies the declining part of a hill, and continues to the waters' edge. A battery of six guns has lately been erected near to the north-western extreme of the wall to protect the custom-house; there are remains of an ancient mole, and it is to be much regretted that the Turks do not repair it, as the landing and shipping of goods is attended with great risk; particularly now the trade is so much increased since the Royal Danube Steam Company have opened a weekly communication to Constantinople, as the exports from Trebisond alone are near 40,000 bales of goods annually,—raw silks, hides, copper, and other commodities; and in return nearly the same quantity of British manufactured goods are landed for the interior.

The Frank town is situated a little to the eastward of the Turks, near to Cape Trebisond, where the Consuls of the different nations reside. A very handsome palace was erected some years since on the extremity of Cape Trebisond, by the Pacha, but the Sultan considering its appearance too formidable, ordered it to be pulled down, and now the remains are used as a place of quarantine from the interior.

The anchorage of Trebisond is to the eastward of the Cape, off which a shoal runs a short distance. It is perfectly open to all northerly winds; but the best anchorage is in five to seven fathoms, with the Cape N.N.W.,

distant about three-quarters of a mile, good holding ground; and although the swell sets into the bay very heavy, with the least northerly wind, and a heavy surf on the beach, yet vessels ride comparatively easy and secure. It is no doubt from the outset, and in consequence of the high land close to the back of the town that the winds cannot blow home. As the Cape next to the eastward of Trebisond is S. 73° 10' E. true from it, it is therefore, perfectly exposed.

The scenery in the interior of Trebisond is magnificent, the whole being perfectly wooded except the few cultivated spots, and the deep ravines full of water coming from the mountains, which are covered with snow early in October; yet the climate of Trebisond is generally milder than that of Constantinople.

The Currents in the Black Sea.

The currents have been so often described that it is next to useless my commenting on them, but in a general way; as no doubt exists from the numerous rivers emptying themselves into it when a vast quantity of water comes down the western shore, taking its course for the Bosphorus, the only outlet; but as the width will not admit such a quantity, some portion passes, and continues on to the eastward, along the southern shore. In fine weather with northerly winds it does not exceed three-quarters of a mile per hour, when with strong southerly winds and the current running up the Bosphorus, and particularly near Kizil Ermak, which I have seen on different occasions, particularly in October, at the rate of three knots per hour; then it runs much stronger to the eastward, and even at the rate of two knots and a half per hour; it is influenced near the mouth of the different rivers on the southern shore, when it increases. From Trebisond to the eastward the current gradually decreases, taking a more northerly direction.

The greatest difficulty in the navigation of the Black Sea, and more particularly entering the Bosphorus, is from the dense fogs which have such continuance, and at times the lighthouses are covered with snow, and consequently the lights not distinguishable.

[For further account of the Hydrography of the Black Sea, we refer our readers to the excellent papers of Captain Middleton in the early Series of this journal.—Ed.]

Sulphuretted Hydrogen and its Antidotes.—*The Niger Expedition.* *By Robert Armstrong, M.D.*

Royal Naval Hospital, Plymouth, April 13, 1842.

Sir.—In the *Nautical Magazine* of last year, at page 737, there is a report of a lecture, delivered at the Royal Institution by Professor Daniell, respecting the discovery of sulphuretted hydrogen in water from the coast of Africa,—with some remarks on its injurious effects on the health of the seamen employed on that station,—and on the copper sheathing of ships. As this is a subject of the deepest interest and im-

portance to the naval service, the following observations may, perhaps, not be misplaced on your Journal.

This discovery appears to have produced some sensation, and according to report, has led to the adoption of means to deprive this gas of its noxious properties. It is somewhat extraordinary, however, that this noxious agent should have so long escaped observation; more especially when its presence is so easily recognized, and when it is said to exist in such abundance, along a line of coast so much frequented by our ships-of-war and merchantmen. In the report alluded to, a tabular view is given of the quantity of sulphuretted hydrogen, and saline matters, contained in an imperial gallon of different samples of water submitted to analysis. Water taken from the Sierra Leone river, is said to contain six cubic feet, and eighteen inches of this gas, per gallon. Water from Lopez Bay, eleven feet sixty-nine inches; and water from Lagos, fourteen feet seventy-five inches per gallon; while water from the Mooney and Gaboon Rivers, contained no gas whatever, although the proportion of saline matter was greater than in the water from the Lagos. Without waiting to enquire whether any evolution of sulphuretted hydrogen took place during the passage home, from the partial decomposition of the water, or of the small quantity of fish-spawn, or vegetable matter it contained, it is sufficient to remark, that water, under the ordinary atmospheric pressure, is incapable of holding in solution so large a quantity of sulphuretted hydrogen as reported. Water readily absorbs about its own bulk of this gas when confined in a glass jar, but it is again given off when exposed to the atmosphere. Even if we admit with Gay Lussac, Dr. Thompson, and other chemists, that water will take up three, or three and a half volumes of this gas, when in a state of purity, this will fall far short of fourteen cubic feet to the imperial gallon. This is so palpable an error, that it is impossible Professor Daniell could have made such a statement. The mistake must have arisen with the reporter, and instead of fourteen cubic feet and seventy-five inches, we should read fourteen cubic inches and seventy-five hundredths of an inch.

That a slight disengagement of this gas may take place, from the action of vegetable matter upon the sulphates contained in salt water, is not improbable. The same gas is generated in abundance, when fresh water is kept in casks excluded from the air; and many of your readers must perfectly recollect the perfume diffused through the ship on opening a water-cask, before the general introduction of iron tanks. Although the Professor appears to entertain a different opinion, there is reason to believe, that the sulphuretted hydrogen found in the water of the Lagos, was not imported from the coast of Africa, but generated during the passage. Admitting, however, that this gas is disengaged in considerable quantity on the coast of Africa, from the causes abovementioned, it may be fairly questioned whether it is capable of producing those injurious effects upon the health attributed to it. Sulphuretted hydrogen is disengaged from some mineral waters in considerable quantity, from stagnant pools and ditches, and in the holds of ships. It is the cause of the offensive smell of bilge water, yet, being diluted with perhaps many thousand volumes of atmospheric air, the unpleasant smell is the only inconvenience arising from its presence.

On the coast of Africa, and in other inter-tropical countries, where the changes of temperature, with occasional exceptions, are but trifling throughout the year, animal and vegetable matters are constantly undergoing decomposition, and giving rise to new products. Under similar circumstances, therefore, we may expect similar results, and the chemist can anticipate what these results will be. If circumstances are favourable for the developement of sulphuretted hydrogen, or any other gas, its effects must be at all times apparent;—yet, neither Capt. Trotter, nor any of the medical officers, whose attention was perhaps more immediately directed to the exciting causes of disease, take any notice of offensive smells during the week the ships were detained within the outer bar, repairing their rudders. It is an incontrovertible fact, that sulphuretted hydrogen, and other gaseous products which are destructive of animal life, are equally injurious to vegetables. Wherever, then, we observe a luxuriant vegetation, we may rest assured, that the atmosphere which sustains it, contains no permanent impurity likely to prove injurious to man. That sulphuretted hydrogen, in common with chlorine, nitrogen, and other unrespirable gases, is destructive of animal life, no doubt can be entertained. A small bird died immediately in air containing $\frac{1}{150th}$ part of its volume of this gas; a dog perished in air mingled with $\frac{1}{400th}$; and a horse in air containing $\frac{1}{250th}$. The chemist can produce this gas in his laboratory by a very simple process—can immediately decompose it by means of chlorine, and prove to an admiring audience, that this is effected by the chlorine combining with the hydrogen to form muriatic acid, (as it is commonly termed,) while the sulphur is precipitated. Chlorine gas has been long employed for the purpose of destroying contagion and bad smells; but, as the gas was itself unrespirable, it was necessary to remove it by a free ventilation with atmospheric air. The most elegant and convenient way of using it was by Morveau's disinfecting phial, which was carried in the hand, and by unscrewing the cover half a turn, a puff of chlorine was allowed to escape from this pretty plaything when required.

A few years ago, an attempt was made to introduce into the navy a new fumigating material. Being required to report upon it, it was submitted to analysis, and found to consist of oxide of manganese and common salt. The chlorine was disengaged by the addition of sulphuric acid, and in this there was nothing new, as the same materials had been used in the preparation of this gas for at least half a century. It would appear that some gentlemen, unacquainted with a ship, entertain an opinion that foul air is the cause of innumerable evils. Could these closet theorists be induced to take a cruise to the West Indies, or the coast of Africa, they would soon be convinced that, when common attention is paid to ventilation, the decks in a ship are as free from bad smells or foul air as a house on shore. The air between decks in a ship-of-war is as pure as the air without, and to attempt to purify the atmosphere, by means of chlorine gas, is visionary and impracticable. Chlorine gas is as fatal to animal life as sulphuretted hydrogen, and even when largely dilated with atmospheric air, produces a most distressing sense of suffocation. It has been a prevalent opinion for centuries, that noxious exhalations are disengaged from certain soils, and

it would be a most unprofitable task to attempt to overturn opinions so long and so pertinaceously entertained; yet, it may be asserted, and upon strong grounds, that the miasmata, or malaria of marshy soils, are incapable of producing the terrific effects usually attributed to their action; and that those fevers, which often prove so destructive to our seamen, have their origin in causes of a very different description. The climate of Batavia has long been considered as one of the most unhealthy. The country for many miles is low, swampy, and covered with brushwood, and supposed to produce malaria in its most concentrated form. Yet these swamps I have penetrated at midnight, on two occasions, and at an interval of nearly two years, in quest of this invisible agent, but without being able to find it. The same investigation was pursued when in charge of the Naval Hospital at Port Royal with no better success. The mangrove swamps in the Pallisades, if they deserve that appellation, were repeatedly entered late at night, and before daylight in the morning. The air and the water were examined by the most delicate tests, in the hope of discovering some obvious cause of the ravages of Yellow Fever prevailing at the time. Neither the air, the water, nor the soil, presented any sensible deviation from their usual state.

If we trace the histories of epidemics, we shall find that they spurn the artificial bounds of swamps, rivers, mountains, and woods, and appear in situations, where none of the causes supposed to operate in their production exist; yet the disease shall present the same symptoms in these different localities. On the coast of Africa, all ships are not unhealthy, even when employed on the same service, and on the same part of the coast. One shall enjoy as great an exemption from sickness as in the most favoured clime; while fever shall appear in another, and carry off one-fourth of the ship's company. Fevers of the most malignant kind, occasionally appear in situations where there are neither swamps, nor decaying animal or vegetable matters. Of late years, a remarkable instance of this kind occurred at the island of Ascension,—a dry volcanic rock rising up in the midst of the ocean. Here a fever broke out, exactly similar to the African fever, and which could not be attributed to imported contagion, as no vessel had arrived from the coast for some time previously. In the West Indies, similar instances are not unfrequent. A ship at anchor off Port Royal, shall have fever on board, while in another there shall not be a man on the sick list, although a free communication is kept up between them. Fever appears amongst the troops at Port Royal, or Fort Augusta, while Up-Park-Camp, near Kingston, continues healthy. A regiment quartered there, by way of precaution against sickness, is marched to Stony Hill.

This station is on the summit of a dry limestone rock, at a considerable elevation, and exposed to the sea breeze by day, and to the land breeze by night. Here, although there is nothing like a swamp within several miles, fever appears in the most severe form, and carries off nearly one-fourth of the regiment. Many other examples might be adduced, but those already mentioned will be sufficient to shew, that exhalations from the soil are not always sufficient to account for these visitations of sickness.

It is a curious, but a well-known fact, that in Batavia, Bengal, and the West Indies, the ships' crews are seldom attacked with sickness until from three to six weeks after their arrival; and it is to the physiologist, rather than to the chemist, that we must look for a satisfactory explanation. The appearance of sickness amongst a ship's company depends upon a variety of causes, some of a physical, and some of a moral nature. Seamen, in their sudden migrations from a cold or temperate, to a warm climate, carry the germs of disease within themselves; and they are developed, or excited into action, by various external circumstances which are often unnoticed.

The expeditions hitherto sent to the coast of Africa, on discovery, have been singularly unfortunate; and every friend of humanity, while admiring the self-devotion of both officers and men employed on the last, must feel grieved at the result. The medical officer, however, who has observed the effects of climate, and the influence of the passions upon large bodies of men, on calmly reviewing all the circumstances, will be at no loss to discover, that many causes operated in producing a disposition to disease, even before the vessels left England. The formation of settlements on the banks of the Niger, and the civilization of Africa, were the professed objects of the expedition. The public attention was excited by the speeches of philanthropists at public meetings; and the Government readily lent its aid in carrying into effect their benevolent intentions. Steamers of light draught of water were constructed for this particular service; and the officers were selected from their experience, or local knowledge of the country, and interest in the cause. The vessels were manned with volunteers, who received double pay; and that nothing might be wanting to promote their health and comfort, stores of all descriptions were most liberally supplied. A ventilating apparatus was fitted to propel fresh air into every part of the vessel; and every means that science could devise adopted to disarm the climate of its virulence. In the river, at Portsmouth, and at Plymouth, numerous visitors inspected the vessels; and experiments were made, to shew them the means they possessed of preventing disease. The officers and men appeared to be in good spirits, although, it was quite evident, that they considered the enterprise hazardous; indeed, the whole tenor of their conversation shewed a perfect conviction on their minds, that sickness was to be expected as a matter of course. The seaman stood by,—heard the conversations, and regarded, with certain misgivings, those unusual provisions which had been made to protect him from a climate, admitted by all to be pregnant with pestilence and death.

During the voyage, the excitement which had been kept up while in port subsided, and was succeeded by a corresponding depression of spirits, as they approached the scene of their operations, some anxiety must have been felt, although probably not apparent. On getting over the outer bar, the vessels were detained a week in repairing some damage done to their rudders. When they did proceed, their progress was slow; and various delays appear to have arisen, in entering into treaties with the native chiefs, and in establishing the model farm. Here there was no prominent object in view to divert the minds of the crews, exposed during the day to the heat of the sun, and to the chilling effects

of the dews by night. Despondency crept in unobserved; and being already disposed to disease by the causes above mentioned, fever made its appearance. In all probability, in the first case or two, the symptoms were not very urgent; but upon its being once known to exist, a feeling of alarm was created, and the disease made rapid progress. The readers of the *Nautical Magazine* being intimately acquainted with the habits of seamen, are well aware, that when they are called upon to perform any service where the object to be attained is apparent, a confidence in their own powers will generally ensure success. In the present case, the glory likely to result from the civilization of Africa was too remote; it was contrary to all their habits to take an interest in teaching the negro how to cultivate the soil, or to establish a black colony of market gardeners on the banks of the Niger. Under other circumstances, a successful cruize up the Niger might have been anticipated.

Had these vessels been employed on the coast on ordinary service, and ordered up the Niger to bring down half a dozen slavers at Iddah, the ships' companies would have set about their work in a very different temper of mind; they would have found their way utterly regardless of swamps and sulphuretted hydrogen, would have speedily taken, and brought down their prizes, and in all probability without the loss of a man by sickness.

Without entering into the question of the capability of the African for acquiring the arts of civilized life, it may be observed, that all attempts for the attainment of that object have proved signal failures. To effect any change in the habits of men in a semi-barbarous state must be the work of time, and can only be accomplished in the course of several generations, under the most careful management. Although perfectly aware of our superiority, their physical and mental condition prevent them from imitating our example. Adapted by their physical organization to a climate where the wants of nature are supplied without the necessity of hard labour, they subsist chiefly on vegetable substances; and do not require the same quantity of stimulating food or drink, as the natives of colder regions. The high temperature of their climate renders clothing, except of the lightest kind, an incumbrance; and as their wants are so easily supplied, they have no stimulus to exertion. The first step, therefore, towards the civilization of this degraded race of men is, to create artificial wants, by the introduction of luxuries amongst them; and to induce them to exchange their produce for the productions of other countries.

If another expedition is to be sent to explore the Niger, success will be more likely to result from a somewhat different mode of equipment. Let a steamer of light draught of water be employed, and fitted out as for any ordinary service; let the births of the officers and men be large and airy; let young and intelligent officers be employed, and promotion held out as the reward of their exertions; let the crew also be picked men, and the prospect of being made warrant-officers held out to them for good behaviour; let them have every indulgence consistent with the proper discharge of their duties; let cheerfulness and buoyancy of spirits be encouraged, and due attention paid to proper clothing by night, or, on sudden changes of the weather. As a farther means of ensuring success, the Admiralty must take the management of the expedition

into their own hands. If the enterprise is entered into as any ordinary service, and without any presumption of danger, there appears to be no good reason why the Niger should not be navigated with as much safety as the Ganges, or the Mississippi. Previous to the formation of model farms, the river should be explored as far as practicable, and friendly relations entered into with the native chiefs; let them be convinced that we can render them essential benefits; and at the same time, that we have the power of severely chastising them for any infraction of treaties, or want of faith. After a good understanding has been established, permanent establishments may follow, as the means of introducing among them the arts of civilized life.

These observations having extended to a much greater length than was intended, I shall not, at present, advert farther to the action of the sulphuretted hydrogen upon the copper sheathing, than by remarking, that the greater wear of copper on the coast of Africa, and in the Medway, may, perhaps, with some justice, be attributed to causes of a very different nature from those assigned by the learned lecturer.

ROBERT ARMSTRONG, M.D.,
Deputy Inspector of Hospitals and Fleets.

To the Editor, &c.

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.—*Port Royal and its associations.*

(Continued from page 325.)

THE jaunt to Kingston before day-break for fresh meat and vegetables was always to me an agreeable one, indeed, I considered it a treat; but there were some who thought otherwise, and that the duty might more appropriately be transferred to the purser or clerk. The adoption of this transfer, however, would not relieve the midshipman from the boat duty. It has, I understand, since taken place. It was the delightful cool morning air, the inviting serenity that breathed around at such an hour, and the pleasurable feelings arising therefrom, heightened by the freshened, and as it were, revived aspect of the beautiful scenery, that made this trip so facinating to me. As to the mere duty assigned to the officer on such occasions, I never gave it a moment's thought; my aristocratic notions were not so ultra as to urge me to fall out with my "bread and butter," or, to take offence at the occupation when the certainty of a good beef-steak for breakfast was in view; and as to the interruption of a comfortable morning slumber, those whose duty it is to be ready at all times when their services are required have no right to complain. Indeed, to all but the most morose temper, there was full compensation for any little inconvenience, in the subsequent delight inspired by the opening of a tropical day, with its accompaniment of a gorgeous sunshine, gradually dissipating the vapours, and spreading its splendour over the land and sea; gladdening every thing into life, and light, and warmth!

Under the same impressions and agreeable sensations, as a youngster, I was never more pleased than when enjoying the morning watch; at which

time there was an irregular sort of cannonading going on with the spruce bottles upon the canoes. The "holy" stoning and washing of the decks was an operation not altogether devoid of interest to the middies, who, when they possessed any emulation, were very watchful that every particle of sand should be washed off, the deck thoroughly dried, and the ropes coiled down with the nicest care. The paddling about in the cool fluid with naked feet was an enjoyment suited to the age of the young officers; and the quaffing of the frothy spruce beverage much more so. But the highest point of pleasurable sensations entertained, sprang rather from the anticipation of parading upon a beautifully clean deck, trimmed out in "apple-pie" order, and fit for the reception of the greatest potentate on earth; and, as often happened, from the satisfaction of hearing the remark of some visiting "grandee," on the "delightfully white," and "nice" state of the decks; followed of course by due acknowledgments from the captain and first-lieutenant, and their approving smiles, as they caught the eyes of the, now, smartly-dressed youngsters, who were "hugging" themselves with the blessed thought that for one day, at least, there was a prospect that good humour would last. So much influence has agreeable trifles in disposing the mind to preserve equanimity. Indeed, although we call the merited praise (certainly entirely devoid of flattery) on these occasions, a trifle, the effect generally produced by it throughout a ship, is, of such moment to all on board, that, it is one of those cunning points worth keeping in mind by those who feel and appreciate the gratification of being on good terms with their superiors in rank; and in whose hands much of their happiness is held. We may rest assured that it does not require a grandee, or a visiting friend of the captain, to produce such a desirable result, at least in seven or eight cases out of ten. The officers and men may generally produce the effect upon their two leaders, by strictly and cheerfully executing their duty, bearing in mind, that this word *duty*, is a very comprehensive one, for, it not only embraces every professional, but much of that which is personal; especially with respect to deportment. The beauty of such a voluntary system, for it becomes one when properly regulated, is that a reciprocal effect springs from it. If trifles are sometimes the occasion of making the heart sorrowful, a look, or a smile, or a brief approving expression from those we wish, and it is our duty, to please, should always convey to it a very agreeable sensation. The force of these minor sensibilities are nowhere more productive of happy consequences than in a well regulated man-of-war; and, whenever disregarded, or not properly reciprocated, unhappiness to some degree must prevail. A single individual in a mess from bad temper, or ungentlemanly behaviour, may, for a time, make things disagreeable, but he cannot mar entirely the happiness of his messmates. The force of the general voice brings him to his senses; or he exchanges into another vessel. The only man, therefore, who has the power of making all miserable is the captain. When we consider that there are altogether more than fifteen hundred, it is a real happiness to think that, among that number, such a character is a rarity.* In a happy ship the practice of kindly feelings becomes reciprocal throughout; and by a sort of

* I allude to the confirmed tyrant: the petty worrier is almost as bad.

tacit acknowledgement of the benefit arising from such an unforced compact, everything goes on smoothly, cheerfully, and with a degree of comfort delightful to behold and to experience. Such was the old (French) Pique, under Capt. Ross, with the three Lieutenants Bridges, Baker, and Brasier. I think it impossible that the unanimity and gentlemanly manners which prevailed could be exceeded. The men too had followed the example of their officers, and the ship was not only a beautiful model, but was in every thing perfection itself. I treasure the recollection of this fine man-of-war, and her noble crew, with indescribable satisfaction, although on board, for two or three weeks, as I did not belong to her, attachment can have no share in the praise.

During the war, from changes and other unavoidable circumstances it was not possible that this desirable understanding should exist in perfection in all ships; but I have seen, felt, and enjoyed its good effects in several; and believe it is pretty general at the present time. Indeed, circumstances are so favourable for its consummation, that I should think it would be the fault of the officers, (especially the captain,) if they did not enjoy as much comfort and happiness as it is possible to experience at sea. I should be sorry to rake up exceptions, and record them here, although that might have its use. Such would be a disagreeable task, and one for which I have no taste. The more obvious choice being that of touching on praiseworthy events, rather than the holding up of ungratifying results bearing upon this particular subject.

How much our habits and pursuits guide the tenor of our opinions, and the drift of our ideas of what is proper, and indecorous, need not to be insisted upon. The hauteur of demeanour may be of parallel importance to the individual who exercises it, as the cloak which he wears over his shoulders is for a particular purpose. Of course, a sensible observer understands that, and inwardly smiles at the display. In like manner, the pride of station (*caste*, with reference to society,) may be serviceable to the feeler, as the veil is to an ugly face. I am not here, however, alluding to our salt-water sphere, albeit, our nautical "Counts" appear to play upon the same boards; and very farcical are some of our oceanic dramas, especially when the *haut-maree* of passion makes, and floods all reasonable feelings. Such extreme acting I can do no more than lament. I have read somewhere of an unfortunate captain who, for carrying a nosegay in his hand, was considered by his acquaintance of the *haut ton* as having forfeited all claims to gentility! Ye oracles of decorum! what would have been thought of the unhappy half-pay lieutenant, a man of good family, whose sire kept his coach, that from dire necessity was obliged to carry home to his hungry and numerous family of children a —— oh! horror! a leg of mutton wrapped up in brown paper! He, poor man, had he been detected, assuredly he had been doomed to a martyrdom of character equally as severe as the loss of caste in the Hindoo; from a Kyetra he would at once have sunk into the base and servile Soodra!

Such things are! In this world of artificial feelings our *hearts are* but too often weaned of their natural sensations; and we become the dupes of an extravagant and starched-up philosophy of forms and manners, alike destitute of warmth and benevolence; and which is based

upon no sounder foundation than a union of vanity and insincerity. I have led the reader into these reflections in order to introduce to his notice a trifling anecdote in keeping with those absurd notions which pride and affectation so often engender; and which appear not to be restricted to the aristocratical classes of any one country in particular, but to pervade human nature throughout the habitable world; whether of the most polished civilization, or of the rudest savage state.

Whilst the frigate to which I belonged to as a mid, lay in Montego Bay on the north side of Jamaica, J. P., Esq., M.H.A.,* was kind enough to come off to the ship in a canoe, to invite and take me on shore, to breakfast at his delightful residence, and with his two charming and amiable daughters. It so happened that we were washing decks, and I had the watch, and, of course, was without shoes and stockings, with the *ducks* rolled up above the ancles, as had two or three other youngsters.

Our worthy member was greatly scandalized at such a sight,—young gentlemen as bare-legged as a negro, and dabbling in salt water! The very idea was horrifying; the sight still more so to my Anglo-West Indian. It had made an unfavorable impression upon his mind. I saw that clearly, as after speaking to me and the lieutenant, he hurried back into his canoe; but waited very patiently until the little shoeless boy had rigged on his best, and otherwise prepared himself in a suitable manner for appearing in company with the ladies. Whilst rowing on shore, the old gentleman expressed his surprise at what he had seen, and said that he could not have believed it possible that the "potentate captain," as he called him, could have exacted such a duty from any of his officers! An aristocratic fancy truly. Where was the degradation? It is probable that our late gracious sailor sovereign had gone through the same duty. I laughed heartily; and by way of augmenting the old gentleman's horror, told him that, had he gone on board the day before he would have seen all the "young gentlemen" with sleeves rolled up, tarring down the mizen rigging; and by way of confirmation, showed him my palms, which were as deeply tinged as the husk of a cocoa-nut. He held up his hands in amazement! I recollect the captain of a seventy-four gun ship, ordering the midshipmen to divest themselves of their shoes and stockings whilst the water was freezing.

Fortune is often represented with a wheel as a symbol; but in some ancient sculptures she is found with a *rudder* in the right hand, resting upon a globe; and Horace has styled her the "Mistress of the Sea." Hence those nautical adventurers, who, in martial language consider themselves "Sailors of Fortune," may legitimately invoke her aid, without doing violence to the loyalty they are in duty bound to pay to their titular sovereign Neptune!

One of the most remarkable instances of professional success unaided by distinction of birth, by literary talent, or by human interest, strictly

* Member of the House of Assembly. The title I have added, instead of the universal Mr., as due to the gentleman alluded to. There is no place in the world where this abused title is so craved. The Bushas and book-keepers are so styled! All are esquires, and it is not improbable that "Quashee" may by this time also aspire to it.

so considered, was that of the late Captain John Punch, of the Royal Navy. The novelty of the case has induced me to mention it here, with the few circumstances which came to my knowledge whilst in the station where he figured. I do not know that the subject of this brief notice was a "genius," so called for some marked characteristic, or peculiar quality of mind; but he had the reputation of having been a dashing, valiant warrior; very successful as a cruiser; and, moreover, was a very Cerberus in standing fire.

"Ah! nimble was he, and bold as could be,
For he heeded not the fire or squall;
And the bullets and blast, might whistle and last,
For his spirit surmounted them all."

The fame of this renowned seaman had reached me at the time I aspired to the "weekly account," and on the station where his exploits took place, I heard occasionally some vague allusions to the deeds of the schooner he commanded some years before, which excited my curiosity to know more. There was, however, such an air of romance in the current reports, and so much that seemed bordering on fiction that, my credulity was often sorely put to trial. But as I possessed no means of sifting the chaff from the grain, I could do no more than listen and keep in remembrance the substance of the tales which were circulated; and it is probable that these were known to everybody except the hero himself, and as is very generally the case, when the characteristics of any noted person becomes food for the public appetite for anecdote, whether reasonable or extravagant.

At what period, or where the celebrated seaman entered the service seem to be unknown, or, at least, like many of his early dashing exploits, unrecorded; which is the more extraordinary, considering the pains which naval historians were at, in booking the services of nautical worthies. Certain it is, however, our hero, was successively promoted to the rank of lieutenant, commander, and captain; and latterly commanded H.M.S. Tulip, of 32 guns, a very fine frigate of her class.

In one respect the noted seaman seems to have stood "alone in his glory;" he could neither read nor write, farther than having mechanically learnt the art of subscribing his name. Far be it from me to make note of this very curious circumstance with any intention of fixing it upon his memory as a reproach: it is entitled to the note of admiration as something out of the common run of events. But I have waved the privilege of using it, as its presence might have been misconstrued; for which I have no doubt the reader will give me due credit. Liberality is always becoming.

We have no right, I think, to condemn; that is to say, the bare fact of itself cannot justify us in condemning such a deficiency, although the individual moved in the circle of gentlemen, and the period of his existence happened in the eighteenth century, and stretched a little beyond it; because we know nothing of concatenation of circumstances which may have controlled the minority of the *little* "Jack Punch." The probability is, that the blame rested with his parents, if he ever knew any beings with that endearing title. Considering however, that this remarkable man must have possessed at least some degree

of capacity, and assuredly much intelligence, to have cut such a prominent figure in his voyage through life; it is strange he did not endeavour to obtain a knowledge of either art. It is true the schoolmaster was not "abroad," but there were instances of persons being self-taught. The probability, however, is that, his early life, the period for study, was one of incessant practical struggle for bare subsistence, and the propriety for mental culture unthought of, until his growing greatness, and attendant pride could not brook the (fancied) humiliation of wrestling with the A B C, and the pot-hooks and hangers.

In what way could his mind be occupied during leisure when in his cabin? What a blank and unavoidable state must his have been on such occasions. There is every reason for believing that the lower orders in England are, for the most part, when unable to read, led into habits of intemperance to kill time. I am not aware, however, that our hero had a propensity for the bottle.

I suspect that the reason, as given above, is the true one for the deficiency. But it is still a singular circumstance that, the energy of purpose, which led to his advance in life, was not exerted in the improvement of his mind. I have heard of a Mulatto girl who, not only without aid, taught herself to read and write, but was able to compose a correct and well-written epistle; and the missionaries say that, the Tahaitians (adults) learn to read and write in six or nine months! Has the delightful climate they enjoy, anything to do with this wonderful fruitfulness of intellect? In tropical climates there is a tendency to precocity in the human being; and the schoolmasters assert (in England) that, the West India boy learns much quicker than he that is British born; but does not retain what he has been taught in so great a degree as the latter.

That our hero commanded the respect of his officers* who served under him, I cannot say. It may be doubted, however, that he was so fortunate, as I have heard that he could seldom recollect their names; generally addressing them somewhat in the Yankee fashion—"I say, *Mister* Lieutenant," &c. There is certainly nothing offensive in the word, though it may appear out of place here; the epithet "Master," of which the other is evidently a corruption, being considered a minor title of respect. Great range in truth it hath, being applied indiscriminately to the Prime Minister, and, intermediately down to the cobbler. The French equivalent seems to have equal latitude, especially on Pont Neuf, at Paris, where its application is exceedingly amusing. It has besides, in the language of that country, a plural number, which it wants with us; and, moreover, in letter addresses it is reiterated. Indeed, it seems to be well received by every body save and except a "Qua-queer," or Quaker, or "Friend," and a regular Jack tar, as the following fact regarding the latter will shew:—"Well, Mister Quid, how fares it with you to-day?" quoth a waterman, to a sturdy boatswain's mate, standing, arms across, on Point ——. "Mister! be d——d, none of your gammon if you please—my name's *plain* Ben Quid." Here we find Jack disdaining flattery; leaving that, (in the

* There are three still alive who served under him in the Tulip.

enticing "over *serjeant*, ov'r!") to be spunged over by a corporal of marines who stood behind him; and claimed to be a Christian man, entitled to nothing more than belonged to him by right of station. Oh! what a deal of extravagance lies in this very curious matter! 'Tis amusing to the sober-minded, from the "loop-holes of retreat" to gaze upon a world like this; to see the craving after title and distinction; to notice the jostling, the climbing, the envy, the malice, the puffing, the hopes, the fears, the absolute agony, &c., and all for what? For a passport to Heaven? For a niche in the temple of Virtue? No! That I may *seem to be* a greater mortal than my neighbour! Such is the squabbling for precedency among all grades of society, whilst, like Capt. Parry's ice-boats on the Polar platform, in the midst of the eager struggle of the multitudes, life is slipping from under their feet, and hurrying them retrograde to the final brink, below which, when they plunge, all distinctions are obliterated for ever! Well! it is a blessed thing to be humble in the midst of our pride. I cannot tell if this was the feeling of our hero; who, one may fancy, stood as much in need of some such moral martingale to curb his vapoury spirit, as the wild horse of the Pampas does the Gaucho's lasso.

> "How poor, how rich, how abject, how august,
> How complicate, how wonderful is man!"

All manner of strange stories were related of him, which, probably, for the most part, had not the least foundation in truth. The Americans have long been taxed as being the most consummate stretchers of the long-bow, in the civilized world. But Jonathan's "twangs" fall harmless; they embody a peculiarity unrivalled, and are outlined in caricature superlative, and their design and effect are, to create mirth. But it was not so with the unsubstantial prattler "Report," the *on dits* of which, like the fiendish words of the Goblin Page, of Scott's "Lay of the last Minstrel," were either wantonly uttered, or intended to breed mischief. Thus, among other tales it was current on the station that the commander of the —— schooner, and the French privateers'-men "understood one another." The gist of which rascally slander was,— "you drive the birds into my net, and I will do the same friendly turn for you." The consequence, of course, being many re-captures! Another; save your modesty as well as your credulity good reader!— the redoubtable seaman was so ardent a disciple of the Polygamous creed, that he was the father of a *hundred* children, of all shades except pure black!

I am not aware that he ever, in confidence, divulged the secret of his native place; the reports were various. It was said confidently and generally believed, that he was a coloured man, and was born in the island of St. Domingo; which, if not true, may have originated from a rather exciting episode out of the regular course of his naval servitude; that of his having, during a peace been cast into prison at Jeremie, in the year 1792, and condemned by the authorities to be hung for having supplied the "Brigands," with arms and ammunition, and otherwise instigating them to rebellion, in order to effect their emancipation or liberty. He was then a lieutenant, and the main facts of the case are well authenticated, and are recorded in the Naval Annals. How

far the accusation of the French may have been based upon truth, I, of course, cannot say; but certain it is that the presiding genius which seems to have ruled over his destiny with a most successful uniformity, did not desert him at this critical moment of his career. The gallows had been erected, and the rope placed over the head of the devoted victim, when, most opportunely the "meteor-flag" of Old England appeared in the offing; a sight, which, at once arrested the arm of the executioner, and put a stop to the tragical scene that was about to be enacted. Our hero was saved by the firmness of the captain of a British frigate, and the display of a little artifice; and no doubt blessed his lucky stars for so narrow an escape from an elevation to which his ambitious views, we may believe, never contemplated or aspired.

(To be continued.)

ADELAIDE, *South Australia.—Directions for the Port.*

[In the absence of all kinds of information that can be of service to vessels bound to Adelaide, we give the following extract from the Note-Book of Commander Wickham, R.N. It is to be regretted that the Harbour-Master at Adelaide, who we understand is a Naval Officer, has not succeeded in diffusing a knowledge of his port either by survey or sailing instructions.]

There is good anchorage off Glenelg, in Holdfast Bay;* but during strong south-west gales, the sea is heavy. However, as the holding ground is very good, ships may ride there in perfect safety, if provided with good anchor and cables.

I was told by one of the pilots that it rarely occurred that he could not land in a whale boat with comparative ease. The beach is very flat, and the water shoals so gradually to the shore, that the surf is but trifling.

About four leagues higher up the Gulf is the entrance to the port of Adelaide, which although small is an exceedingly good harbour, in which vessels of nearly 600 tons burden can lie alongside the wharf, for the purpose of landing and taking in cargo.

Port Adelaide is a considerable arm of the sea reaching to a short distance from the town; the wharves and storehouses are about five miles from Adelaide, to which place goods are conveyed upon as level and good a road, as will be found in any part of the world.

The entrance to the port is over a bar or bank, apparently formed by an accumulation of sea-weed and sand, (and which might perhaps be easily removed.) There is never less than nine feet water on the bar, at low water, and the average range of tide is seven feet, but mostly nine at the springs, and at times even ten and eleven; however, this depends upon the winds. Strong south-west winds cause the tide to rise higher than usual, whereas strong northerly and north-east winds have a contrary effect.

* In our April number, Capt. Bethune calls Holdfast Bay, no bay at all. He says, however, that "a ship may ride there for ever." Captain Hindmarsh in our volume for 1839 alludes to it.—Ed.

A light-vessel is anchored off the bar, and is a good mark in running for the entrance of the harbour, and the pilots live on board of her, and board ships in sufficient time to prevent any delay in crossing the bar. Heavy ships, and those arriving too late for the day tide, anchor a short distance outside the light-vessel, (where the anchorage is perfectly secure,) and ships of a great draught usually discharge a part of their cargo there, before entering the harbour.

The bar and channel are well buoyed, and there is no difficulty whatever after the depth of water on the bar has been ascertained, which is done by one of the pilot-boats being anchored on it when a ship is to cross, and making a signal when the water is sufficiently deep.

The bar is not more than a cable over, and generally quite smooth: when a ship has passed it she will be in good anchoring ground, and well sheltered by the banks that front the entrance.

There is a bank about a mile in length, and reaching quite across the channel, four or five miles within the bar, upon which I was told the depth was ten feet at low water. Between this bank and the bar the anchoring ground is good, indeed with the exception of this bank, the whole space from the bar to the wharves, (a distance of about twelve miles,) may be considered excellent anchoring ground, and the channel sufficiently broad to admit of heavy merchant ships being worked, until reaching to within two or three miles of the wharves, where the port becomes more contracted; however, the prevailing land and sea breezes all difficulties of this nature entirely at rest.

Ships are moored head and stern opposite the wharves, where the holding ground is equal to that in any part of the river Thames; and there is a decided advantage in not having the strength of the tide to contend with that is experienced in that river.

The greatest strength of tide in Port Adelaide is rarely over two knots.

J. C. WICKHAM,
Commander, R.N.

ON THE EFFECTS OF LIGHTNING ON THE BRITISH SHIP UNDERWOOD.

By Mr. W. Snow Harris, F.R.S.

1. The notices which appeared in the public journals, in September 1840, of the damage done by lightning to this fine vessel were such as to excite a more than ordinary degree of interest. The electrical discharge it appears passed by the mainmast into the hull, and by two copper bolts at the termination of the metallic pumps through the ship's bottom into the sea, producing in its course very destructive effects:—

"On examining the ship in Mr. Green's dock, two holes were said to have been found in the vessel's bottom, one under each pump, with which she had completed her voyage, upwards of 2,000 miles, without any one on board suspecting the extent of their damage."—*Shipping Gazette*, Sept. 21, 1840, and *Times*, 23, 1840.

Those who inspected the vessel took it for granted that the ship had been damaged by transmission of the electric fluid through the bottom, and reports to this effect were speedily made to the Lords Commissioners

of the Admiralty, by official persons, and others adverse to my method of conductors who greedily seized upon the circumstances without any very acute perception of the nature of the case, in order to shew the damage of conducting lightning into the sea by metallic bolts passing through the timbers and planking of the vessel.

2. Although upon a careful review of the facts which at the time were communicated to me, I felt quite assured that the defect observed in the plank on the larboard bilge, *was not caused* by lightning; yet not having had an opportunity of inspecting the vessel myself, I did not think it fair to call in question the judgment of those who had. I was, therefore, content with remarking simply on the unsoundness of the reasoning which applied the damage, supposed to have occurred in this case, and *in the absence of any protecting conductor*, as argument against a systematic method of defence, such as that I employ, and by which a discharge of lightning is deprived of its expansive force at the masthead, and all intermediate explosion in the body of the vessel avoided. To cite the case of a vessel struck and damaged by lightning in the absence of a given system of protecting conductors, as argument against the use of such a system, was certainly a somewhat novel mode of reasoning in physics; it was virtually appealing to the effects of a disease, as ground of objection against the means of prevention or cure, and was a kind of argument but little likely to benefit those who resorted to it.

3. Fortunately for science, the parts of the planking of this ship said to have been damaged by the electric fluid, have been presented to the Directors of the United Service Institution, by the owners of the vessel, so that any one interested in this momentous question may examine the appearances for himself; and I feel perfectly persuaded, that on comparing these appearances with the facts of the case, with the course of experience, and with *perfectly* similar appearances on the removal of copper bolts from the timbers and planking of ships under ordinary circumstances, almost every one will come to the conclusion, that the enlarged hole about one of the bolts, is not the result of lightning; and will be obliged to acknowledge that the *ship owed her safety to the two metallic bolts* above-mentioned, which transmitted the electrical discharge to the sea, clear of *all damage to the timber and planking whatever;* and this I propose now to show.

4. That I may not, however, be accused of passing lightly over the history of this case, I shall commence by quoting the extract from the log-book of the vessel, sent by her commander, Mr. Moffat, to the Directors of the Museum, with the specimens in question; it runs thus:—

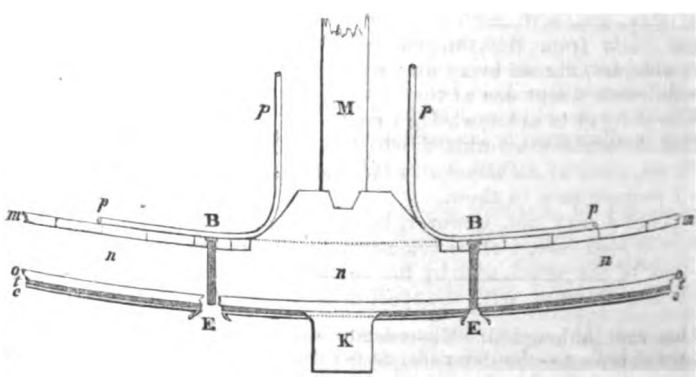
"Lat. 42° N., long. 55° W.,—weather squally and unsettled, with much rain and lightning,—the ship under double-reefed topsails with mainsail furled. At 5h. 30m. A.M., a flash of lightning, accompanied by a tremendous report, struck the main-royal-mast, which was shivered, forcing the heel several inches into the main-topmast head, and destroying the cap and all the blocks there; it then took hold of the chain topsail tye, which is broken in twenty different places, and again appeared to burst in the main-top destroying two new top-gallant-studding-sails rolled up there, and sprung the mainmast head; shattered one trussle-tree, and split half one cheek off the mast; from thence it flew round to the fore part of the mast, took a piece out of the mainsail and ran down the mast, taking a piece out of it in the way of an iron hoop; and appeared to

expend itself in the pump cistern; it blew all the covers overboard, and broke one of the bilge pumps. Sounded the well, and examined the hold, fearing from a strong sulphurous smell the ship was on fire; but *found* no *water of consequence in the well, or, signs of it in the hold.* 8h. A.M. pumped ship, found she had made as much water in the last four hours, as in many days previously. From this date up to the time of our discharge in the West India Docks, Sept. 16th, the ship was constantly leaking, which we attributed to the shock the ship had received having opened her seams, but on examining her in a dry dock, we found the lightning had gone down the bilge pumps, (breaking two staunchions of the pump well), and flew to the first copper bolts they were in contact with, which were the bolts directly under the leaden pipes of the pumps where it made its way out, on the starboard side, by simply making a hole through the metal, (the copper sheathing,) but on the larboard side also injuring the plank."

5. We see by this statement that the two holes alluded to in the published accounts, were merely those in the copper on the ship's bottom, at the points where the electrical discharge found its way into the sea, and that the injury supposed to have been done to the planking. the great point under consideration was on *one side only.* Now, it will be seen by the following lucid statements kindly sent me by Lieutenant Reed, R.N., who examined the case, that the most destructive effect was on the other side; where *no trace of damage to the planking is apparent.*

"The annexed diagram (Fig. 1,) shews the bilge pumps and bolts through the bottom. The upper part of the pumps are mixed *metal*, for a few feet down; then iron down to the bottom of the well, where they are soldered to the lead pipes, stated to pass over the bolts, which transmitted the lightning: the lead pipes are laid close to the ceiling of the vessel, and by them the water is pumped out of the hold."

FIG. 1.



"The lightning passed down *both pumps* it is supposed, for the copper sheathing under both bolts was forced open, but the *starboard pump only appeared injured*, a piece of the metal at its upper end being broken out; *while the injury, which is said to have caused the ship to leak* was *done to the plank in the larboard bilge.* The copper bolts are about nineteen inches long, seven-eighths of an inch in diameter; the sheathing had tarred paper between it and the planking as usual."

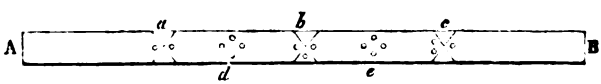
6. We have now fairly before us, all the information we require for judging of this case, whilst the diagram furnished by Lieut. Reed very clearly shews the relative positions of the various conducting bodies, by which the shock was transmitted to the sea. In this diagram M represents the mainmast, *p* B *p*, the lead pipes leading from the bilge pumps over the copper bolts B, B; *m*, *m*, is the internal planking; *n*, *n*, the floor timbers; *o*, *o*, the external planking; *t*, *t*, a layer of tarred paper; *c*, *c*, the copper sheathing; E, E, the ruptured points of exit of the discharge; K, the keel. I have perfect confidence in the accuracy of the detail given by Lieut. Reed, who took great pains to inform himself respecting the circumstances of the case, not only by a careful examination of the vessel, but also by a personal interview with the commander, who arranged a meeting with him on board for the purpose.

7. The first circumstance claiming attention is the rupture of the copper sheathing at the points E, E, where the electrical discharge made its way into the sea. In this result we see exemplified a very common effect of electricity, viz. the expansive force of a dense discharge in passing through an interrupted circuit; that is, from one conducting substance to another separated by bad conducting matter. The result is a very common one, and such as might be expected, and can in no way be available as an argument against the employment of protecting conductors, properly disposed within, and through the vessel. It is an effect which does not take place until the electrical discharge has passed fairly out of the ship, is not productive of any mischief whatever to the planking or timbers; and would not occur if the copper on the bottom, instead of being separated from the terminating bolts by tarred paper, air, or other non-conducting matter, had fair metallic contact with them; this is easily illustrated by experiment, and is demonstrable by the result of experience, as we shall now proceed to show.

8. Experiment I.—

Let a slip of tinfoil, A, B, (Fig. 2,) about twenty inches long, and half an inch wide, be attached by a little paste to the surface of a dry piece of wood; pass the point of a penknife across it in three or four places as at *a*, *b*, *c*; the knife may be passed twice over the strip of tin in oppositely inclined directions so as to produce cross or intersecting lines, as seen in the figure. In this way

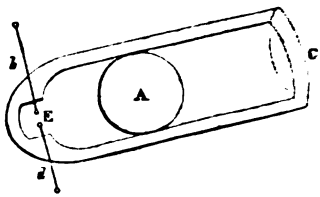
Fig. 2.



we interrupt, although in a slight degree, the metallic continuity. Let a few small wafers be now laid over the cut portions, *a*, *b*, *c*, and also over the continuous portions *d*, *e*; and let the shock of an electrical jar, well charged, be passed along the tin strip from A to B; it will be then perceived that the wafers will be thrown with violence off the interrupted portions *a*, *b*, *c*, whilst those on the continuous parts at *d*, *e*, will remain undisturbed.

Experiment II.—

Construct a small mortar of ivory, *b*, *c*, *d*, (Fig. 3,) having a cavity within it E, about half an inch in diameter and one inch deep; insert two wires, *b*, *d*, through holes in the sides of the mortar so as to come within about a quarter



of an inch of each other in the centre of the cavity E, fit a small ball of cork A to the mortar, sufficiently tight to confine the air and close the barrel; but still capable of moving in it without any great degree of friction. Pass a strong charge of electricity through the wires *b*, *d*, and the electrical spark which ensues between the wires, in the cavity E, will cause the air to expand so violently that the cork ball will be projected from the mortar. Let the wires *b*, *d*, be now pressed close, so that no break may be between them at E, and again pass a dense shock across them, not the slightest effect will be then produced on the ball. If the mortar be so constructed as to admit of a drop of water, or ether being placed in the cavity between the wires, then a very powerful effect may be produced by the conversion of these bodies into steam or vapour.

9. These simple experiments satisfactorily exhibit the violent expansive effect caused by the electrical spark in passing through bad conducting matter, and completely explain the cause of the damage done to the copper sheathing; the effect would in fact be the same as if a quantity of gunpowder, or some other explosive compound had been fired at the termination of the bolts E, E, (fig. 1), the consequence of which would be, to force the intermediate tarred paper, or other non-conducting matter aside, and in this effort to displace the copper sheathing over it, without any damage to the planking of the vessel.

10. Such are the artificial experiments which science enables us to apply to the point under consideration; we will now appeal to the results of experience on the great scale of nature, and see how far they coincide with these experiments. I shall select for this purpose two cases of damage by lightning of a much more frightful character than the case under consideration, in which the electric matter has been transmitted by metallic bolts, under circumstances very similar to those above described.

The first case I shall refer to, is the instance of her Majesty's revenue cruiser, Chichester, struck by lightning on the 7th of February, 1840, in Kilkerran bay, on the coast of Galway;* the particulars of which were most kindly communicated to me, through my friends, by the commander, Capt. Stewart. Mr. Neiling, by the direction of the Honorable Commissioners of the Board of Excise, has been likewise so good as to transmit for my information, a similar authentic history of this case.

Capt. Stewart says, "On the day above-mentioned I was at anchor in Kilkerran bay, a fresh gale had blown the whole day from west and north-west with occasional showers of hail: at 4 P.M. in the midst of a heavy squall of wind and hail a vivid flash blazed over the ship followed immediately by a loud peal of thunder. Alarmed at the crash of every thing about me, I ran on deck. The lightning had fallen on the vane spindle at the topmast head, had cut off a piece of this spar, and had then attacked the mainmast; it broke off about five feet of the mainmast, and then ran down the mast obliquely, scooping it out and charring it. It then passed below, threw down all the bulkheads between the galley and the cabin, and destroyed all the officers' births. It passed also into

* Nautical Magazine for May 1840, page 387.

the cabin, smashed all the dishes and glasses on the cabin table, and threw up the heavy iron grated skylights and all the patent lights in the deck, and actually raised the deck itself six inches off the beams. After passing through the deck, I am of opinion that the ball of fire divided, one part ran along the chain cable to the lower hold, the other passed into the cabin, by the barrel of a long deck gun, lying diagonally against the mast. *On taking the vessel on the bank to examine her bottom a short time afterwards, I found, to my great astonishment, that the electric fluid had passed out through the bottom into the sea, along some of the copper bolts, the copper sheathing being burst out in six or seven places exactly opposite to them: one of the bolts had a round drop hanging on the end of it as if melted.* The ragged hole in one place of the sheathing, which I have by me, is seven inches by five: two other pieces were forced open nearly a foot square: the sheathing was merely raised opposite some other bolts but not broken. *I examined the planks about all the bolts, and found all quite firm and water tight, and I have never thought it necessary to remove them."—Greenock,* April 2, 1842.

We have here a most instructive example of the expansive effect of electricity, and of the power of metallic bolts to transmit an appalling discharge of lightning through the vessel, without damage to the planking, *even although the end of the bolt was partially melted;* thus bearing out the deductions arrived at by artificial experiment.

11. The second case I have to quote is, the instance of a merchant schooner, called the Bezaleel, belonging to Messrs. Hawkins, of Plymouth. This vessel was struck by lightning on the 3d of January, 1841, off Beachey Head. The following are the particulars, as kindly communicated to me, by Mr. Hawkins, the commander, and as furnished by the vessel's journal.

"The lightning struck the fore-royal pole, and split the head of it clean off, ran down top-gallant chain tye and sheets to the chain topsail tye and chain throat halliards, and so passed to the deck, without damage to the spars, although it fused and destroyed the chains in several places, causing the chain throat halliards to fall on deck. The electric fluid appears now to have divided upon two chain cables. Part went forward through the hawse pipes, partially melted the lead, and started the knees of the head, in the act of forcing its way to the sea. Another part followed the chain below, and endeavoured to escape through the ship. In doing this a division again appears to have taken place; one portion exploded between the ceiling and the outer planking on the larboard side, and started ten feet of the planking about midships; the butts and planking were left so open that the vessel narrowly escaped sinking. *The remaining portion* appears to have passed into the chain cable locker from whence it exploded upon *three metallic bolts leading through the bottom and side under water, without doing any injury to the planking or timbers.* On examining the vessel in the dry dock, the copper sheathing over one of these bolts was raised up like the bulge of a teakettle, and over the others was forced open and ruptured; one of the rents was about eight inches in diameter."

Many naval officers and others inspected this vessel whilst in the dock, so that no doubt whatever remained of the passage of the electrical discharge by the bolts into the sea in the way above stated, without any effect on the *planking* or *timbers of the vessel.* This instance, therefore, is nearly similar to the former, and is another striking example of the passage of a heavy electrical discharge through a ship into the sea, by means of copper bolts; and without damage to the planking. Indeed, there is not to my knowledge any recorded instance of

damage by such transmission of lightning, where the bolts have had a sufficiently near contact with the sea, and which is the essential condition of safety. That damage should arise above water, and in places where the bolts are at a great distance from the water, is not only certain but consistent with the laws of electricity. Detached metallic bodies in such circumstances, are really little better than insulated conductors, and cannot possibly afford protection.

12. With these conclusive examples before us, it seems unnecessary to go into the detail of other cases bearing on this point, or, to amplify the arguments in defence of the position I have taken. It may be, however, not improper to observe that, even in the case of this ship under our immediate consideration, viz. the Underwood, we *find no damage whatever arising to the floor timbers sixteen inches at least thick, through which the bolts were driven; and on the larboard side, where the greatest quantity of electricity passed, no sort of defect whatever up to the termination of the bolt in the tarred paper covering the bottom*, thus coinciding completely with the course of nature, as exemplified in every other similar case.

13. The critical observer will, therefore, be reasonably led to inquire, why the alleged damage to the planking on the larboard bilge should be a solitary exception to the general law of electrical action? He will be led to ask, what good reason can be assigned for damage not having occurred on one side, as well as on the other? *Why it should have happened on the side least affected by the discharge in its course?* And if he cannot obtain any satisfactory reply to such inquiries, he will naturally begin to doubt whether this be really an exception to the course of nature, and whether it might not be possible that the defect in the planking said to have been produced by lightning might not, after all, have been the result of other causes; and he will be the more inclined to believe this, when he further observes that the defect in the planking of this ship exhibited to the public as the effects of lightning *is totally unlike every action of free electricity, of which we have any cognizance*. Finally, his suspicions will be very completely confirmed, when on further examination he discovers that not only is the defect in question totally unlike any of the known operations of lightning; but is perfectly similar to the appearances commonly observed after driving out copper bolts from the planking in which they had been long embedded.

14. I have, through the kindness of my friend Mr. Fincham of her Majesty's Dockyard at Chatham, now in my possession many specimens presenting precisely similar appearances to those in the planking in the Underwood: any one who carefully examines the specimen from the Underwood, at the United Service Institution, will not fail to perceive, that instead of long fibrous rents, indicative of the expansive and shivering effect of lightning we merely find a case in which a bolt probably ill-driven at first, had for the purpose of removal been driven back with its rough head, making the hole of larger dimensions than the bolt, the hole on the inside of the plank being, as the shipwrights would say, squalled inwards, and the bolt itself exhibiting the common effects observed in a hundred other cases. Mr. Fincham, who carefully examined the planks and bolts deposited at the museum, has done me the

honor to transmit to me the following communication; and as his opinion must be necessarily more entitled to confidence than my own, he being an experienced master-shipwright in her Majesty's service, of acknowledged ability and talent, and long standing, I take the liberty with his permission, to quote it: he says—

"When in town a few days since, I examined the plank at the United Service Institution, said to have been taken from the bottom of the barque Underwood, and damaged by lightning. I had been anxious for some time from the reports I had heard, to examine this case. This I have now done minutely, and feel convinced that the defects I saw were not the result of lightning, but were produced by the driving in and out of the bolt. Part of the supposed injury was evidently produced when the bolt was *first driven*. It had been clenched at that time on a ring; some pitch or other non-conducting matter had been probably placed over the bolt in the bruised part, to make good the defect; so that when the lightning passed out by the bolt, which there can be no doubt of, this substance was forced out with the tarred paper at the time of the rupture of the copper sheathing in the wake of the bolt. The soft and bruised part of the wood has not the least appearance of wood damaged by lightning, but is precisely the same as we commonly find on driving out bolts from her Majesty's ships when bruised by the maul or drift bolt. It appears to me that the bolt was started inwards when it was got out, and that the ragged part of the head bruised the wood. Neither do the two bolts at the museum, left with the plank present any appearance of damage by lightning whatever. The effects produced on them are very common to bolts which we are continually driving out from old plank, and which is the effect of corrosion or some chemical action between the juices in the wood, the chloride of sodium in the salt water, and the metal: at any rate, whatever may be the cause we very frequently find in driving out bolts in her Majesty's ships, precisely the same appearances; which at times are much worse than those left at the museum."

That the vessel should leak more freely after this accident as stated by Capt. Moffat, is by no means surprising, since the rupture of the copper sheathing would immediately allow the water to pass in under it; and if there had been any original damage of a minor kind produced, as Mr. Fincham thinks, at the time when the bolt was first driven, the general leakage would, by the displacement of the matter which filled in the defect, be still further increased; it would, in fact, be precisely what the commander, Mr. Moffat, describes it to have been. On the other hand, supposing the defect to have been the result of lightning, then it is quite impossible to conceive it could have been so small; it is quite contrary to all analogy to believe that a discharge of lightning which could shiver some of the masts of this ship, destroy the blocks, spring the mainmast, break the chain tyes in pieces; blow up all the covers of the pump cisterns and throw them overboard, and split a piece of the metal out of the starboard bilge pumps, should, when *concentrated* on two bolts, have, on one side where the greatest quantity passed, been productive of no damage whatever; and on the other have caused so little damage as to admit of the ship sailing (according to the *Shipping Gazette*) "2,000 miles after, without any one on board suspecting the extent of their danger." There could not possibly have been any compromise in the result here. Either the result would have been such as to have let the water into the ship immediately, and with great rapidity, by starting the butts and planking, as in the case of the merchant schooner Bezaleel above quoted, or otherwise the light-

ning would have passed as in the other case clear off. Now soon after the accident, the captain says in the report, that he "sounded the well and examined the hold," but found no water of consequence in either. Such are the plain facts of this interesting case, and I have, therefore, no hesitation in saying not only that the defect in the planking on the larboard bilge of the ship was *not* caused by *lightning*, but that the ship owed her safety to the conducting power of the bolts in question. The case, therefore, affords the strongest evidence in favor of capacious continuous conductors led from the head of the mast through the ship to the sea, for it may be readily conceived that if these long bolts could pass such a discharge of lightning as they evidently did through the floor timbers and planking of this ship, in all nineteen inches thick, without doing the slightest damage to them, and, as also observed in the other cases I have quoted; then we have only to conceive these bolts to be continued to the masthead, and safety would be equally insured *from that point*, thus completely verifying the deduction which I have so often insisted on; viz., that in the case of a ship protected by the means I propose, the explosive force of a flash of lightning would vanish at the masthead, the tension of the discharge would immediately fall when it struck on the conductor, and hence the safety of the vessel be insured.

Plymouth, April 9th, 1842.

On Wood, Lead, and Copper Sheathing.—*By Mr. J. J. Wilkinson.*

[From the Civil Engineers' Transactions.]

A very early instance of extraordinary attention to the preservation of the bottom of a vessel appeared in a galley supposed to have belonged to the Emperor Trajan, A.D. 98 to A.D. 117, which was found in the fifteenth century in the lake Hemorese (or Lago Riccio), in the kingdom of Naples, and was weighed after it had probably remained more than 1300 years under water; it was doubly planked with pine and cypress, coated with pitch, upon which there was a covering of linen, and, over all, a sheathing of lead fastened with nails of brass and copper; the timber was in a perfectly sound state.

In the reign of Henry VIII. large vessels had a coating of loose animal hair attached with pitch, over which a sheathing board of about an inch in thickness was fastened "to keep the hair in its place."

It is believed that the art of sheathing vessels was early practised in China: a mixture of fish oil and lime was applied; it was very adhesive, and became so hard that the worm could not penetrate it.

The sheathing the bottoms of ships with timber, appears to have been disapproved by the early navigators. In 1668, the officers of the fleet, then preparing under Sir Thomas Allen for an expedition against the Algerines, petitioned that their vessels might not be thus encumbered, as they were in consequence always unable to overtake the light-sailing unsheathed vessels of the enemy; the petition was granted, upon condition that precautions should be taken by cleaning the ships' bottoms very frequently.

In 1670 a patent was granted to Sir Philip Howard and to Major Watson, for the use of milled lead sheathing; it was not, however, introduced without difficulty; nor until an order was issued that "no other than milled lead sheathing should be used on his Majesty's ships." About the year 1700 the lead was acknowledged to have failed, and wood sheathing was again introduced.

In the 15th century, a boat thirty feet in length, was found in the Mediterranean, sunk in twelve fathoms water; it was built of cypress and larch. The deck was covered with paper and linen, and over all with plates of lead, fastened with gilt nails; this covering proved so impervious to moisture, that parts of the interior were perfectly dry. It is supposed to have lain there above 1400 years.

A Roman ship was also found sunk in the Lake of Nemi. Her hull was of larch; bitumen had been applied to the outside, over which was a coating of a reddish colour, and the whole covered with sheets of lead, fastened by gilt nails. The interior had a thick coating of cement made of iron and clay. The seams of the planks were caulked with tow and pitch.

Sheet lead was used in Spain and Portugal for sheathing ships, and for covering the rudders, long before it was employed in England. It was used in Holland in 1666, and at Venice in 1710.

It is probable that we are indebted to Sebastian Cabot for its introduction into England; it is stated in his Memoirs that he first saw it used in 1514; he was then in the service of the king of Spain, which he entered in 1512, and was appointed pilot major; he afterwards returned to England, and in 1553 was named by Queen Mary, "Governor of the Mysterie and Company of Merchant Adventurers, for the discovery of Regions, Dominions, Islands, and Places unknown."

Three vessels were fitted out for this purpose, under the command of Sir Hugh Willoughby, one of which was sheathed, or at least partly so, with thin plates of lead, then first mentioned as an "ingenious invention." This expedition was unfortunate; Sir Hugh Willoughby, with the crews of two of his ships, being frozen to death; one of the commanders, and his crew, alone escaped. This expedition was the origin of the trade to Russia, and of the Spitzbergen Whale fishery.

In the reign of Elizabeth a patent was granted to one Humphrey, for melting lead, but was afterwards recalled, the plan not being new.

It appears that, up to about 1670, cast sheet lead was used for sheathing; at that time milled lead was invented, and a patent for milling lead was granted to Sir Philip Howard and Francis Watson; by this process the inequalities, as well as the defects from air holes, in the former mode of manufacture, were remedied; the whole surface was rendered smooth and uniform, and the weight greatly reduced. This invention met with much opposition from the plumbers, who averred that it could not be durable; an offer was, therefore, made on the part of the Milled Lead Company, to keep in repair during forty-one years all milled lead of the weight of 7 lb. per square foot, at the rate of five shillings annually per each hundred pounds worth in value.

One of the earliest vessels in the royal navy thus sheathed, was the

Phœnix, a fourth rate. This was done at the express command of Charles II. This vessel made two voyages to the Straits, apparently for the express purpose of testing the new invention, and on her return in 1673, was careened at Deptford, and personally inspected by the King. An order was then issued that his Majesty's ships should in future be sheathed only with lead, excepting by especial order from the Navy Board. It appears that about twenty ships of the royal navy were consequently sheathed with milled lead, and fastened with copper nails.

Even the royal protection could not save this invention from cavillers, so that, in 1677 and 1678, complaints were made by Sir John Narborough and Sir John Kempthorne, that the rudder irons of the Plymouth and the Dreadnought were so much eaten, as to render it unsafe for those vessels to proceed to sea; these complaints were repeated in 1682.

The patentees maintained, on the contrary, that the damage to the rudder irons could not possibly arise from their being covered with lead, as it had been the invariable practice, for a great many years, to secure the iron work of ships, generally, by lead covering, and especially by capping the heads of their bolts, under water, with lead, seized to and nailed over them. Reports too in favour of the invention were made by Sir Phineas Pett, and by Mr. Betts, master-builder, at Portsmouth, in which the latter stated, that lead had effectually prevented the vessels becoming what is technically termed "ironsick," meaning that the bolt-holes became so widened by corrosion, that the bolts were loosened; he recommended, however, that the lead sheathing should be stripped every seven years, on account of the decay of the oakum in the joints; declaring, too, that it became less foul on the voyage than wood sheathing, and was much more easily cleaned. These different opinions led to the issue of an Order in Council in 1682, for the appointment of commissioners to examine and report upon the alleged injury to the iron work by milled lead covering; it is probable their report was unfavourable, as it is said that the use of lead covering, fastened with copper nails, was abandoned on account of the rapid corrosion of the rudder irons. A controversy appears to have arisen on this subject, the merits of which it would be difficult to ascertain after such a lapse of years. Government, however, subsequently determined to make another trial of the value of lead covering; accordingly, the Marlborough was so sheathed, and laid up in ordinary, at Sheerness. A few years after, she was docked, at Chatham, in 1770, when it was found that the lead sheathing was covered with weeds, and the iron fastenings very much decayed; the lead was in consequence removed, and a wood sheathing substituted.

Several patents were afterwards obtained for different mixtures of metal for this purpose, none of which seem to have succeeded, being all subject to the same inconveniences as the simple metal; among which was the influnce of the sun in the torrid zone, which was said to reduce the lead, in the course of five or six years, to a calx.

Among these patents, for mixed metals for sheathing, is mentioned that of Mr. Bulteel, in 1693; it was found to have all the inconveniences of lead. Mr. Donithorne, in 1780, obtained a patent for

sheathing, of a mixture of 112 parts of tin to 10 parts of zinc; this was also as objectionable as lead.

By an epitome of a return to the House of Commons; it appears that in 1839, into Swansea alone, there was imported 4350 cwts. of unwrought metal, and 419,604 cwts. of ore, and that there was exported during the same year, of British metal, 153,742 cwts., and foreign metal 112,830 cwts. Copper from Sweden is considered more malleable than that from Hungary; but the former is not so good as British metal, as it contains a portion of iron. The first recorded use of copper sheathing upon the "Alarm" frigate, in 1761; at that period it was believed that sea water had little action upon pure copper, and the rapid decay of the partial sheathing of certain ships was attributed to the impurity of the metal. Experience showed however, that pure copper, like that employed on the "Tartar," could be destroyed in the short space of four years, while the sheathing of the "Batavia," an old Dutch man-of-war, and of the "Plymouth" yacht, was perfect after 24 and 27 years' service; in both the latter there was an alloy of $\frac{1}{300th}$ part of zinc.

The use of copper sheathing is to protect the wood from destruction by the worm, and to prevent the adhesion of weeds, barnacles, &c. which impede the sailing of the vessel. On the first introduction of copper, it was used in conjunction with iron bolts and other fastenings; these soon oxidated, and serious accidents occurred. It was advised in consequence that all the bolts should be of copper or mixed metal. The attention of the Government was directed to the subject, and Sir Humphrey Davy was appointed to experiment upon specimens of metal of different qualities. He soon discovered that when two dissimilar metals are in contact, and immersed in sea-water, a voltaic effect is produced which occasions a rapid corrosion of the more oxidable metal, while the other remains uninjured. In 1824 Sir Humphrey Davy communicated to the Government that he had discovered a means of preventing the corrosion of the copper by rendering it electro-negative. This he proposed to effect by protectors of zinc, iron, or any other easily oxidable metal: after a number of experiments he determined that the protectors should consist of six bars of cast-iron, whose united surface should be $\frac{1}{250th}$ part of the area of the copper exposed to the action of the sea-water: two of them were placed midships on the keel of the ship, two on the bows, and two on the stern about three feet under water. As far as the philosophical fact was concerned, the result was conclusive, as the copper suffered no waste.

Inconveniences, however, arose which had not been foreseen: as the copper did not oxidate, its whole surface was speedily covered with barnacles and sea weeds, which collected in such quantities as to impede the sailing of the vessels, and adhering so fast that in removing them the copper was frequently torn away: the protectors were therefore abandoned, in 1826, for all vessels on service, but were still used for the ships lying up in harbour; the bottoms of these became, however, so foul, that, in 1828, the system was entirely abandoned.

After the protectors had been for some months on the ships' bottoms, it was found that on the outer surface a red oxide was formed, and beneath it, for some depth, a substance resembling plumbago; this

substance, having sulphate of iron for one of its constituents, when laid upon any inflammable body, caused spontaneous combustion: a similar result was obtained by Mr. F. Daniel in 1817, while experimenting upon cast-iron, by solution in dilute muriatic acid.

Protectors of various kinds have been tried in the French navy, and in the United States; but generally with doubtful success.

It appears that of the vessels which enter the Thames, one-fifth are sheathed with copper and its alloys; vessels at Liverpool, eight-tenths are coppered. The precautions for preserving uncoppered vessels from the "Teredo navalis" are then described: and coal-tar pitch is mentioned as the most effective substitute or sheathing.

Copper sheathing appears to be entirely neglected for vessels in the coal trade, although it is singular that the "Teredo" is found in every port to which coals are carried, south of the Tees; in the Thames, as high up as Gravesend, and northward as far as Whitby. Traces of the ravages of the "Teredo navalis," and of the "Limnoria terebrans," have at various periods been found, from the north of Scotland and Ireland; on almost every coast to the Cape of Good Hope and Van Diemen's Land, in the Eastern hemisphere; and in the Western hemisphere, from the river St. Lawrence to Staten Island near the Terra del Fuego, almost in the Polar Sea; so that although this maritime scourge is rifest in warm climates, yet cold latitudes are not exempt from it.

[Galvanic electricity being favorable to life, in direct opposition to that obtained from the machine by friction, satisfactorily accounts for the barnacles and seaweed collected by Sir Humphrey Davy's protectors. With respect to the Colliers, the perpetual working they are subject to, may produce sufficient disquietude for the operations of the teredo.—ED.]

NOTICES OF JAPAN.—No. V.

(Continued from p. 334.)

THE voyage from Kiusiu affords little worth dwelling upon; except, indeed, the measure which, in 1822, when contrary and tempestuous wind so unusually prolonged the passage, the Japanese sailors adopted, in order to obtain favorable weather. These and their result are too national to be omitted. The mariners flung overboard a small barrel of sake, and a certain number of copper coins, as a sacrifice to the god Kompira.

The money of course sank, and thus it is to be hoped found its intended way to the deity it was destined to propitiate; but the barrel floated, and was picked up by some fishermen. Does the reader suspect the finders of drinking this favorite and readily-intoxicating liquor? He would do them great injustice. They well knew the meaning of the act, and honestly carried the offering to the proper temple.

Upon landing to begin their journey across Nippon, the travellers find palanquins and all other requisites, in lieu of those left at Cokura, and

set forward. The first place of any note that they reach is Ohosaka, one of the five great imperial cities, and a chief emporium of internal trade. But although the travellers rest here a day or two, they are not allowed to see anything on their way to Yedo. The numerous visits they receive, especially from physicians and their patients are all paid underhand. Even the presents destined for the governor of Ohosaka cannot now be offered, but are left in deposit in the town, to be given when the giver, having had his audience of the siogoun, shall be authorized to show his liberality. The only lawful use they can make of their sojourn is to order goods to be manufactured for them against their return.

A journey of a day and a half brings the party to Miyako, the nominal capital of the empire, as being the seat of the daïri or court of the autocrat mikado. Here, likewise, they are allowed a brief rest, yet are more strictly immured than at Ohosaka, and more numerously visited, for the most part underhand, but openly by the secretaries of some official personages, with compliments of welcome. The presents provided for those grandees at Miyako who are entitled to them are left, as in the former case; a passport is obtained from the grand judge, who resides here as the siogoun's representative at the mikado's court, and the longest and most arduous portion of the journey begins.

Between Miyako and Yedo, the nobles of the country, with their troops of attendants, are frequently met; and after some days' travelling, occasionally a prince, with his host. The princes avoid passing through Miyako, where every member of the daïri is esteemed their superior.

The Dutch caravan gives way only to princes; and it is somewhat remarkable that no mention is made of inconvenience of any kind from the collision of such large bodies of travellers, either on the road or at the inns: a consequence, it might be supposed, of much previous arrangement and great uniformity in all their proceedings, did not the casualties of a sea-voyage oppose this idea.

Half-way between the two capitals is a shallow lake, on the western shore of which stands the town of Araye, the station of the great Yedo guard. So important is this post esteemed, that the prince in whose dominions it lies, and whose troops furnish the guard, is almost invariably a member of the Council of State. No one may pass Araye, towards Yedo without the grand judge's passport. No woman can pass without the most especial permission; and, therefore, besides the examination of their papers and baggage to guard against contraband goods, travellers are obliged to submit to a personal inquest, lest a woman should be smuggled past in male attire; a crime, the perpetration of which would infallibly costs the lives of the offending woman, her male companions, and the guards whose watchfulness had been thus deceived. Why such watchfulness is exercised upon persons going to Yedo, is, however, nowhere explained; the avowed object of the regulation being to prevent the escape of the wives of princes, governors, and other men high in office, whose families are detained at court as hostages for the fidelity of the husband and father.

When every form has been gone through, a vessel belonging to the prince, but bearing for this occasion the Dutch flag, carries the whole

party across the lake. The next day they are ferried over the rapid river Tenriu, the sand of which is full of gold-dust, which, Fischer says, the Japanese do not understand the art of separating from the sand—a strange piece of ignorance in a nation whose skill in metallurgy is highly praised!

But a river which, without gold-dust, is much more renowned in Japan, is the Oye gawa, which they cross the following day. This river has too much of the torrent character to bear a bridge or a ferry-boat. It is accordingly passed by fording; an operation rendered dangerous, as well as difficult, by the unevenness of the bottom, which is thickly strewed with large blocks of stone. Upon the banks are stationed persons, whose business it is to conduct travellers across. These people are responsible for the safety of men, beast, and baggage; and the number of guides to attend upon each, as well as their remuneration, is fixed by law, according to the depth of the water. The bed of the river is about a quarter of a mile broad, of which, when Fischer crossed, the stream occupied not more than fifty feet, whilst the water reached to a man's breast. It need scarcely be added that, after heavy rains, that river is often unfordable, and travellers are delayed very many days upon its banks. Our party experienced no such inconvenience, but from twelve to sixteen men were required for every norimono, and the pedestrians were carried over on the shoulders of the guides. The celebrity of the Oye gawa has been already noticed, and it will be enough to add that this river affords to Japanese painters their favourite landscapes, to their compatriot poets and aphoristic moralists, their favorite metaphors, similes, and illustrations. In these respects, the river is emulated by the mountain Fusi, the next remarkable object. This mountain (the elevation of which has been estimated, but* without giving any authority for the measure from actual observation, at ten or twelve thousand feet,) is by far the loftiest in Japan, and always crowned with snow; on account of which, and of the high winds reported to prevail on its summit, a pilgrimage to its highest peak—the ascent to which, Thunberg says, occupies three days—is considered a meritorious act of devotion. This pilgrimage is particularly incumbent upon the yamabosi, who, although not prohibted marriage, may be regarded as a description of monks. They live a sort of hermit life, devoted to religious exercises and superstitious practices of different kinds. Their daughters are the mendicant nuns, of whom mention has been made.

To return to the mountain. Fusi was formerly an active, and peculiarly dreaded volcano; but so long a period—upwards of a century—has elapsed since its last eruption, that all apprehension of its terrors has subsided, and the rich and lovely adjacent region is enjoyed in security. The mountain itself is described as singularly beautiful, as well as bold in character, and commanding admiration from the first moment that it is fairly seen, at a distance of two days' journey. The

* Parker's Journal of a voyage to Japan. The authority for the estimated height of Mount Fusi was Capt. Ingersoll of the ship Morrison; it was but little more than the shrewd guess of an experienced navigator; according to the chart, the ship at the time was about forty miles distance from the mountain. By the same authority, it lies in lat. 33° 50′ N., and long. 139° 05′ E., in the southern part of the peninsula principality of Izu. Its common name is Fusi san, and without dispute its appearance is, as a Japanese notice of it says, "not at all mean, but very magnificent."

road running along its foot affords, during a considerable time, a view of its sublime beauties; and at the village Motoichiba, whence it is seen to peculiar advantage, a peasant hospitably offers the traveller an entertainment, the principal dish of which is a preparation of sake, with snow from Fusi, bearing some resemblance to the ice-creams of Europe. The peasant's hospitality is rewarded by the present of a Japanese gold coin, called a koban, and worth £1. 6*s*. 6*d*.

Soon after leaving the vicinity of this, often-painted and often-sung, extinct volcano, the Dutch deputation begins the toilsome ascent of another mountain, or mountainous ridge, which must be crossed. It is called Fakone, and is said likewise to offer splendid views of mingled fertility and savage nature. At a spot offering the most admired of these, an establishment is prepared for the reception of travelling grandees, where tea, confectionary, and other dainties, are served up by beautiful damsels. Upon this mountain, another guard is stationed for the prevention of unlawful ingress and egress into and out of Yedo; and a curious anecdote is told by M. Titsingh in his Annals, of a trick put upon this guard at Fakone, and the combined artifice and violence by which the fearful consequences of that trick were obviated.

"An inhabitant of Yedo, named Fiyozayemon, a widower with two children, a girl and a boy, was called to a distance by business. He was poor; he knew not how to provide for his children during his absence, and resolved to take both with him. Accordingly, he dressed his daughter in boy's clothes, and thus passed the Fakone guard unsuspected. He was rejoicing in his success, when a man, who knew what children he had, joined him, congratulated him on his good luck, and asked for something to drink. The alarmed father offered a trifle; the man demanded a sum beyond his means; a quarrel ensued, and the angry informer ran back to the guard to make known the error that had been committed. The whole guard were thunderstruck. If the informer spoke the truth, and the fact were detected, all their lives were forfeited; yet, to send a party to apprehend the offenders, and thus actually betray themselves, was now unavoidable. The commanding officer, however, saw his remedy. He delayed the detachment of reluctant pursuers sufficiently to allow a messenger with a little boy to outstrip them. The messenger found Fiyozayemon and his children refreshing themselves at an inn; he announced the discovery made, and the imminent danger; offered the boy as a temporary substitute for the disguised girl, and told the father that, when the falsehood of the charge should have been proved by both the children appearing to be boys, he might very fairly fly into such a rage as to kill his accuser. The kind offer was, of course, gratefully accepted. The wilfully dilatory guard arrived, surrounded the house, seized upon Fiyozayemon and the children, and gladly pronounced that both the latter were boys. The informer, who well knew Fiyozayemon's family, declared that some imposition had been practiced, which the accused indignantly resenting, he drew his sword and struck off the informer's head. The delighted guard exclaimed that such a liar had only met his deserts, and returned to their post; while the father, received back his daughter instead of the substituted boy, went his way rejoicing."

On the forty-eighth day from leaving Dezima, the deputation of which Overmeer Fischer, when secretary of the factory, made one, arrived at Kawasaky, within a short distance of Yedo.

"We more and more plainly perceived," he says, "that we were advancing into the neighbourhood of a large town; bustle of all sorts, numerous retinues, the size of the houses of entertainment, even some little diversity in dress and manners, distinctly proclaimed it; and, in the evening, we were surprised by the appearance of Sazyuro, the interpreter, then resident at Yedo, who came with one of his friends to bid us welcome. The landlord of Nagasakkia, as the abiding place of the Hollanders at Yedo is called, likewise visited us here, to pay his compliments. By daybreak of the 27th, all was commotion and hurry, every one busy alike. Attired in our best clothes, we quitted at nine o'clock in the morning, crossed the Rokfugo gawa, and at half-past eleven entered Sinagawa, the western suburb of Yedo, amidst a frightful concourse of people.

"Here we were necessarily detained for some time, in order to await a number of visits from friends and acquaintances, who came to welcome the chief police-officer and the interpreter, as well as ourselves. At about two o'clock, we again set forward, and passed the palace of the prince of Satzuma, who, in the year 1818, had visited the opperhoofd in person. Our train was preceded and accompanied by soldiers belonging to the town, chiefly for the purpose of preserving order. The streets were so thronged with men, that we could scarcely see anything of the houses; and although our escort very palpably repelled the people, that did not prevent our bearers from being inconveniently crowded. We passed along wide streets, on both sides paved with stone, and, as in other towns, formed by regularly built houses. We saw here very large edifices and shops, the latter protected regularly by awnings. In front of these shops, and of every place where goods were on sale, stood a number of lads, who recommended the goods, emulously clamouring in order to draw the attention of passers-by. Here as in England, much is thought of signs and inscriptions over shops, and although there are here no carriages to increase the noise and tumult, I can compare the hurly-burly of Yedo to nothing but that of London.

"Long ere we entered Sinagawa, we were already moving amidst the thronging of an unnumbered multitude, and along wide streets, all of which may be reckoned as part of the town; and, from the suburb to our residence, we were full two hours on our way, proceeding at a steady pace, rather faster than usual. Nagasakkia lies close to the imperial palace, which is situated in the centre of the town, and estimated to occupy an extent of ground measuring half a mile in diameter, from which calculation we must reckon the diameter of the town at five or six hours' moderate walking."

(To be continued.)

The Naval Transport.

On the 19th of March, 1828, the navy transport, John Bull, having on board 200 soldiers of the 73d regiment, with their wives and children, also a few invalids from the South American squadron, left Rio de Janeiro for England with a light land breeze; and, as customary on such occasions, under tow of the boats of the ships-of-war in port, viz., Brazilian, French, American, and English. Towards sunset of the following day we lost sight of Cape Frio.

On the 31st we crossed the line, and soon arrived in the region of calms and light variable winds, having encountered nothing but the ordinary incidents of a sea voyage. During the whole of the 3d and 4th of April, we had squally weather, with showers of rain; but towards the evening of the latter day it cleared off, and a fine starlight night overhead ensued, though it was still hazy on the horizon. We were sailing with a moderate breeze and smooth water on the starboard tack, heading about north, when, at half-past eight the officer in charge of the deck came into the state cabin, and reported that a ship was hailing us. We all ran on deck, for being in the track of outward bound vessels, we anticipated news from England.

"Where is she?" asked the captain. "Ship ahoy!" was heard, and the sound came from to-windward. A light was immediately shown over our weather gangway; the mainsail was hauled up, and the main yard backed.

Nothing, however, could be seen of the expected ship. The captain and agent ordered silence fore and aft; for everybody had by this time assembled on deck,—soldiers, sailors, women, and children. "Ship ahoy!" was again heard distinctly by all hands, and the captain answered loudly "Hallo!" as did also the agent. A dead silence was kept, every one listening for the next hail, which was of course expected to be "What ship is that?" "Ship ahoy!" was again heard, and "Hallo!" returned by several voices. Still nothing was seen.

"It is very strange; where can she be?" exclaimed the captain. The agent thought she must have passed us. Every individual began to be a little excited, when some one on the poop gave his opinion that it might be a piratical vessel about to board us. The hint was taken: the troops were immediately ordered under arms, and to load muskets; the guns were also cleared away and double-shotted. Silence was then ordered; the same "Ship ahoy!" was again heard, and the sound still came from to-windward.

The chief mate presently suggested that the voice might proceed from some persons on a raft, and volunteered to go round the ship in a boat to ascertain the fact. The boat was accordingly lowered, and the chief and second mates, with the boat's crew, all armed with a sword and pistol, rowed round the ship at some distance.

During the time the boat was away, the same sound was repeated, though less audibly, and this fact, while it gave the opinion of the chief officer an air of probability, served to abate the excitement of the crew.

After a short interval the boat returned, and reported they could neither hear nor see anything. As the mate communicated this aloud

to the captain, the buzzing of voices ceased, each being anxious to learn the result. Again in the midst of the general silence was the hail "Ship ahoy!" heard, still less audibly than before. A minute or two after it was heard louder and much closer. The order was given to "Shoulder arms," and to "make ready the guns."

It would hardly be possible for the mind to picture to itself the degree of excitement which at this moment pervaded the breasts of the many persons assembled on the deck of the transport. Upwards of an hour had elapsed since they had hove the ship to, with perfect darkness around them. During that time they had been frequently hailed, yet nothing could be seen of the stranger. The women screamed or fainted, the children joined their little voices, and a feeling of superstitious awe crept over every one.

At this moment the cabin-boy, who had been near the mainmast, stepped aft to the chief-mate said, "Its a fowl in the hencoop, Sir, a-making that noise." The mate, somewhat enraged, gave him a hearty box on the ear for his information; but immediately recollecting that he had on several occasions observed him to be a shrewd lad, he accompanied him to the hencoop with a lantern; in it he saw a fowl lying on its side. He heard it make a noise, withdrew it from the coop, and placed it on the capstan; and there, in view of each warrior was a poor hen dying of the croop, occasionally emitting a sound which may be thus written "*ee-a-aw*," and which sounded as much like "Ship ahoy!" as any hail that I ever heard.

ARGUS.

THE VARIATION OF THE COMPASS.

(Continued from p. 347.)

Royal Observatory, Greenwich, May 10, 1842,
Magnetical and Meteorological Department.

MEAN MAGNETIC VARIATION FOR MARCH 1842—23° 10′ 39″.

MEAN MAGNETIC DIP FOR MARCH 1842.

At 9 A.M.	At 3 P.M.
68° 27½′	68° 32′

G. B. AIRY, *Astronomer-Royal.*

THE RIVER GUAYAQUIL.

IN the *Comercio* daily paper of the 18th of December last, published at Lima, we find our enterprising countryman, Mr. Peacock, busily employed in forwarding the interests of navigation and commerce on the shores of the Pacific. By an advertisement it appears that the two boats, Peru and Chili, maintain a line of steam communication between Valparaiso and Guayaquil touching at the Intermedios, or all the intermediate ports, one of which vessels is under the command of Mr. Peacock. The following extracts communicate the important intelli-

gence of a lighthouse being most advantageously established at the mouth of the Guayaquil river, and three buoys laid down on some important shoals.

Pacific Steam Navigation Company's steamer Chili,
Guayaquil, 26th November, 1841.

SIR.—I have the honor to inform you that after embarking the lighthouse frames, iron work, lanthorn, &c., on a Balsa, on the 19th inst., we took it in tow in the Guayas steamer, and proceeded to the island of Santa Clara, (or Amortajado,) where we arrived on the evening of Sunday last, and with very great difficulty, owing to a heavy surf, succeeded in landing everything by Monday night.

Having superintended the laying of the foundation, I proceeded in the Guayas to the Payana shoals, leaving the prosecution of the work in the hands of Capt. Rojas and Mr. Girdon, and during Tuesday laid down a black buoy, bearing a staff and ball fifteen feet high, off the extremity of the outermost and most projecting spit, the position of which, together with that of the lighthouse and the other buoys, I beg to hand you herewith annexed.

We anchored off Mr. Cope's house at Punta Española on Tuesday evening, completed our water for the use of the island, and took off the two white buoys left here by Capt. Rojas in the Diligencia by midnight. On the following morning whilst Capt. Doyle was supplying the steamer with fuel, I visited the top of the Cerro Mala in company with Mr. Cope to observe the best stations for telegraphs, and to examine the nature of this part of the island of Puna geologically, and from what I saw and examined I am led to believe that coal exists there. I have pointed out to Mr. Cope the spot where I consider the most likely to find a vein, which that gentleman intends searching for without loss of time. The best places for telegraph stations I have enumerated in the appendix.

I take this opportunity of stating, that I consider Punta Española a place well adapted for steamers, or other vessels getting supplies of fuel and water, which are of the best description; and a wharf or mole may be easily constructed.

We left Punta Española on Wednesday at 2 p.m., and placed one white buoy on the north-east spit of the shoal (called in Spanish Bajo Mala), and then proceeded to look for the shoal said to exist off Punta Arenas, which, after a great deal of trouble, time, and patience we had the good fortune to find, and laid down the other white buoy off its south-east extremity. This is a very dangerous shoal, and I should strongly recommend that whenever an opportunity offers a Balsa should be moored on the spot the buoy now occupies, carrying a light elevated fifty or sixty feet above the level of the sea, and the buoy removed to the middle of the Mala shoal. I should likewise recommend that a black buoy should as soon as possible be placed on the spit of the shoal lying off the mouth of Balao river; one also on the shoal lying one mile and a half east of Punta Mandinga, (or Puna bluff,) which is sometimes dry; and another black buoy close to the west side of the sunken rock lying off Punta Piedra, which would complete the naviga-

tion of this noble river, and render it safe and secure. Whenever the trade of the port shall warrant it, a revolving light on Punta Mandinga (or Puna bluff,) would be very serviceable to lead vessels up to Puna in the night.

We returned to the island of Santa Clara, or Amortajado, on Thursday morning, and at 5 P.M., the frames being all up, we had the honor to drink your Excellency's health, and success to the Republic of Ecuador; and the flag of the nation being at the same moment unfurled from the top of the lighthouse, it was immediately saluted by the guns of the schooner-of-war Diligencia. The light will be permanently lit on 1st of December next.

As all our energies have been directed to the erection of the lighthouse, which, to carry to the top of the hill was a work of great labour, no search has been yet made for the vein of coal or water; but I beg herewith to hand you further specimens of what I procured from a stratum of carbonaceous schist, last evening, about one hundred feet above the level of the sea, and I set four men to sink a pique (shaft) before I came away, in a spot I think likely to strike the vein. I have much pleasure in stating that I have received the greatest assistance from Capt. Doyle, Capt. Rojas, and Mr. Girdon.

I have the honor to be,
Your Excellency's most obedient servant,
GEORGE PEACOCK.

To Vicente Rocarfuenta, Esq., Governor, &c.

BEARINGS, DISTANCES, &c., OF THE LIGHTHOUSE ON SANTA CLARA, AND THE BUOYS.

The lighthouse is erected on the breast of the island of Santa Clara, or Amortajado about one-third from the head, it showed a fixed light about 230 feet above the level of the sea, having ten Argand burners with burnished silver reflectors visible in every direction, except from N. ½ W. to N.b.E.; and should a vessel approach too near the island in a southerly direction, it will be shut in with the edge of the cliff. Its most brilliant face extends from W.N.W. to E.N.E. by the south, in which directions it will be seen in clear weather from five to six leagues off. It bears from the beacon buoy of the Payana shoal W. by N. ¾ N., ten miles; from the south buoy of the Bajo de Mala, (or Arenas shoal,) S.W.b.W., twenty-five miles.*

From a fair distance off the south point of the island to the south buoy of the Bajo de Mala white, the course is N.E.b.E. From this buoy steer N.E.b.N., ten miles, and then N.N.E., five miles to the north buoy of the Bajo de Mala, white, taking care not to come into less than four fathoms water. From this buoy you may keep right for Cape Mandinga, (or Puna bluff,) N.b.W. East from this bluff, one and a half miles, lies a dangerous shoal, which is sometimes dry at low water. Near the bluff the water is deep.

* The long tongue of shoal ground extending from off Punta Española to off Point Arena may all be termed the "Baxa Mala," (as the channels through,) opposite Puna Vieja, formed by a middle ground, are only fit for small vessels.

The buoy of the Payana spit, black, with a staff and ball, lies in four fathoms and a half low water, with Point Tembleque bearing S.S.W. $\frac{3}{4}$ W.; bluff of trees on islet in Chupador Islet S.S.E.; extreme point of a sandy point E.b.S.; Lighthouse on Santa Clara W.bN. $\frac{3}{4}$ N.; Starboard point of Chupador entrance S.b.E., about two cables' lengths from the nearest breaker at low water, and about two miles and a quarter from the nearest land.

South buoy of the Bajo de Mala, or Point Arenas shoal, white, lies in four fathoms, low water, with the termination of the trees on Point Arenas bearing W.b.S. $\frac{1}{4}$ S.; peak of Cerro de las Animas W. $\frac{1}{2}$ N.; Cerro de Mala N. $\frac{1}{4}$ E.; and Point Puna Vieja N.W.b.N. North buoy of Bajo de Mala, white, lies in four fathoms sand, with Mr. Cope's summer-house on the hill, just shut in with the sandy bluff of Punta Española bearing W.b.N.; and the west point of Mondragon Island a ship's length open of Puna Bluff, bearing N.b.W.; and Cerro de Mala W. $\frac{3}{4}$ S. From this buoy a direct course may likewise be shaped to Punta Española, and vice versa, and it points out the entrance of both channels. The white buoys must be left on the larboard hand, and the black on the starboard in sailing up the river.

Vapor Peru.

Para Guayaquil tocando en los puertos de Huacho, Casma, Santa Huanchaco, Pacasmayo, Lambayeque y Paita.

El hermoso paquete de Vapor Perú su capitan Eduardo Pinnix, saldrá el martes 21 a las 8 de la manana sin falta. Los pasajeros deben estar a bordo a las 7 de la manana. Ningun equipaje será recibido a bordo que no vaya bien marcado con el nombre de su dueno y el lugar de su destino. Para pasage ò flete veanse con

Templeman & Bergmann.

El Vapor Perú debe salir de Guayaquil en su regreso el dia 30 tocando en todos los puertos, y debe llegar a Payta el 31, a Lambayeque y Pacasmayo el 1. °, á Huanchaco y Santa el 2, á Casma, Huacho y Callao el 3.

Vapor Chile.

El Vapor Chile, su capitan Jorge Peacock, saldra para Valparaiso el Lunes 27 del presente a las 2 de la tarde sin falta tocando en todos los puertos intermedios de costumbre, para pasaje ó flete veanse con

Templeman & Bergmann.

Todos los pasajeros deben estar á bordo á la una y media del dicho 27. Ningun equipaje será recibdo á bordo que no vaya bien marcado con el nombre de su dueno y el lugar de su destino.

Pacific Steam Navigation Company's steam-vessel Chili.

Panama, 18th Feb. 1848.

Sir.—Of course you heard all about the unfortunate accident of the Chili; it was a sad blow for poor Pinhorn, it being his first voyage in

command, and you may suppose what an undertaking it was for me to heave down a vessel of such magnitude and construction, in an open roadstead, to say nothing about taking the engines out, and putting them on board a hulk in a sea-way, the pumps going all the time, night and day, without intermission. As I consider the mode I adopted to get the vessel's keel out somewhat original, I will endeavour to give you an outline of my proceedings.

Having taken out the engines and shored up the boilers well, and taken all the other weights out of the vessel, I secured the masts well by out-riggers and extra shrouds, and lashed a four-fold 24-inch purchase-block to each masthead. I then procured two line-of-battle ships rough topmasts (New Zealand spars of twenty-four inches square), and erected them sheer fashion, with both heels resting on the side to be hove down, immediately over the paddlebox beams at the gunwale; the head secured to the opposite paddlebox beam ends, by four chain cables of 1½-inch, all equally tort, and the head of the sheers plumbing the ship's centre. To the head I lashed two more 24-inch blocks, and rove four falls of 7½-inch. I next bulk-headed the poop front on the side to be hove down, and caulked it; the forecastle the same; but as the poop from its size, as compared with the forecastle, I knew would displace more water as it became hove under, and consequently would prevent the fore part from coming out square with the after part, I drove ring bolts through the side at the water line, before the paddle box, and lashed a spar along, to which I fixed a number of large 300-gallon oil butts, equal to the difference of displacement.

Having fixed the necessary capstans on board the hulk, I had the topsides, windows, and scuttles, &c., caulked in, and placed relieving tackles with chains round the hull. With 120 men we hove her keel out, planked up the fractures, and stuffed a large quantity of oakum and candles into the numerous holes that presented themselves; after which, on easing her up she was comparatively tight, and after building a water-tight bulkhead across the fore peak, I put the engines in again, and took her to Guayaquil. The carpenters pronounced it a miracle that she could have been brought down. It was a greater miracle how she escaped destruction after striking on the horrible reef, going at the rate of ten or eleven knots. If I had not taken her in hand she would have been abandoned to the underwriters. Every one at Valparaiso declared I must be mad to think about heaving such a vessel down, and I took all the responsibility on my own head. I succeeded in spite of one of my purchase-falls giving way; a new rope! but we had it *stoppered* in time.

I do not think I have given you a correct idea now, of the application of my sheers. When I speak of the head being secured with chains, I mean that the chains were secured to the sheer heads, and thence to the ends of the opposite paddlebox beam ends, serving as backstays to the sheers, and transmitting the power of the lever to the strongest and widest part of the vessel in the act of heaving down. I believe this is the first steamer that was ever hove down, at least keel out, and I think I would scarcely venture to heave down another.

You will be pleased to hear that the Company is in a very flourishing state. The last voyage of the Chili, or rather first voyage I may

say, we grossed nearly 18,000 dollars in a month, which would leave a clear profit of 2000*l.*; and I think we shall even do better yet, but we want more steamers, and larger ones. I hope to see six more out before two years are over. It is one of the soundest speculations ever proposed, and although we had a thousand difficulties to contend with, things are now looking well, and people have the greatest confidence in steam. It is a delightful coast for steamers. This is a sort of experimental trip to Panama, as the line for us with two steamers is between Guayaquil and Talcahuano until we get out other boats.

The coal mine I am working, is yielding beautifully. We have now worked several thousand yards of galleries, and got out nearly 4000 tons of coal, which answer our purpose very well, as the coal does not cost us more than three dollars per ton. I never tried my hand at this work before, but having resided some years at Sunderland I found my little knowledge, there acquired, very serviceable. We had likewise to teach the natives how to work it, for no mine had ever been worked there before. I left one of my stokers as foreman of the work, with directions how to proceed, and as he is rather an intelligent man, we are going ahead famously. I am now building a pier, and making a railway from the mouth of the mine to the extremity of it, so as to save carriage by bullocks, which is very expensive.

Since the Peru left England she has gone over 50,000 miles, and grossed in fourteen months, including the passage out, in all 120,000 dollars, a most excellent beginning. The increased rate of earnings is extraordinary during the last three months. At the request of the proprietors here, I have taken the command of the Chili, to try and change her luck, and have had the good fortune to make an excellent beginning.

I remain, &c.

GEORGE PEACOCK.

To the Editor, &c.

VOYAGE OF H.M.S. CORNWALLIS,

From Hong-Kong to Chusan against the North-East Monsoon, in the Winter of 1841-2.

CANTO THE FIRST.

I wrote to you last, my dear friend, from Hong-kong,
And our voyage to Chusan has not been very long—
If you only just take into consideration,
That the north-east monsoon causes much botheration:
Such reefing of sails, and such sailing by reefs,
And such currents to drift one, are past all belief.
The month was December, the day twenty-eight
When we sailed from Hong-kong at a deuce of a rate!
Four days took us into the Babuyan Isles,
When a gale drove us back about three hundred miles.
The ship is crammed full of shot, rockets, and bread,
And dived down so deeply she stove in her head:
To our caterer's great joy the pigs were all out,
For, if one had been lost he'd have set up a shout.
At last through the haze Formosa was seen,
Or, Tai-ouan (an isle off the coast of Fokien).

The ship was then shoved 'twixt Gadd's reef and Tobago,*
Where if you have luck, in safety you may go.†
We now were well out in the Western Pacific,
When a northerly gale made us all rather sea-sick.
(The last words I assure you are merely for rhyme,
For we've been out at sea a precious long time.
Seven *months* are now gone, since Old England we've seen,
And the *days* spent in harbour are barely nineteen.)
We then stood east by south for three days at the most,
And quickly regained the time we had lost,
For an easterly wind took us past Ty-pin-san
In two days exactly,—then was fair for Chusan.
This breeze took us on two days more in good style,
But again we were doom'd to be stopped for a while.
A north-westerly gale, (without current however,)
Taught us all once again, not to trust in the weather.
We stretched over at last, without striking a rock,
And anchored one night off Patch-he-cock.
From thence we had water quite smooth all the way,
And went up with flood tides in two days to Tinghae.
We here found our chief whom we'd been so long hunting,
From our masthead now floats, the "bit of red bunting."
The old Wellesley is here, (but soon bids us adieu,)
Also Pelican, Blonde, and a steamer or two.
The Blenheim has sailed with the great Plenipo;
The rest of the squadron are up at Ningpo.
There was pretty good fighting before we arrived,
But Celestials are not to be taken alive;
They fought very well—then took to their legs,
When they look'd at our shells, (which they call "devil's eggs.")
So here we are moored, just three weeks from Hong kong,
Which brings me to nearly the end of my song.

The Chinese are the funniest beggars I've seen,
With long tails and thick shoes, and are not very clean.
In fact they have much of the pole-cat about 'em,
For they smell very strong whenever you rout 'em.
They eat all sorts of dirt—rats, sharks' fins, and dogs,
Cats, lizards, and snakes, and mostly partial to hogs.
They call one a name, which signifies brother,
And we get on together well—somehow or other.
For coats—they wear bed-gowns, which mostly are blue;
Those, at least, that we've seen from Ting hae and Hang-choo.
We get plenty of rice, fowls, eggs, and chow-chow'
But no milk to our tea, though so near to *My-cow*.‡
We were fried in the summer, now we're frozen alive,
For the glass has been seen much below twenty-five.
The consequence is, that pea-jackets are riz;
But that must soon end, or we shall soon all be friz!
What is next to be done, I know no more than you,
But we hear 'tis intended to take Hang-choo-foo,
In six weeks or two months, when the cold's had its fling,
And then we all hope to go up to Nanking.
Should the sun and moon's brother not then cry "peccavi."
There'll be plenty more work for the army and navy.
I now come to a close—as left there is no line,
So believe me as ever, yours truly,

TOM BOWLINE.

* Off the south-east end of Formosa

† There was an old man of Tobago,
Who lived on rice, gruel, and sago;
The doctor one day,
Unto him did say,
To a roast leg of mutton you may go.

‡ Query—"Macao."—P.D.

Directions for entering Western Port, Australia, by the Eastern Entrance.

The eastern entrance of Western Port, formed by Cape Wollomai, the termination of Philip Island, on the westward side, and by the opposite point of the main land to the eastward, is little known and never attempted. It appears to have been known to and sketched by Flinders, who has placed it on his chart of the coast; but his ignorance of its importance as an anchorage, probably induced him to pass it over without that accurate survey which he bestowed on other portions of the coast; the depth of the channel is marked at one fathom and a half, a circumstance in itself sufficient to deter a navigator from attempting its unknown and insecure anchorage. From a survey, however, lately made by Mr. Kirsopp, R.N, when on his late expedition, in company with Mr. Morris, to the coal indications at Cape Patterson, it is ascertained that the passage at this entrance to the harbour at Western Port, is safe for vessels drawing fourteen feet of water; while under the shelter formed by Cape Wollomai, anchorage for the largest class of men-of-war exists, sheltered from all winds but the south-east. This anchorage is in the shape of a sandy bight, about a mile across inside of the western head, having from five to nine fathoms on a sandy bottom. Any ship bound to Port Philip, in a westerly gale, and unable to make the western entrance to Western Port, by which all vessels have hitherto availed themselves of its shelter, can bear up for and make this bight by rounding Cape Wollomai, in any weather, taking care to avoid the tail of the sand spit situated nearly midway between the heads, by keeping within about a mile of the island shore. As the bight is shallow, a vessel should anchor as close to the sandy beach as the depth of the water will admit, in order to experience the full effect of the shelter afforded by Cape Wollomai. As this point forms, with the main land, the entrance to this passage into the inner harbour, it will be necessary to describe the physical aspect of both headlands, previous to leading the navigator through the channel.

Cape Wollomai, the south eastern point of Philip Island, is a high granite bluff, with a small rock, over which the sea breaks one cable's length to the southward of it, sloping gradually to the Sand Hills, north-west of it, and known to the coasters as Schnapper Head, from its supposed resemblance to the snout of that fish. The eastern head is a sandstone cliff, about seventy feet high, with a rocky ledge stretching to the south-west for a quarter of a mile. The width of the entrance from seaward between these heads, is rather more than a mile. Vessels of the proper draught, wishing either to pass the channel into the basin of Western Port, or to avail themselves of the inner anchorage, which is to be distinguished from that described as lying under Cape Wollomai, will have to attend carefully to the following directions:— Passing Cape Wollomai, and arriving at the next point, which, forming the western head, must be kept aboard within a quarter of a mile to avoid the sand spit before described; the tail of the sand will be brought abeam as soon as the western head bears S.W. This spit not having more than four feet water upon it, indicates its position by the constant

surf. Arriving at this point, you should haul over to within a cable's length of the breakers, trending to the N.W. which will enable you to avoid the Shoal Patch off Rocky Point, which forms the N.W. or inner extreme of the sandy bight before mentioned. When the east head bears W.$\frac{1}{2}$.N. you will be inside of all hidden dangers, and may trust entirely to lead and eye in choosing your anchorage between Rocky Point and the inner heads. The following are the magnetic cross bearing of the northern edge of Shoal Patch—Rocky Point south eastern head, E.b.N.$\frac{1}{4}$.N. In order to proceed in security, and take your vessel into the basin of Western Port after clearing the inner heads, a look out must be kept from the masthead, as the mud banks, through which the channels wind, are too extensive and numerous for a hasty survey. —*Port Philip Gazette, 14th August,* 1841.

Rodger's Anchors.

In a recent number of the *Times* we observed among various items of naval intelligence, a statement of one of Lieut. Rodger's anchors having proved defective. It would have been but fair both to the makers and Lieut. Rodger to have stated at the same time that the anchor being short by 3 cwt., was submitted to a test beyond its power; and that, of upwards of 3,000 of these anchors already made, a defect in construction appearing once or twice, is no argument against the principle of the anchor. But in order to show that Lieut. Rodger's anchor can withstand the test in such a manner as anchors in general cannot, we will add the following.

Another Small-Palmed Anchor on Lieut. Rodger's plan, and manufactured by Messrs. Hawks and Co., has just been delivered at Woolwich, for H.M.S. Winchester, of 50 guns. It weighs 61cwt. 3qrs. 7lb. and underwent the usual tests. On supporting different strains up to 49$\frac{1}{4}$ tons, it did not appear to undergo the slightest alteration in its form, but an accurate measurement proved the deflection of the shank and the arms to be as follows, viz:—

With a strain of 20 tons, it deflected $\frac{5}{16\text{th}}$ of an inch; with 40 tons, $\frac{9}{16\text{th}}$ of an inch; and with the prescribed test of 49$\frac{1}{4}$ tons, only $\frac{13}{16\text{th}}$ of an inch, on being relieved from which latter it resumed its original form. This is a remarkable property in Lieut. Rodger's anchors, as many others of the usual construction, do not entirely recover their original form; and when it is considered that the measurement by which this is decided, is taken from the extremity of the arms to a point in the shank close to the stock, it will be allowed that the test is a tolerably severe one, and that an anchor to recover its straight shank, and the original curvature of the arms after bearing such a strain has a very remarkable property to say the least of it. The distance between these points in the present anchor was 9 feet 6 inches; so that the greatest deflection which it yielded did not exceed 140th part of its whole length, confirming in another point of view our opinion that, Rodger's anchor is superior to any other yet made.

Paddlebox Safety Boats.

R. N. Club, Bond Street, May 16th, 1342.

Sir.—Having always advocated the necessity, that all steamers employed in long voyages, should be fitted with the *Paddlebox Safety Boats*, invented by Captain George Smith, R.N.; I beg again to call your attention to a recent catastrophe, appearing in the Times, of the 13th ult. which proves, that although no legislative enactment has passed on this subject, it is high time, that something should be done, to insure a chance of safety to the crew and passengers, in the event of a similar danger.

The letter is from one of the survivors, and recounts the loss by fire, of the Madagascar Steamer, on the coast of China. A most melancholy tale it tells, of loss of life, and severe suffering: out of a crew of *ninety-nine persons, forty-two only, were by the interposition of Providence, very miraculously saved*, and it appears, that this perilous position of even the survivors, as well as those, that unhappily perished, was entirely owing to the *incapacity and smallness of the boats!*

Now, Sir, Captain Smith's boats, are *fine, strong, and capacious*, some of them, capable of carrying one hundred men, *being perfectly seaworthy*. As you did me the honour, on a former occasion, to publish a letter on the same subject, I trust you will oblige me by publishing this, as I consider your valuable magazine one of the best channels of communication on all nautical subjects.

I am, &c.,

Edward. H. Scott,

To the Editor, &c. *Captain, R.N.*

West India Mail Steam Packet Company.

It pains us much to be unable to say anything calculated to repress the growing conviction that this is a most perilous enterprise; not that there is anything inherent in the nature of the scheme to render it necessarily disastrous, but that the management is so supremely injudicious as would be fatal to any project, even the most promising. It is true, that this evil admits of a simple and obvious remedy, but the constitution of the human mind is such, that men prefer to attribute calamities to any cause except their own ignorance or indiscretion; and a fault once committed, is oftener defended than acknowledged. On this account, although the means of amelioration are attainable, our hopes of spontaneous amendment are but feeble; and certain it is, that the accomplishment of such a thorough reformation as the exigency of the case demands, requires much fortitude upon the part of the directors, as it involves the admission of past errors and the dismissal of every cherished prejudice and prepossession. It is right, however, that the opportunity of reformation should be afforded, and we are willing to render our best advice and assistance towards so happy a consummation. It would grieve us much, that any calamity should fall upon this most spirited and arduous enterprise. Such an event would operate most perniciously upon the whole interest embarked in steam navigation, and paralyze the spirit of commercial adventure in the same channel. Should no improvement have been carried into effect before next month, it is our intention to

enter into a thorough analysis of the character and management of this enterprise; and we are only prevented from doing so at once by the apprehension that our expositions might occasion such inconveniences as the obduracy of wrong-headedness alone deserves.

We entreat the respectable directors of this undertaking to give their immediate attention to this subject. Let them look to the dangers of their present position—dangers from which neither magisterial pomp nor inexperienced precipitancy can possibly save them. Was it ever before heard of, that the utmost skill and experience should be deemed unessential to the success of an enterprise of extraordinary magnitude and difficulty, though found indispensable to the prosperity of more limited and less adventurous schemes? and can the directors confidently say, that in the whole compass of their immense establishment, there is a single man to be found experienced in the conduct of commercial steam navigation upon the large scale? Is such an enterprise as this to be expected to succeed in the hands of inexperienced persons, even although those persons may unite much general ability with much plausible pretension? What are the fruits of such administration? There is scarcely a newspaper which does not teem with accounts of mails late—vessels wrecked, or missing—quarrels abroad—passengers almost starved—and vessels following one another *by mistake*—and at an interval of a few hours across the Atlantic? whilst, at other times, the greatest inconvenience and distress are occasioned by merchants being left without their remittances for months together, and correspondents without their letters. Do the directors imagine that such things will be long endured, or is it to their interest or credit that such things should exist? But all this is as nothing when compared with the loss which must arise from the working of the vessels under existing conditions. One vessel comes in with twelve or fourteen passengers —another, with five or six, bringing an income of a few hundred pounds, perhaps, when the expense of a voyage must be several thousands. There is the mail money, 'tis true; but how far will the mail money go towards paying for coal, insurance, and wear and tear! But we are departing from our intimated intention. We think the enterprise beneficially accomplishable, but not under existing circumstances; and unless those circumstances are so changed as to give the undertaking a fair chance of success, we shall, in our next number, draw the attention of the proprietary and the public to the subject.—*From the Civil Engineer and Architect's Journal.*

Holyhead Packets.

In order to guide her Majesty's packets into the harbour of Holyhead during fog, a large bell has been directed to be placed on the light-house, at the end of the pier; thus, whilst the gun on the mountain warns them of their approach to land, and that on Salt Island directs them to the bay, the bell on the lighthouse is intended to remove all difficulty of finding the way to the pier.

It has been suggested to us by Commander Sheringham, R.N., instead of bells or gongs used during fogs, that powerful whistles, such as those used on Railways, would be heard to a far greater distance.

The proposal appears well worthy of attention, and we, therefore, should be glad to see the whistle tried. A machine might be readily constructed on the principle of the bellows, which would send forth a powerful noise, continuing its lengthened sound as it is slowly drawn up by the signal-man, with no more trouble than would be required to keep the gong or the bell going. And as the rocket flies further than the shot over the wrecked vessel, so might the continued sound of the whistle penetrate the atmosphere to a further distance than the intermitting sounds of the bell from the blows of its iron tongue.

NAVAL INTELLIGENCE, *Woolwich*.—The Lords Commissioners of the Admiralty have ordered that a first-rate ship-of-war of 120 guns be built in Woolwich dockyard, and in compliment to her Majesty's illustrious consort to be named the Royal Albert. This splendid ship will be built on a plan submitted to their Lordships by Mr. Oliver Lang, master-shipwright of the yard, and will be constructed under his own superintendence, on the slip from which the Trafalgar of 120 guns was launched on the 21st of June, 1841. The superior construction of the Trafalgar under the direction of Mr. Lang, and his abilities as a shipbuilder, are a sufficient guarantee that a first-rate vessel on his entire plan will far exceed any yet built according to the modern system of naval architecture. It was originally intended to build a 90-gun ship on the slip where the Trafalgar was built, to be named the Hannibal, and nearly the whole of the keel was laid, but for several weeks past no workmen have been employed upon her, and the keel will be removed to make way for the Royal Albert. The Agamemnon, 80, a second-rate, is also ordered to be built, on the slip at present occupied by the Infernal steam-vessel.

The following ships and steam-vessels are building in Woolwich dockyard:—Boscawen, 70, third-rate. This vessel is to be fitted with an entire new stern on a plan recommended by the Committee of Master-shipwrights of her Majesty's dockyards. Chichester, 50, fourth-rate; Amphion, 36, first-rate; Gladiator, first class steam-vessel; and Infernal, second class steam-vessel, which is ordered to be launched as soon as possible.—*Naval and Military Gazette*.

PRESENTATION OF PLATE.—A short time since a meeting of the commanders of the royal navy, took place at the Naval Annuitant Society's Rooms, Plymouth, for the purpose of presenting Capt. Sanders, R.N., of Stoke, with a substantial mark of their approbation of the services which he has conferred upon that class of naval officers. Capt. Hayden presided, and having eulogised the conduct displayed by the gallant captain, when representing their case before the Naval and Military Commission, presented him with a massive silver-gilt and elegantly chased snuff-box, bearing on a gold plate the following inscription:—"Presented to Capt. Sanders, by the Commanders of the Royal Navy, as a mark of their approbation of the very masterly way in which their claims were advocated by that officer before the Naval and Military Commission on the 12th of March, 1839." The gallant captain neatly returned thanks; and the proceedings were exceedingly gratifying to all parties. Since the termination of the sittings of the commis-

sion, Captain Sanders has received promotion, and been appointed a magistrate for this borough.—Royal marks of distinction of which the gallant captain is well worthy.—*West of England Conservatice.*

Galvanism.—We mentioned, some short time since, a few particulars of Mr. Hay's new method of coppering boats, &c., by galvanism. This process is now in full operation in our dockyard, and has been inspected by the Lords of the Admiralty, who have expressed themselves highly satisfied with its simplicity, and felt much interested for its ultimate success; their lordships also witnessed the process of coppering iron nails, screws, &c., and calico, intended for roofing sheds and other buildings; the screws and nails were tested by being driven into wood, without the previous use of brad-awls, and were drawn out again without the copper sheathing being injured. Two models of boats were coppered in their lordships' presence, and Mr. Hay took the opportunity of exhibiting to them several applications of the galvanic fluid, as a power to be used for propelling vessels and machinery, in lieu of steam; also its action on the compass needle.—*Hampshire Standard.*

Wreck.—The barque Granada, laden with coal for the Precursor Steam Company, made Aden on the evening of the 31st ultimo, and seeing the shipping in Back Bay, whilst running down the coast to the eastward of the town, the authorities on board jumped to the conclusion that Aden was an Island, and all they had to do was to sail straight ahead to reach their proper anchorage! The consequence was, they got too near shore off the eastward of the Turkish wall, where they anchored for the night; and a severe storm coming on in the mean time, the vessel drifted ashore, and she is now a wreck near the spot where the famous Denyeah Dowlut was lost. We are informed Capt. Cogan has been residing at Aden for the last month, arranging for a branch of the mercantile house he belongs to, being permanently established at that place: we trust it is the fortunate precursor of many others.—*Bombay Times.*

Experiments in the Marshes at Woolwich.

Amongst the numerous inventions submitted to the Lords Commissioners of the Admiralty, and referred by their Lordships to the Committee of Master-Shipwrights recently sitting at Woolwich dockyard, was a composition to be used in place of the substance with which vessels are at present caulked to render them water-tight. The experiment was ordered to be made by the master-shipwright to ascertain its value when applied to the purpose for which it is intended, and the results were interesting and satisfactory. Two pieces of African teak, a species of wood difficult to be joined together by glue, on account of its oily nature, had a coating of the composition applied to them in a boiling state, and in a short time afterwards bolts and screws were attached to each end, the joined wood placed in the testing frame, and the power of Bramah's hydraulic engine applied to the extent of 13 tons, when the chain broke without the slightest strain being susceptible where the joining took place. A larger chain of one inch and a half in diameter was then applied, which broke with a strain of 21 tons, the joint in the wood remaining apparently as firm as at first. The utmost strain the cement can bear in this form, therefore, remains to be proved when experiments are made with larger chains. Four pieces of hard wood were then joined together, weighing in one piece 44 cwt., and car-

ried to the top of the shears in the dockyard, a height of 76 feet, from which it was precipitated on the hard granite wharf below, without any of the joints yeilding in the smallest degree.

The results of these severe tests induced the Lords Commissioners of the Admiralty to communicate with Lieut.-Gen. Sir G. Murray, GCB. and GCH., for the purpose of making experiments with it in the marshes, by bringing the full force of cannon balls against it. Accordingly a number of planks of oak 8 inches thick and fir 26 inches square were joined together with the cement, to represent 8 feet in height and 8 feet in length of the side of a first-rate ship-of-war, without anything else in the shape of bolt or security, to assist the composition; and it was on Tuesday, set up as a target at the butt in the marshes. At 1 o'clock in the afternoon, Lieut.-Gen. Lord Bloomfield, GCB. and GCH., Colonels Cleveland and R. Jones, Lieut.-Colonels Jackson and Chalmers, Majors Sandilands and Vaughan, Brigade-Major Cuppage, and a number of officers of the Royal Artillery, and a large detachment of the 1st Battalion, were present to assist at and witness the experiment. Lord A. Fitzclarence and a number of civilians were also present, anxious to know the result; but after remaining from 1 to 3 o'clock, it was found impossible to fire a single shot, two brigs having anchored within the range, notwithstanding repeated warnings not to do so.

At the request of Lord Bloomfield, the firing was deferred till yesterday, the men being ordered to be in the marshes at 9 o'clock A.M. At that hour a large detachment of the 9th battalion, under the command of Lieut.-Col. the Hon. W. Arbuthnott and Major Hope, arrived, and shortly afterwards Lieut.-Col. J. F. Love, C.B. and C.A., of the 73rd Regiment, and Brigade-Major Cuppage; but after remaining until 11 o'clock could only obtain three shots, owing to the length of time occupied by the brigs in getting out of the range, and the number of vessels passing at high water. It was originally intended to fire from the five-gun battery; but three new 32-pounder guns having been placed at 400 yards distance on point blank range, it was considered desirable to use them, as they will be wanted immediatety for first class steam-vessels, and consequently the shots did not take effect. At 1 o'clock in the afternoon, however, the levels were taken and three shots fired, every one entering the target the third in a direct line with the bull's eye within three inches of its outer circle. The effects of these shots were wonderful, tearing the wood to pieces, and in only one instance, where the joint had not been good, showing that they had any effect upon the cement, so as to separate the joined parts from each other. A hole, six inches and a quarter in diameter, was then bored in the centre of the target, and a 32-pounder shell inserted and exploded by a match, which tore the wood to small splinters, without in many places, in the least separating the composition. The new invention is said to possess the power of expanding like India-rubber in warm climates, and will not become brittle under the coldest temperature. It appears to be a great favourite with naval officers, as it is so clean, having only the appearance of French polish. The name of the inventor is Mr. Jeffery.

Capt. Sir T. Hastings, Knt., of the Excellent, gunnery-ship, stationed at Portsmouth, who has been present at Woolwich, on the part of the Admiralty, during the whole of the time the recent experiments in the marshes were carried on, having arrived on Thursday, although the weather was very unfavourable from the quantity of rain which fell during the morning and forenoon, caused the men to be ordered out at half-past 1 o'clock for practice against the representation of a ship's side and coal-box, for protecting steam engines on board vessels-of-war. Fortunately, the weather became more favourable in the afternoon, and the following members of the select committee appointed by the Board of Ordance, attended. Col. Cockburn, Col. Lacy, Lieut.-Col. Dansey, C.B., Lieut.-Col. Dundas, C.B., and Lieut.-Col. Chalmer.

Lieut.-Col. Dundas conducted the practice of the 68-pounder gun, weighing 110 cwt., cast from a pattern of his own, and Lieut.-Col. Chalmer conducted the practice of Mr. Monk's 56-pounder gun, weighing 97 cwt. Major Hard-

inge, K.H., brother to Lieut.-Gen. Sir H. Hardinge, K.C.B., Secretary at War, with Lieut. Pack, had charge at the butt, and by the promptness with which the Major availed himself of the ships clearing the range, some excellent practice took place. Capt. Sir T. Hastings on this occasion remained nearly the whole of the time with Major Hardinge at the butt, and was so satisfied with the practice of the 56-pounder gun, that it was ordered to discontinue firing after the twenty-fourth round. Several of the 56-pounder shot entered the coal-box and caused great destruction, and although they did not pass through they tore the joinings from the bottom to within about two feet of the top. Two more rounds were fired from the 68-pounder, one of which rent the joinings at the east end of the coal-box, from the bottom to within about three inches of the top, and a great quantity of the coals fell out. The experiments with these guns, which were made at the long range 1,250 yards, having been concluded, Gen. Millar's 10-inch gun commenced practice, having been previously placed at a range of 900 yards. The firing from this gun with shells was the best that could have been witnessed. The first shell entered the centre of the bull's eye, but did not explode, probably from the action of the loose coals through which it passed, extinguishing the igniting composition before it could communicate with the contents of the shell. The second shell entered within about two feet of the bull's eye, and did not explode, probably from the same cause as in the former case. The third shell entered about nearly the same distance from the bull's eye as the second, only nearer the ground, and in six seconds exploded, throwing up into the air a flame of ignited small coals to a height of upwards of 30 feet, forming a grand and imposing spectacle, and scattering fragments of the shell, wood, and coals, to a distance of 200 yards in all directions; and the scene at the moment reminded Major Hardinge of the blowing up of a moderate-sized tower erected to protect a bridge over the Vavasour, when the British armies were about to cross that river, and by a singular coincidence Lieut.-Col. Dansey, who was present when the tower was blown up, was close to Major Hardinge when the explosion of the coal-box was effected in the marshes. A fourth shell was fired, but it entered and exploded in the butt.

The experiments were resumed at 1 o'clock on the practice being, with 10-inch shells from Gen. Millar's gun, removed back to its former station, a distance of 1,250 yards. The interest which the experiments created caused a great number of officers to attend, amongst whom were the following:—Major-Gen. Sir H. D. Ross, K.C.B., Deputy-Adj., Col. Cockburn, Colonels Paterson, Lacy, R. Jones, and J. E. Jones; Lieut Colonels Dansey, Dundas, Chalmer, and Belson; Majors Hardinge, Hope, and Anderson; Captains Strangways, Palliser, and Forbes of the Royal Artillery; Col. Sir G. C. Hoste, C.B., and Brigade-Major Sandham, of the Royal Engineers. Capt. Sir T. Hastings was also present on the occasion.

After continuing the practice with shells for some time without doing much injury at that distant range, although the firing was very good, considering the obstructions by vessels passing on the river, it was resolved to fire the red-hot shot, 32-pounders at a range of 800 yards. The first of these entered at the bottom of the coal-box nearly perpendicular with the bull's eye, and set fire to the woodwork, which continued to burn slowly along with the ignited coals.

The second red-hot shot entered about three feet from the bull's eye, and so lodged amongst the coals, that it was fully a quarter of an hour before the smoke of the ignited coals could make its way through the hole where the shot entered, and at the top of the box; but it afterwards rapidly gained an ascendancy, and would have consumed the whole had not the fire been put out by a party of men with the fire engine. The experiments concluded by firing an 8-inch shell from a battery at a distance of 950 yards, and it struck in a horizontal line with the bull's-eye, tearing the eastern side of the coal-box, and exploding when it reached the back part of the box, scattering the coals, fragments of shell, and wood to a considerable distance.—*Hampshire Standard.*

The Right of Search.

The question of the right of search is placed in such a clear light in the following extracts from the *Times*, that we are induced to quote them at length.

"The right of search for the suppression of the slave trade has become such a bugbear in France, that the Upper and Lower Chambers vie with each other in the absurdity of their mis-statements and mis-conceptions on the subject. The papers relating to the case of the Marabout are not yet before the public; but supposing the capture to have been illegal, the French court at Cayenne has made a decree in the matter which gives 10,000*l.* sterling for damages to the master of the vessel, and if that decree is not reversed on appeal, it is admitted that the compensation is fully equivalent to the loss. The affair of the Senegambie is, however, fully explained in the Slave Trade Papers, class C., for 1840, and the following facts, which rest upon judicial evidence, and are admitted by the French Government, will show that there never was a worse case for remonstrance:—

"In the month of October, 1839, in pursuance of an instruction contained in a despatch of the French Minister of Marine and the Colonies, dated the 31st of May, 1839, No. 108, a contract was entered into at St. Louis, in Senegal, between the administration of that colony and Messrs. Pellew and Marbeau, for the supply to the Senegal Government of 100 young negroes, to be delivered within a prescribed period, at the Island of Goree. The negroes so imported were to be declared free, but, in reality, embarked within the space of three months for the settlement of Cayenne, to serve with the troops, as a company of pioneers. That is to say, the French Government not only allows, but employs a mercantile house to purchase slaves at Bissao, from the most notorious slave-dealer on the coast of Africa; and when these unfortunate beings are brought to the French settlement, they are placed, without any consent or act of their own, under the strange and fatal discipline of the colonial military service. The French army is, we believe, the first which has ever been recruited by such means.

"The Senegambie, formerly a Portuguese slaver, sold at Sierra Leone a few months before, was chartered for the voyage, and she had already performed part of the contract, but thirty of the negroes having been rejected, she was obliged to make a second voyage to the Nunez. She was escorted on her voyage back to Goree by a French sloop of-war, and was provided with signals to give the alarm, in case of revolt on the part of the passengers, or in case a suspicious sail hove in sight. On her second voyage out, however, she put into the British harbour of Bathurst, not, as the Prince de la Moscowa asserted in debate, for the purpose of procuring objects of barter, but, as it appears, in order to complete her equipment as a vessel for the transport of slaves. When she was seized by Lieut. Hill, caulkers and carpenters of St. Mary's Bathurst, were found on board—the latter engaged in fitting spare plank to the slave-deck. It is shown by the affidavit of seizure, that, *after being presented with their freedom*, the negroes were to be confined under hatches, secured with iron bars, according to the invariable practice of slave-vessels; and the master of the schooner stated in evidence that he knew they were engaged in a slave-dealing expedition, and liable to capture. She was consequently taken from Bathurst to Sierra Leone, and there condemned by the Vice-Admiralty Court, in pursuance of the first clauses of the act of 5 George IV., cap. 113."

The foregoing relates to the French, the following to the Americans:—

"When M'Leod was committed for trial before the courts of the State of New York, the claims for his release which were put forward by the British Minister at Washington, founded alike upon the comity of nations and the responsibility which the British Government openly assumed in the affair of the Caroline, were met or evaded by a declaration that the American Government had no power to interfere with the municipal law of the State of New York. The British Government, carrying to the furthest possible extent the principle of respect to the laws and judicature of foreign countries within the

sphere of their proper jurisdiction, patiently awaited the issue, and allowed the Cabinet of the Union to shelter itself behind the judicial institutions of one of the states of the confederation. Much more, then, have we a right to invoke in the more recent affair of the Creole, the full authority of the laws of the land we live in, not applied with particular reference to a cause in which national animosities are excited, or administered by any local tribunal, but deliberately laid down by the judges of England, in a case which goes on all fours in all its essential parts with the subject on which Mr. Calhoun, and the American senate, have thought proper to re-commence their boisterous declamations.

"We shall proceed to lay an abstract of the case to which we refer before the public, for the convenience of that numerous class of readers who have not an habitual access to the law books.

"In the month of February, 1815, the British forces, under Sir Alexander Cochrane and Sir George Cockburn, had taken possession of Cumberland Island, on the coast of Georgia, and on the confines of East Florida, which formed part of the dominions of the King of Spain, and was consequently a perfectly neutral territory in the war then prevailing between the United States and Great Britain. From that neutral territory of Florida, a party of sixty-two negroes escaped, who belonged to John Forbes, a British merchant, who had resided in the Floridas for thirty years, and was the legal owner of those slaves by the law of Spain. Of these slaves thirty-eight found their way to the British squadron, and to Cumberland Island, then occupied by the British forces. Mr. Forbes memorialized the commanding officer, Sir George Cockburn, for the restitution of these negroes, "together with a boat which they had piratically stolen from his plantation." The Spanish governor of East Florida also claimed the fugitives. Sir G. Cockburn replied, that Mr. Forbes might try the power of argument and persuasion to induce the slaves to return, but that he would neither use force himself to send them back, nor allow force to be used by others. Subsequently, on a reference to his superior officers for instructions, Sir G. Cockburn was directed to send the negroes to Bermuda, until the case should have been decided by His Majesty's Government. The slaves were taken to Bermuda, where they remained; and Mr. Forbes brought his action for their value in the Court of King's Bench, against the commanding-officers who had refused to deliver them up. The plaintiff got a verdict before Chief Justice Abbott, in 1822, subject to the opinion of the court on the case. The final decision of the court was for the defendants; and the great principles of English law which must *a fortiori* govern the present and all similar cases, were most ably laid down by Justice Bayley, Justice Holroyd, and especially by the present Lord Wynford.

"The observations of those eminent judges may be briefly stated as *follows*:—The claim or right of action of the owner of these negroes rests either upon the general law of nature or upon some particular local law. But upon the general law of nature, the law of England, the law of Rome, and the conscience of mankind, utterly repudiate and deny the very existence of slavery. It is then, by express local laws only that the state of slavery exists. Therefore, beyond the jurisdiction of those local laws the state of slavery ceases to exist. 'The law of slavery is a law *in invitum;* and when a party gets out of the territory where it prevails, and out of the power of his master, and places himself under the protection of another power, without any wrongful act done by the party giving that protection, the right of the master, which is founded upon the municipal law of the particular place only, does not continue, and there is no right of action against a party who merely receives the slave in that country, without doing any wrongful act.' 'In this case,' adds the learned Judge Holroyd, 'the fugitives did not escape to any island belonging to England, but they went on board an English ship (which for this purpose may be considered as a floating island,) and in that ship they became subject to the English laws alone. It was not a wrongful act in the defendants to receive

them—quite the contrary. It was not a wrongful act in him, a British officer, to abstain from using force to compel the men to return to slavery.'

"The language of Justice Best is even more decided and remarkable:—'The question is, were these persons slaves at the time when Sir G. Cockburn refused to do the act which he was desired to do? I am decidedly of opinion that they were then no longer slaves. Slavery is a local law, and therefore, if a man wishes to preserve his slaves, let him attach them to him by affection, or make fast the bars of their prison, or rivet well their chains, for the instant they get beyond the limits where slavery is recognized by the local law, they have broken their chains, they have escaped from their prison, and are free.'

"Those men had from that moment all the rights and liabilities of Englishmen. They enjoyed the full protection of the laws of England, and might have brought their action of trespass against persons using force on behalf of their former master; nay, they might have resisted that force by force, and if one of them had been killed in the struggle, by our laws, whoever had contributed to that death would, according to our laws, have been guilty of murder. Sir George Cockburn, having once received them, could no more have forced them back into slavery than he could have committed them to the deep.

"These remarks must completely set at rest the question of the possibility of the surrender of the negroes who entered the harbour of New Providence. The judgments to which we refer were delivered at a time when slavery, however repugnant to the law of England, was still expressly recognized by divers existing enactments, and was actually in existence in most of our own colonies. Even then the judges of England refused to extend the protection of the laws of property to perpetuate the bondage of their fellow-men. But now, when slavery itself has been abolished by our legislature, the law of England not only abhors but absolutely proscribes the existence of slavery within the shores of every colony of the British Crown. Much more, then, does an English governor, an English judge, or an English minister, reject the claim of a foreign state for what is called redress or compensation under a foreign law, when that redress was refused twenty years ago to a British subject. Redress to the United States! ask rather, who would give redress to those unfortunate beings, who believed that the soil of the Queen's dominions was a free soil, and her laws the laws of a free people, if they had been deceived?

"The case of mutiny and murder which is preferred against 19 of these persons, who have, of course, been detained on that charge, rests on wholly different grounds. No treaty now exists between Great Britain and the United States for the extradition or mutual surrender of criminals. These prisoners will, therefore, be tried, if they are prosecuted, by the British courts; but they will be tried as free men."

The following are instructions under which the British cruisers are to act. The officer in command is instructed that,—

"If, from the intelligence which he may have received, or from the manœuvres of the vessel, or from other sufficient cause, he shall have reason to believe, that although bearing the American flag, the vessel does not belong to the United States, he is ordered, if the state of the wind and weather shall admit of it, to go ahead of the suspected vessel, after communicating his intention by hailing, and to drop a boat on board of her, to ascertain her nationalty, without detaining her, if she shall prove to be really an American vessel. But should this mode of visiting the vessel be impracticable, he is to require her to be brought to for this purpose. The officer who boards the vessel is merely to satisfy himself of her nationalty, by her papers or other proofs, and should she really be an American vessel, he will immediately quit her, offering, with the consent of her commander, to note on her papers the cause of suspecting her nationalty, and the number of minutes she was detained, (if detained at all,) for the object in question. All the particulars are to be immediately entered in the log book of the cruiser, and a full statement of them is to be sent by the first opportunity direct to England."

Nautical Notices.

The following notice appeared in the *Shipping Gazette* of the 1st of April, dated Stranraer 30th of March. We place in juxta position with it an extract of a letter from Commmander Robinson, R.N., employed by the Admiralty surveying in the neighbourhood, and whose survey of Loch Ryan published by the Admiralty, we announced in a recent number.

Shipping Gazette Account.

Stranraer, 3d March.—"As the bark Isabella, Rymer, was coming into Loch Ryan, on the 25th ult., and had shut in Corswall light, about half a mile from the point of Milleur (west point at the entrance of the Loch,) she struck and hung on a sunken rock, and lost her false keel; she was not supposed to have received any other injury; but Mr. Rymer having so many lives in charge (30 or 40 passengers,) resolved to proceed for Greenock or Liverpool to have her bottom examined, the wind being from south-west.

"The rock on which the barque struck is not laid down in any chart I have seen; it is not in any chart belonging to the whole of the wind-bound fleet in the Loch, nor is it laid down in the Admiralty survey, by Commander C. G. Robinson, 1841.

"The barque was drawing 15 feet water. At the time she was on the rock several vessels were coming in between her and the point, and had 5¼ fathoms water.

* * * *

"This rock, discovered for the first time in the mouth of our Loch, has surprised everybody. It must, in fact, have been thrown up by some subterranean commotion; for it never was heard of before, and I can't think a rock of the kind could have escaped discovery in a Loch so well frequented; besides, Com. Robinson's survey in 1841, was a most minute one, and had this rock been there at that time, I think he would have discovered it; it is in the very track for vessels taking the Loch after coming round the Corswall Point."

Commander Robinson's Account.

Gourock, 29th April, 1842.—"I have been to Stranraer in search of the reported rock, and only returned yesterday after a fruitless effort, having been engaged in close examination of the ground for upwards of six hours, on a beautiful calm day, when the bottom was clearly observed in 4 fathoms. It only confirms my opinion that the vessel bordered too close on the western point of the entrance; for several passengers asserted on shore that she had no business so close to the point, when the master was asserting that he was half a mile off, and in the *fairway!* I think we may rest satisfied that no new rock exists in that Loch; for to confirm my efforts in some measure, the day after I had been examining the ground, I had an interview with Sir John Ross who was at Stranraer, and on relating the circumstance he told me I might rest assured nothing of the sort existed unless of *recent formation*, (which I conclude is not likely,) as he commanded the Driver there for some years, and was trolling over every foot of ground in that part of the Loch."

The readers of the *Nautical* are well acquainted with the *difficulty* of finding sunken rocks, however well authenticated they may be. And considering the authenticity of the Isabella's rock with the opinion of Commander Robinson, Sir John Ross, and the surprise of the people of Loch Ryan at such a *discovery*, seamen need not be uneasy about it. "*Subterranean Commotion*" may have thrown it up, but until we are informed what vessels passed between it and the point with 5¼ fathoms water, while the Isabella was upon it, and some marks to define its position, we must agree with the opinion above quoted, that "no new rock exists in that Loch."

Mouth of the Dwina.

Navigators are hereby informed, that, the two beacons or signal poles hitherto standing on the western shore of the island Muduga, near the Lighthouse, to denote the outer edge of the bar at the entrance of the North Channel of the Dwina, are removed further to the Southward, and placed so as to show when brought on with each other the channel over the bar.

The beacons now stand in the following positions viz: The first which is

nearer to the Sea and bears two black balls is 2474 yards S. 13¼° E. from the Lighthouse, and the second bearing one ball is 2688 yards S. 16¼° E. from it. The two beacons bear N. 60° E. and S. 60° W. from each other, distant 215 yards.

The height of the beacons from the ground is 91 feet, and from highwater mark 101¼ feet.

LIGHT OFF CALSHOT SPIT, SOUTHAMPTON WATER.

Trinity-House, London, 17th May, 1842.

Notice is hereby given, that in fulfilment of the intention expressed in the advertisement from this house, dated 13th ultimo, a floating light vessel has been moored near the Spit off Calshot Castle, at the entrance of Southampton Water.

Mariners are to observe that a Single Revolving Light will be exhibited on board this vessel every evening, at Sun Set, and continued until Sun Rise.

This vessel is moored in 3¼ fathoms, at low water, spring tides; and with the following marks and compass bearings. viz.—

Bursleden Windmill, in line with the middle of a red tiled barn, at Hook, N. ¼ E.

Portsdown Windmill, in line with the west end of a Farm House, West of Hill Head Cliff, E. ¼ N.

Kicker Point, S.E. ¼ S.; Nettlestone Point, S.S.E. ¼ E.

Calshot Castle Point, N.W. ¼ N.; Southampton New Pier Head, N.N.W.

Calshot Spit Buoy, W. ¼ S.; North-west Bramble Buoy, S.W.b.W.

North-east Bramble Buoy, S.b.E. ¼ E.

By Order, J. HERBERT, *Secretary*.

Trinity-House, London, 23rd April, 1842.

This Corporation having deemed it advisable to alter the positions of the buoys upon the River Middle Sand, and also to place an additional buoy on Shoeburyness, notice thereof is hereby given, and the following particulars, in relation to these changes, are hereby made public, for the information of Pilots and other persons;—viz.

RIVER MIDDLE SAND.

The red and white striped Buoy, heretofore placed on the shoal part of the River Middle, has been moved Half a Mile to the Eastward, and now lies in 15 Feet Low Water, Spring Tides, with the following Marks and Compass Bearings, viz.—

Shell Haven House, its apparent width south of the Scar House on Canvey Island, N.W.b.W. ¼ W.

The Hope Tavern, on Southend Beach, in line with the Light House on Southend Jetty N.N.E. ¼ E.

Nore Light Vessel S.E. Southerly. Jenkin Buoy S.S.W. ¼ W.

The Red Fairway Buoy has been removed, and a Red Buoy, marked "River Middle," has been placed on the West End of that Shoal, in 14 Feet Low Water Spring Tides, with the following Marks and Compass Bearings, viz:—

Shell Haven House, in line with the Scar House N.W.b.W. ¼ W.

Prittlewell Church Tower, in line with the East-end of a Grove of Trees next West of Hamlet Windmill, N.N.E. ¼ E.

Jenkin Buoy, S.b.E. ¼ E.; Blythe Beacon, W.b.N. ¼ N.

The two buoys on the River Middle lie N.W.b.W. ¼ W. and S.E.b.E. ¼ E. from each other, one mile apart, and Midway between them are only 7 Feet at Low Water, and less than two Fathoms at two Cables' length round the shoalest part.

Shoeburyness.

The Black Buoy, N.N.E. of the Nore Light Vessel, has been marked "Middle Shoebury," and an additional Black Buoy, marked "Shoebury Ness," has been placed on the West End of the Maplin Sand, in 4 Fathoms at Low Water, and with the following Marks and Compass Bearings, viz :—

The Ruins of Hadleigh Castle in line with the Light House on Southend, Jetty, N.W.

The Semaphore on a Hill, South of Mile Town, in line with Mile Town Church, S.S.W. ½ W.

Middle Shoebury Buoy, S.E.b.E. ½ E.; East River Middle Buoy, W.N.W. Nore Sand Buoy, S.W. ½ S.; Nore Light Vessel, S.S.E. ½ E.

By Order, J. Herbert, *Secretary.*

Florida Cays.

After March 1st, 1842, a fixed light will be hoisted at Indian Cay, for the benefit of vessels sailing inside the reef. It may be seen from the gulf, bearing W.N.W. from the western point of Alligator Reef, latitude. 24° 54′ north, and longitude 80° 40′ west—*Shipping Gazette.*

Lights of the Cattegat.

We understand that Denmark has agreed to pay the sum of 21,000 dollars, or about 2,400*l.* sterling, to Norway and Sweden, for keeping up the lights on their respective coasts: of this sum, Sweden is to receive 14,000 dollars, and Norway 7,000. It is gratifying to see that the efforts of our Government for the last twenty years to procure the complete lighting of the Sleeve, the Cattegat, and Danish part of the Baltic, have at length been crowned with success. The whole of the Baltic shores are now well buoyed and lighted. The lights are so judiciously placed on the opposite coasts, and the floating lights so many and effective that the navigator has now nothing to fear under ordinary circumstances, if he will only keep a good look out. England has been the only nation solicitous for this important result, and she has succeeded in spite of every opposition thrown in her way by authorities and men of science! the latter declaring it impossible to establish lights, where experience has since proved little or no difficulty really existed.

The most important new lights are the Walsthorven to be erected on the north-west coast of Jutland; that of the floating light just moored at the eastern extremity of the Knobben Reef, an account of which we gave in our last number; and that to be moored on the western extremity of the Falsterbo Reef, on the south-west coast of Sweden, opposite to Stevensklint on the Danish coast, on which there is one of the finest lighthouses in the world.

In our volume for 1832, p. 64, will be found the original position of the Falsterbo light-vessel, and in p. 337 of the same volume will be found Capt. Zahrtmanns notice of its being discontinued, for which we could see no good reason, but many reasons why it should not be. We are, however, glad to see so near a prospect of its being re-established, and congratulate the masters of our numerous merchant ships on it, and more particularly our correspondent, who pointed out the ill effects of its being discontinued in the early part of our last volume.

PRESERVED POTATO.—We have long since called the attention of our readers to this excellent article,—another confirmation of our opinion is in the following extract of a letter from Capt. H. D. Trotter, of H.M. steam vessel Albert, Niger Expedition, to C. Croker, Esq., Admiralty.

My Dear Sir.—I believe it was owing to your recommendation of the Preserved Potato, that I took it to sea, I should be obliged, therefore, by your letting Mr. Edwards know how much reason I had to be pleased with the article, which I consider one of great value as a sea store.

I have brought a small quantity from the Niger, which is as good as when I took it from England twelve months ago. Dr. Pritchett, the surgeon of H.M.S. Wilberforce, has I understand written to the proprietors of the potato, expressing his approbation of its use for the sick on board a ship.

(Signed) H. D. TROTTER, Captain. R.N

NEW BOOKS.

THE LIFE OF AUGUSTUS VISCOUNT KEPPEL, *Admiral of the White, and First Lord of the Admiralty in* 1782-3.—*By the Hon. and Rev. Thomas Keppel, Rector of Wurnham, &c.—In two volumes.*—Colburn, 1842.

WE have here, indeed, a truly professional work; one filled with the glowing records of by-gone days, teeming with the valorous deeds of great men, and rich in the great events of the state during one of the most remarkable periods in the history of this country. A life of so celebrated a man as Admiral Keppel, from the pen of a relative, authenticated by private, as well as public letters, (for we find that the records of the Admiralty have been open to him,) can be looked on in no other light, than as a treasure in our Naval libraries, and there is so much interesting detail in it of the lights and shades, the adventures and the general concerns of a naval life, that we shall have frequent recourse to it for the amusement of our readers. We may also premise, that although the biographer of Admiral Keppel belongs to the church, he may be considered to write as a naval man, from having in his early life had some experience in the navy. This is satisfactory, as like the artist who looks at a picture with a different eye from that of the general observer, so in naval matters some experience is required to appreciate properly certain professional conditions, which would otherwise lose their effect. We are told, that Keppel was one of the Fox school, but political matters concern us not; our object will be to follow him as an officer, and if we should occasionally show the absurdity of half measures, whether they be of the Fox or of the Pitt caste, why, all we can say is, that we shall do right,—for from such measures have sprung much mischief. We shall return to the work in our next; at present we have other matter on hand.

NOTES OF A HALF-PAY IN SEARCH OF HEALTH.—*By Captain Jesse.*—Madden and Co., Leadenhall-street.

WE revert to these volumes, which were noticed in a preceding number, in order to give the following extract respecting the dockyard at Nicolaieff, on the Black Sea, and observations on the Russian Navy, in which we entirely coincide with Captain Jesse.

"*Nicolaieff.*—The dockyard is extensive, but all is not gold that glitters; it was in wretched order, and, with one exception, the slips are uncovered. Some of them are in cuttings in the cliff. Of the four line-of-battle-ships on the stocks, the largest was the Twelve Apostles, a three decker; the dimensions exceeded those of the Royal William, which, if we except the Trafalgar now building, is said to be the largest man-of-war in the world. I went on board one of the fir corvettes. The wood used in her construction appeared to be of a very inferior description, and her seams were so open, from expo-

sure to the sun, that on going below I found her lower deck a couple of inches deep in rain water; she was to be launched in a few days.

"Most of the ships built here are laid down from the lines of English men-of-war, the drawings of which are obtained from England. The corvettes and schooners are, generally speaking, fitted up with great care; large sums are thrown away on ornamental carving in mahogany, rosewood, and marble. These vessels are generally sent into the Mediterranean, and as they have picked crews, they give a far more favourable impression of the Black Sea fleet than it deserves.

"With the exception of what can be stowed under two sheds, the timber in this yard is exposed to the weather, and the oak, the greater part Polish, though of a good kind, is green.

"In the boat houses, where the best seasoned timber is made use of for the gigs and cutters, I remarked that many planks had shrunk full a quarter of an inch, that had only been laid down a fortnight. The fact is, they have no stores of seasoned wood, for it is used up very soon after it comes in. As there are no dry docks, the ships are coppered on the stocks; from their exposure during the whole period of their building, and the new materials used in their construction, they are generally like the Warsaw, which I saw at Sevastopol, rotten in eight years. Half the fleet would not be able to stand the weather in the Black Sea in the winter.

"About 3000 men are employed in this yard; they are nearly all slaves, that is, peasants of the crown. Their services must not be estimated too highly, as a great portion of them are not only badly instructed in their different trades, but are also very sluggish workmen. Some of them as at Sevastopol, were persons who had been found roving about the country without passports, runaway serfs and deserters from the army; many of them very fine looking men. There were likewise a few convicts in very heavy chains. The dock-yard appeared animated, as the government had given orders for replacing several ships which had been lost on the coast of Circassia in the winter of 1838.

"The mills here work only two pair of saws; the supply of planks, therefore, is very deficient, and it frequently happens that the shipwrights are at a stand still for materials. A lathe and boring apparatus have recently been erected, the block machinery is to follow. They are all of English manufacture, as is also most of the machinery in use in Russia. The administration of Admiral Lazareff appears to be as good as the nature of the government, and the chicanery and venality of the employes, from the Minister of the Marine downwards, will allow.

"He was absent on the coast of Circassia with the expedition intended to retake the forts which the inhabitants of that country had carried in the winter. It is said that Admiral Lazareff is not desirous of being opposed to the English fleet, but is very eager to encounter the French. This speaks more for his courage than his judgment, for failure would be equally certain with either. England can afford to give Russia the mechanical means of endeavouring to rival her: neither money nor ukase can create the British seaman. No! here Nicholas must halt! he may order ships, like the Twelve Apostles, to be built, and guns, from four-pounders to Paixhans, to be cast in unlimited numbers; but crews, to man either the one or the other, neither he nor his successors can ever hope to have. The Turks excepted, the Russians are the after-guard of all the sailors in Europe: One cannot help smiling when contrasting the seamen of other nations with theirs. Look at a blue jacket in our own service! he is all ease and freedom, agile and muscular; his countenance is open, and bearing independent, and, though he shows implicit obedience under discipline, his demeanour is manly as well as respectful, and he is clean. The Russian sailor is neither fish nor flesh, a kind of horse-marine. His head is nearly shaved, and his jacket of green cloth, made like a dragoon's, fits quite tight; this is buttoned all the way up the front, being padded out like

one of Mr. Buckmaster's, made for a young cornet. His lower extremities are cased in Wellingtons! and on his head is a worsted forage cap, all on one side. If a mate, his pipe is stuck between two buttons of his jacket, like an eye-glass; the last, though certainly not least, when addressed by his officer, he uncaps, and bringing his feet together, stands, Oh! ye tars! at what?—"At ease!" oh, no! "At attention!" with his little fingers down the seams, and thumbs pointing outwards."

TREATMENT OF THE IMPROVEMENT OF THE NAVIGATION OF RIVERS; *with a new Theory on the cause of the existence of Bars.—By William Alexander Brooks, M.Inst. C.E.*—Weale, Holborn.

In our previous notices of this work, in page 204, the word "to" should be omitted at the commencement of the last line; and in page 288 the words "like the Thames and Humber," should follow, instead of precede, "and to find others free."

We shall now proceed with our notice, continued from p. 288.

This alternate action is fully proved by Mr. Brooks' observations to exist solely at the mouths of rivers free from bars, where, as at sea, there is but a slight interval of rest, like that which takes place in the vibrations of a pendulum. The experience of our nautical readers will readily enable them to recognize the difference of the duration between slack water at sea, and slack water at the entrance of a bar river.

Mr. Brookes' Theory is evidently built upon an accurate examination of facts, and therefore differs from the many which are first conceived, and for which facts are subsequently sought and tortured to support.

Our author gives many examples of rivers both with and without bars in support of his observations and theory.

We may say that having thus clearly pointed out the distinction which exists between the features of rivers with, and of rivers without bars, it was naturally to be inferred that the means for the improvement of the former was to be found by the execution of works to remove the causes of the difference between it and the perfect navigation; but on this subject we will let our author speak for himself.

"The reasoning in the preceding pages on the cause of the formation of bars, suggest the course to be adopted for their amelioration, by the removal of all those inner banks, or shoals, which stretching like dams across the river, which have the effect of preventing the rapid discharge of the back water during the proper tidal duration of the ebb. Where this is judiciously undertaken, an improvement must take place, not only within the river, but on the bar. Let us imagine a case to exist, (and there are many such within my own observation,) that at a distance of a few miles, say seven from the mouth of a river, the vertical rise of tide is diminished one-fourth of that on the bar, or, in other words, is reduced from sixteen to twelve feet.

"If, therefore, by the operations which are undertaken, the original difference be lessened so that at the said distance of seven miles from the bar, the low water level has been made to subside three feet, giving a vertical rise of fifteen feet, where there was formerly a flow of only twelve; it is clear that a greater body of tidal water must enter, and that the period of the duration of the flood tide must be lengthened, while that of the ebb is diminished."

That the result of this alteration must be a deeper channel due to the more rapid discharge of the back water, and augmentation of the volume of tidal water there can be no doubt, and it is perfectly reasonable, and natural, to conclude that, with the diminution of the period of the confliction of the ebb and flood, an improvement must take place on the bar. Our author does not go the length to maintain that bars are capable of being utterly removed, because in many cases this must be impracticable on account of natural impediments too costly to remove; such as rocky beds of great length.

The eighth chapter of the Treatise enters fully into the cause of the forma-

tion of every description of shoal, and confirms the old adage, that "in a knowledge of the cause of the complaint rests more than half the cure."

There is one great recommendation in favour of the author's Theory, on the cause of the formation of Bars, and in his plans for their amelioration; our plain common sense is not called upon to be surrendered to a doubtful opinion, or to one which is not brought home to our understandings. We can rely upon the fact, that no possible injury can occur to any navigation, by adopting the author's views for its improvement, the whole tending to effect two evidently useful objects:—the first being to enable the natural drainage of the country or back water to be discharged to the utmost possible extent, in the shortest period, and with consequent more powerful action upon the bed of the river throughout its whole course: and the second, the admission of a greater volume of tidal water as a natural attendant upon the enlarged tidal receptacle by the increased drainage or lowering of the former surface of the river at low water, owing to the removal of the inner dams or shoals.

The preceding observations have reference solely to tidal rivers, but Mr. Brooks calls our attention to the difference in the workings of nature at the mouth of a river which is discharged into a tideless sea.

"Turning our attention to the state of those rivers which discharge their waters into tideless seas, or into fresh water lakes, we shall be able to trace to the same cause the existence of their bars; viz. to the excess of slope which their longitudinal sections present near their embouchures; but, as here the agency of the tide, or counter current, does not exist, the deposit will be differently affected from that which forms the bar of a tidal river, which latter does not usually experience that great observable elongation of its course which takes place in rivers which discharge their waters into tideless seas."

The further observations on this subject are to the effect that the discharge of rivers into tideless seas, where the waters of those rivers are charged with alluvions, is the accretion of land, or the formation of deltas; and that in the words of Major Rennel "these deltas almost invariably encroach on the sea, beyond the general, and it may be supposed, the original line of coast"; and there is, therefore, a great difference in the effects produced by the discharge of alluvions into tidal, and that deposited in tideless seas.

"In the latter, the alluvions discharged are continually forming new land, and this result holds good in many cases where there is only present the effect of a very weak tide; but in the ocean, or where a powerful tide is in operation, the position of the bar varies little as regards its distance from the original line of shore, and varies also as little, as regards the magnitude of that bar; thus proving beyond all doubt the truth of the arguments advanced by our author; that while one cause is in constant operation to produce one effect; another counteracting cause is also at work, and that the presence of the bar, or the extent of the injury to the navigation, is in direct proportion to the difference which exists in the power of either agent."

The object of the Treatise, from which we have so largely quoted, is to show how we may give a preponderating effect to the useful cause; or, how bars may be improved without risking the danger of being found to war against the laws of nature.

New Charts.

(Published by the Admiralty.)

Loch Eil, *leading to the Caledonian Canal.—Surveyed by Commander Robinson.*
England, *East Coast.—Sheet* 5.—*From Trusthorpe to Flamborough Head.*
England, *East Coast.—Sheet* 6.—*From Flamborough Head to the Tees.*
England, *East Coast.—Sheet* 7.—*From the Tees to Blythe.*
England, *East Coast.—Sheet* 8.—*From Blythe to Eyemouth.*

CHATHAM ISLANDS.

The last of these valuable publications is compiled from a plan by M. Fournier, lieutenant of the French ship Heroine, with important additions from Mr. C. Heaphy, Draftsman to the New Zeeland Company. The coasts of England are from the labours of our departed countrymen, whose loss we have so recently deplored in this journal. Sheets Nos. 7 and 8 are, by the late Commander Slater; and Nos. 5 and 6 by Captain Hewett, who perished in the Fairy. They will remain as the imperishable memorials of the useful services of these two officers, verifying our words in a recent number, in alluding to the surveyor's works, "they remain after he has passed away the faithful records of the faithful performance of his duty." Loch Eil, at the head of our list, is an invaluable chart to vessels frequenting the Caledonian Canal, with the directions in the first part of this present number.

THE LATE COMMANDER SLATER, R.N.

THE untimely death of the late Commander Slater, who recently perished by falling from a lofty cliff into the sea, while in the execution of his duty, has much excited the public sympathy for his Widow; but it should be known that the fatal blow which bereaved her of an affectionate husband, has been still more embittered by reducing her from affluence to great pecuniary embarrassment.

Commander Slater had been constantly employed for twenty-five years in the Surveying Department of the Navy; his skill and perseverance are sufficiently attested as well by his labours abroad as by his admirable charts of the coast of Great Britain, which extend from the River Humber to the northernmost point of Scotland; and in the neighbourhood of that point the lamentable accident occured, while examining the course of the Tides in the Firth of Pentland.

The peculiar ardour that urged him to make any and every sacrifice which could promote the great work committed to his care, had induced him to devote a large portion of his professional emoluments to the hire of extra assistants, and to the purchase of the most expensive instruments, and this has mainly led to the difficulties with which his Widow has now to contend, and to this appeal in her behalf.

His conspicuous merits have been long appreciated by his brother Officers and by the Public, and surely they will not now withhold that prompt and generous aid, which on such occasions they are ever ready to afford, and on which the present case possesses so just a claim. At the time of the unfortunate loss of the *Fairy*, Mrs. Slater took a most active and successful part in soliciting charity for the sufferers in that awful catastrophe; she herself is now placed in a situation of similar distress, and it is to be hoped that she who so warmly advocated the cause of the fatherless and the widow will not herself be neglected.

MESSRS. STILWELL, Navy Agents, 22, Arundel Street, Strand; MESSRS. WILLIS, PERCIVAL, and Co., 76, Lombard Street; and MESSRS. COCKBURN and Co., 4, Whitehall, will thankfully receive contributions for the Widow.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

PROMOTIONS.

COMMANDERS—J. B. Cragg, R. Holman, R. S. Simmonds, A. Collingwood T. Dickson, late flag-lieutenant to Vice-Admiral F. Watson, J. A. Stevens, E. S. Pearce, C. W. De Courcy Ross, late flag lieutenant to Rear Admiral Ross.

LIEUTENANTS—J. J. Donsford, P. F. Shortland, C. F. Hillyar, D. Lane.

MASTERS—W. Ellis, J. Regan, H. W. Allen.

APPOINTMENTS.

CAPTAINS—R. Barton, (1837,) to be agent of the West India Packets at Southampton—A. Milne (1839,) to *Caledonia*—W. F. Owen (1811) to *Acon*—C. Wyvill (1822) to *Cleopatra*—Sir T. R. T. Thompson, Bart. (1837) to *Talbot*.

COMMANDERS—S. T. Hood (1815) to *Caledonia*—E. Hawes (1828) to be resident agent for transports at China—R. F. Gambier (1837) to *Satellite*—R. Yorke (1838) to *Albatross*.

LIEUTENANTS—R. Wilcox (1842) to

Indus—H. C. Harston (1840) to *Philomel*—St. Leger Aldworth (1831) to *Rodney*—G. Raymond (1831) to *Ætna* v. Wilson promoted—G. F. Dawson (1824) to *Camperdown*—J. A. Macdonald (1827) from Coast Guard to *Charybdis*—F. L. Barnard (1840) to *Cleopatra*—E. K. Barnard to *Excellent*—T. Hodgkinson and Sir F. Freeling to *Talbot*—W. Read to *Sylvia*—W. D. Carroll (1842,) add. to *Winchester*, for squadron at Cape of Good Hope—J. M. Mottley (1829), P. H. Somerville (1840), act., and Hon. C. St. Clair (1837), flag, to *Caledonia*—J. Hancock (1811) act. to *Victory*—F. H. Stevens (1841) add. to *Queen*—J. Donsford (1842) to *Hecate*—G. Raymond (1815) to *Spy*—A. G. T. Dickson (1833), W. G. Everest (1842), and P. H. Somerville (1840) act. to *Caledonia*—J. Shears to *Talbot*—W. Hallet to *Malabar*—F. P. Porteous to *Royal William* for rank—P. Lecount (1827), T. Heard (1840), and F. A. Egerton (1811) to *Satellite*—A. Kortright (1826) to *Avon*—M. T. Molesworth (1842) and G. Caswell (1815) to *Cleopatra*—W. P. Green (1806) to *Victory* for service in the Ordinary—E. J. Voules to *Albatross*—H. J. Lacon (1842) to *Blonde*—T. G. Drake (1841) to *Cornwallis*—C. F. Hillyar to *Caledonia*—T. A. Lewis to *Crane*—W. M. J. G. Pasco to *Kite*.

MASTERS—W. Ellis to *Grecian*—J. Underwood and D. Gossman to *Caledonia*—W. Parsons to *Cleopatra*—H. W. Allen to *Black Eagle*—H. B. Harris to *Satellite*—H. Thompson and W. Archer, act. to *Talbot*—J. Belam to *Albatross*.

MATES—C. J. P. Glinn to *Camperdown*—T. Marryat to *Cambrian*—C. A. Vansittart and T. J. Barrow to *Winchester*—Hon. M. Douglas and W. B. G. Johnson to *Scylla*—Hon. G. H. Douglas to *Thalia*—J. S Davison to *Royal George* yacht—R. W. H. Alcock, T. S. Smyth, T. Johnson, and J. A. L. Wharton to *Caledonia*—E. Rowe to *Crocodile*—C. P. Coles and A. F. Kynaston to *Excellent*—J. E. D. Hay to *Agincourt*—A. Fletcher to *Winchester*—G. W. Preedy to *Excellent*—P. G. Nettleton to *Malabar*—W. D. Lester to *Resistance*—R C. Tatnell to *St, Vincent*—W. D. Lyster to *Geyser*—R. W. Clarke and G. H. Richards to *Caledonia*.

SECOND-MASTERS—W. Rowe to *Shearwater*—G. H. Loveridge, act. to *Volcano*—E. Moore and T. Pitt, add., to *Caledonia*—T. H. May, add. to *Nelly* tender—R. B. Batt and W. Benson to *Crocodile*—J. Iago to *Confiance*—F. Macdonald to *Rhadamanthus*.

SURGEONS—J. Kittle to *Cleopatra*—J. Brown and R. S. C, Scott to to *Talbot*—J. Wilson to *Caledonia*—W. H. Foster, M D., to *Satellite*.

MASTER'S-ASSISTANTS—W. Byford to *William and Mary*—B. Stuart to *Geyser*.

ASSISTANT-SURGEONS—A. Murray to *Spider*—J. G. Risk, S. Bernard, and A. Robertson to *Caledonia*—W. P. Griggen and C. A. Anderson to *Impregnable*—A. Armstrong, M.D. to *St. Vincent*—C. Downward to *Satellite*—R. Tilson and W. H. Slogget to Haslar hospital—J. Clarke to *Vanguard*—H. O'Hagan to *Skylark*—G. R. West to *Camperdown*—W. Hannant to *Resistance*—J. Simpton to *Blonde*—H. Richardson to *Alligator*—J. P. Henry to *Blenheim*—H. G. Willmott to *Modeste*—S. S. Stanley to *Algerine*—L. C. Urquhart to *St. Vincent*.

MIDSHIPMEN—H. D. Selby to *Belvidera*—G. Wale to *Scylla*—E. A. Drummond to *St. Vincent*—G. F. Colville to *Camperdown*—H. Parker and E. Drummond to *Winchester*.

VOLUNTEERS 1st Class—A. H. Hoskins and T. Geer, supernumery, to *Winchester*—F. Pyne to *Warspite*—R. Lowry to *Vernon*—T. Legh to *Spartan*—J. H. N. M'Swiney and C. T. Kurnie to *Talbot*—F. Parke to *Impregnable*—J. Carnegie to *Formidable*—J. R. Lawrence to *St. Vincent*—J. J. H. Groves to *Caledonia*—W. J. Lloyd to *Satellite*—C. Grant to *Vernon*.

PURSERS—S. Little to (1795) to *Caledonia*—E. J. T. White to *Talbot*—J. Lyall to *Cleopatra*—J. Braid to *Satellite* W. B. V. Farror to assist in the department of the Accountant-General at Somerset house—J. Warwick to *Albatross*.

CHAPLAINS—A. Watson to *Caledonia*—H. S Slight to *Alfred*.

NAVAL INSTRUCTORS—Revs. J. Brand, W. Salkefield, B.A., and C. Osbourne, B.A., to *Cambrian*—E. B. Barnes to *Vindictive*—Rev. W. S. Parish, M A., to *Agincourt*—G. Brand to *Madagascar*—W. E. Shaw to *Cambrian*.

CLERKS—D. F. Stow to *Spider*—T. S. Neame and A. A. Speck, add., to *Ocean*—A. Whitehouse to *Winchester*—B. Scott (in charge) to *Sylvia*—J. D. Bowden and C. Saunders (assistants) to *Victory*—T. H. Molesworth to *Talbot*—W. Dighton (in charge) to *Skylark*—T. Mitchell to *Cleopatra*—T. C. Dryden to *Avon*.

SECRETARY—J. London, to Admi. Sir D. Milne.

COAST GUARD.

Appointments—Commander S. Granby to be Inspecting-Commander—Lieutenants J. Loveless, J. Campbell, G. Vincent, R. Bowden, and D. Mapleton.

Removals—Lieut. H. R. Raye to Cranfield—Lieut. F. Higginson to Lydd—

Lieut. W. Southey to Winchelsea—Mr. Tippet, chief officer, to Torr Head—Lieut. J. H. Jeffries to St. Nicolas station.

Movements and Stations of Her Majesty's Navy.

AT HOME.

Ætna, 6, Com. J. Wilson, paid off at Plymouth.

Agincourt, 72, Capt W. H. Bruce, 21st April moved into Sound, 12th May sailed for China.

Benbow, 72, Capt. H. Stewart, 5th May arrived at Spithead, 6th sailed for Sheerness to be paid off.

Buzzard, 3, Lieut. Com. C. Fitzgerald 12th May arrived at Plymouth from the coast of Africa.

Caledonia, 120, paid off at Plymouth, and recommissioned by Capt. A. Milne.

Comus, 18, Com. E. Nepean, 10th May arrived at Portsmouth from West Indies, 16th sailed for Chatham.

Crocodile, 26, Master-Com. T. Elson, arr. at Portsmouth 19th May.

Daphne, 18, Com. W. Dalling, 5th May arrived at Spithead from Gibraltar, 9th sailed for the eastward

Firefly, (st. v.) Lieut. Com. W. Winniett, May 10, arrived at Portsmouth from West Indies, 12th sailed for Woolwich to be paid off.

Malabar, 74, Capt Sir G. Sartorius, 27th April arrived at Plymouth from Gibraltar.

President, 50, Capt. W. Broughton, 4th May arrived at Spithead from Rio, 7th in harbour, 21st paid off.

Resistance, 42, Commander Patey, 23d April arrived at Spithead, 14th May sailed for Quebec with 23rd regt.

Satellite, commissioned by Com. Gambier. May 7th.

Scylla, 16, Com. R. Sharpe, Ap. 16, left Plymouth for Halifax.

Styx, (st. v.) Capt. A. T. E. Vidal, left Woolwich on 13th for Azores, 15th at Plymouth.

Tartarus, (st. v.) Lieut. Com. G. W. Smith, 21st April arrived at Plymouth.

Wizard, 10, Lieut. Com. Somerville, paid off at Plymouth April 28th.

At Portsmouth.—*At Spithead.*—Lord Lowther, and Equestrian freight ship—Success hulk. *In Harbour*—St. Vincent, Victory, Excellent, Royal George yacht, Satellite, Winchester, Albatross, Lively and Drake lighters, Echo steamer.

At Plymouth.—*In Hamoaze*—Philomel, Caledonia, San Josef, Confiance.—*In the Sound*—Malabar.

COMMISSIONED.

Albatross, by Com. R. Yorke, at Portsmouth, May 14.

Caledonia, by Capt. Milne, for Admiral Sir David Milne.

Talbot, 22d April, at Sheerness, by Capt. Sir T. Thompson.

PAID OFF.

Ætna, Lieut. Wilson, 20th April, at Plymouth.

Benbow, Capt. H. Stewart, 23d May, at Sheerness.

Caledonia, Capt. H. Eden, April, at Plymouth.

Daphne, Capt. J. W. Dalling, 18th May, at Sheerness.

Nightingale, Lieut. Com. J. Barnes, Plymouth.

President, Capt. W. Broughton, 14th May, at Portsmouth.

Wasp, Com. Hon. H. A. Murray, 12th May, at Sheerness.

Wizard, Lieut. J. B. Somerville, 28th April, at Plymouth.

ABROAD.

Acorn, 16, Com. J. Adams, 13th Feb. left St. Helena for Cape, arr. March 6.

Actæon, Capt. R. Russell, Jan. 30, at San Blas.

Alecto, (st. v.) Lieut. Com. W. Hosea-son, April 12, arr. at Malta from Ionian Isles.

Andromache, 26, Capt. R. L. Baynes, C.B., Feb. 14, at Rio, 18th sailed

Apollo, Com. Festing, Feb. 2, arr. at Rio, 28th sailed for China.

Basilisk, 6, Lieut. Com. J C. Gill, Jan. 12, left Valparaiso for Cobija, 30th at Callao.

Belleisle, 72, Capt. J Kingcome, Feb 2, at Rio, 28th sailed for China.

Belvidera, Captain Hon. G. Grey, April 5, left Malta for coast of Spain.

Bittern, Com. Carey, Feb. 6, left Rio on a cruise.

Blenheim, 72, Capt. Herbert, Feb. 1st, arr. at Hong-Kong.

Brisk, 3, Lieut. Com. G. Sprigg, 17th March, left St. Helena for Cape.

Cambrian, 36, Capt. H. D. Chads, Feb. 21, arr. at Madras, 28th Bengal.

Camelion, 10, Lieut. Com. G. M. Hunter, Dec. 20, left Macao for Hong Kong.

CARYSFORT, 26, Capt. Lord G. Paulet, April 9, arr. at Madeira, 14th sailed for Rio.

CHAMPION, 16, Com. R. Byron, Feb. 4, left Trincomalee for China.

CHARYBDIS, 3, Lieut. De Courcy, Mar. 3, left Jamaica for Carthagena, &c.

CHILDERS, 16, Com. E. P. Halstead, Feb. 28, at Benga, March 8th, at Calcutta.

Extract of a letter from an officer on board, dated Calcutta, Mar. 8th.—"We are arrived here after some months stay at Moulmein harbour, and fitting out for China. There are 40 ships of all kinds in the harbour, most of them under orders for China, for transports and store-ships. The Endymion frigate has arrived here to-day, bringing the governor of Bombay; she had a great deal of sickness on board with fever, and out of 30 marines attacked 13 died. The Calliope, Cambrian, Endymion, have sailed for China. There are a great number of sloops lying at Port William, all ready for service.

CLIO, 16, Com. S. G. Freemantle, Dec. 22, arr. at Macao, 28th sailed for Hong Kong.

CORNWALLIS, 72, Capt. P. Richards, June 18, arr. at Chusan.

CRUISER, 16, Com. G. W. Giffard, Jan. 23, arr. at Canton from Amoy.

DIDO, 18, Capt. Hon. H. Capel, Feb. 13, arr. at Port Praya, and sailed for the Cape and China.

DEVASTATION, (st v.) Com. Henry, May 3, left Malta for Tripoli.

DRIVER, (st. v.) Com. Harmer, Mar. 20, arr. at Madeira, 24th sailed for China.

DUBLIN, 50, Capt. J. C. Tucker, Jan. 12, left Valparaiso for Cobija, 30th at Callao.

ELECTRA, 18, Com. Darley, April 5, left Port Royal for Mosquito shores.

ENDYMION, 38, Capt. Hon. F. W. Grey, Mar. 8, arr. at Calcutta.

EREBUS, Capt. J. C. Ross, Nov. 14, at Bay of Islands.

FAVORITE, 18, Com. Sulivan, Oct. 24, at Bay of Islands.

FAWN, 2, Lieut. Foote, 2nd March sailed from Cape.

FERRET, 10, Lieut. Com. Oake, Feb. 16, at Sierra Leone, March 6, arr. at Accra, 7th sailed.

GRECIAN, 16, Com. Smyth, 8th Mar. at Simons Bay.

HARLEQUIN, 16, Com. Hastings, 3rd Mar. left Cape for China.

HAZARD, 18, Com. Bell, Mar. 3, left Rio for the Cape.

HEROINE, 16, Lieut. Commander T. D. Stewart, arr. at Bathurst 16th Mar., 19th sailed for Sierra Leone.

HORNET, 6, Lieut. Com, R. B. Miller, April 5, left Jamaica for Mosquito shores.

HYDRA, (st. v.) Com. R. Stopford, April 5, left Jamaica for Mosquito shores.

ILLUSTRIOUS, 72, Capt. J. Erskine, April 5, left Jamaica for Mosquito shores.

INDUS, 84, Capt. Sir J. Stirling, May 2, remaining at Lisbon.

ISIS, 44, Captain Sir J. Marshall, Feb. 11, arr. at Rio from Plymouth in 38 days.

LARK, (st. v.) Mr. J. Lawrence, com., Dec. 26, arr. at Jamaica from Nassau, Jan. 5, sailed for Mosquito shores.

LIZARD, (st. v.) Lieut. Com. Postle, April 18, left Gibraltar for Tangier

MADAGASCAR, 44, Capt. Foote, left Sierra Leone for Cape Coast 20th Jan.

MAGICIENNE, 24, Capt. Warren, Mar. 14, at Suda.

MEDEA, (st. v.) Com. F. Warden, 7th April arr. at Malta from Athens, 23rd sailed for Athens and Suda.

MODESTE, 18, Com. H. Eyres, Jan. 12, at Ningpo.

NIMROD, 20, Com. C. A. Barlow, Jan. 29, at Amoy.

NORTH STAR, 26, Capt. Sir E. Home, 2nd Mar. arr. at Simons Bay, 8th Mar. sailed for China.

PANTALOON, 10, Lieut.-Com. Lapidge, arr. at Bathurst from Portendic, 15th Mar. Got on shore on the Arcas Shoal, Bissau Channel, River Gambia, 27th Mar., and was attempted to be boarded by the natives, but they were beaten off by the boats of the Pantaloon.

PIQUE, 36, Capt. H. Forbes, Mar. 10, left Barbados for Jamaica.

POLYPHEMUS, Lieut. J. Evans, April 11, left Malta for Naples.

PYLADES, 18, Com. T. V. Anson, Jan. at Amoy.

RACEHORSE, 18, Com. Fitzgerald, Feb. 1, left Jamaica for Honduras.

RACER, 16, Com. Harvey, April 5, left Jamaica for Port-au-Prince.

RODNEY, 92, Capt. R. Maunsell, April left Malta for Syria.

ROSE, 16, Com. P. Christie, Feb. 9, at Rio.

ROVER, 18, Com. T. W. C. Symonds, Mar. 16, at Barbados.

SAPPHIRE, (trp. s.) Mr. G. H. Cole, Feb. 2, at Rio, 28th sailed for China

SAPPHO, 16, Com. Parry, April 5, left Jamaica for Havana and Halifax.

SAVAGE, 10, Lieut. J. H. Bowker, Ap. 19, arr. at Alexandria from Beyrout, 22d sailed for Malta.

SERPENT, 16, Com. Neville, 6th Mar. arr. at Cape on way to China.

SOUTHAMPTON, 50, Admiral Sir E. Home, 8th Mar. at Cape.

SPARTAN, 26, Hon. Capt. Elliot, Ap. 5, left Jamaica for Port au Prince.

SPITFIRE, (st. v.) Jan. 19, at Jamaica from Barbados.

TERROR, Com. F. R. M. Crozier, Nov. 14, at Bay of Islands.

THALIA, 42, Capt. Hope, 8th Mar. at Cape.

THUNDER, (sur. v.) Com. Barnett, Jan. at Nassau.

VERNON, 50, Capt. W. Walpole, Ap. 10, left Malta for Athens to relieve the Monarch.

VESTAL, 26, Capt. J. Parker, Dec. 28, at Bermuda.

VINDICTIVE, 50, Capt. J. T. Nicholas, Mar. 26, arr. at Madeira, and sailed for Cuna.

VIXEN, (st. v.) Com. W. Boyes, Feb. 13, at Ascension, Mar. 10, arr. at Cape.

VOLAGE, 26, Capt. Sir W. Dickson, Mar. 4, at Jamaica.

WANDERER, Com. Troubridge, Feb. 14, at Rio.

WARSPITE, 50, Capt. Lord John Hay, April 22, arr. at Bermuda from New York.

WOLVERINE, 15, Com. Johnson, Mar. 20, arr. at Madeira.

AT MALTA, 17th April.—*In Port.*—Queen, 110, (bearing the flag of Vice Admiral Sir E. W. C. R. Owen, GCB. GCH.); Howe, 120, (bearing the flag of Admiral Sir F. Mason, K.C.B.); Ceylon, 6, (bearing the flag of Rear Admiral Sir J. Louis, Bart.,) Impregnable, 104, Vanguard, 80, Thunderer, 84, Calcutta, 84, Cambridge, 78, Scout, 18, Savage, 10; steamers Alecto, Vesuvius, and the French steamers Leonidas and Minos.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

Lately at Stonehouse, the lady of Capt. G. R. Sartorius of a daughter.

On April 22d, the lady of Lieut. G. Caswell, R.N.

At Falmouth, April 23d, the lady of Lieut. J. Parsons, R.N. of a daughter.

On the 15th May, at Woolwich, the lady of Capt. A. T. E. Vidal, R.N., commanding H.M.S. Styx, of a son.

On April 10th, at Southsea, the lady of G. J. Gibbon, Esq., master R.N., of a son.

Marriages.

On the 4th May, at Guildford, Surry, F. Deacon, Esq., lieut. 19th regt. to Ann daughter of Capt. Norton, R.N.

On the 19th May, Capt. Clinch, R.N., to Maria, daughter of Mrs Feakins, of Sheerness, Kent.

Deaths.

On the 11th of April at Chichester, Admiral Hall, Vice-Admiral of the Red, in the 77th year of his age.

Rear Admiral Smollett,—lieutenant 1794, commander 1799, captain 1802, admiral 1840.

Lieut. E. C. Dausey, R.N.

On the 9th May, at Bromley, Jane, the wife of H. Harvey, Esq. commander, R.N., aged 23.

At the Naval Hospital, Macao, on the 26th of October, of dysentery, Lieut. J. Aetle, late belonging to H.M.S. Alligator.

Commander W. Henvey, lieut. 1815.

Lieut. J. Craske, greatly distinguished himself in Holland, in 1799, in the Ballquax, 1806, and at Batavia, in 1807.

Lieut. C. Austen, of H.M.S. Hecate, drowned off Jaffa; wounded when midshipman of the Alacrity, in boarding a pirate, in the Mediterranean, 1829.

At Portsea, on the 8th May, Mary, third daughter of Lieut. J. Smith, aged 15 years.

Lately, in China, on board the Palmyra transport, Lieut. W. Lovett, R.N., of Southsea, aged 63.

Lieut. H. C. Gordon, RN., of the Post-Office department, Calcutta.

Mr. W. Duffill, second-master of H.M. steamer Pluto, on the African station.

Drowned at sea, on the 28th Nov. last, by a fall from the masthead during a gale of wind, in lat. 47° 30′ south, and long. 46° 0′ west, George de Soyres Young, aged 16, youngest son of Capt. Young, R.N., of Exeter.

At Devonport, 7th of May, Cornelius, second son of S. Little, Esq., purser of H.M.S. Caledonia.

On the 17th May, Charles Hamilton, second son of Capt. Binstead, R.N.

Suddenly at Stoke, Devonport, on the 16th inst., Capt. J. Wilson (a) R.N., in his 69th year, leaving a wife and nine children to deplore his loss.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of April, to the 20th of May, 1842.

Month Day	Week Day	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9. AM	3. PM	Min	Max	A.M.	P.M.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Th.	30·13	30·11	47	56	34	57	E	E	3	6	bc	qb
22	F.	29·98	29·94	47	57	42	58	NE	NE	3	3	o	b
23	S.	29·90	29·92	53	67	43	68	N	NW	3	2	b	bm
24	Su.	29·95	29·95	57	65	45	70	NE	SE	2	4	b	bctlrb(3
25	M.	30·03	30·08	54	67	43	68	E	E	2	3	b	b
26	Tu.	30·07	30·08	54	61	42	62	E	E	4	5	b	b
27	W.	30·00	30·02	52	57	38	58	NE	E	3	4	b	b
28	Th.	30·05	30·09	54	66	40	67	NE	E	2	2	b	b
29	F.	30·09	30·05	52	63	40	64	E	NE	2	3	b	b
30	S.	29·87	29·84	55	69	42	70	NE	NE	4	4	b	b
1	Su.	29·97	30 02	55	66	45	67	NE	NE	3	4	b	b
2	M.	30·05	30·05	56	61	43	62	NE	E	4	4	b	b
3	Tu.	29·96	29·92	46	66	39	67	NW	NW	3	3	bm	bcmr4)
4	W.	29·92	29·90	50	58	45	59	NW	NW	4	4	bcr(1	bc
5	Th.	29·90	29·80	53	57	43	59	SW	S	4	5	bc	qor4)
6	F.	29·45	29·42	54	51	47	57	SW	SW	5	5	qbcp(1(2)	qlcphr(5)
7	S.	29·36	29·26	52	57	46	58	SW	SW	6	6	qor(2)	qbc
8	Su.	29·35	29·54	52	55	46	56	SW	SW	6	7	qp(2)	qbcphr(5)
9	M.	29·90	29·99	46	53	42	54	NW	NW	6	6	qphr2)	qphr(3
10	Tu.	30·15	30 15	49	57	35	59	NW	SW	3	3	bcm	bc
11	W.	29·99	29·93	56	61	40	62	S	S	3	5	b	bc
12	Th.	29·90	29·94	46	48	43	49	NE	NW	3	3	or(1)(2)	or4)
13	F.	30·02	30·06	52	64	42	63	W	SW	2	2	bcm	bcm
14	S.	30·15	30·20	54	66	43	67	SW	NE	2	2	bcm	bcm
15	Su.	30·35	30·40	55	65	43	66	E	NE	2	3	bcm	bcm
16	M.	30·40	30·40	56	66	44	67	NE	NE	3	4	bcm	bcm
17	Tu.	30·30	30·25	55	59	42	60	NE	NE	4	5	bc	bc
18	W	30·06	30·00	51	57	45	58	N	NE	2	2	o	o
19	Th.	29·83	29·79	54	58	42	60	SE	SW	2	4	bc	bcr3)
20	F.	29·68	29 70	53	58	42	61	SW	SW	4	5	bc	qbc

April—Mean height of barometer = 30·022 inches; mean temperature = 45·0 degrees; depth of rain fallen = 0·51 inches.

Note.—April 24th.—Between 2 and 4 P.M. Greenwich and neighbourhood were visited with a severe storm of thunder, lightning, hail, and rain.

TO OUR FRIENDS AND CORRESPONDENTS.

Will Lieut. Kendall have the goodness to inform us on which hand the new light-vessel, at the entrance to "*Southampton Water*," is to be left by a vessel passing up to Southampton.

The letter on the Sympiesometer in our next.

The first despatches from Panama have not reached us.

Errata.—In Mr. Harris's paper, p. 393, line 4, *for* "damage" *read* "danger": p. 396, line 1, *after* "other" *place* a full stop,—line 12, *after* "them" also place a full stop.

The Bay or Roads of Vares, or Barquero.*—*By Lieut.-Com. Hon. E. Plunkett, H.M.S. Savage.*—1840.

Tofino, in speaking of this anchorage in his "Coasting Directions," describes it as "an excellent harbour," and says, "it is by no means generally known."

The want of any commercial town in the neighbourhood, which renders it of no value to commerce, sufficiently accounts for its being still neglected; but as an anchorage for a fleet, or for men-of-war of any description, it possesses advantages not to be found in any other point on the north coast of Spain.

It is sheltered from every wind, except those from north-east to south-east, a quarter from whence it rarely blows with any force. It is easy of access with all winds; has very good holding ground, and is perfectly clear and free from rocks close to the shore. It is sufficiently spacious to contain a large fleet, and has three excellent watering places, where boats may water with great convenience. A good supply of fresh meat may be had at a very low price, and fuel can be procured, though not in the immediate neighbourhood. These circumstances seem to recommend it as a place of rendezvous to a fleet, or cruising ships, requiring a refit, or in want of water, &c. It may also be very useful to vessels unable to weather Cape Ortegal in westerly gales, and is often entered by Spanish vessels under those circumstances. In the heavy gales of last winter (1839-40) there were at one time twenty-two vessels at anchor in the inner roads, called El Vicedo, where they remained perfectly sheltered.

The vicinity of Barquero to Ferrol and Coruna, as well as its unprotected state, its goodness as an anchorage for a large fleet of transports, and its numerous safe landing places might render it a point of much interest under some circumstances: there are no traces of any defensive works of importance having ever existed, and the nature of the surrounding country is unfavorable to their construction.

The entrance of Barquero is easily distinguished, especially in coming from the northward or westward, when its distance from the remarkable point of Cape Ortegal will serve as a guide.

It may be further known by the promontory about one mile and a half in extent, whose western extreme is called Estaca; and which runs down rugged and irregular to the sea, with several small pointed rocks or islands off it. The eastern extreme of the projectory land is called Vares, and the land between the two points is high and steep, over the sea. On each side of the promontory is a deep bight, the one being the harbour of Barquero, and the other the inlet of Santa Marta, which latter is not an anchorage.

In approaching the land from the northward or westward the island of Conejera, which forms the eastern point of the bay of Barquero, will be seen, and the sandy beach at the bottom of the bay. On the hill

* The scanty account which Tofino has left us respecting the important bay formed by Cape Vares on the northern extreme of the coast of Spain, adds much to the importance of this clear and concise description of it by Commander Plunkett.

above Point Camero at the eastern entrance, is a square low look-out station.

In choosing a berth regard should be had to the time of year, the prevailing winds, and the object in view. Ships driven in by stress of weather during the north-west gales in winter time, would do well to run along the weather or western shore, at about three cables' length, and when nearly abreast of Point Almiero, with Cape Vares about N.E. $\frac{3}{4}$ E., and Conejera Island S E. $\frac{1}{2}$ E. to come to with the small bower in eight fathoms, so as to moor north-west and south-east, with open hawse to the north-east; in this position a vessel will be well sheltered by the land, and will have ample room to veer or to way, if desired.

Should the sea in the offing be *very* heavy in a north-west gale some cross swell will come into the bay round Cape Vares, and the smoothest water will then be found farther to the south-east, in the inner roads, called by the pilots, Vicedo. It was in this part of the anchorage that twenty sail of merchant vessels rode out the heavy gales of 1839-40.

The marks for this anchorage are to bring the point of Cueva-baja on with Point de Cruz, (the south point of Conejera Island,) and a long low one-story house standing by itself on the beach of El Valle, on with Point Videiros, bearing S.S.W. But large ships should anchor with Conejera Island open nearly its own breadth of the mainland at the entrance of the harbour in six or seven fathoms. In the southerly gales which are very heavy on this coast, though unattended with sea, this part of the anchorage will also be preferable, as well as with south-east winds. It is also more convenient for ships having to water, the best watering place being close to Conejera Point, on the south-east side under the village of El Vicedo. There is, however, an excellent run of water on the opposite shore, near Point Campelo, where two or three ships' boats can water at the same time, even at low water; at present ships find some difficulty in watering, both at Coruna and Ferrol, having to get the casks out of the boat.

Though particular marks have here been given for the best anchorage, ships may anchor in any part of the bay after bringing Cape Vares to the eastward of N.N.E., which will give them sufficient shelter in north-west gales. The bottom is everywhere clean, with excellent holding ground, and as the soundings are regular, and the shore free from sunken rocks, the largest ships may work in or out of the anchorage with perfect safety, and without any pilot, or previous knowledge of the place.

Although Vares, or Barquero, as a harbour, is not equal to Ferrol or Coruna, it offers some advantages not possessed by either of those ports: it is easier to make in thick weather, the coast is perfectly clear and bold, and in approaching it in westerly gales, you do not, as at Coruna and Ferrol, run down on a lee shore and get embayed. Ships may enter Vares with the heaviest gales at south-west or north-west, and on sailing from it with these winds, they will be at once clear of the land, as the entrance of the harbour is the most northerly point of the whole coast.

It is said that the Spanish government once intended making Vares a naval station, and it would certainly be, in many respects, a desirable

one. It does not appear from the accounts of some of the oldest inhabitants that any accidents have happened to vessels in this harbour, while the neighbouring port of Vivero has a very bad name on the coast. In the year 1810, a Spanish frigate and a brig-of-war were wrecked there, with the loss of all hands; and an English frigate barely escaped by cutting away her masts.

Exclusive of Vivero, which is not a safe anchorage for winter time, there is not a single harbour to the eastward of Vares suitable for large ships, and accessible in north-west gales. Its only disadvantage consists in being open to easterly winds, which blow with greater force on this part of the coast, than farther eastward; but it appears from the statements of the inhabitants and others, that these winds are never accompanied by any sea to endanger a ship at anchor, and this is confirmed by the appearance of the shore itself, which does not shew the usual marks of a heavy surf, when exposed to the easterly winds. The vegetation on the sides of the harbour, extends nearly to high-water mark, a certain proof it is not washed by the surf.

As several English line-of-battle ships anchored in Barquero towards the close of the war, it is possible that its advantages as a port are not unknown, but the want of any large town in the neighbourhood, and the short notice taken of it by the Spanish surveyors, have prevented its being so well known as its importance deserves.

Should the trade between Great Britain and the north coast of Spain become more extensive, or should circumstances lead to the employment of a fleet on that station, the importance of the only harbour for large ships from Ferrol to Bordeaux will soon be acknowledged.

The River and Harbour of Vivero.

This harbour, which is only four miles to the eastward of Barquero, can scarcely be considered a safe anchorage, except in the summer months.

Though it is only open to two points of the compass, viz. from N.N.E. to N.E., and is consequently to *appearance* better sheltered than Barquero, yet a north-west gale will send home a very heavy sea, and a northerly gale will blow directly home.

The holding ground is, however, very good, and the shore perfectly clean and steep on both sides, so as to allow of a ship working out when the water is smooth; but this would be impracticable with the wind fresh from the northward.

The anchorage pointed out by Tofino appears the most sheltered, and is easily found by the marks he has given.

From enquiry made among persons best acquainted with the coast, and the appearance of the bay itself, I am led to think no ship should anchor there during the winter months. It is very rarely visited by any description of vessel, and only in summer time.

The near neighbourhood of so superior an anchorage as Barquero, deprives Vivero of any value it might have had for ships requiring water and fresh provisions. It has a tolerably good watering-place, and the fresh meat is good.

The Port of Rivadeo.

This small port is sufficiently described by Tofino, and no change has taken place in the position of the shoals since his survey, though there is somewhat less water near the entrance.

As an anchorage, it is small and inconvenient, it being necessary to moor head and stern with cables to the shore. There is no proper berth for a large ship, and not more than five or six vessels, drawing twelve feet water, can lie in safety.

There is a good watering-place at Castrepol, about one mile from the anchorage, where boats may fill at high water; and fresh beef may be procured at a low price.

It may be useful to mention, that the hermitage of St. Mark, spoken of by Tofino as the principal mark for nearing the entrance, no longer exists, nor are its ruins even distinguishable.

The Island Bonacca.—*By Lieut.-Com. Smith, H.M.S. Lark.*

This island seems to have undergone little change in appearance since its first discovery, the same dense forest covers all; the higher lands have Cohune and Pine ridges with spots of white granite here and there visible between the trees; some bold cliffs of red and yellow ochre make the east and west extremes conspicuous from seaward.

Its harbours are excellent, with channels in so many directions as to be accessible for the largest ships with any wind. This is a great advantage over Port Royal Rattan, which cannot be entered in northers when they are most required.

The cays on the dry reef forming the eastern branch, are all covered with cocoa-nut and other trees, from forty to eighty feet high. The best plan for a stranger is to count them, beginning to the eastward, as marked in the chart, observing that Nos. 6 and 9 are small, and No. 10, or Half Moon Cay is the largest of all. The first cut, or channel, between Nos. 1 and 2, is so much exposed to the heavy swell generally found here in the season of the breezes, that it should never be attempted by strangers. The one between Nos. 9 and 10 may be, with a vessel well under command; but the best of all is to the westward of the *Small* Cocoa Cay, No. 12, where the water is smooth. A good windward mark for running in, is the white sand bore under a clump of peaked trees on the highest ridge, bearing N.b.W. The bearing of the sand bore alone will be enough should the trees decay, or be hid by clouds.

Pond Cay channel will be found useful, with a north wind, it can be easily taken by eye. A good night anchorage will be found with the well defined West Bluff bearing W. ¼ N., and the South-west Cay north-east in five or six fathoms, coral and sand, this is far preferable to remaining under way in bad weather. The only inhabitants now are two on Sheen's Cay, who ran from men-of-war, some years since. We took one as pilot to show us where the Swift, sloop-of-war struck, who soon ran us on one as bad to the eastward, which I have named *Lark*

Ridge. This extensive bank can be plainly seen in fine weather, and breaks in bad.

All the shoals inside the reefs should be avoided by eye in the same way. It will require a person to be at the masthead, and the sun at least 15° high. There is only one tolerable harbour on the north side, Michael Rock Channel. To enter, bring the highest peak to bear S.E. ½ S., this is 1,200 feet high, although somewhat difficult to be made out on the south side; it never can on the north, even when close in shore. The land winds in the morning are from E.S.E. to S.E. The sea breezes draw round about noon to E.N.E. and N.E. Strong fiery gales seldom shift more than a point or two for several days, day and night, and if it lulls at all it is about daylight.

There is scarcely any living on the north side for sand flies and musquitos.

The windward cays on the south side should be chosen for buildings. It is one of the most healthy spots in the West Indies: and has many advantages over Rattan, probably, not the least is, the abundant supply of excellent water here; it really runs down in almost every valley. A stranger may find the spring inside Sheen's Cays, by bringing the dry sand bore between Dunbar and Peak Rocks. The small stream in the Eastern Harbour will be found more convenient in the breezes, being better sheltered, and having soft mud instead of rocks and stones.

The hawk's-bill turtle are very plentiful, by far the greatest number is taken by the Caribs from the main. Manati are still found in the north-east bight, several kind of Golding and Curlew; pigeons are very numerous on the South-west Cay, and wild hogs on the mountains.

Fish may be taken at pleasure either towing ground, hook, or with the seine.

The tide is very much influenced by the wind, but we find it on a calm day, to flow at F. & C. 1X, rise eighteen inches.

Remarks on the Anchorage between Arnad and the Coast of Syria.—*By F. W. Bateman, master of H.M.S. Carysfort.*

The island of Arnad, as seen from seaward, at a distance of eight or ten miles, has the appearance of a large white castle; on approaching nearer, you see the mast-heads of the small coasting vessels showing over the tops of the houses.

Tortosa, famous in ancient history for the strength of its walls, is a small and ruinous town standing on the beach, about two miles to the northward of Arnad. The ancient cathedral or church stands by itself to the right of the town, and is a conspicuous land-mark.

Arnad is itself only a piece of rock extending from north-west to south-east about half a mile, and rather more than a quarter of a mile across;—it is surrounded by the remains of an ancient and massive wall. The castle is much in the fashion of the old Genoese buildings, but could not be long defended for the want of water, the whole island being dependant on the artificial reservoirs for rain water and supplies

from the main land, which the boats of the island daily fetch from the river, hereafter described. The population is reckoned at about 1,500 souls, of whom about 300 are able-bodied men, who mostly employ themselves in the sponge fishery.

The north point of the island is bold, having nine and ten fathoms close to, but at the distance of about 200 yards is a small rocky patch, with three fathoms and three-quarters on it. It is, therefore, necessary either to keep the island *close on board*, or to pass at the distance of two cables' or a quarter of a mile, carrying not less than five fathoms water, and anchoring in six fathoms and three-quarters under the shelter of the island, at about a quarter of a mile from the rocks,—bottom sand and mud. Still further towards Tortosa, and bearing from the north point of the island N.N.E., at something less than half a mile distance is a shoal of hard sand and rock, with three, three and a half, and four fathoms on it, and extending with slight variation to the main land. This must not be approached nearer than to the depth of four fathoms and a half, as the sides are in some places abrupt. On this shoal, and on the small rocky patch, the sea breaks heavily with a north-west gale, so that although subject to an unpleasant swell, the anchorage is well protected and safe.

To the southward of Arnad is a rocky islet, between which is a passage of four fathoms, but so intricate that no stranger should attempt it, even in fine weather, and in bad weather the sea breaks the whole way across.

About a mile and a quarter south of Tortosa, is a small river which empties itself over a sandy bar into the sea, and here her Majesty's ships Benbow, Carysfort, and Zebra, completed water in the months of August and September, although there were 200 cavalry, with two field-pieces at this station, which were soon routed by the fire from the ships. We were at anchor off the river in five fathoms, about 800 yards from the beach, but this can only be done in fine weather, as there is always a very heavy surf during and after a gale.

On Finding the Latitude, Time, and Azimuth.—*By Mr. J. J. Waterston, Naval Instructor, Indian Navy.*

[We have received the following solution of the Double Altitude problem from Mr. Waterston, naval instructor at Madras, which, although not likely to supersede the method in use at sea, has peculiar recommendations to the attention of the scientific navigator. For simply obtaining the latitude, it has far too many logarithms to come into general use, while there are so many other means by day and night of getting it. But the author might in some degree have reduced this redundance of figures, by taking out the sine of the elapsed time in time) in Raper's tables, instead of resorting to the old method of converting it into space for that purpose. Again, he might have avoided the clumsy alternative of halving his log of arc V, for the sine, and then doubling the quantity for that arc, by simply taking out the arc itself from the first leg in Raper's table of log. sine square, which as neatness and brevity are so much required in these matters, we may recommend to Mr. Waterston's especial attention. The rule alluded to in White's ephemeris, we may also observe is not new, having been given long ago.]

THE latitude, time, and azimuth by one computation from two altitudes of the sun, or of a star, taken at an interval of from 15^m to 10^h; at any time of the day or night, may be found by the following method.

The method is a rigorous solution of the problem without the error involved by taking the sun's declination for the middle time. Although apparently tedious, it will be found, I think, fully as easy to compute as the rules in common use. It appears also to be better adapted to short intervals of time. Under favorable circumstances a good result may be obtained with an interval of from 10 to 15 min. if the time, from apparent noon, does not exceed the meridian zenith distance converted into time.

In this as in all other methods of finding the latitude by a double altitude, an error in the difference of altitudes when the elapsed time is small, causes a much greater error than if it affected both equally. An error of this kind affects the latitude least, and the hour angle most when the two altitudes are taken near noon, and *vice versâ*.

By this method the *time* as well as the latitude may be obtained at or near noon, *with fully as much precision as in the morning*,* and quite independent of the dead-reckoning.

If the greater altitude is in the meridian, the latitude may be found by this method, and by the meridian altitude, which will effectually check the error of the hour angle.

Thus, or even without a meridian altitude the latitude and longitude for the day may be determined at or near noon, if the sun is obscured in the morning or afternoon; and on the other hand both latitude and longitude may be determined early in the morning, if it is an object to near the land before noon.

As a general rule it may be remarked that the time from noon of the lesser altitude ought not to exceed four or five times the meridian zenith distance converted into time; and when the interval does not exceed 15 min., the time from noon ought not to exceed one and a half times the meridian zenith distance converted into time.†

The mathematical elements of the rule (which is rigorous except the small correction applied to arc A for the change of declination, and which will not be found to differ sensibly from a strict trigonometric solution,) depend on the projection of the several points of the sphere on the tangent plane at the sun's place, when the greater altitude was observed. The parallel of declination is projected into an ellipse, and the line that joins the two positions of the sun (being the chord of an elliptic arch, of which the major axis is twice the *cos.* of declination, and the minor axis to twice the *cos.* × *sin.* declination) is deflected from the perpendicular to the meridian that passes through the tangent point. The amount of this deflection is arc A. The length of this line is equal to the *sin.* of the arc of a great circle that measures the distance between

* Having taken several sets of altitudes with sea horizon within half an hour of noon, and each set with an interval of about twenty minutes, I find on computing the error of the watch at the greater altitude of each set, that all the results are within 2s. of the truth, the meridian zenith distance being 20°.

† The time required to perform the whole computation for latitude, time, and azimuth, is not so great as that for three chronometers.

the two positions of the sun; this is arc B. The angle formed by this arc, and the zenith distance of greater altitude is arc V, which is found by the common rule, and has the advantage of indicating the position of the meridian exactly without ambiguity. By applying corrected arc A to V, and taking the complement, we find arc C which is the angle of variation included by the polar and zenith arcs of the sun at a greater altitude. The last part computes the latitude, hour angle, and azimuth, at one operation, and will be found an expeditious form of solving a spherical triangle, of which two sides and their included angle are given, if the three unknown parts are not within 7° or 8° of 90°.*

Rule.—Set down distinctly the times of observation, the true altitudes, the latitude by account, and the declination reduced to the time of the greater altitude. Note the hourly difference of declination from the *Nautical Almanac*, which call miles, and divide by 16, if the elapsed time does not exceed 1½ hours; the quotient call the correction of arc A. (When the elapsed time is 2^h divide by 15—3^h, 14—4^h, 13—5^h, 11—6^h, and 10—8^h.)

To the *tan.* of half the elapsed time converted into degrees add the *sin.* of the sun's declination: the sum is *tan.* of arc A, to which *add* the correction, if the *declination at the lesser altitude is the greater*, if *otherwise subtract*. Add the *secant* of arc A to the *sin.* of elapsed time in degrees and *cos.* of declination; their sum is the *sin.* of arc B.

Arrange the lesser true altitude arc B, and greater true altitude, as altitude, polar distance, and latitude respectively in the usual form for computing the time from an altitude, and find the hour angle in degrees which call V.

Add the *corrected* arc A to V (if the sun is between the zenith and equator; if otherwise *subtract*,) and call the *complement* of the sum or difference, arc C. Take out the *sin.* and *cos.* of arc C; to its *sin.* add *cos.* of greater altitude, the sum is *sin.* of arc D, the *sect.* of which is to be added to *cos.* of greater altitude, and *cos.* of arc C, the sum is the *sin.* of arc E, which is of the same name as the declination, if the sun is between the zenith and equator, if not so, it is of a different name, and their sum or difference is taken for arc G, which has the name of the greater. From the *sin.* of arc G subtract *sect.* of arc D, the remainder is the *sin.* of true latitude at the time of taking the greater altitude.

Add the *sect.* of latitude to *sin.* of arc E, the sum is *sin.* of hour angle at the time of taking the greater altitude. If the *sec.* of latitude, *sin.* of arc C, and *cos.* of declination be added together, the sum is *sin.* of the azimuth at the time of taking the greater altitude.

N.B.—Take the arithmetical complement of *sin.* B for its *cosec.* Take out *sin.* and *cos.* of declination at once; also *cos* and *sect.* of greater altitude.

* To find the correction of arc A exactly;—Take the arithmetical complement of the sum of the *sect.* of A and *sin.* B, and add it to *sin.* of the increment of the declination, during the elapsed time the sum is *sin.* of correction to be applied as previously directed. It will be found that this can be done without taking out any additional logs, and by inspection, as only two figures of the log. require to be computed.

If a star is observed the elapsed time must be *increased* at the rate of 10ˢ per hour.

If the ship has made any way during the interval, the lesser altitude must be reduced in the usual way to the place of the greater.

EXAMPLE I.

Feb. 21st, 1842. Lat. 18° 55′ N. Long. 4h. 52m. E.

Times P.M.		True Altitudes.					
3h. 42m. 16s.		32° 35·3′		Decl. 10° 36′ S: Hourly diff. 55″			
4 16 25½		25 14·3		55′÷16=3·4′=correction; to be *subtracted* from arc A, because the declination is the *lesser* at the lesser altitude.			
34 9½							
El. Time 2)8° 32·3	.....	sin 9·17164					
Half do. 4 16·1	tan 8·87294						
Declin. 10 36 S.	sin 9·26470	cs.* 9·99252					
		·00004		Lessr. alt.	25°	14·3′	
Arc A. 0 47·2	tan 8·13764			sin arc B.	8	23·8	cst. ·83580
Correc. — 3·4		9·16420		Grtr. alt.	32	35·3	sct. ·07439
Cor. arc A 0 43·8					2)66	13·4	
					33	6·7	cos 9·92304
Arc C 59° 16·2′	sin* 9·93428	cos 9·70841			7	52·4	sin 9·13666
Grtr. alt. 32 35·3	cos 9·92561	cos 9·92561					
					75	0	2)19·96989
Arc D	sin 9·85989	sec ·16144				2	
							sin 9·98494
" E 38 38¼ N.	.... .	sin 9·79546	(—) A rcV		150	0	
						—43·8	Arc A corrected to be *subtracted* from V because the sun is *not* between the zenith and equator.
" G 28 2¼ N.	.....	sin 9·67214					
Lat. 18 55 N.	sec* 02411	sin 9·51070		Arc W	149	16·2	
				" C	59	16·2	
Hour angle	sin 9·88400	3h 19m 50s					
Az. * * * sin 9.95091	....63° 16′ or sun's true bearing S. 63° 16′ W.						

When arc W is less than 90° it indicates that one observation was taken in the forenoon, the other in the afternoon. When both altitudes are A.M. or P.M. arc W is always greater than 90°.

When the elapsed time is between 6 and 7 hours, arc B may be acute or oblique. To determine which subtract the log. *cos.* of declination from log. *sin.* of declination (adding 10 to its index) if the remainder is *greater* than the log. sin. of arc A, arc B is *acute*; if it is *less* arc B is *obtuse*.

For this and other reasons an elapsed time of from $5^{h.}\ 40^{m.}$ to $6^{h.}\ 50^{m.}$ is to be avoided.

When the interval does not exceed 15 min. a very good approximation to log. sin. of arc C may be obtained by adding the log. sect. of declination to the common log. of the difference of altitude in miles and decimals, and from the sum subtracting the common log. of the elapsed

time also in miles and decimals. In this case the mean altitude must be taken in the latter part of this computation instead of the greater altitude. When arc C is thus obtained, a correction ought to be applied to it for the change in declination, the rule for which is:—Take out the hourly difference of declination for the day from the *Nautical Almanac*, which consider as minutes of a degree, and divide by 16, the quotient is the correction of arc C. If the declination at the lesser altitude is the *greater*, *add* the correction to arc C, if the sun is between the zenith and equator; otherwise *subtract*. If the declination at the lesser altitude is the *lesser*, *subtract* the correction from arc C; if the sun is between the zenith and equator, otherwise *add*.

Example II.

March 6th, 1842.

Lat. 18° 55′ N. | 10h. 37m. 19s } A.M. 55° 49·5′ } True 5° 48′ S. decl.
Long. 4h. 52m. E. | 10 46 20 } 57 19 } Alt. Hrly diff. 58 ÷ 16=3·6

Elapsed Time	9m. 1s.		1 29·5		
Do. in degrees	2° 15¼		89·5	log. 1·95182	
		Decl. 5	48	sec. 10·00223	
				11·96405	
Do. in miles	135·25			log. 2·13114	
Arc C		41° 41·6′		sin. 9·82291	
Correction		—3·6			
Correctd arc C		41 38	sin. 9·82240	cos. 9·87356	
Mean alt.		56 34·2	cos. 9·74109	cos. 9·74109	
			sin. 9·56349	sec. ·03123	
		26 15·6 N.	.....	sin. 9·64588 (−)	
		5 48 S.			
		20 27·6	.....	sin. 9·54350	
Latitude		18 59 N.	sec. ·02429	sin. 9·51227	
Hour angle		1h. 31m. 5s.	sin. 9·58778		

This is similar to the rule given by Mr. Woolhouse, in the admirable nautical tables recently published along with White's Ephemeris. A satisfactory result for latitude must not be expected from it, unless the time from noon is less than three-fourths the meridian zenith distance converted into time.

The above example computed by the first process gives 18° 55′ N. latitude, and 1h. 31m. 17s. hour angle, which was the actual latitude and time otherwise known.

In another example the elapsed time being 34m, hour angle 3h 40m, and meridian zenith distance 29°, the latitude and time was correct by 1st process. By the 2d without correcting arc C the latitude was 8′ in excess, and with the correction, 5′ in excess. As this correction increases the error when it has to be subtracted, it will be perhaps best not to apply it, unless when additive.

To find the Latitude and Time by the simultaneous altitudes of two stars.

This is a modification of the preceding rule. Call the star with lesser polar distance α, and that with the greater β. Set down in a distinct order, their altitudes, declinations, and diff. of R.A.

The first part of the computation is similar to the last part of example I. Put diff. R.A. as arc C, and the declination of α as the altitude: find by the formula arc E to which add the declination of β, when the difference of R.A. is less than 6^h, and subtract when more. (To prevent ambiguity it will be best, when possible, to select the stars so that their diff. of R.A. may be less than $5\frac{1}{2}^h$, or more than $6\frac{1}{2}^h$. The distance found by the rule ought to be less than the polar distance of α in the first case, and greater in the other.) The arc that answers to the latitude in the result is the complement of the distance of the two stars, and the arc that answers to the hour angle call arc M.

The second part of the computation is the same as the common rule to find the time by an altitude.

The altitude of α, the distance of α and β, and the altitude of β are to be put in the place of the altitude, polar distance, and latitude respectively. Find the hour angle in the usual way which call arc N. To ascertain whether the sum or difference of arcs M and N is to be taken for arc P; suppose a thread to be stretched between the two stars and to extend indefinitely both ways; if the pole and zenith are on the *same* side of this line take the *difference* of M and N, if on *different* sides take the *sum* for arc P.

The last part of the computation is similar to the first. Put arc P in the place of C, and for the altitude take the altitude of β, and for the sun's declination take the declination of β, adding or subtracting it from arc E, according as it is between the zenith and equator, or otherwise. The resulting latitude and hour angle is the true latitude and distance of the meridian from β. The latter added or subtracted from the R.A. of β according as it is west or east of the meridian will be the R.A. of the latter, from which subtract sun's R.A. to find apparent time of observation P.M.

Although more speculative than useful, it may be remarked that by the last rule the latitude and time may be computed by any two isolated altitudes of the sun, taken at an interval of from five days to five months. The time at each observation being known near enough to take out the R.A. and declination of the sun with ordinary exactness. The conditions of the problem are evidently the same as if simultaneous altitudes were taken of two stars having the respective positions occupied by the sun at the two times of observation.

Bombay, Mar. 14th, 1842.

JOURNAL OF AN EXPEDITION TO NORNALUP; *or the Deep River of the Sealers, in the months of March and April*, 1841.—*By W. Nairne Clark.*

HAVING heard from the sealers many reports respecting a river to the

westward of King George Sound, called by them the "Deep River," I had long felt an anxiety to visit the place by land or sea, in order to find out, for the benefit of the colony, whether the stories told respecting this district of country were true or not. On explaining my views to J. R. Phillips, Esq., the Government Resident at Albany, I was promptly and kindly furnished with a fortnight's rations for three men, for the purpose of facilitating so far the contemplated object. I had then decided on reaching the Deep River by sea, and having procured Mr. Solomon Aspinall's whale-boat, manned by himself, his boat-steerer, and three men, I started from Princess Royal harbour, on the 15th of February last, about 5 o'clock A.M., but on getting out of the harbour, finding the wind to be S.S.E., and of course foul, we pulled for Mistaken Island, and disembarked. This island is somewhat more than a mile in circumference, and derived its name from the fact of its being so near the main land that it was at one time supposed to have formed a point of it. There is, however, a good passage for boats between the island and the main, of the depth of about 8 or 9 feet, and a very safe boat harbour. There are several wild goats on the island, and abundance of rabbits. I counted three goats at one place, and four at another, but they bounded away into the thickets like wild deer, so that it was almost impossible to obtain a shot at one; and finding out afterwards that they were private property, belonging to Mr. Cheyne, I was glad that they were not molested; although, to tell the truth, they may in a manner be said to be wild animals, as the island belongs to the crown. I noticed the bronze-winged pigeon in numbers.

Of the productions of Mistaken Island, the thickets were composed chiefly of the peppermint-tree, and the same species of leguminous plant that grows in what Mr. Drummond, the botanist, fancifully styles the "fatal grove" of King George Sound. The plant was then in seed, and, being so plentifully strewed over the island, must be eaten by the goats. It is, therefore, evident that this leguminous plant, which belongs to the same species as *Burtonia*, cannot possess that fatal effect so hastily attributed to it by Mr. Drummond. Another fact struck my attention, which was, that as not a drop of fresh water could be procured on the island, goats and rabbits can exist without that essential requisite of humanity.

On the 16th we were obliged to run for Oyster Harbour, during the same foul wind, and to obtain a supply of fresh water. We remained there for two days, and one day in the Kalgan River, obtaining a supply of fish with Mr. John M'Kail's seine net.

On the 19th, started from Oyster Harbour, at 3 o'clock A.M., on our voyage. Pulled out with great difficulty to Michaelmas Island, and then made sail, rounding Bald Head at about eight o'clock. The sea was running very high, and finding the boat leaking a good deal, we stood in for Torbay, and landed first on an island in the bay quite close to the main, where we obtained some mutton birds in holes. From the top of this island I had a fine view of the Mount Lindsay of Dr. Wilson, bearing by compass N.W.b W., said to be situated at the head of the inlet bearing his name, into which the Hay, Denmark, and Steeman rivers flow; also named by him. We then made for the place where Mr. Sherrat's vessel of 200 tons is in the course of

being built and on hauling the boat up, it was deemed necessary to give here a false keel, and a rudder, instead of the heavy steer oar.

20th.—Engaged all day repairing the boat, and making her fit for sea. In the interim I had a good opportunity, of which I availed myself, of inspecting Torbay. According to the map, there seems to be a communication with the sea and the inland water (which, instead of a river, I take to be the mere drain of swamps), but on approaching it, after walking four or five miles round the beach from the vessel, a bank of sand of considerable breadth intervenes between the sea and the inland water, rendering boat navigation impracticable, except in the winter months, when the rushes of fresh water caused by the rains may open what I would call a very dangerous passage for boats. There is very good cattle and horse feed around the Torbay district, and fresh water is plentiful in all directions. Near Mr. Sherratt's vessel the water gushed from the rocks and hills as if from the spouts of tea kettles, in such a perpendicular line as to make a natural cold bath for any person so inclined.

21st.—Started from Torbay at 4 o'clock in the morning with a fair wind, but about 8 it became a dead calm, which detained us two hours; at last a breeze from the S.E. sprung up and we reached the bay of Wilson's Inlet, running *in* in a W N.W. course, in order to discover the mouth of this estuary. We got so near as to see a bar of sand stretching right across its entrance. It may be open in the winter months, according to the maps, but during the other seasons of the year a boat is barred from all appoach to it. We then hauled off and made for Williams Bay (Parrys Inlet), expecting to find a good harbour, according to the report of sealers, and of Williams in particular; but there are so many names on maps referring to this person and that person whom nobody knows, that simple people are at a loss to find the exact spot where bays, rivers, harbours, and good land exist. Off this bay there are a good many of what are called "blind breakers," which show themselves only at times, and as there was a very high sea raised by the S.E. wind, we narrowly escaped being swamped by one, which, by able management of the helm, broke right on the stern of the boat, with no damage exept a complete drenching. Unappalled by this danger, we nevertheless ran in on the west side of an island immediately off the main, expecting to remain there all night, but we could perceive no boat harbour, after rounding the whole of the bay near shore. The surf was breaking very high, so it was impossible to beach the boat. Thus, although the day was far spent in running into and out of these bays, we had now no other alternative than to make for Deep River (twenty-five miles farther) with all possible despatch, and we reached the entrance about 9 o'clock at night. The swell of the ocean was heavy outside, but we easily swept over the bar, got into deep water, as smooth as a mill-pond, and moored the boat to a tree by the river bank (left side going up). I cannot describe my sensations on entering this beautiful river during the gloom of night. A sense of awe mingled with pleasure was chiefly predominant. We were all much fatigued and wet, but a brisk fire was soon made, and we procured plenty of fine spring water close at hand.

22nd.—Early in the morning we proceeded to a large island some-

thing more than a mile from the mouth of the river, which we named Saddle Island, from its resemblance to a saddle with the flaps extended. On our way, and immediately outside of the bar, we examined what seemed to be a fine anchorage for vessels. It lies in the mouth of the river, and is sheltered from all winds except east and south-east. We sounded and found three fathoms water close to the shore, on fine sandy bottom; farther out, six fathoms. The following are the bearings:—A rocky point called East Point bore south-east; Breaker Rock, on right side of bar (going up), N.b.W. On rounding East Point, a larger bay appeared, with 6½ fathoms, on the same kind of bottom. The following are the bearings:—A bluff rocky promontory called Rocky Head, forming the very outer head of the river on the left (going up), bore south; East Point N.W.b.W.; the point on the main land called Ramé Point in the map (distant eight or nine miles) bore east. During the summer months, however, these harbours are exposed to the south-east gales and swells of the sea, rendering them safe only during the winter months. All around them, from the bar of the river to the shore of the main off its mouth, there are numerous streams of fresh water flowing from the rocks, sufficient to water a navy of ships. On rounding Rocky Head, Saddle Island bore S.S.W., and the outer point of a reef between the island and the main bore S.W. ½ W. On reaching the island, to my infinite gratification, a ship's harbour developed itself, which far surpassed the two others. It is completely protected from all winds except the east, and the water was perfectly smooth. This harbour is formed by the island on one side, a long reef of rocks on another, and the main land on the third. The reef excludes the south-west swell, and the island the south and south-east swells. The following are the bearings:—Ramé Point on the main, E.b.S.; extreme point of the island E.S.E.; outer head of the river, Rocky Head, north-east; point of reef north-west. Our object in going to the island was to procure a supply of mutton birds, as our salt provisions were nearly expended. We found a considerable number of petrels, and salted them with that useful commodity which is procured in quantities on this island. To my astonishment, pure fresh water was found in the middle of the island flowing down from the high rocks in little streams. At this season, when they were seen flowing, it may be inferred that they are never dry. If such is the case, ships may be watered from them with little trouble, except merely blasting the rocks to make a large cistern. On Saddle Island hundreds of swine might be reared without any expense, as there is plenty of natural food for such animals. The mode of catching birds is simple;—during the day they are ever skimming over the restless wave with their light wings, but at sun-down they return to roost on the island in innumerable flocks. Parties then arm themselves with sticks, and as the birds are running about in all directions in search of their holes, with which the island is covered, they are knocked down with the sticks. Penguins abound, and a very large species of lizard. The fur-seal likewise frequent it, and the adjoining reef.

23*rd*.—On our return to the river we sounded the island harbour as follows:—Close to the north point of the island three fathoms and a half; on the outside of the harbour another point of the island bearing

south-east farther in the entrance eight fathoms, boat going north-east; soundings near the shore of the main land ten fathoms, then fifteen fathoms, and thereafter very deep water; close to the shore of the main land fifteen fathoms; soundings immediately off outer head of river eight fathoms and a half; soundings in the harbour five and six fathoms all through, on a fine hard sand mixed with blue clay. As we were this day preparing for our start up the rivers flowing into the large estuary, called Nornalup by the Aboroginal inhabitants of the country, I walked along the sea hills on the coast and found tolerable feed for sheep, of a scrubby nature, certainly, but thickly interspersed with tufts of grass, the long silky grass and what is called the oat grass. A very beautiful and large species of the creeper plant spread itself over the ground in many places, but at this time the seed had dropt from it. On arriving at the point of the estuary where the water expands into a magnificent bay, I observed an appearance on the sand that indicated water, I scraped with my hands, and in less time than a minute the water began to run into the hole. I then enlarged it with both hands, when the water actually gushed in, and allowing it to clear I quickly filled a horn that I had slung around me, with delicious cool water. A large flock of sheep feeding on the downs might here be watered, in fact, from the high appearance of the land on the left bank of Nornalup (going upwards), abrupt wooded eminences and rocky precipices from the bar of the estuary, I have no doubt that the whole beach abounds in fresh water springs. We afterwards found two more springs flowing from rocks close to the river.

24*th*.—Started to explore the river at the head of the inlet, flowing to the westward, its mouth being opposite a small island near the main land. We sounded the estuary all along the shore towards this island, and these soundings were as follow:—On entering the estuary towards the west river, we found 7 feet, (low water at the time,) 5, 7, 5, ½, 2 fathoms, 17 feet, 3 fathoms, 19 feet, 14, 13, 12; course north-west 11 feet, 10, 9½, 8, 6, 7, 12, 13, 12, muddy bottom, and 12 feet nearly to the north end of the island from the main N.b.W. West side of the island 7 feet, 6½, 5. W.b.S. 4 feet, 3 and 2½, bar of the west river at low water. We then sailed up the river, which is broader than the Swan at Guildford ferry, but of a more picturesque character; it developed itself in many beautiful reaches with high bold hills in parts crowned with trees of gigantic growth close to the waters' edge. The following was our course up the river, and the various depths; at the entrance, as I have before stated, 2½ feet, being the sandy bar at low water steering in S.W.b.W.; W.S.W. 3 feet, west 3½, W.N.W. 5 feet, first reach N.W.b.W. 6 feet water, W.b.N. ½ N. 3 feet, north 3 feet, W.N.W. 3½ feet, north-west 3½ feet, N.W.b.W. 4 feet, north 4 feet, N.W.b.N. 4 feet, N.W.b.W. 5 feet, W.b.N. 5 feet, about this distance, half a mile from the bar, a branch appeared to the left almost as large as the river, which we determined to explore on our return; N.W.b.W. 5 feet, N.N.W. 7 feet, north-west 7 feet, west 5 feet, W.S.W. 5 feet, south-west 5 feet, W.S.W. 5 to 6 feet, right through this reach west 8 feet, N.N.W. 5 feet, W.N.W. 5 feet, W.b.N. 5 feet; this we called Long Reach, from its length and depth, averaging from 5 to 12 feet, W.S.W. 8 feet, west 11 feet. Here, about five miles from the bar

the river becomes quite fresh dividing itself into two branches, we took the one to the left hand (going up), which was narrow, but 5 feet deep all along; it proved to be a mere creek. We then returned and sailed farther up the main branch N.W.b.N. 7 feet, W.N.W. 7 feet, west 7 feet, S.W.b.W. 6 feet, W.b.N. 7 feet, N.W.b.W. 6 feet, N.W.b.N. 6 feet, W.N.W. 8 feet, west 9 feet, S.W.b.S. 9 feet, S.W.b.W. 8 feet, W.b.S. 3 fathoms, W.b.N. 5 feet, 9 and 12 feet and sunken rocks, W.S.W. 8 feet, W. ½ S. 8 feet, west 6 feet, W.S.W. 9 feet deep, but full of dead timber. Here the river again branched out, one part coming from the south, and the other N.W.b.N., both so choked up by dead timber as to prevent the further progress of the boat. This place was about 10 miles from the mouth of the river; here we encamped on the left bank (going up) and I walked along the borders of the southern branch, but soon found it to be a creek. To my gratification, however, I discovered a pure mountain torrent about two yards wide rushing down with great impetuosity towards the river, and having that murmuring sound which is so pleasing to the ear. At one part it formed a natural cascade and the torrent was strong enough to turn the largest Mill-wheel in the colony; about 300 yards further on, another stream was found much broader, but not flowing so rapidly. All along these streams and back into the country from the river, the vegetation was of a very rich description—sow-thistles between 5 and 6 feet high, so thick as to impede one's progress, and on the surface of the ground grass and wild vetch, fine feed for cattle and horses; near this then was a large plain destitute of trees covered with the gigantic *fern* of Fraser, *Zamia spiralis*, and *Xanthorhœa*, soil black sandy loam. I afterwards crossed in the boat to the right bank (going up) which was generally high towering hills. Here the vegetation was luxuriant, wattle trees, tall ferns, and wild vetch were growing amongst trees of magnificent growth, some of them 100 feet high, of enormous girth and straight as a pole, all of the genus *Eucalyptus*, so well known to the scientific world. The soil was a red loam embedded on clay. I went up the river some distance and found the same character of country prevailing. Where I left, it was about 70 feet wide, and if the trunks of trees were cleared away, I was quite satisfied that boat navigation could be extended for several miles farther. Having finished the survey so far, we rowed down, and on arriving at the opening which I thought was another river, we pulled up this branch. After various twistings in a S.S.E., S.E., and easterly direction I began to surmise what it actually was, and my conjecture proved right by our arrival at its mouth in the Nornalup estuary, thus forming an island of a large piece of land which I thought was the main. We then pulled back to examine another opening which we had observed again diverging from this opening and soon arrived likewise at the estuary. This branch cuts off another piece of land of considerable size making another island. There is a small island near the mouth of the latter branch, thus forming four islands belonging to this part of the estuary, and establishing the fact that the west river discharges itself into Nornalup by three separate mouths.

25*th*.—The boat steerer being sick I left him on the island and took the men in the boat to the bar of Nornalup, for the purpose of fishing with the hook and line, and we soon procured plenty of snappers. In

the afternoon I walked round the south and south-west side of the inlet, in hopes of finding another opening, but was disappointed. I waded across the bars of the second and third mouths of the west river, which were scarely knee deep. The third mouth is 125 yards west of the second, and the second 38 yards west of the first. As we approached the main branch from the northward, yesterday in the boat, we of course, did not then perceive them. I tried to walk across the Long Island, but found it impracticable, owing to the dense and matted vegetation reaching higher than my head.

26th.—Left our encampment on the island, the west river on the north; course N.N.E., pulled round a small rocky island called Gull Rock, which bore S.E.b.S. from Long Island, and N.E.b.N. from the entrance of the middle branch of west river; course N.E.b N. round the inner side of Garden Island at the entrance of the second estuary, there are high bold cliffs on each side with large trees to the top of the hills; course in E.N.E., muddy bottom, eight and nine feet water and no bar. The entrance into this estuary is nearly as broad as that into Princess Royal Harbour. From point Possession, N.E.b.E. 10 feet, and muddy bottom, N.E.b.N. 7½ feet, N.N.E. 7 feet, N.b.E. 8 feet, north 8 and 9 feet, N.b.W. 9 feet, N.N.W. 8 feet, N.W.b.N. 7 feet, north-west 6 feet, 5½, and 4 feet, N.N.W. 4½ feet, very muddy bottom. The banks here contracted, and we entered an estuary nearly as large as Oyster Harbour; course N.b.W. noticed an opening coming from the westward, with low banks on each side; but determined to explore this large basin of water, which lies east and west, and north and south. We pulled round the bay, and found, generally, four and five feet of water, although the depth might have been as many fathoms elsewhere. It is situated about N.b.E. from the other estuary, three miles or more east and west, and a mile north and south. We rounded the whole of this second estuary to see if there was any other opening than the one alluded to, but found none. On approaching the east part, a high hill bore due east, another high hill E.b.N., and one between the two. We then pulled for the opening which we had seen in the morning, and on approaching it, two high hills bore north-west. We entered it W.b.S., and it is about 100 feet broad at the entrance. The following are the various bearings and depths of water; W.N.W. 9 and 8 feet, N.W.b.W. 8 feet, north-west 7 feet, W.N.W. 6 and 9 feet, N.b.W. 7 feet, north 6 and 9 feet, N.E.b.N. 7 feet, E.N.E. 13 feet, S.E.b.E. 13 feet, N.N.W. 7 feet, W.N.W. 7 feet, N.W.b.N. 9 feet, N.b.W. 7 feet, W.S.W. 7 feet, south-west 9 feet, south-east 6 feet, E.b.S. 6 feet. Here the river (about five miles from its mouth) was so choked up with dead wood as to prevent us from going farther up in the boat. I landed, and walking up its right bank (going up) for some distance, found the soil to consist of a rich red loam, and quite soft. The back land was a black sandy loam covered as usual with a profusion of vegetation, the giant fern and sow-thistle chiefly predominating, and on the surface, wild vetch and grass intermixed. About two miles up from the place where the timber stopped the navigation of the boat, the water of this river becomes fresh, but it dwindles into an inconsiderable brook.

The trees were not nearly of such magnitude as those on the west

river, and on travelling down I passed over a sandy plain several miles back from the river, of the worst soil imaginable. There are several flats of alluvial soil, one especially on the right bank (going up) at the entrance, but I suspect from its appearance it is partly covered with salt water during the winter months. We encamped for the night at the entrance of the second estuary as it was blowing too stiff a gale for us to reach our depôt on the island. The land along the west side of the second estuary is very rich, but thickly timbered with the *Eucalyptus* genus. The trees are of large growth and quite straight; many ships might be built from this place alone, and some of the trees are admirably adapted for masts and spars. The mast of the Lively cutter was obtained from amongst them, and floated down to Sealers Cove, inside the bar, where she lay in three fathoms of water.

27*th*.—Started for the third and largest river commonly called the Deep River, and arrived at its mouth about 7 o'clock A.M.; the river flowing from the eastward. Here I must pause, and state that some person or other has taken it on him to name it the "Frankland" river, after some individuals quite unknown to us settlers. The only persons that visited the estuary of Nornalup, were Lieut., now Capt., Preston, of the Royal Navy, wrecked in a whale-boat, or obliged to abandon it on the coast, in the month of April, 1831, and Capt. Bannister in the month of January in the same year. These gentlemen did not explore the rivers flowing into the estuary, and from their printed Journals which I have seen, gave them no names, for the best of all reasons, because they never saw them. Mr. Smythe, then belonging to the Surveyor-General's Department, accompanied Capt. Bannister in his overland journey from Swan River to King George Sound, but between the two they mistook their way, and struck the sea-coast near Cape Chatham. Mr. Smythe afterwards derived all his information from a sealer of the name of Isac, who lived for several months with a black woman on Saddle Island. His information was very imperfect and erroneous, for instance, it is laid down in the map that, "the banks on the Frankland River are generally about 80 yards apart, in the lower two miles and a half with alluvial flats 200 yards in depth, covered with grass and sedge, behind which the primitive banks rise abruptly, and are beautifully timbered." This appears very fine on paper, but it so happens that there are no alluvial flats, and no rich land until the Deep River is ascended for three miles. The person, therefore, who put down on the map such names as the "Frankland" and "Collier" rivers, could never have inspected them so far as to entitle him to give them names.

There are two islands at the entrance of the Deep River, and two mouths into the estuary. We pulled up for three miles to what appeared to be an island in the middle of the stream, but it proved to be a mere peninsula. Here I landed, and walked along the right bank (going up), and found fine alluvial flats, containing rich grass and tender sedge, backed by gentle hills covered with fine dry sheep feed. These hills are the general characteristic of the country between the river and the sea at this part. I found fresh water in two places on the surface of the ground, and plenty of it. The banks on the other side were composed of slight wooded hills, the *Banksia grandis* chiefly predominating,

and growing on sandy soil. We then pulled and sailed up the river about fifteen miles, but at this our starting place had some difficulty in crossing sand flats, where the river was broader than the Swan opposite Perth. After poking about for some time, we at last found a channel of about three feet, although I am satisfied there was a much deeper one. We could get no farther up than twenty miles, on account of the immense logs of dead wood lying right across the river. The sail up was truly delightful. The river actually appeared in places to be embossed amongst lofty wooded hills, with tall *Eucalypti* trees close to the waters' edge, and crowning the summit of these hills; thus casting a deep gloom over the waters, and making the scenery the most romantic that I ever witnessed in other quarters of the globe. The river being salt at this distance, and finding no surface water, although, from appearances, plenty might have been had by digging, but unfortunately we had no spade, we rowed down, intending to obtain water at the place where we had seen it in the morning, when, in our course, we luckily perceived a small opening to the left (going down), and entered it with the whale-boat. It is about thirty feet wide, but on sculling the boat up for about 200 or 250 yards, were stopped, as usual, by dead timber. The water of this opening was salt, but on disembarking and going about 100 yards farther, we found the brook running with a gurgling noise, and containing pure fresh water. This seasonable supply saved us a long pull, as I was determined to return, and explore the country around the river thoroughly. I here took one of the men with me, and walked about eight miles in an east and E.b. S. direction.

I may mention that the rich valley, in which we encamped, is composed of alluvial black mould, running first south-east by compass, then north-west, then east, and afterwards in a northerly direction for many miles; where it ends I cannot say. On crossing the plain, we found no less than three running brooks of pure fresh water, which evidently feed the larger brook where the boat lay. After three hours' hard walk, we reached the base of a very high range of hills, but before we got there, saw three places with abundance of fresh surface water; one stream in the middle of a large sandy plain, three miles long by two broad, covered with coarse scrub so prevalent in many places of the colony. The other two were native springs or wells. The base of this range of hills was surrounded by a broad belt of rich cattle and horse pasture, then fine red loam amongst the timber, and as the hills are ascended the soil becomes richer.

We toiled to reach the top of one hill, but toiled in vain, for when we did reach it we found it covered with *Eucalypti* of immense height and circumference, and an absolute thicket of wattles, about twenty-five feet high, which shut up all view of distant objects. The plant *Leptospermum* grows luxuriantly, and in great quantities on these hills and their adjacent valleys, and I noticed in abundance the sweet-scented *Santalaceæ* of the genus *Dycotyledones*, resembling the sandal-wood of the East Indies. It perfumes the air for a considerable distance, and many a time I inhaled its sweet fragrance, giving one an idea of the balmy zephyrs of Arabia. On the very top of this mountain we could only see a few yards before us, and as my time would not allow me to

penetrate the recesses on the other side, we began to descend on our way to the boat.

I particularly marked the size of some of the trees, and people may think me romancing, when I state, that many of them measured eight feet in diameter, or twenty-four in circumference, all growing on the richest soil imaginable. In fact, this country is entirely *sui generis*, having a character of its own totally different from any other part of the colony of Western Australia.

We returned much pleased with our trip. I have no hesitation in stating that several hundred head of cattle and horses might be depastured in this valley alone. There is another valley to the north of it, with only a gentle rise of a hill intervening, running east and west. This other valley is equally good, and has the same alluvial soil and cattle-feed. Both of them join towards the north-east.

NOTES ON THE RIVER CONGO.—*By Com. E. H. Butterfield, of H.M. Sloop Fantome.*

On crossing the line on the month of March, 1840, in longitude 15° west, we experienced a current of from thirty to forty miles per day, between 0° 30′ north, and 3° 0′ south.*

The depth of water in the Congo, differs very much from the soundings laid down in the chart of that river, and several banks existing which are not laid down at all, but we had no opportunity of surveying them. The water in the stream in fourteen fathoms, is very good, the tide running from six to seven knots. In five fathoms, near the shore, where we anchored to procure wood, the water was brackish, and the anchor brought up a mass of putrid leaves, as black as ink.† We cut wood in forty-eight hours sufficient to last three months, and found the natives very anxious to trade either in slaves or ivory.

I would recommend no one entering the Congo until the sea breeze sets in strong. The Fantome going five knots, was completely turned round two or three times. And great care must be taken to keep on the south shore, as the tide sets directly on the Mono Mazea Bank, and at such a rapid rate, a ship is almost unmanageable with any wind. In coming down the river, (in December when we found the water eight feet deeper than in July,) keeping well over on the south shore, we were set directly out of the river. We came down with a one knot breeze, the tide running five and six knots. On the south side of the stream the current appears to set about W.b.S. true, and to the northward of it about N.b.W. true. The climate is so fine, that the natives' huts are generally built without roofs. The Fantome has been on this station since June, and we have never experienced rain to last one hour, nor any more than six days, between that time and Dec. 31st, 1840.

The thermometer generally in June, July, August, and September, was 70°, and in November and December 80° to 82°.

* The same current is noticed in a former number by Com. Frankland in the Pearl.

† Is this the origin of the Sulphuretted Hydrogen discussed lately?

Some valuable remarks on the Congo will be found in our May number (p. 297,) by Capt. Tucker, R.N.

Nautical Rambles.—The Leeward Station during the War.—*Port Royal and its Associations.*

(Continued from p. 391.)

It will be recollected, that at the period we have been speaking of, St. Domingo was in a very unsettled state. In the mother-country the demon of faction was ascendant, and social equality proclaimed amidst the most consummate tyranny and bloody domination that ever outraged civilized society. The citizenship of the blacks, or even of the coloured people, (amounting together to about 463,429 souls,) was not, however, at this time, thought of by the white fiends in their loud clamour for the "rights of man." The slaves, however, commenced the struggle in the year 1791,—some months before we find our hero accused of acting a part with them, under their new appellation of "brigands." The reciprocal acts of cruelty at this period, and for several years subsequently, were horrible. How far success would have attended the exertion of the blacks, but for the intervention of the war with England, seems doubtful. As they gained ground, generally from that cause, the unfortunate white inhabitants were obliged to retreat upon the sea coasts, and, eventually, to confine themselves to the ports; and those who could not succeed in thus escaping, fell a sacrifice to the ferocious and demoniac revenge of the sable race! It is hardly possible to conceive a situation more exciting and appalling, than that in which these unhappy white people were placed. I speak from actual personal knowledge—having as late as the year 1803, witnessed several horrifying massacres.

The celebrated negro Toussaint, began his career about the time of the lieutenant's rescue; but, as he was on the north side of the island, and our hero was figuring on the shores of the bight of Leogane, there was probably no connexion between them, supposing the accusation of the latter to have been true. How long he had sojourned in the island, or what induced him to visit it during the troubled state of affairs, of course, I cannot state. We are not justified in believing that he was employed officially—*sub rosa*, to foment the discord already raging there. The thing, indeed, is not impossible, for we all know that political *expediency*, but too often employs means at variance with the dictates of humanity, and that on such occasions there are those, who, as instruments, are ever ready and willing to undertake the most hazardous exploits, and install themselves in the most degrading stations upon a certainty of personal profit! Supposing in this instance, such to have been the case, the despicable capacity of *spy* could hardly be attached to such a mission during a peace, however precarious, but the equally base character of *incendiary* would unquestionably. However much suspicion, from the whole tenor of circumstances, may seem to bear out such a conclusion, yet, there is nothing to confirm it further than that of our hero having undergone a trial, and received condemnation for his connexion with, and services to, the rebellious negroes. But these events, considering the feverish state of the white community at the time, should not be readily admitted as conclusive evidence of the surmised fact. For it would be a cruel reflection on the memory of this

extraordinary seaman, to insinuate that he had risen in rank very far above his education and former condition of life, by the performance of actions which an honourable mind would have shrunk from. A variety of opinions were afloat on the station, which I do not think it is necessary for me to add here; for my own part, I could never come to any satisfactory conclusions in the matter, from the stories which I heard.

Another report stated the noted seaman to have been the son of a Mulatto woman, of Kingston. One of his "nankeen" daughters I knew. She kept a respectable lodging-house, and seemed to be in a thriving condition, and had adopted the captain's name.

Lastly, I have heard that he was really an Englishman, and that he was born at a village called Kingswood, situated on the right bank of the Bristol Avon, in the county of Gloucester, where there are some coal pits, and the peasantry of which place, until very lately, were scarcely a remove from savages. From personal appearance, I should say he was not an Englishman; but, it is to be remembered, that an early and long servitude in a tropical clime, may have a very great effect in this respect. At all events, we may believe, that if the French language was not his vernacular tongue, he must have acquired some knowledge of it, to have had intercourse with the inhabitants of St. Domingo.

Another singularity attached to his career, and which gives some colour to the opinion of his being a West Indian or Creole, is that of his having served during the whole time* he was in the service in the West Indies, and principally on the Jamaica station, if not solely.† When on half-pay, he lived at Kingston, and died there,—it is said of asthma. During my time on the station, I do not recollect but one gallant action which he performed, and this was certainly executed in capital style. Some French line-of-battle ships having stole out of Cape Francois during the night, chase was given by the squadron. The superior sailing of the *Tulip*, enabled the gallant captain of her,—our hero, to outstrip all the other ships, and to rake the fugitive repeatedly. Indeed, so annoyed and "peppered" was the unfortunate Frenchman, that the English Commodore found him an easy prey on coming up.

As a schooner cruiser, it was said, "Jack Punch" excelled all competitors,—his skill, daring, and cunning, were superlative; yet, a time came, when he had risen to a more staid and dignified station, that he was out-witted by a mortal of equal celebrity, with respect to the above qualities, but on another account very much his superior. I allude to the noted rover, Capt. Love, commanding a French privateer during this period, who was, not only a thorough seaman, but also a well educated, accomplished, and polished man.

The story of his escape from our hero's frigate, in detail, I have almost forgotten, but the cream of the incident was this—he was found in an American vessel which had been taken by his own privateer, and

* The period of his entry and his age are unknown, but he was serving during the first American war, and probably long before.

† This may be extraordinary in a naval career, but there is another instance of it in the last Commodore who returned from that station.

recaptured by the Tulip. The cunning rover finding himself entrapped, played off a *ruse*, which succeeded admirably, and he no doubt enjoyed, at his leisure, a hearty laugh at the expense of the renowned "Jack Punch." He passed himself off as a Yankee, and trumped up a story about the rascally French pirates having robbed him of a large amount of coin, which they had headed up in a salt-beef barrel and buried in the sand, upon the beach opposite to which the ship happened to be passing. Now, it was the easiest thing possible for him to accomplish in the small boat of the prize, with two of her men to row on shore, dig up the treasure, place it in the boat, and be on board again in an hour or two,—salvage, of course, the captain would be entitled to! Will it be believed, that all this was not only received as true, but the request granted! Away went Love towards the beach, which as soon as he reached, he steered a course directly into the woods, and never returned! From this date, the sun of our hero's "glory" was set,—at last he had met one who had eclipsed his fame, and cast him altogether into the shade. I am not aware that Love's person was known to our hero; his fame and his name unquestionably must have been. There were some reflections cast upon the captain on this occasion; it was thought a most extraordinary thing that the old "fox" should have proved himself such a "*goose*." It was, perhaps, nothing more than a "diamond cut diamond" affair. Subsequently, Love was captured, under precisely the same circumstances by one of the Desiree's boats, under the Honourable Lieutenant W. Pakenham. On this occasion, as on the other, the rover tried to play off the same *ruse*, but unsuccessfully. He was taken especial care of in the frigate, and was sent away in a ship-of-the-line to Port Royal, from which place, he was to have been sent to England to be tried as a traitor, many persons believing him to have been a Briton; but they could not keep him even shackled, and with double the number of centinels in the prison-ship, and over his person, than it was usual to set. This most extraordinary man, not only effectually escaped from the ship and the island, but carried the sentries with him, without being traced, or the officers on guard knowing anything of the matter, until the day after it had occurred! There is little doubt that Love's money,—he being as rich as Crassus, had effected his liberation in this instance, as far as the common soldiers were concerned. He had plenty of friends at Kingston.

Capt. Punch was a man of middle stature, rather slender, and his thin sharp visage more remarkable for its sallowness, and his eyes for a certain expression of acuteness, denoting activity of purpose, than for any indication of firmness and resolution for which he appears to have been so famous. I had often an opportunity of seeing him, and from the extraordinary tales I had heard respecting his mysterious history, and dashing exploits, always gazed upon the person of the warrior with no small degree of curiosity.

It is presumable that the captain, notwithstanding his deficiency of education, conducted himself with propriety as an officer, as he died, I believe, without having ever subjected himself to the penalties of military law. I would, therefore, speak with becoming reserve on the question of advancing so illiterate a man to the high rank of a captain in the navy.

It is true there would be no difficulty in ordinary matters, as there are amanuensis enough to be found in a ship. But, when sailing under sealed orders, or receiving a letter marked "confidential," the contents of which he is enjoined to keep strictly secret,—how would the case stand? He could not possibly comply with the imperative orders of his chief. A second person must be admitted as confidant, and although his honour may be indisputable, a positive breach of orders would be the consequence. The circumstance is so perfectly unique, as to be without a parallel in the modern annals of the navy.

The captain, whatever might have originated the facetious character of Old King Cole, was evidently of the same opinion as this royal personage, whose contempt for literature is stated and accounted for in the following *couplet*:—

Old King Cole, though a merry old soul,
Nor read nor write could he;
For to read or write, was useless quite,
As he kept a secretary!
So his mark for Rex, was a single X,
And his drink was ditto double;
For he scorned the fetters, of four-and-twenty letters,
And it saved him a vast deal of trouble!

In the days of "buffoons," and "court fools," indeed, we are told that even the nobility could neither read nor write. In bad weather, resort was had to certain games within doors, and the out-door amusements consisted of hunting, hawking, &c., in which females partook, and in keeping with such pastime, the costumes were of the most fanciful descriptions; even the children were decked out in a manner more like puppets than rational beings. What a blessing has the typographers' art not proved since those days! Perhaps, equal in its consequences to any discovery ever made by the intelligence of the human mind.

From causes which, by a careful investigation of facts, may be susceptible of satisfactory explanation, it would appear, that during the revolutionary war,—and probably the same may be said of those which immediately preceded it, there was a dearth of junior officers in the public service. The havoc, from pestilence and battle, was but slowly recruited with the sons of noblemen and gentlemen. So slowly indeed, that it was found absolutely necessary to place grown-up men from "before the mast;" and from the merchant service in the stations of midshipmen, and masters' mates. These individuals, however, were generally not only good seamen, but had received at least the rudiments of education, and some of them have risen to high rank from these stations. But with respect to our hero, we find him totally without acquirement, if we except seamanship. Nevertheless, to say that they who promoted him, spoiled a good boatswain or gunner, when they made him a midshipman or lieutenant, would be an unqualified censure, which, whatever may be thought, I should not, perhaps, be justified in pronouncing. The whole of the circumstances of the case, seem to be involved in obscurity, which nothing transpired that I ever heard of, to penetrate, and which, upon the station where our hero figured, was universally canvassed in no measured times.

All, therefore, that I feel at liberty to add is, that Capt. John Punch

was a very lucky man, come from where he may. And I have only to assure the reader, who may never have heard of him before, that there is no romance in what I have stated. The circumstances are, indeed, remarkable, and might be deemed incredible, but there are those living who could verify, and probably add considerably to them. Perhaps he was the only instance, at least in more modern times, of such extraordinary success in life, and we may, not unreasonably, believe it will be the last, there being no want of aspirants who are altogether well educated and accomplished.

A new era has, indeed, opened upon this class of juvenile officers, and their condition has been altogether vastly improved. The necessity for these measures became so urgent, after the evil had been tolerated, rather than acknowledged as right, that on the change from war to peace, in the true spirit of wisdom, the amendments were adopted with a liberality highly honourable to the sea-lords of the Admiralty. A few words *en passant* in this improvement, may be ventured. It is impossible not to be sensible that, a great change has taken place since the peace, in the mind of all classes. In the naval service especially, there is among the junior officers a higher tone of feeling. This does not arise altogether from the infusion of aristocratic notions, which may be said to adhere to the *scions* of the upper classes, who embrace the profession. The gradual loosening of the reins, which fettered personal liberty during the rigours of a desperate and protracted state of warfare, when there was scarcely time for thought on the subject, and a not altogether correct idea held of the necessity for extreme coercion, is the main cause. The power which a commanding officer possessed of disrating a mid., has been properly disallowed. It was one not always exercised with strict justice. I do not speak in these matters at random, but deliberately from what I have known. I pass on to another practice, that of mast-heading mids, not youngsters alone but young men. This also has been discontinued,* and even with greater propriety than the former, because the practice had a wider range, the lieutenants exercising the power,—harsh and even brutal instances having occurred. It indirectly injured subordination, so much so, as the captain reprimanding a lieutenant in the presence of the ship's company. The last and most *ultra* exercise of power sanctioned, I believe, only by the custom of the service at any time, was that of *flogging* "young gentlemen," not boys alone!—this has given way. Oh! if I stop, the power no longer exists,—thanks to the more humane and gentlemanly feelings which a meliorating peace has spread into the hearts of men. This foul blot has been brushed away too!

With respect to the class of gentlemen "*mates*," as they have now rank bestowed upon them, it seems desirable that their military *title* should be altered. The vulgar class-appellation which they have so long endured, should give place to the more appropriate one of "sub-lieutenants," or even to that of "lieutenant's-assistants," as in the case of the surgeon's second, who formerly had the same familiar dockyard distinction, pendant from his superior's title. The term seems to have

* It would seem, however, that this is evaded by sending the mids to the yard-arm!

been originally confined to the mercantile marine, and to have crept into the royal navy at a time, when the distinction between the two services was scarcely well defined. It would be a vast improvement to let it "slip," and recede back to its place of origin, where its application is more legitimate.

At first the alteration may be thought a very trivial affair, and a matter of real importance; but upon reflection it will not appear in that light. A higher tone of feeling, in every respect, now pervades the junior officers; and this is a happy omen of future excellence, which it is most desirable should be encouraged. I need not presume to *insist* upon the good effect of *title* in the support of propriety of conduct in its possessor, for such is its obvious tendency; and no stronger proof of the justness of its advocacy is necessary.

The city of Kingston, in Jamaica, although not the seat of government, may be considered the largest and first commercial town of the island, and in that light may be esteemed the metropolis; it occupies a large extent of ground on the plain at the foot of the Liguanea mountains. The houses are principally built of wood, with piazzas in front, the balconies above being supported by pillars. This, however, is not uniformly the case, there being many detached buildings, and a great number of small cottages occupied by the sable race. "Grog shops" abound, but it is remarkable that the negroes, as a class, are *not* addicted to the vice of drunkenness, although ardent spirit, as may be supposed, is everywhere within their reach. The town has the advantage of the principal streets being very wide, and some of which are of great length, and, moreover, the full benefit of the sea-breeze is received throughout its whole extent, the trend of the land being from east to west. It is kept in tolerably clean order, which, from the warmth of climate, is found to be absolutely necessary to be observed, as being conducive to the preservation of health. It is also well supplied with water. The hotels and taverns are large and commodious, and all necessary attention paid to the visitor, but who must expect to pay well for every thing. Stores and shops are numerous, and there is scarcely an article that a demand can be made for which is not be found *in one* or the other; but all bearing a high price. There are a few public amusements; occasionally the Thespians are abroad, and in the season horse-racing is carried on with considerable emulation, and with an ardency and zealous intensity quite surprising: cock fighting also used to be common, but, I believe, the "sport" is, and has been, some *time* in the decline. Assemblies are frequent, but the amusement of capering about in such a clime is too melting a one to be relished by any but the West Indian, or the youthful European.

Social parties are constantly meeting, and here every word and action speaks and displays genuine hospitality. There is no restraint placed upon the good breeding of either sex, in fact, every thing partakes of the warmth of the climate, and in no part of the world do *people* understand the art of making one another happy by suavity of manners, and benignity of feeling, which, upon all occasions, are practically in use, more than the worthy good folks of this beautiful island. Very delightful evening soirees, entirely divested of those stiff, formal, and often unsatiable, if not repulsive, observances of a colder region, are of

daily occurrence. I have enjoyed, during brief relaxation from duty, some very happy hours in such agreeable society, both here, at Spanish Town, and other places and ports of the island; and which I treasure up in remembrance, as among the most delightful of my chequered life.

There is a considerable mixed trade carried on, not only with the mother-country, but with the United States, British America, Cuba, and the new Republics of Mexico, Guatimala of Central America, Colombia, and the Musquito shore. An incalculable amount of specie, principally in old Spanish coin, was in circulation, and passed through the hands of the merchants even during the war, indeed, trading was not altogether interrupted during the period Spain acted with France against us; on the contrary the "force trade" was extremely brisk, and the interchange of goods and money effected with little risk, for the activity of our small cruisers was so great the Spanish guarda-costas dared not to venture out to scour their coasts. It was certainly a singular mode of warfare, the granting licenses to the enemy's vessels to trade, and by which document they were exempted from capture. Why is it not generally followed with reference to the colonies of other powers? What an amelioration of the rigours of "grim war" it would bring to these generally unwilling parties in the strife. There appears evidently to be a growing desire on the part of some of the more enlightened powers of Europe to preserve peace, and be on good terms:—May the Ruler of our destinies strengthen them in such a wise resolution; the observance of which is far more glorious than all the fame derivable from the successful display of valour and skill in warfare. I wish our trans-atlantic brother would imbibe a similar feeling, and learn to restrain his tongue from vain-glorious boastings and vapouring. One step towards the ultimate discontinuance of that reproach on the humanity of the civilized man would be, to confine the pursuit of maritime war to the national vessels, leaving the industrious merchant to follow his traffic unmolested.

The population of Kingston is very mixed; foreigners and Jews forming a considerable portion of it. As in the mother-country, there are a vast number of small dealers; and it is really a matter for surprise how so many individuals manage to procure a living by the disposal of small wares, in a country where living is so very expensive. Some commence in a very small way, and gradually increase their store, and by sheer economy manage, at last, to realize small fortunes; others, with larger capitals, and a more extensive variety of goods, contrive, in a short time, to accumulate large sums, but are often reduced again, from extravagance, or want of due care, and have to begin again.

Since the peace the New States have opened markets for British goods, which the merchants here avail themselves of; but in some cases they run much hazard of great loss, and are plagued by vexatious charges and delays; besides great uncertainty of returns sometimes prevails from the unsettled state of affairs, and the unstable bases on which the republican governments appear to stand.

It appears that the great change in the social condition of the black and coloured races, passed off without any serious demonstration of

riot, or disturbance; indeed, although anticipated, such an event was hardly to be expected at the moment when such a gratuitous benefit was bestowed upon them as unconditional liberty.

The magistrates in such a populous place, as may be supposed, have enough upon their hands to satisfy all their ambition. It is certainly a useful thing in its way, notwithstanding that, I have been often puzzled to find out what pleasure there could be in the avocation. It is a fact, however, such is the admirable provision of nature, that the ambitious feeling of the individual is made subservient to the general good, and the well being of society; the most irksome, sickening, and often disgusting duties attached to the office of magistrate, as a necessary condition of its possession, being altogether inoperative in checking the desire for the commission! Such is the love of power, the *qualification* for the fulfilment of so grave an office, being unthought of, hence the multitude Justices ShaHow, to be met with on the bench! *

I have often been very much surprised at the erroneous ideas I have heard expressed, in England, regarding negro slavery in the British West Indies. Equally silly notions were entertained of the intelligence and social feelings of the negroes; the terrible word—slavery! being associated with shackles, whips, dungeons, unceasing labour, starvation, nakedness, and abject wretchedness; all which could not fail of rendering the poor creatures dull and stupid as the mules they drove! I have both heard and read assertions perfectly devoid of truth, and which were expressed with a confidence truly wonderful. There is no class of persons under the canopy of Heaven so wedded to what we may term the lighter pleasures of life, dancing in particular, none, who, as slaves, were more light-hearted, gay, and joyous during the hey-day of youth, and up to middle life; the reason is obvious—they were free from those cares which press so hard upon the peasantry of England; they thought not of the morrow; to the master that was left; and as for the labour they were constrained to follow, it is a condition which the greater portion of mankind are of necessity obliged to conform to, and cannot be considered a hardship; and one of the fallacies of the humane who were anxious to see their personal liberty altered was, the measuring of the feelings of the negro slave by those of the white freeman. Nevertheless, the emancipation was an act of justice, which very much redounded to the credit of Britons, who have thus made amends for the sins of their progenitors; and have set an example worthy of imitation by other States.

In the streets of Kingston, where hundreds of busy persons are to be met with, there are none of those sights of "squalid misery" so often seen in the crowded cities of England. The blacks are well, though lightly clothed, and are generally clean; and the costume of the females tasty and picturesque, especially those who vend fruit and other eatables about the streets. There is much harmony in their soft voices as they proclaim aloud their articles for sale; and a great deal of genuine good humour about them, as though their hearts had been mellowed, and their feelings attuned by the soft and balmy warmth of their delightful clime.

(To be continued.)

* Does not the recent display at Kingston bear on this point?

Expedition to Port Grey.

H.M.S. Beagle, Gage Roads, Dec. 19, 1841.

Dear Sir.—Knowing the deep interest yourself and the colonists of Western Australia take in the recent short cruise of H.M.S. Beagle, this brief account of it may be acceptable.

We left Gage Roads early on the morning of the 12th inst. During the day we held a N.N.W. course, passing the different projections of the coast at a distance of from five to nine miles, in soundings from fifteen to twenty-four fathoms. At noon Cape Leschenault bore N.E. b.E., eight or nine miles. Soon afterwards we noticed a break in the land bearing north-east, probably the Moore River; this, as we came abreast of it, appeared shut in; therefore, the supposed river must empty itself into the sea in a south-west direction. At six o'clock we were abreast of, and distant nine miles from a very remarkable large sand patch; indeed the coast northward of Moore River presented a very desolate appearance,—the coast range of the sand hillocks or dunes being crested in many places with bare white sand. As the day closed the remarkable high land called Mounts Peron and Leseur bore N.N.E. thirty miles. After passing Island Point, our course was directed more to seaward, in order to avoid a portion of the coast Capt. King had not examined, and it was fortunate we did so, for on returning we discovered some islands and shoals in that neighbourhood, in latitude 29° 1′ 8″ S., longitude 115° 14′ E. nearly, lying eight or nine miles from the coast. About 10 o'clock on the following morning we closed with the land three miles northward of some reefs laid down by Capt. King thirty-two miles S. ¼ E. from Mount Fairfax; from thence we followed the shore at a distance of from three to five miles; two miles in a N.b.W. direction, and the same distance in a N.W. ½ N. direction, in soundings varying from seven to twelve fathoms, over a bottom of sand and rock.

Early in the afternoon, owing to the smoothness of the water, we found ourselves embayed in a reef extending south 37° west, about fifteen miles from Mount Fairfax; extricating ourselves, caused our arrival in Champion Bay, in latitude 28° 47′ south, to be late in the evening. Our latitude in closing with the shore in the morning was nearly 29° 13′. If, therefore, such a harbour as Port Grey existed in 29°, as according to Arrowsmith's chart, we must have seen it; moreover, I feel assured, excepting the bight fronted with rocks situated five miles south and by east of Point Moore, and the secure summer anchorage bearing the name of Champion Bay, there are no bays or bights offering an indifferent anchorage for ships or vessels on this portion of the Western Coast of Australia, between the latitude of 28° 20′ and 29° 20′.

The general appearance of the coast previous to reaching Champion Bay was that of high sand-hills, partly covered with vegetation, immediately behind which there appeared a range rather higher, and of a less barren appearance; again behind these, at a distance of eight or nine miles, were a series of singular table-topped, broken ranges, terminating southward, in latitude about 29° 5′. Mount Fairfax and

Wizard Peak are the most conspicuous objects in this range, which is the most remarkable feature on the western shores of Australia.

At daylight on the morning of the 15th we landed with a large armed party, carrying with us the necessary instruments for ascertaining the positions and elevations of the different points visited. Mount Fairfax being the nearest and most promising, our course was directed for it, bearing east and by south. About one mile and a half from the beach we crossed a dry bed of a stream trending N.b.W. and S.b.E., about twenty yards wide, with banks from twenty to thirty feet high, composed of a reddish earth and sand, with considerable portions of ironstone in it. A few small tea-trees of the colonists grew in the sand forming the dry bed of this stream. Afterwards our course was uninterruptedly over a gradually rising plain of a sandy, scrubby nature, until reaching the foot of Mount Fairfax, when we crossed another small watercourse, trending south and by west, where, for the first time, we noticed a solitary stunted casuarina. Mount Fairfax is the southern and most elevated part of an isolated block forming Moresby's Flat-topped Range; it rests on a reddish, sandy, sloping plain, on which fragments of quartz and ironstone were occasionally noticed. The latter alone is the character of Mount Fairfax, and apparently of the neighbouring heights. Our observations being completed, which placed Mount Fairfax 582 feet above the level of the sea, we continued our journey to the south-east in the direction of Wizard Peak; two miles over a still scrubby, sandy plain, brought us again to the Chapman or Greenough River, the same dry stream we had crossed soon after landing; here, for the first time, there was an appearance of fertility, but only in the valleys of the river, for the Chapman or Greenough appeared to have two, an outer, in width from two-tenths to a quarter of a mile, with sloping banks from thirty to sixty feet high, whilst the inner scarcely exceeded twenty yards in width, with steep banks: dry white sand formed its bed, as before noticed; growing in which were a crooked small kind of drooping gum, besides a species of wattle and tea-tree. Its direction was about S.b.W., and it appeared to come from the vallies formed by the ranges in the rear of Mount Fairfax and north of Wizard Peak. A small quantity of brackish water lay in pools near the part we crossed. Continuing our journey, we proceeded over an undulating plain, on the higher parts of which a reddish sand and ironstone gravel universally prevailed; in the lower parts, and near watercourses, the soil approached light mould, and produced the warran, so much sought after by the natives. In all this district the vegetation was of the worst description, not a tree large enough to furnish building material, being only small kinds of banksia, wattle, and drooping gum. These only grew in the vallies.

We reached the summit of Wizard Peak in the course of the afternoon. This we found composed of large blocks of ironstone, which had a most powerful effect on the needle, changing its direction in different places ten degrees. Here we noticed a few stunted *Xanthorhea* growing on the south-west side of the hill, and a few small stunted casuarina and wattle were thinly scattered on its summit, which, by barometric measurement, was found to be 715 feet above the level of the sea. The vegetation on this hill, as well as on Mount Fairfax, appeared to de-

crease as its elevation increased, leaving the summits of both nearly bare. Part of the range lying immediately north was absolutely a mass of bare ironstone. Our view was very commanding. To the N.N.W. and N.E. for ten to twenty miles lie extensive vallies, all of which appeared through a spyglass to be of the same arid nature. For a few miles to the eastward, and a great many to the southward, the formation of the country was of the same flat, broken, and angular character; but no part visible appeared of higher elevation than that on which we stood. To seawards the appearance of the country was that of an undulating plain, with patches of stunted woodland widely scattered. Descending, we found the party left below in the dry bed of a watercourse, had failed in their endeavours to procure water by digging; we, therefore, as we supposed, had no resource, exhausted as we were, but to return to the brackish water-pools we had seen in the Chapman or Greenough. Happily, however, our dogs discovered a deep hole under a drooping gum, which proved to be a native well, and which afforded our thirst relief, after clearing and digging deeper. The soil through which this well was sunk was a light alluvial deposit, based on sand, six feet below the surface. Numerous native paths, and deep holes from which the warran-root had been extracted, encircled this spot. Some neighbouring wigwams of a superior structure gave us snug quarters for the night; Wizard Peak bearing south 50° east, about a mile distant.

At break of day we resumed our exploration. The morning was dull and cloudy; thermometer 59°. On the preceding day its greatest height was 85°.

In our way, two miles from our bivouac, we fell in with a recent native grave. A circular pit three yards in diameter, filled within a foot of the surface with sand, carefully smoothed over; some small sticks, with red horizontal marks painted on them, and others scraped, with the shavings tastefully twisted round them, ornamented the edges of the grave; a large semicircular fence fronted its south-east side; and its neighbourhood bore evidence of its being deserted by the natives, from the destroyed wigwams around it.

After walking at least five miles, we again made the Chapman or Greenough about a mile south of the point at which we before crossed it. The bed here, as before, was a dry sand; we, however, found a small hole of brackish water in a hollow. Here the river pursued its usual course between south and S.S.W. Crossing it, we pursued a west direction, and were surprised to find ourselves again on the same river's course, which could be accounted for by the high red cliffs forming the south bank, having changed its direction to the northward. We subsequently crossed two dry beds of rivulets, the last of which forms the dry stream which we had first crossed on the preceding day. From an elevation on its south-west side, Mount Fairfax bore north 50° east, and Wizard Peak, south 58° east.

From this point we proceeded one mile west over a dry arid plain, covered with yellow and white everlasting flowers of small growth: a small patch of woodland, consisting of a species of wattle and very small kind of gum, here delayed our hasty progress. The ground beneath these trees was entirely bare of vegetation, but emerging from them, we

came upon the only piece of grass of a useful nature seen in the route; it was, however, quite parched, and occupied a space only of three or four acres. From hence to the sea coast dunes, to reach which we made a detour to the south-west, walking over 6 miles of country universally of scrub and sand, the latter changed gradually from reddish to white as we approached the sea. On the low ridge lying immediately behind the coast range of sand-hills, limestones occasionally cropped out. After making a few observations on the shore immediately beneath the dunes, we proceeded in our boat to examine a small estuary, seen from Mount Fairfax, at the northern part of the bay. This we found to be separated from the sea by a low bank of sand, 30 feet wide, and five feet high, over which the sea appeared in gales to enter. We landed, and traced this estuary until we proved it to be the mouth of the river so frequently crossed in our two days' walk, and probably it is the Greenough of Captain Grey: the water in it was entirely salt, and its banks, in some places 70 feet high, were composed of limestone.

We had now seen and examined an extent of country little short of 40 miles, nearly the whole of which deserved the character of sterility. In our progress we had seen no other woods or bushes than the following:—

Narrow-leaved dwarf banksia; Cabbage-tree (*Nuytzia floribunda*); Small she-oak (casuarina); Broom; Wattle (or acacia) of two kinds; a species of Eucalyptus known by the appellation of drooping gum, of a dwarf and crooked description; Blackboys (*Xanthorhea*), on south side of Wizard Hill only; Tea-tree, of dwarf size, in two or three places.

We did not, in our route, fall in with any natives, but on reaching our boat, we found that a party of five men had approached the beach, and had held friendly communication with the officer, who, in exchange for a handkerchief or two, had obtained from them a belt composed of small kangaroo fur, commonly worn by the natives of this coast, a throwing-stick, and nose-piece of kangaroo-bone. The natives were entirely naked, and slightly scarred, but were not smeared with wilgy, and had their hair knotted up on the crown of the head, like the natives farther north. They had retired before we could reach the spot to which they had advanced. During our route, we noticed their winter habitations substantially constructed, and neatly plastered over with red clay.

We left Champion Bay on the morning of the 16th instant. After stretching out to the north-west, we met a favorable westerly wind, which, by the afternoon, carried us past the bight south of Point Moore, and sufficiently near to see that its shores were fronted with many sunken rocks. This leads to the conclusion that Champion Bay is the port Capt. Grey speaks of in his journal, placed in Arrowsmith's chart twelve miles south of its true situation.

Our position during the early part of the 17th afforded means of laying down some islands, reefs, and a portion of the coast passed by Capt. King in the night; and on the afternoon of the 18th we reached Gage Roads, after fully and satisfactorily accomplishing the object in view with most fortunate despatch.

The tracks of the Beagle to and from Champion Bay, in addition to her former ones, must tend to satisfy the public that no dangers exist outside of nine miles from the coast between Swan River and the Abrolhos.

I remain, &c.

I. L. STOKES,
Captain H.M.S. Beagle.

To the Hon. J. S. Roe, &c.

THE VARIATION OF THE COMPASS.

(Continued from p. 410.)

Royal Observatory, Greenwich, June 17, 1842,
Magnetical and Meteorological Department.

MEAN MAGNETIC VARIATION FOR APRIL 1842—23° 11′ 0″.

MEAN MAGNETIC DIP FOR APRIL 1842.

At 9 A.M.	At 3 P.M.
68° 40′	68° 35′

R. MAIN, *for Astronomer-Royal.*

VOYAGE OF H.M. STEAM-VESSEL VIXEN FROM ENGLAND TO THE CAPE.

An extract from the Log, and a few remarks upon the passage.—Communicated by Mr. R. Allen, master.

46, *Leicester Square, June* 1842.

SIR.—I enclose for your useful *Magazine*, some extracts from an account that I have received from Mr. R. Allen, the intelligent master of H.M. steam-vessel Vixen, of the voyage which that vessel has lately made from Plymouth to the Cape of Good Hope, on her way to the East Indies. It can be hardly necessary to make any remark upon the utility of these communications, to further the progress of steam navigation; and if we are to judge by recent events, at present we are very backward in the knowledge that is requisite to determine the best arrangements which ought to be made, to ensure success to the long voyages, that are now undertaken by steam-vessels. The steam navigator can, I think, learn something from this account of the Vixen's voyage. For instance, it is now obvious that a steam-vessel, which only stows twelve days' fuel, ought not to attempt to steam directly up from Ascension to the Cape of Good Hope; but rather leave under sail alone, make a fetch over to the coast of Africa, and when well in with the land, use the steam for the rest of the voyage.

I remain, &c.

W. RAMSAY,
Captain R.N.

To the Editor, &c.

1842.	Course.	Dist	Lat. in.	Lon. in.	Winds.	Remarks.
Jan. 14	Left	Ply	mouth.	harbour	South-east	1·30 PM. up stm, 3·30 to sea
15	S. 28° W	150′	48° 8′ N	5° 55′W	N.E.-S.W.	Light breezes—strong ditto
16	S. 28 W.	114	46 34	7 14	North-west	Strong breezes.
17	S. 37 W.	168	44 20	9 42	North	Moderate weather.
18	S. 24 W.	200	41 16	11 32	North-east	Moderate breezes.
19	S. 24 W	225	37 51	13 29	North-east	Strong do.
20	S. 26 W.	200	34 52	15 20	W.N.W.	Fine weather.
21					Calm	7 A.M. anchored in Fun-
22					North-east	chal Roads, Madeira.
23					S.W.-N.E.	9 PM. lft Madeira undr stm
24	S. 26 W	116	30 54 N.	17 57 W	E.N.E.	Moderate breezes.
25	S. 29 W	200	28 0	19 49	East	Fine weather.
26	S. 27 W.	203	24 59	21 32	S.E.-N.E.	Light breezes.
27	S. 21 W.	204	21 47	22 47	North-east	
28	S. 23 W.	203	18 41	24 13	E.N.E.	Frsh brzs, 5·40 PM. saw St Antnio, dwn stm, disctd eges
29					North-east	10 AM. anchd in Pto Grae
30					E.N.E.	Frsh brzs. [I. St. Vncnt
31					North-east	Moderate weather.
Feb. 1					E.N.E.	Fresh breezes, 1 PM. wate proed undr sail, whls disctd
2	S. 25 E.	121	14 58 N.	24 18 W	E.N.E.	Fresh breezes and fine.
3	S. 46 E.	142	13 19	22 33	E.N.E.	Moderate weather.
4	S. 50 E	175	11 27	20 14	North-east	
5	S. 44 E.	96	10 18	19 5	North-east	Lgt winds, 5 AM. connected wheels—up steam.
6	S. 41 E	167	8 12	17 14	W.N.W.	Light airs.
7	S. 40 E.	190	5 45	15 13	Calm	
8	S. 47 E	195	3 23	12 57	S.S.W.	Ditto.
9	S. 47 E	205	1 3	10 27	South	Ditto.
10	S. 10 E	167	1 41 S.	9 57	S S.W.	Smooth water, mod. weath.
11	S. 32 W.	189	4 21	11 38	S.S.W.	
12	S. 26 W.	198	7 19	13 5	South-east	3 PM. made Isle Ascension, 8 stopped engines—hove to.
13					South-east	Daylight anchored in Ascension Roads.
14 to 19	At	An	chor.			
20			8 9 S	14 5W.	S.S.E.	Mod. brzs, 7·20 AM. up anr and proed on with stm &
21	S. 69 E.	157	9 6	11 37	South-east	Fine weather.
22	S. 68 E.	165	10 6	9 2	S.E.b.E.	Smooth water.
23	S. 65 E.	187	11 25	6 10	South-east	
24	S. 46 E.	187	13 34	3 51	S.S.E.	
25	S. 46 E.	183	15 41	1 35	South-east	
26	S. 46 E.	161	17 33	0 25	S.S.E.	Head sea.
27	S. 48 E.	170	19 27	2 37	South	Moderate weather.
28	S. 49 E.	185	21 26	5 9	S.S.E.	Long head swell.
Mar. 1	S. 45 E.	178	23 32	7 25	S.S.E.	
2	S. 45 E.	154	25 21	9 25	S.S.W.	Fresh breezes.
3	S. 49 E.	164	27 8	11 44	South-west	8 PM. out fires, discontd the engs & proed undr sail alone.
4	S. 51 E.	86	28 2 S.	13 0 E.	South-west	4 PM. unshpd paddle boards.
5	S. 44 W	59	28 44	12 14	S.S W.	Moderate weather.
6	S. 42 E.	61	29 29	13 1	Variable	Smooth water.
7	S. 23 W.	83	30 46	12 24	S.S.E.	
8	S. 81 E.	115	31 4	14 36	S.S.W.	Fresh breezes.
9	S. 78 E.	67	31 18	15 53	South	
10	S. 26 E.	43	31 57	16 15	South-east	Smooth water.
11	S. 51 E.	40	32 22	16 52	S.S.W.	3 PM. shpd pdle bds, up stm
12					South-west	11 AM. anchd in Table Bay

H. M. steam-vessel Vixen left St. Vincent (Cape Verd Islands) Feb. 1st, 1842, for Ascension, under canvas alone, the wheels being disconnected. Passed between Fogo and St. Jago on the following day, about a league to windward of the former. On the 5th, being in latitude 10° N. longitude 19° W., the trade wind fell very light. The paddle wheels were connected and the steam got up. On the 9th at 10 P.M. crossed the Equator, in 9° 47′ W. longitude, a light breeze from S.S.W. and smooth water. On the 12th at 8 P.M. arrived off the Isle of Ascension, having had light winds and smooth water the whole way. We left Ascension for the Cape of Good Hope Feb 20th, under steam, having 285 tons of coal on board.

We made good 7·2 miles per hour from the time of leaving Ascension, up to the 3rd of March at 7 P.M., when having only twenty hours consumption of coal left, we proceeded on under sail alone, with the wheels disconnected. At this time we were 465 miles from the Cape. The following day the paddle boards were taken off. From the 3rd to the 11th the winds were moderate, varying between S.W. and S.E. during which period the ship was kept on the most advantageous tack, working up direct to the Cape of Good Hope, and we were fortunate enough to average 45 miles per day. On the 11th being within twenty hours steaming distance of Table Bay, the paddle boards were shipped, and the steam got up. We arrived on the 12th at 5 P.M. having only one ton of coals left.

NOTICES OF JAPAN.—No. VI.

(Continued from p. 408.)

THE Dutch deputation, or embassy, whichever it is to be called, being now fairly housed in Yedo, those who are accustomed to read narratives of travels may naturally expect from one of the travellers a description of the court and actual capital of Japan. But in Nagasakkia, at Yedo, the strangers are far more strictly imprisoned than in their artificial island at Nagasaki; and, except in case of some accident, such as that to be presently described, see little more of the place than the road between their own dwelling and the palace. The particulars they give, rest, therefore, for the most part, on the authority of their native friends; and this being the case, a few words concerning Yedo may suffice to introduce the account of the Dutch proceedings there.

The town stands at the head of a bay or estuary, round which it extends in a crescent; but as the water is, for many miles below Yedo, too shallow to admit vessels of any burthen, it has nothing of the character of a seaport. In fact, the harbour is reported by Dr. Parker, apparently upon the authority of fishermen upon the coast, to be as much as eighteen or twenty leagues from the capital.* In buildings

* The bay upon which Yedo stands is fed by several small rivers, the largest of which disembogue upon the western side, and their waters combining flow down in a deep channel near the same shore, until they reach Uragawa, a place about

and appearance, Yedo resembles other Japanese towns, differing from them principally in its extraordinary size (it is averred to be from fifty to sixty miles in circumference;) and although the population is estimated by different writers at from 500,000 to 2,000,000 (and even 8,000,000 by Capt. Golownin,) much of this size is the consequence of the extraordinary extent of rising ground occupied in its centre by the imperial palace, to walk round which is said by late writers to occupy three hours, whilst Thunberg gives it the still greater circumference of fifteen miles. This is somewhat explained by the information that the palace comprehends not only the residence of the siogoun himself, with his numerous household, and the separate mansions of a whole harem of lawful concubines, whom he is allowed in addition to his empress, (as his wife, the midai, is called by Europeans,) but also the mansion of his eldest son, of several adult members of his family, and of some high functionaries, together with gardens, pleasure-grounds, and woods. The nominally despotic vicegerent ruler of Japan being, by the customs of his court and government, virtually, pretty much imprisoned within these spacious palace-precincts. This real *rus in urbe*, being a country-seat upon the largest scale within a city, is not inclosed by walls, but encircled by a wet fosse, supplied from the river that runs through the middle of the town into the estuary. Across this river, in the heart of Yedo, is thrown the celebrated bridge, called Nippon-bas, or bridge of Nippon, from which every distance in the empire is measured.

In this immense town, the Dutch deputation is shut up in four back rooms of a house, the more open parts of which are assigned to their Japanese companions and attendants; and here, until the day of audience, they are still more closely confined than elsewhere. The Japanese of their party, even the bearers included, are doomed to the same imprisonment, and the head police-officer is forbidden not only to visit his family, but likewise to receive visits from them; and the observance of this strict seclusion is enforced by placing guards at the door of the mansion. The presents are conveyed to the castle, where, undelivered or unseen until the day of audience, they remain under the care of one of the two governors of Nagasaki, whose turn it is to reside at court,

But at Yedo, this seclusion, lawfully relieved, as at Miyako, by official visits of inquiry from the governor of Nagasaki in person, and from the secretaries of those ministers who have the superintendence of foreigners, is altogether nominal. The gobanyosi, and their Japanese fellow prisoners, who naturally choose to see their own relations and

twenty miles south of Yedo, where the shores approach each other, and form an estuary for several miles to the ocean. The vessels trading to Yedo anchor at Sinagawa on the south-west of the city, distant between two and three miles; this anchorage is reached by keeping in the channel on the western shore, the rest of the bay being very shallow, interspersed with islands, and covered with numerous fishing-boats. According to Krusenstern's chart, Yedo is situated in lat. 35° 40′ N., and long. 130° 55′ E., in the principality of Musasi. There are also other anchorages between Sinagawa and Uragawa, and villages along shore, the *principal* of which is Kanagawa. A thousand vessels are sometimes collected at Sinagawa from all parts of the empire, some bringing taxes in kind, some merchantmen, and others fishing craft.

friends in secret, cannot refuse to indulge the Dutch with similar clandestine visits for a bribe; and, in fact, it is evident that this constant naibon infringement of rigid laws is avowedly connived at by government, as it cannot be supposed that the spies neglect to report it.

The Dutch give their reception room an European air, with chairs, tables, carpets, and the like; and thus, in their dwelling at Yedo, with the exception of grandees who come officially, every one is received after the fashion of Europe. Their most frequent visitors are the four physicians and the imperial astronomer, all better Dutch scholars than the interpreters, and anxious to make the most of the opportunity of acquiring information respecting the latest scientific discoveries,—an appreciation of the superiority of European knowledge, which strikingly distinguishes the Japanese from the self-sufficient Chinese. Siebold (whose testimony is, from his own character for learning, most satisfactory) says, that the questions of both physicians and astronomers discovered a proficiency in their respective sciences, which, considering their deficient means of acquiring information, astonished him. The most acceptable present that can be offered them is a new scientific publication in the Dutch language. Many of those given them they have translated into Japanese, some of Laplace's works included.

These scientific men are members of the Yedo College. Such colleges, which the Dutch writers compare to their own high schools, are said to exist in most of the great cities, but the most distinguished for the proficiency of their scientific professors are the colleges of Yedo and Miyako, though the latter, indeed, seems more akin to an academy of sciences.

But these are by no means the only visitors of the Dutch. "We had," says Fischer, "no want of merchants and shopkeepers, who offered us the most beautiful wares, infinitely better and much cheaper than are to be had at Nagasaki. If they did not bring prohibited wares with them, they willingly sent for whatever we desired. Great personages always came late in the evening, and their arrival was commonly preceded by a present, consisting of mercery, lackerwork, fine paper, fans, letter-cases, tobacco-boxes and pipes, or rarities, such as they know the Hollanders value. When the present was costly, the opperhoofd always gave something in return; but it was necessary to do this very circumspectly, and through a third hand, and our envoy was especially diligent thus to win the favour of these officials, on whom our business depends. Although no women could lawfully be admitted to us, the concourse of our fair visitors was greater here than anywhere else. One gentleman would sometimes bring with him six ladies, especially in an evening, whereby our large stock of confectionary and liqueurs was prodigiously reduced. At these visits, the ladies often unpacked our trunks of clothes, expressing much wonder at the form of our garments, as well as curiosity concerning the mode of wearing them. We were thus obliged to present them with some of the more valuable articles, either immediately, or through their servants, sent to us for that purpose. At all events, something as a remembrancer they must have, were it but a couple of Dutch words written upon their fans. The opperhoofd's Dezima servants, who all understand Dutch, are

usually our underhand interpreters; and, indeed, the princes and other high personages who come naibon, prefer employing our servants, rather than the governmental interpreters, in that capacity. These grandees rarely make themselves known until next day, when they send a secretary with a present, and their thanks for our reception of them. They are accordingly received without any ceremony, and often come in the dress of the middle classes, as do their attendants, who, if the prince is right well-pleased and merry, become very familiar, and write down as much of our answers to their inquiries as they wish to recollect. The princes are always friendly, conversable, and unwearied questioners respecting European arts, sciences, customs, and manners, or the locality and government of Holland and our East Indian possessions; but they never allude to Japanese policy. We thus received visits from the princes of Matsmai and of Tamba, the prince of Mito, brother to the emperor, and the emperor's secretary; from the secretaries and other household officers of the princes of Satzuma, Nagats, Firakatta, Owari, Kaga, &c.; the first of whom brought us a present of twelve beautiful birds, fifty rare plants, a pair of dwarf fowls, a pair of rabbits, a pair of fan-ducks, and some pieces of silk; but all stowed in such nice cages and boxes, that their cost assuredly exceeded that of their contents."

The amusements of the Dutchmen in their not solitary confinement must not be dismissed without adding Doeff's account of one of the shopkeepers who visited them in his time, whose wealth, grandeur, and liberality, remind the reader of some of the merchants commemorated in the Arabian Nights' Entertainments.

"There is a silk-mercer here, named Ichigoya, who had shops in all the large towns throughout the empire. If you buy anything of him here, take it away to another town—say to Nagasaki—and no longer like it, you may return it, if undamaged, to his shop there, and receive back the whole sum paid for it at Yedo. He sent us five or six large chests, out of which to choose. The wealth of this man is astonishing, as appears by what follows. During my stay at Yedo, there occurred a tremendous fire, that laid everything, our residence included, in ashes, over an area of about three leagues by one and a half. Ichigoya lost on this occasion his whole shop, together with a warehouse containing upwards of a hundred thousand pounds weight of spun silk, which fell altogether upon himself, the Japanese knowing nothing of insurances. Notwithstanding this, he sent forty of his servants to our assistance during the fire, who were of great use to us. The second day after the conflagration, he was already rebuilding his premises, and paid every carpenter at the rate of about ten shillings (English) per day."

This accident afforded the Dutch a sight of more, at least, than they usually see of Yedo, and Doeff gives the following account of it:—

"At ten o'clock in the morning of the 22d of April, 1806, we heard that a fire had broken out in the town, at the distance of about two leagues from our quarters. We heeded not the news, so common are fires at Yedo; a fine night never passes without one; and as they are less frequent during rain, a lowering evening is a subject of mutual congratulation to the citizens of Yedo. But the flames came nearer

and nearer; and about three o'clock in the afternoon, a high wind driving the sparks towards our neighbourhood, four different houses round about us caught fire. Two hours before this occurred, we had been sufficiently alarmed to begin packing, so that now, when the danger had become imminent, we were prepared to fly. On coming into the street, we saw everything blazing around us. To run with the flames before the wind appeared very dangerous; so, taking an oblique direction, we ran through a street that was already burning, and thus reached an open field, called Hara, behind the conflagration.

"It was thick set with the flags of princes, whose palaces were already consumed, and who had escaped hither with their wives and children. We followed their example, and appropriated a spot to ourselves by setting up a small Dutch flag used in crossing rivers. We had now a full view of the fire, and never did I see anything so frightful. The horrors of this sea of flame were yet enhanced by the heart-breaking cries and lamentations of fugitive women and children. Here we were, for the moment, safe, but had no home. The governor of Nagasaki, then resident at Yedo, Fita Bungo no kami, had been dismissed; and the house of his successor, appointed that very day, was already in ashes.

"We had quarters assigned us in the house of the other governor, then resident at Nagasaki, which stands quite at the other side of the town; thither we were led at half-past ten in the morning, and were received, and all our wants supplied, in the most friendly manner, by the son of the absent governor. About noon next day, a heavy rain extinguished the fire. We learned from our landlord, that thirty-seven palaces of princes were destroyed, and above twelve hundred persons (including a little daughter of the prince of Awa,) were burned to death or drowned: this last misfortune having been caused by the celebrated bridge Nippon-bas breaking down under the weight of the flying multitude, whilst those in the rear, unconscious of the accident, and wild to escape from the flames, drove those in front forward, and into the water.

"Politely as we were treated in the house of the governor of Nagasaki, we were less free there than in an inn, and I caused diligent search for a suitable residence to be made. At the end of four days, we thanked the governor's son for his hospitality, and betook ourselves to our new abode. It was situated in a very agreeable open place; immediately behind it ran the large river that divides Yedo, and being the fourth house from a bridge over this river which many people are constantly crossing, we were very decided gainers in point of cheerfulness of prospect. From a sort of balcony attached to the back of our apartments, we commanded this restless throng, which was much augmented by the numbers whom curiosity to see us drew thither, but who at that distance in no wise inconvenienced us. The circumstance was, nevertheless, noticed, and the under-interpreter brought me a message from the governor of Yedo, forbidding us thenceforward to show ourselves on this balcony, on account of the curious crowds we attracted.

"Hereupon, I requested to speak to the head police-officer who had

accompanied us from Nagasaki. To him I expressed my astonishment at receiving such a message from the governor of Yedo, and not from the governor of Nagasaki, from whom alone, during the whole journey, the Hollanders had received commands or communications, and who, as he the police-officer, had repeatedly informed me from the said governor, was intrusted exclusively with such authority over us. I added, that I did not intend to obey any other person's orders, and earnestly intreated the gobanyosi to make what had happened known to the said governor. The appeal to his authority was not fruitless. The very next morning he sent me word by the same gobanyosi that he fully approved of my conduct, and gave me and my countrymen free leave to enjoy our balcony unmolested. He even increased that enjoyment, by ordering a certain court-yard to be cleansed."

It does not appear, however, that the deputation acquired much new information by this glimpse of the living world of Yedo. We will now, therefore, proceed to the grand object of the journey—the audience of the siogoun. This it is to be observed, can take place only on the 28th of a month; a holiday appropriated, after the performance of the appointed religious rites, to the paying of compliments and making of visits. Should the 28th of one month by any accident be missed, the deputation would be obliged to wait four weeks for the next. We take the account from Doeff:—

"A sort of full dress is ordered for this occasion. That of the president is composed of velvet; those of the doctor and secretary of cloth, trimmed with gold or silver lace, or embroidered with gold or silver. All three wear cloaks, the opperhoofd of velvet, the others of black satin; but these are not put on till they enter the interior of the palace. The president alone enjoys the privilege of having his sword borne behind him in a black velvet bag: no other foreigner is suffered even to retain his side-arms in Japan. On the appointed day, the 28th of the third month, (which then answered to the 3d of May,) we repaired in state to the palace at six o'clock in the morning, to the end that we might be there prior to the arrival of the state councillors. We were carried in our norimono into the castle, and to the gate of the palace, where even princes are obliged to alight, except only the three princes of Owari, Kiusiu, and Mito, who being princes of the blood, are carried as far as the gate opposite to the guard of a hundred men.

"To this guard we proceeded on foot, and there awaited the coming of the councillors of state. We were desired to sit on benches covered with red hangings, and were offered tea and materials for smoking. Here also we saw the governor of Nagasaki, and one of the first spies, general commissioners of strangers, who after congratulating us upon our approaching happiness of beholding the emperor, entered the palace. Then came the commandant to visit the president; and here it is necessary to stand rigidly upon one's rank. The commandant required that I should come from the innermost room, which is held the most honorable, into the first, or outer room, because his inferior rank did not authorize him to enter the inner room. I, on my side, asserted the impossibility of leaving the upper place assigned me. The commandant advanced, but paused at the distance of two mats (about twelve feet), whence he saluted me. By thus resolutely maintaining my place,

(which must always be done in Japan, when one is in the right,) I insured the observance of old customs, the restoration of which, if through good nature one ever gives way, is exceedingly difficult.

"When all the state councillors had arrived, we were invited to cross yet more courts, and enter the palace, where we were received by persons who, except for their shaven heads might be compared to pages. They conducted us to a waiting-room, where we sat down on the floor, in a slanting direction, and covered our feet with our cloaks; to show the feet being in Japan an act of gross rudeness. After remaining some time here, the governor of Nagasaki and the commissioner of foreigners led me into the audience-hall, where I was desired to rehearse the required ceremonial, as the governor would pay the penalty of any imperfection. I was now led back to the waiting-hall. Some time afterwards, I accompanied the governor to the real audience, from which we saw several grandees returning. I was led along a wooden corridor to the hall of a hundred mats, (so named, because it actually is carpeted with a hundred mats, each six feet by three. These are made of straw, are about two inches thick, and covered with others of a finer workmanship, ornamentally bordered; such mats cover all handsome sitting-rooms. There we left the chief interpreter, and I alone, with the governor of Nagasaki, went into the audience-hall, where I saw the presents arranged on my left hand. Here we found the siogoun, or emperor, whose dress differed in no respect from that of his subjects. I paid my compliment in the precise form in which the princes of the realm pay theirs, whilst one of the state councillors announced me by the shout of 'Capitan Horanda!' Hereupon, the governor of Nagasaki, who stood a step or two behind me, pulled me by the cloak, in token that the audience was over. The whole ceremony does not occupy a minute."

As this account, although, no doubt correct as far as it goes, does not give a very distinct idea of the ceremonial of the Yedo court, a more particular description may be added from Fischer, who, if he did not attend the ceremony, was present at its rehearsal, and may, therefore, be considered a competent witness.

"The whole ceremony consists in making the Japanese compliment upon the appointed spot, and remaining for some seconds with the head touching the mats, whilst the words 'Capitan Horanda' are proclaimed aloud. A stillness, as of death, prevails, broken only by the buzzing sound used by the Japanese to express profound veneration. The governor of Nagasaki and the chief interpreter are the only persons who accompany the opperhoofd, and give him the signal of retreat, which, like his entrance, is performed in a very stooping attitude; so that, although the presence of numbers may be perceived, it is impossible, without violating the laws of Japanese courtesy, to look around for what should attract attention or excite curiosity."

But if the imperial audience be now over, not so the business of the day. The deputation, leaving the imperial palace, repair to that of the nisi-no-maru, or crown prince, which is described as finely situaetd upon a hill, whence some idea of the extent of the palace-grounds may be formed, and, negatively perhaps, of the size of the town, since in no direction can its limits be discovered. The crown-prince is not

found at home by any deputation, and is probably in attendance upon his father; thus performing his part of the compliment-paying of the day. The deputation is received in his name by state councillors deputed for the purpose, and no account is given of the ceremony observed. Of the subsequent visits of compliment and present making to the officers of state, something more is related. The deputation visits the extraordinary and ordinary state councillors, to present them gifts, but find none of them at home. Doeff adds, "We were everywhere politely received by a secretary, and entertained with tea and confectionary. This last was set before us on wooden trays, but not touched; it was neatly folded up in paper, secured with gold or silver cords, and carried to our lodgings, in lacquered bowls, by an under-interpreter and our landlord. Behind the screens we heard the wives and children of the councillors, who were curiously watching us. That they did not show themselves in the room was not from any Turkish custom of secluding women, but because it might have led to too great familiarity with strangers." Their concealment might possibly be in part a following up of the system that prohibits unnecessary intercourse between Japanese and foreigners, but as much a consequence of the great difference in rank that separates the wife of a minister of state from a trader. Pipes and tobacco are likewise everywhere presented to the Dutch strangers.

Fischer says, "In some houses, permission was asked to examine our watches, and the president's hat and swords; whilst at every visit I had the irksome task of writing with red lead upon several sheets of paper, which after the fatigues of the day, together with the inconvenience of the posture, sitting on the ground, became at last exceedingly troublesome, and almost intolerable. It was half-past nine in the evening before we got home from these honorable ceremonies, and then we had to receive a number of congratulatory visits, as though the object had been by dint of compliments, to put our health and strength to the test, for it became at last a feverish agitation, under which many persons might have fainted."

(To be continued.)

China.

The latest intelligence is to Feb. 14, from Macao. The Chinese government having garrisoned the cities and forts of Yuoao, Tsikee, and Funghwa, which are situated forty, twenty, and thirty miles from Ningpo, with a view of awing all those who had submitted to the British, a force consisting of three steamers, with about 700 men, was despatched against them. They were soon occupied; the only opposition being an attempt at one place, on the part of the Tartars to defend the town from without the walls; but, although they opened fire, the Tartars fled as soon as attacked; they were pursued, and lost about 150 men. The snow which covered the country saved the others, as their pursuers did not know the safe paths. The ammunition, arms, clothing, and other war-stores, were destroyed, and the public granaries sur-

rendered to the populace. The expedition returned to Ningpo on the 12th of January.

Hang-chow-foo is the chief city of the populous province of Che-Keang, and was, it is said, about to be occupied during February. It had a garrison of 10,000 raw recruits. The division of the English troops into detachments at Hong-kong, Amoy, Chusan, Chinhae, and Ningpo, was likely to prevent an immediate attack; but on the arrival of the expected reinforcement from India and England, the campaign would, it is said, begin by the capture of that important position at the south point of the Great Canal. The utility of this proceeding is much canvassed, for many contend, that instead of wasting forces at isolated points, the British expedition ought to proceed at once to the attack of the imperial province of Pekin, which, being by the constitution of the Chinese empire placed under the immediate government of his Celestial Majesty, any attack on it would oblige the Emperor in person to examine the causes of the war, and to come to a speedy decision.

The great blunder of the late plenipotentiaries was their not persisting, in 1810, to demand a settlement of all disputes, when Keshen hoaxed them back to Canton. Sir H. Pottinger must go to Pekin in order to bring the war to a termination; for the mandarins at Hang-chow-foo seem resolved to carry on their operations in their own fashion, although they appeared to make an offer of negociations. The sacred province of Pekin must be assailed, and even the British troops may have to march towards the capital before the obstinacy of the Emperor will yield. The possession of the imperial province is, besides, to be considered as an occupation of the government, and then the Emperor will have either to abdicate or submit to proper terms.

Having issued a circular to Her Britannic Majesty's subjects announcing the capture of those three cities, Sir H. Pottinger sailed for Hong-kong, where he arrived on the 1st of February. He immediately put a stop to the wretched system of seizing the Chinese commercial junks. Trade was carried on successfully with the southern ports, and opium was selling freely along the coast, for the powers of the government to control the use of that narcotic appear now to be in a great measure paralyzed. The sale of this article is such, and the prices so remunerating, that it has been proposed to station vessels in different places to serve as depôts for the cargoes. The profits are such as will enable the Hon. Company to defray, at least, one-half of the expenses of the expedition to China.

In the meantime the mandarins at Canton and their Dutch engineers, are busy in erecting fortifications along the banks of their river; they have already erected twelve stone or earth batteries along the Macao passage and the Salt Junk river, in which they have placed nearly 500 guns of large calibre. As the export trade from Canton continued, Sir H. Pottinger has decided, while trade is allowed, and the river below Whampoa is left unobstructed, upon not attacking that place again, for, as he declared to some mandarins, who came commissioned, as they said, by their Celestial Monarch to treat with the British Plenipotentiary, "I will not now enter into treaty: I will negociate with the Emperor personally at Pekin."

Reinforcements are now preparing in different places. The 2nd and

41st Madras Native Infantry embarked on the 13th of March from Madras, and the 14th, which was at Moulmein, and the 39th Madras Native Infantry, which was at Penang, have, as it is asserted, received orders to get ready for proceeding to join the China expedition.

It is reported that Chusan, Amoy, and Hong-kong are to be free ports; buildings of various kinds are springing up fast in the last named place.

Loss of the Royal Mail Company's steam-ship Medina.

To the Editor of the Royal Gazette.

By the Dee, just arrived at Southampton, we receive Nassau papers containing an account of the loss of the Medina.

Nassau, 19th May, 1842.

Sir.—Nassau being the point from which the most immediate and direct communication can be made as to the fate of the passengers and crew of the West India steam-vessel Medina, which was wrecked on a reef of rocks on Thursday morning, the 12th inst., to the east end of Turks Island, striking at one o'clock, A.M.

I have accordingly prepared the following brief statement for insertion in your journal, as I consider it the certain mode of putting the relations and friends of the passengers and crew in possession of the material circumstances connected with the wreck of this splendid vessel, as well as the destruction of property to an enormous amount, but whether insured or not I have not been able to ascertain.

In the first place, by the mercy of the Almighty, not a single life has been lost, nor have any serious injuries been received by the passengers or crew.

The baggage has in a great portion been recovered by the exertions of the crew of the Medina, as well as by the activity and the rapid assistance offered by Captain Resterick, of the Contract West India schooner Larne, in receiving all baggage on board when conveyed to his vessel.

To the shore boats—under the judicious order of Mr. Missick, of Turks Island, we are also much indebted, not only as far as concerned the baggage, but, in the immediate and rapid removal of the women and children from the wreck when the uncertainty existed as to the vessel keeping her position and when apprehensions were entertained of her capsizing.

On the 13th inst., the accompanying statement (now transmitted from her Majesty's ship Tweed to which the passengers were removed). Letters were also forwarded to Capt. Burney, ought in justice to all parties to appear in your widely circulating journal. Their insertion will no doubt be of the greatest consequence to Capt. Burney, and I trust be the means of soothing the afflictions of his wife and family, who would otherwise be kept in a most wretched state of suspense.

In these testimonials the zealous conduct of the officers of the ship is particularly noticed; but as I remained on board the Medina until

four P M. to render any assistance in my power, I had opportunities of observing the cool and firm manner in which the officers carried on the duties, and executed the orders of Capt. Burney.

I have not the least doubt that when this matter comes to be enquired into, the exertions of the following officers will be fully appreciated by the Chairman and Directors of the Royal Mail Company, viz. Lieut. Gardiner, R.N., Admiralty Agent, Mr. Wemps, first officer, late of H. M. S. Seringapatam, Mr. Burke, late of Cunard's line of Steamers, and Mr. Hedger, third officer, Mr. Thompson, Engineer, Mr. Brown, Purser.

When this vessel settled down and got firmly embedded across the reef which run at right angles with her keel, and which could be perceived by the whole frame of the heavy steam machinery being forced up about seven or eight inches, the mercy of Providence was clearly shown; and that there was a prospect of the loss of life being very trifling in comparison to what would have been the result, had she lain in an oblique position on the said reef, or parallel to it, in which case she might have been capsized by the heaving of the sea. And as heavy articles of every description were loose about the deck—amongst the rest 229 iron jars of quick-silver, each weighing from ninety to one hundred pounds—were to have been disembarked at the first owing to their great value, as well as chains, spars, &c., almost all loose, the cabin doors broken open and opening and shutting, with the greatest violence every time the sea struck her; had she capsized, 179 persons (150 men, 15 women, and 14 children,) would in all probability have been drowned or crushed to death, the water deep on all sides of the reef. A message was delivered in my presence to Captain Burney by Lieut. Davis, Admiralty Agent to the Tweed, that Lieut. Keatly, R.N. on leave of absence from the Tweed, begged to offer his services, to do all that lay in his power on board the Medina, which were gladly accepted, and were very efficient.

On my reaching the Larne schooner, I learned that the passengers for Jamaica, were ordered to the Tweed, those for England to the schooner Larne.

I am happy to say his Excellency the Earl of Elgin with his Lady and Lady Charlotte Bruce were ultimately removed to the Tweed, they having embarked from the Medina and reached the schooner Larne with nothing but his Lordship's despatches.

The detachment of the 2nd West India Regiment stationed at Turks Island, under the command of Lieut. Howell, were most active and useful, as will be seen by the official letter addressed to me by the Admiralty Agent, now on board here, in charge of her Majesty's mails the original of which I have handed over to the officer commanding the left wing at Nassau.

The passengers who are to go to England of the Medina, when wrecked, are Robert Dick, Esq., of the Island of Trinidad with his family. Monsieur Rennay, a resident of St. Thomas, but a native of Bordeaux, and a Mr. Harrisoultz, a Polish gentleman lately from Laguira; these gentlemen are ready to express their entire satisfaction at the ample attendance and obliging conduct of all authorities on board the Medina and Larne, which must be gratifying to any person interested in the

welfare of this establishment, so desirable to be entertained uninterrupted, not only by the colonies of Great Britain, but by those of the States.

I am, &c.

THOMAS FALLS, Lieut.-Col.

Deputy-Adjutant in the Leeward and Windward Islands.

R.M. Packet Tweed, off Turks Island, 12th May, 1812.

SIR.—I consider it my duty to assure you that from the 15th ultimo up to the period that the Medina got entangled with the N.E. Rocks off Turks Island you evinced a never ceasing attention to the charge intrusted to your direction, and not only expressed your determination, but could have redeemed your anxiety bearing out the directions of the Company you held your command firm—had not the deception here and a strong current drifted the Medina on the rocks. With every good wish that your conduct may be perfectly appreciated.

I remain, &c.,

HENRY DILKES BYNG,

To Capt. Burney. *Commodore.*

THE CALCULATING MACHINE.

THERE are few efforts of the mind more fatiguing, more irksome, dry, and monotonous, than the drudgery of making long calculations. The fixed and unceasing attention to a subject in itself devoid of interest, when the slightest intrusion of thought or fancy destroys the work already done, and compels us to return our weary way, is enough to addle and stupify the brain. No wonder then, that, from times immemorial, the ingenuity of man should have been directed to the discovery of some contrivance, whereby this wearisome labour might be lightened or abridged. Hence the invention of calculating instruments and mechanical aids of various kinds. This long-sought desideratum appears at length to have been obtained; but before we present to our readers some account of the latest attempts of this kind, we will take a rapid glance at the various endeavours previously made to accomplish the end in view, and which will place in a more conspicuous light the merits of this new invention.

The instruments hitherto contrived for assisting or abbreviating calculations may be classified as follows:—

1. Such as supersede the mere setting down of figures, but requires as close an application of the mind as common arithmetic. To this class belong the calculating boxes of the Russians and Chinese, where the figures are represented by balls moved by wires. Even the Romans possessed an instrument of this kind, called Abacus, in which the figures were indicated by buttons running in grooves.

2. To another class belong such instruments as are constructed on the following principle, viz.:—Two long slender rules are divided into 100 equal parts, those parts being numbered from 0 to 100, and are thus used: if, for instance, it be desired to add 17 to 23, the rules must be so placed that the 0 of one shall be exactly opposite to 17 in the other, then by finding 23 on the first, you will have below it on the second the number 40 as the result. If, on the contrary, you wish to subtract one number from another, as 13 from 30, the number 13 on one rule must be brought opposite to 30 on the other, and under the 0 of the former you will find 17 the remainder. Such contrivances, being of very

limited utility, and partaking more of the character of toys than of practical inventions, have long since sunk into oblivion. Instruments on this principle, some square, and others of a circular form, have been produced by Perrault, in 1720; Poetius, in 1728; Peregre, in 1750; Prahl, in 1789; Gruson, in 1790; Guble, in 1799, &c.

3. A third class of instruments for assisting calculators comprises the "Virgulæ Neperianæ," as likewise the other two works of this celebrated Scotchman —namely, his *Multiplicationis Promptuarium*, and his *Ababus Arcalis* in 1617. In his footsteps followed Caspar Scott, 1620; Demeam, 1731; Lordan, in 1798; Leopold, Pelit, and others.

4. Equally well known with the foregoing is the calculating scale, so much used by the English in mechanics, which was invented by Michael Scheffelt, of Ulm, in 1699.

All the contrivances above enumerated, and others which we pass over in this brief sketch, do certainly diminish the labour of arithmetical calculations, more or less, but they all require the attention to be fixed, and do not completely attain the object sought. Hence the aim of scientific men has been to invent an automaton, or self-acting instrument, for calculation, which alone can deserve the name of a calculating machine. The first attempt of this kind was made by Blaise Pascal, in 1640. His machine performed addition and subtraction mechanically; but it was so difficult to work, and the mechanism so imperfect, that it was soon discarded and forgotten. A similar destiny attended a machine for adding and subtracting, invented in England by Samuel Moreland, in 1673. His other mathematical instrument is nothing more than an adaptation of Napier's scale to circles for multiplication and division. The defects and insufficiency of these two inventions of Pascal and Moreland gave rise to subsequent endeavours to improve them. Lepine in 1725, and Hillorin de Boistissandean in 1730, were not more successful than their predecessors; nor did Gersten's invention, submitted to the Royal Society of London in 1735, afford any greater satisfaction.

In Italy, in 1709, Polenius tried his skill on a machine of this kind, but produced only a coarse unsightly abortion, incumbered with weights, that was far inferior to those which had preceded it. In all these cases the aim of the inventors was only to work addition and subtraction. Leibnitz sought to extend the operations of an arithmetical calculator to multiplication and division. The plan of his machine was submitted to the Royal Society of London in 1673, and met the approbation of the society. A similar honour attended it a short time afterwards from the Academy of Sciences at Paris. But, despite the approbation of those celebrated learned bodies, the plan which looked so promising on paper proved impracticable in execution. Leibnitz laboured hard during his whole life to bring his scheme to perfection, expended vast sums upon it, and yet effected nothing. Death carried him off, and his work remained unfinished and forgotten. In 1727, Leupold promised to publish to the world the plan of a machine that should perform addition, subtraction, and multiplication; he died, leaving behind him only a few fragments of his plan. After this it seems that no further attempts were made for a long period, until, in the year 1799, a minister of Wirtemberg, named Hahn, came forward with a new machine, which, however, attracted no attention as it was found to commit serious errors in arithmetic; its internal structure, remains unknown, as does also that of a faulty instrument presented to the Academy of Sciences in Gottingen, by Muller, 1716.

The machine constructed by Mr. Thomas Colmer in 1820, was a retrograde step in this branch of science.

In the year 1821 Mr. Babbage, of London, undertook to construct a machine for Government, which should by mechanical means form tables of progression for the use of surveyors A portion of this machine, forming a progression up to five figures, was complete. £17,000 had been expended on it already, and to perfect the entire work would have required twice as much more; consequently

in 1833 the project was abandoned, and it is not probable that the costly machine will be brought to a perfect state.

The fragment or member alluded to may be seen at the inventor's. Mr. Babbage is at present occupied with the plan of a machine which is to perform mechanically all the operations of algebra. Already he has 30 plans extant; every friend of science must heartily wish that the inventor may be more successful with his new project than he was with the previous one. We come now to speak of the recent successful attempt before alluded to. For the last two years Dr. Roth, of Paris, has been engaged in the construction of arithmetical machines, and the success that has attended his efforts hitherto proves he has accomplished his scheme for performing automatically all the operations of arithmetic, from simple addition, subtraction, multiplication, and division, to vulgar and decimal fractions, involution and evolution, arithmetical and geometrical progression, and the construction of logarithms, with ten plans of decimals. The machine in its present state works addition, subtraction, multiplication, and both kinds of progression, quite mechanically. In division alone the attention is required to avoid passing over the cipher. The arithmetical progression is of vast importance, as it operates from one farthing to millions of pounds sterling; and when we consider the variety and utility of the functions performed by a small instrument, not more than a foot wide, and its comparatively insignificant price, we cannot but congratulate the inventor on his decided success in the results hitherto obtained, and express our cordial wishes that he may meet with every encouragement to persevere in his highly interesting and important labours.

Mr. Wertheimber, the proprietor and patentee of this invention, has two descriptions of these machines—a larger one which performs sums in addition, subtraction, multiplication, and division; and a smaller, which performs addition and subtraction only. These machines have been submitted to the inspection of several gentlemen eminent for their scientific attainments, all of whom, particularly Mr. Babbage, have expressed the most unqualified admiration at their unparalleled ingenuity of construction. Mr. Wertheimber had the honour of an introduction to the Royal presence, at Windsor Castle, on Wednesday, the 6th inst., when both her Majesty and Prince Albert were graciously pleased to express their approbation of the machines, and to order two of each sort to be supplied for their use.

The Hon. Company's Steam-Frigate Acbar.—On Sunday at noon this splendid war-steamer left her anchorage at Gravesend, bearing the pendant of Commodore Pepper, of the Indian Navy, who will assume the command of all Company's ships of-war now serving in China, under Admiral Sir W. Parker. The Acbar is a steam-frigate of the first class, armed with two eight-inch guns and four long 32-pounders, with a complement of 160 men; carrying five boats, on two of which are mounted brass 12lb. howitzers. The engines are of the collective power of 350 horses, manufactured by Napier of Glasgow, and of a very superior description. She has four copper-boilers of about seven tons each. The perfect and beautiful arrangements of the engine-room, the care which is everywhere observable for the health and comfort of the firemen and the crew in general, the cleanliness and beautiful adaptation of every part to the uses for which they are intended, reflect the highest credit on the parties concerned. The officers' accommodations are very superior; and the apartments allotted to the Commodore are of such a magnificent description as would reconcile even a landsman to a life at sea. The armoury is filled up with 100 percussion muskets, pistols, cutlasses, and musketoons, &c., the whole in beautiful order, and presenting a most warlike appearance. *The liberality* and taste displayed by the Hon. the Court of Directors, in fitting out the Acbar, is worthy the highest praise, especially the extensive and valuable library supplied for the use of the officers and crew, who seem fully to appre-

ciate the advantages of serving their honorable masters. The Achar carries 500 tons of coal, which with a consumption of a ton an hour will enable her to steam 20 successive days. A few such efficient vessels, and we shall soon hear that our celestial friends have been visited with a lucid interval. The Achar made her passage from Gravesend to Falmouth, a distance of 370 miles, in 36 hours, which gives an average speed of more than 10 miles an hour. This is the best proof of her capabilities, and renders it highly probable that she will arrive in Singapore in the short space of 85 days. The quiet and orderly manner in which the men conducted themselves, and the perfect ease and readiness with which every order was executed, excited the admiration of all those who enjoyed the pleasure of the trip.

Earthquake in St. Domingo.—It appears from a paper published at Port-au-Prince, entitled *Le Patriote*, on the 11th of May, that a shocking earthquake occurred to that island on the 7th of May, at five o'clock in the evening.

The principal destruction of life, of which we have an account, was at Cape Haytien, which was entirely destroyed. It contained about 15,000 inhabitants, two-thirds of whom are thought to be dead.

The approach of the earthquake was indicated in Port-au-Prince by great heat, and heavy clouds that covered the neighbouring hills, and followed the direction of the south-west to the north-east. The vessels at anchor, some of the sailors report, experienced the shock before they saw the houses agitated, which seemed to indicate that the shock came from the west.

There were two shocks at Port-au-Prince very distinctly felt, the first not so long as the second, which last endured about three minutes. Every person strove to get out of the houses, and the streets were filled with the affrighted population. A little longer, says the *Patriote*, and Port-au-Prince would have been the theatre of a disaster similar to that of 1770, of which disastrous year the remembrance was rushing into all minds.

The *Patriote*, also says, that there is hardly a house or a wall, that has not suffered a little. Some have become almost uninhabitable. The front of the Senate House, where the arms of the Republic are sculptured, is detached and broken. The interior was uninjured.

On the Saturday night succeeding, and on Sunday, there were other shocks. Mass was interrupted, and the persons present ran hither and thither, while many women fainted. On Monday morning at 12 o'clock there was another shock. The weather all the while was changeable, now extreme heat, now rain, now fair, and now signs as if a storm. On Tuesday, again, there was another shock, and since then, says the *Patriote*, "it seems to us that we walk upon a quaking earth."

St. Marc.—A letter from this town says, that the earthquake was felt there with violence. Many houses were seriously damaged, and some destroyed, but no loss of life is mentioned. At Gonaives the shocks were yet more serious, the greater part of the houses were overthrown. A fire broke out at the same time, and there was not a drop of water in the town. All the houses that were not burnt suffered from the earthquake. It was in the streets that the writer of the letter giving this account was indicting it. The Church, the prison, the Palais National, the Treasury, and the Arsenal were all destroyed. This letter concludes at 8 a.m. by saying—"It is only half an hour since that we felt a very great commotion. At present we are ignorant of the number of persons killed or wounded. All the prisoners that are not buried in the ruins escaped. God grant that Port-au-Prince may not have experienced such a disaster!"

Cape Haytien.—The town of Cape Haytien has entirely disappeared, and with it two-thirds of the population. The families that could escape fled to Fossette, where they were without an asylum, clothing, or provisions.

The President of Hayti has given orders to the physicians and officers of the

hospitals to leave the city immediately, in order to give succour to the distressed.

In addition to the above disastrous intelligence from the Cape, a courier arrived from the city a few hours previous to the departure of Capt. Morris, who stated a fire broke out after the earthquake, which on Monday, the 9th, destroyed the powder magazine, and with it the remnant of the inhabitants who had escaped the earthquake. The towns of St. Nicholas and Port Paix are also said to be destroyed. Other parts of the island had not been heard from when Capt. Morris left; but it is conjectured that all the towns of the north are a mass of ruins.—We give the foregoing as it has appeared in the daily papers, but do not vouch for its accuracy.—Ed.

Hong-Kong.—It seems that the commercial community here generally begins to give more attention to Hong-kong than hitherto, and great activity in building godowns and private houses has of late been observed there, while many merchants have during the week gone over, with a view, we believe, of commencing building.

The public buildings are several of them completed, and the construction of others is urged on with spirit, so that we suppose this Island which eight or nine months back, inhabited by none but poor Chinese fishermen, will soon boast of a stately town. A practicable bridle road has been cut across the Island to Tytam-bay, and a road fit for carriages already several miles long, whilst a great number of workmen are employed upon it to complete it. The Chinese population is daily increasing, and its orderly behaviour, although they may be supposed not to belong to the most respectable classes of society, allows little room for the interference of the police. The bazar is well supplied at cheap rates, and workmen and artizans as well as the materials for building are plentiful. There are in one part of the Island several quarries of fine granite, which the Chinese work at cheap prices, so that granite stones for building of foundations or even houses may be had at very moderate prices. Concerning the climate of Hong-kong opinions have varied considerably, nor do they now seem to be altogether reconciled, for while some of the residents there have enjoyed health without interruption, many others have had attacks of fever and ague. There are however, many causes to induce sickness, independent of the climate. Waiting for the completion of their houses, people have have been obliged to live in matsheds, or bamboo houses, in which the sudden changes of temperature, so frequent here in the latter part of the year, would be more severely felt; others have gone to live in their new houses before they were dry; and the more than usual exposure to the sun of the Europeans residing there may also have had its share in producing sickness. According to all accounts the situation of Tytam-bay is more healthy than that of the new town of Hong-kong, but we have as yet not had sufficient experience with certainty to judge of either. The piracies committed in the neighbourhood of Hong-kong continue to give uneasiness to the native population, and the efforts of the British authorities to put them down, have hitherto been but partially successful. Independent of the occupation which the Chinese derived from foreign trade and building and the supplies of provisions, a considerable trade in salt has already sprung up, and we are informed that many parts of the surrounding country are now supplied with salt from Hong-kong, which the Chinese have made a depôt for that article.—*Bombay Times.*

Experiments with Large Guns at Deal.—The preparations for making experiments on an extensive scale with large guns on the coast betwixt Sandwich and Deal, are now nearly completed, and the experiments will be commenced in the course of the next or following week.

Major Hardinge, K.H., and Capt. Fyers, of the Royal Artillery, have proceeded to Deal, the latter to join Major M'Bean's company, by whom the ex-

periments will be carried on. Major Hardinge, as senior officer, will have charge of the whole; and, from his great practical knowledge as an artillery officer, will be able to give correct reports of the details, and how far they may be likely to prove of an advantageous nature to the military and naval services of this country. The Lords Commissioners of the Admiralty, and the Board of Ordnance, have acted with a spirit of liberality in this matter, worthy of the heads of these important branches of her Majesty's service, and have spared no personal exertion, in addition to the fullest instructions, for carrying on the experiments in the most effectual manner. The following guns, having been previously mounted on ship carriages at the Royal Arsenal, Woolwich, have been delivered at Deal, along with fifty rounds of balls, and cartridges for each. One 68-pounder, weighing 112 cwt., on Lieut.-Col. Dundas's principle, removed from the Geyser steam-frigate, to try its range on land; one 56-pounder, weighing 97 cwt., on Mr. Monk's principle; one 56 ditto, weighing 85 cwt., on Mr. Monk's principle; one 42 ditto, weighing 80 cwt., on Mr. Monk's principle; one 10-inch gun, weighing 85 cwt., on General Millar's principle; one 8-inch ditto, weighing 65 cwt. on General Millar's principle.

Several magnificent guns of very large calibre, capable of containing solid shot of 130lbs. weight, were recently cast at the foundry of Messrs. Walker and Co., for Mehemet Ali, Pacha of Egypt, and proved at the Royal Arsenal at Woolwich. The founders of these guns having expressed a wish to have the range of one of them tried to its utmost extent, their desire has been complied with, and a suitable ship-carriage and one of Messrs. Walker's guns will be forwarded to Deal for that purpose. A 32-pounder gun, weighing 50 cwt., and a splendid 32 pounder brass howitzer, constructed on a plan of Lieut.-Colonel Dundas (Inspector of Artillery,) will also be forwarded at the same time for the purpose of having their qualities reported upon.—*Naval and Military Gazette.*

New Guns in War Steamers.—The late experiments at Woolwich, and the forthcoming ones at Deal, for the purpose of testing the superiority of the new guns, excite just now considerable interest throughout the profession. No greater proof of this can be afforded than the numerous inquiries we have received not only from officers who have recently served, but those who have been on half-pay a considerabel time, and are, probably no longer fit for active service. Some of these latter, who have not posessed the opportunities now available for acquiring proficiency in naval-gunnery, express their surprise at the great weight of the 68-pounders in the Geyser; and are anxious to know what benefit is expected to compensate for this inconvenience. The reason is evident; the intention being to produce a great range, it cannot be accomplished without large charges of powder, hence the necessity for casting the gun much heavier than was the former practice.

The old 68-pounder carronade (or Smasher, as it was originally called,) weighed only about 36 cwt., the full charge was 5lb. 12oz., and the range (greatest) about 1,300 yards; but Col. Dundas' modern gun, of that calibre, owing to its weight and form, is capable of bearing a charge of 20lb. of powder, and to range a shot upwards of 4,000 yards, being considerably more than any piece of artillery that we have hitherto possessed; while Mr. Monk's gun of 97 cwt., throwing a shot of 36lb., is little, if any, inferior in this respect to the former, which weighs 113 cwt. The principal advantage of the Dundas gun is, its being adapted to an existing calibre; whereas Mr. Monk's shot of 56lb. is a deviation from any calibre we possess. For steam-vessels, guns possessing the longest range are the most desirable, because not only are they calculated to batter a town from a distance beyond the reach of ordinary cannon, but also because the shot has greater velocity, and consequently the power of penetrating deeper at low elevations, and thus producing more certain and destructive effect than when it is necessary to elevate greatly in order to reach the object.—*Naval and Military Gazette.*

NEW METHOD OF LOADING GUNS.—*Extract of a letter from Mr. Waterston, U.S.*—Amongst the various plans for improving the mode of firing ordnance, there is one which might, perhaps, deserve a trial, and which does not appear to have been yet suggested. There is a well known philosophical toy,—a small tube in which tinder is ignited by the rapid condensation of the inclosed air; could not a very small apparatus of this kind be applied to the locks of muskets, and other ordnance; the touch-hole to be at the bottom of the small cylinder, and the plug forced down rapidly by the spring of the lock. The heat evolved by the condensed air would, probably, be sufficient to fire the gunpowder in the touch-hole. The act of loading would thus be sufficient to prime the musket.

THE GREAT BRITAIN.—*Iron Steamer building at Bristol.*

WHAT can I say of this gigantic vessel? I have had but a transient view of her, but sufficient to impress me with the belief that she will prove to be something out of the common build of sea-going craft.

There is no other steamer, nay, vessel of any class, I believe I may safely say, with such an extraordinary overhanging bow. And, as to the cut-water, it does not measure more than an inch, I should think, judging from eye-sight, in thickness; comparatively, indeed, it may be called a "razor-cut;" and, if thinness be an advantage in dividing the fluid, she has it in perfection. Her whole monstrous body will be light compared with a wood built vessel of the same tonnage, as the plates seem to me not much to exceed the above measure, if indeed they are so thick. No doubt they are each and all of good stuff, and will bear a punch; indenting rather than cracking by collision with other materials. The wing-flaps of the screw are curious looking things, difficult, indeed, to be described by any but a mechanic.

When she is completed, and makes her start for the New World, it will be a second era for Bristol, where, if the mass of the citizens find their spirit of enterprise chained by a body, who, though apparently willing, seem to lack the energy necessary for effecting the release, some few there are who have, by the powerful aid of that which will break through any fetter laid on the pursuit of traffic, spurned all restraint, in the fulfilment of an object at once patriotic and highly spirited! May they succeed, for they richly deserve success, although in the first experiment, in a pecuniary point of view, it has not yet been realized.

How far the metallic "Mammoth" (her popular name,) will answer expectation as a "screwer," is, of couse, yet in embryo; but, it may be doubted, if so much talent, science, and practical mechanical skill as have been exercised in her construction, can be deceived. She is drawing rapidly towards completion. From some composition which has been payed over the iron, she now assumes a copper colour.

We add the following extract concerning this vessel from Mr. Grantham's work, noticed in another page.

"The scientific world is awaiting with intense interest the completion of the iron ship the "Great Britain," now building at Bristol, and better known as the "Mammoth." I have been favoured by Mr. Guppy, the Managing Director of the Company to which she belongs, with her dimensions, which are truly gigantic. They are as follows:—

	ft.	in.
Length of keel	289	0
Length from figure head to tafrail . .	320	0
Beam	51	0
Total depth from underside of the upper deck to the keel	31	4
Draft of water when loaded . . .	16	0
Tonnage, per old measurement, about .	3500	tons.
Displacement of water when drawing 16 feet, about .	3000	"

The plates of the keel are from ⅜ths of an inch thick in the middle, to 1 inch at the ends; and all the plates under water are from ⅜ths to ½-inch, at the top, except the upper plate, which is ⅜ths. She is clencher-built, and double rivetted throughout. Towards the extremities, and quite aloft, the thicknesses are reduced gradually to 7-16ths.

"The ribs are framed of angle-iron, 6 inches by 3½, by ½-inch thick at the bottom of the vessel, and 7-16ths thick at the top. The mean distance of the ribs from centre to centre is 14 inches; and all these ribs will be doubled: the distance is then increased to 18 inches, and then gradually to 21 inches at the extremities.

"The boiler platform is of plate iron, supported upon ten iron kelsons, of which the centre ones are 3 feet 3 inches deep. These kelsons are formed, like the floorings, of iron plates placed on edge.

"The hull is divided into five distinct compartments by means of substantial water-tight iron bulkheads.

"The decks which are of wood, consist of the cargo deck, two cabin decks, and the upper deck.

"It would be an endless task, and, without the aid of drawings, a fruitless one, to attempt a description in detail of the construction of this magnificent vessel. I can, however, state that her lines are very beautiful, and adapted to attain the highest rate of speed. The general character of the workmanship is very good, and does great credit to the builder. Her exquisite proportions prevent that appearance of heaviness which is generally observable in large ships; and, although she is probably the strongest vessel ever built, she has a remarkable air of grace and lightness."

Nautical Notices.

The following extracts from a Spanish paper,* which has just been received from the Spanish Hydrographer, Senor Navarrete, contain important matter to seamen. We recognize here and there an old acquaintance, but have not time now for an overhaul of these different rocks. We, therefore, lay the whole as they stand, before our readers, for their immediate information, intending to return to them in another number.

"The pilot and second-captain of the Spanish merchant-ship Dolores Ugarte, (matriculated at Havana,) from Guayaquil, made the following declaration on oath at the residence of the Captain of the Port at Coruna.

No. 1.—That on Monday the 18th of April, 107 days from Guayaquil they saw from the deck of that vessel a group of rocks about a cable's length in extent, and in the middle of them a large one, high and insulated, on which the sea broke violently. The latitude at the time they were seen was 25° 29′

* Gaceta de Madrid, May 28th, 1842.

55″, and longitude by chronometer 31° 0′ 30″. The latitude observed at noon was 25° 40′ 45″, and longitude also 31° 12′ 2″ west from Cadiz, at the greatest distance which the vessel was from the rocks at the time, being that of four miles.

No. 2.—The captain also says, "that after making the island of Trinidad, and having run on the parallel in which the islets of Martin Vas are situated he was unable to see it, notwithstanding he was on the spot where they are laid down; nor could he discover them at any distance, notwithstanding he went into the rigging, and could see the horizon clearly.

Coruna, 6th May, 1842.—Juan Benito de Arrian 'ciaga,—Es copia,—Gutierrezde Caviedes.

The group of rocks above referred have been marked in the charts in latitude 29° 29′ 55″ N., and longitude 31° 0′ 30″ W. of Cadiz, as given by Captain Gandaria, whose name has been adopted for them as usual. But they have been marked "*uncertain*," until further accounts of them are obtained, which will be duly published.

With respect to the islet Martin Vas, as it is a point which, until now, no one has doubted, and which has been seen and laid down by different navigators, as related in the archives of this office, more accounts are required to corroborate its disappearance, although such may have been the case, as such phenomena are frequent. To ascertain the fact, as well as to obtain the true position of the new rocks, further particulars have been asked from Gandaria, which might confirm his account, and notwithstanding that, it appears credit should be given to the statement for the probability which may attach to it, this office cannot place entire confidence in it, without having all the necessary data. As soon as they are received they will be published for the information of navigators: the captain having, in the meantime rendered an important service to his brother seamen, and the commercial interests in transmitting the discovery of the new rocks, and for which this office is under great obligation.

Hydrographic Office, Madrid, 19th May, 1842.

By the Captain of the Port of Manila the following notices have also been received in this office.

No. 3.—The brigantine Ramina on her departure from Boclecomba on the 8th November, 1840, steering S.W.b.W., considering herself according to the plans of Norie and Horsburgh steering clear of all danger, and having run nearly two miles on that course, struck on a rock, and luffing up, immediately sounded in three fathoms stones, the water to leeward being of a light green colour, and large blocks of stone being at the same time distinctly seen from the masthead. Having passed it, and being about a cable's length from it, the town of Boclecomba bore N. 24° E.; the west point of the northern island S. 61° E., and the mountain of Boutain N. 42° 5′ W., which bearings place its centre in 5° 37′ 30″ S. lat., and long. 126° 34′ 43″ E. of Cadiz. It is uncertain whether there is less water on it, as the breeze freshened from the S.E. and the current set strongly to W.S.W. The Captain's name of the above vessel, and who gave the account is, D. Blas Maten, (the same who noticed the rock in Gaspar Strait,) commanding the brigantine San Joaquin. At the same time he gave the following notices which he obtained in his voyage to China.

No. 4.—The Brigantine, of Baltimore in the United States, the Bob Roy from Macao in the N.E. Monsoon and running for the China Sea, discovered a rock S.W.b.W. from the West London, distant from it 25 miles, and placed it by observation and chronometer in latitude 8° 39′ N. and longitude 117° 54′ 13″ East from Cadiz.

No. 5.—To the southward of the China Sea a Dutch frigate discovered a rock, elevated from thirty to forty feet above the surface of the sea, with the following bearings, Pulo Taya S. 45° W., the little mount on the eastern point of I. Linguin N. 14° W. which bearings place it in 0° 37′ 0″ S. and longitude 111° 23′ 43″ east of Cadiz.

No. 6.—The Captain of the English corvette Maria, M. Miller, discovered in the Pacific on the 1st of June of the present year, an island in lat. 11° 38′ S and lon. 160° 52′ 13″ east of Cadiz. On June 29th, two islands in lat. 9° 37′ S. and lon. 158° 55′ 13″ east of Cadiz. On the 3rd July another in lat. 2° 47′ S. and lon. 150° 20′ 13″ east from Cadiz, which islands not being noticed in the charts, the captain called the first Isle "Maria," the next "Sharps Isle," and the last "Miller."

No. 7.—The Captain of the Spanish Schooner Audaluza, Don Jose Sanches states having found in the western pass of Paraguay, a rock in lat 9° 31′ N. and lon. 124° 19′ 13″ east of Cadiz, and a bank of six to twenty fathoms sand and stones, in lat. 10° 47′ 26″ N., and lon. 124° 14′ 13″ E. of Cadiz. The first was laid down by bearings and observation, and the last by observation only.

No. 8.—The captain also of the Spanish schooner San Vicente Don Jaime Simo found a reef in the same strait, lying E.N.E. and W.S.W. about a mile and a half long, and a third of a mile wide, with from three to nine fathoms in the channel, which he passed through; but the rest to appearance was nothing but rocks. He found it by observation and bearing of Mount Higlibang S. 85° E., and Mount High N. in lat. 9° 29′, and long. 124° 13′ E. from Cadiz.

No. 9.—The same captain was anchored on the western coast of Paraguay, in lat. 10° 55′, where he found a bay with a river falling into it of very good water, and he anchored in eight and ten fathoms, fine sand, at a cable's length from the beach, sheltered from winds from north-west to south, round by east, which prevail in the north-east monsoon. He also anchored to water in the same part of the coast in lat. 9° 44′, where there are two good rivers, and a bay in which shelter may be had in the North-east Monsoon, his anchorage being in from six to eight fathoms, coarse sand. Close to the beach there is a small town, the inhabitants of which are well disposed, and with little precaution may be treated with. He was sheltered from winds from north to south by the east.

Captain of the Port of Manila y Cavite,

August 27th, 1841. SALOMON.

TABLE BAY.

Cape Town, 1st March, 1842.

Instructions for entering Table Bay by night, by the plan constructed on the observations made by her Majesty's ship Leven, November, 1825. The bearings mentioned in these instructions are all by compass, or magnetic. :—

1. To enter Table Bay from the northward, meaning to pass outside of Robben Island, a ship should keep the light to the eastward of south—9° east, or about south and by east, until she get soundings under twenty fathoms, at a little more than a mile from the light-house; she may then steer E.S.E., or east and by south, not to come under ten or twelve fathoms until the light bear W.S.W., she may then steer for the anchorage, and may anchor in from seven to six fathoms, as soon as the lights are shutting in behind the Lions Tail. This track leads about a mile clear of danger on Green Point; but a ship need not approach it so near, if she have, by seeing Robben Island, ascertained by its bearings, that she is clear of the Whale Rock, in which case she may round it at a greater distance from Green Point, if desirable, but the soundings in that case will not alone be a sure guide.

2. In coming from the south-west, a ship should not get less than forty fathoms before the light bears south-east, or E.S.E., nor less than twenty fathoms before it bears south and by east, when the preceding directions may be followed.

From the northward (inside of Robben Island) the light should be kept about south-west and by south, until a ship have passed that island; in doing which she may have some casts from eight to six fathoms: and when on that

course the water deepens to eleven or twelve fathoms, she may steer for the anchorage by the plan as before directed.

In beating round Green Point, a ship should never shoal her water under eleven or twelve fathoms, until she have brought the light to bear W.S.W., as before said.

In beating between Robben Island and the main, to enter Table Bay, the soundings may be taken from the island as it shoals to very regularly. In standing towards the main, it appears prudent to tack at the first cast of the lead after the water shoalens.

In these directions it is taken for granted, that a ship will always keep her leads going.

By day, or when the shores or surf can be seen, or indeed under any circumstances the plan ought to be a sufficient guide.

There are two lights at the light-house, which are in one about south-west and by west; these appear to be of no other use than to assure the navigator which is the light-house, if he should see other lights. We have seen the lights clearly off deck at sixteen miles distance; but they will not make clear as two lights until within six or seven miles to the westward of them; and from the northward one light only will be seen.

(Signed) W. F. W. Owen,
Captain of H.M.S. Leven.

A light having been erected on the Mouille Point, with a lenticular light of the 4th class,* for the better guidance of vessels entering Table Bay during the night, the following instructions are appended to the instructions by Captain Owen, R.N.

In standing in from the south-west, a ship should not pass the lights on Green Point nearer than a mile—nor should the course be altered from the eastward to the southward, with the intention of steering for the anchorages,—nor should the ship be brought into less than fourteen or fifteen fathoms water, before the lights on Green Point bear S.W.b.W. ½ W. (they will then be in one,) when the light on the Mouille Point will instantly be seen, (and not before,) bearing nearly S.b.W. A ship may then alter the course from the eastward, and steer S.S.E. for the centre of the anchorages, and anchor whenever the lights on Green Point are shut in (by sand-hills near the Mouille) and the light on the Mouille Point bears north-west distant about a mile, in from six to eight fathoms water. Vessels of light draft of water may steer S.b.E. ½ E. for the anchorage, and anchor with the Mouille light bearing N.W.b.N. in from four to five fathoms of water.

The ship's distance from the shore, when the light on the Mouille appears, may be readily ascertained by the bearings of the two light-houses, and the distance between them, which is 1,215 yards—the perpendicular height of the Mouille light above high water mark is forty feet.

In coming in from the northward (inside Robben Island,) the lights on Green Point will appear in one, (or nearly so,) and the light on the Mouille Point will also be seen; the distance between the light-houses being as above-mentioned. The directions by Capt. Owen, and the appended directions, will be a sufficient guide to the anchorage.

It is earnestly recommended to strangers not to attempt to beat into Table Bay at night, in squally or thick weather. The strictest attention should be paid to the soundings, and the leads kept constantly going. The plan of the bay by Capt. Owen, (upon which the instructions are founded,) should also be at hand for reference.

(Signed) J. Bance, *Port Captain.*

* We conclude Mr. Bance means a harbour light, as we are not aware how many *classes* of "*lenticular lights*" we English have.

By command of His Excellency Sir G. T. Napier, K.C.B. Governor, Vice-admiral, and Commander-in-chief of the colony of the Cape of Good Hope and its Dependencies, &c. (Signed) J. Moore Craig,
Acting Secretary to Government.

N.B.—The light on the Mouille Point will be lighted from and after the 1st day of July next.

Revolving Light on the Great Berling Coast of Portugal.

A notice has been given by the Portuguese Government, that the light on the Great Berling, (which was announced in our January number, see table in p. 8,) was established on the 15th of June. Its revolutions are completed in three minutes, in the course of which a bright glare, and a sudden eclipse takes place. It is also added, that the Light of Peniche is discontinued, a measure, we presume, neeessary for making the alteration "about to be improved on the modern system," as noticed in our table.

Cherbourg Lights.

On the 1st of July next, the two small Fixed Lights of Fort Royal, on Pelee Island, in lat. 49° 40′ 16″ N., long. 1° 34′ 53″ W. of Greenwich will be discontinued, but they are to be replaced by a single Fixed Light of sufficient power to be seen nine miles.

The new fixed light will be only 2843 yards from the Intermitting Light on the central fort of the breakwater (la Digue,) which bears N.W.b.W. (mag.) from Fort Royal; it cannot therefore be mistaken for the fixed light on the fort of Querqueville, which is 5195 yards from the central fort and bears W.N.W.

Light at Shoreham.

In future a white light will be shown at night on the middle pier, when there is 11 feet water between the piers; and a red light at the same situation when it is high water, slack tide.—*Shipping Gazette.*

Removal of Buoys, Ameland.

Amsterdam, May 12.—The Director-General of Marine gave notice on the 23rd ult., that the dwars (thwart) at the north-western entrance of Ameland having, from time to time, filled to such a degree that at present there is on this ridge at most only twenty palms water, and therefore cannot be navigated, the buoys have in consequence, been removed from the north-western entry to mark the safer channel in the vicinity of the former western entry.

And, in order that ships coming from sea may be able to find the outermost buoy, the cape at Hollam, near Ameland, is to be placed in a line with the steeple of Hollam, consequently the said cape cannot, for a short space of time, be used as a landmark.

[We insert the foregoing as it appears in the *Shipping Gazette*, but at the same time regret that we have no orginal authority for the better information of seamen.—Ed. N.M.]

The Sympiesometer.—The general use into which Sympiesometers are getting, renders it highly important, that they should be constructed with the greatest accuracy possible, in order to be able to compare ob-

servations at different places; as well as to prevent the possibility of deceiving the mariner. Most persons find fault with the instrument, being (as they say) too sensible of slight alterations in the atmosphere, often causing alarm without reason. This fault appears to me to arise from the following causes: the makers of the present instruments, adjust the correcting scale for temperature so as to make them correspond with the barometer, at the common temperature of the place of manufacture, leaving the extremes of heat and cold, in a great measure to chance. When the instrument comes into use, and in variable climates, its height is noted, with a temperature of 60° in the morning (at which we will suppose it to agree with a barometer,) and by noon when the next observation is taken, the temperature is increased to 70° there will in most instruments (supposing the barometer to be stationary) be a fall in the height of the Sympiesometer of about 1-10th, if from 70° to 80°, $\frac{15}{100}$. On the other hand, in colder climates, reduce the temperature between the observations, say from 60° at noon, to 40° at midnight, and the sympiesometer will then show 2-10ths above the barometer. The barometer may thus be falling, while the sympiesometer is rising, and vice versâ; thereby often creating a doubt in the mind of the observer as to which weather he may expect. These figures are from a correction which I now apply from experience to one of Adie's, upon which an endeavour has been made to remedy this defect, by varying the length of the degrees on the barometric scale, which has quite failed. The same rule however applies to a number of instruments of different makers, that I have examined, and appears to me to arise from the following cause. The instrument as at present manufactured has a correcting scale for temperature (the degrees on which are equal) to correct for the expansion of the gas and oil at different temperatures, but as the expansion of the oil partly counter-balances the increased bulk of gas, without the difference of expansion of these bodies be accurately known, the instrument can never arrive at perfection. The greatest evil that is overlooked is the unequal expansion of the gas, which I will explain by quoting from Arnott's Elements of Physics, p. 6, vol. 2, "The expansion in bodies generally increases more rapidly than the temperature, because the cohesion of their particles lessens with increase of distance, being remarkably greater therefore in liquids, than in solids, and in airs than in liquids."

In order to counter-balance this unequal expansion of the gas, the degrees of the correcting scale should be gradually elongated; as the oil also expands unequally and partly corrects the expansion of the gas, it would be necessary to have a farther correction for it, and it seems to me almost, if not quite, impossible ever to make an instrument of this kind mathematically correct. Much may be done towards its practical improvement in the manufacture, by marking the degrees of correction by observation, submitting the instrument to as much artificial cold as necessary, and marking the degrees of correction as the temperature increased, keeping the index to a uniform height with a standard barometer throughout the proof.

A few such observations would no doubt form a scale which would be sufficiently correct for all nautical purposes, as from its size, portability, and showing a greater range, the changes can be noted sooner,

and with more accuracy than the barometer, and will generally be preferred to it. Where more accurate observations are required on board ship, it ought to be suspended in gimballs, as the more inclination a ship takes, the higher it must rise to attain its perpendicular height, and when a ship rolls heavy the pumping is considerable.

In conclusion, I would recommend all persons using the present instruments to keep them at the same temperature as much as possible, and, if convenient, compare the height at different temperatures, with a barometer. A few observations will soon form a scale of corrections sufficiently near for ordinary purposes; and as the subject is now under the consideration of an eminent maker, I hope soon to see the instrument arrive as near to perfection as possible.

AUDAX.

ORDNANCE SURVEY OF GREAT BRITAIN.—IT is rather remarkable that the great triangulation of the ordnance never was extended to the north-east part of Kent, Essex, Suffolk, Norfolk, part of Cambridgeshire, Huntingdonshire, Lincolnshire, or the east of Yorkshire, although the surveys of most of those counties have been published.

The late Major-General Roy measured a base line, and carried a triangulation to the south coast, between 1784 and 1788, for the purpose of connecting the observatories of Greenwich and Paris only; and in 1791 to 1800, the late Major-General Mudge remeasured General Roy's base line, and carried a principal triangulation from it, proceeding along the southern coast of England; and for the purpose of obtaining approximate data for calculating the figure of the earth, he also carried a single chain of triangles from the south to as far north as Clifton, near Doncaster, in Yorkshire. In 1806, the Major-General carried forward the same chain northward to Burleigh Moor, near Upleatham, on the Yorkshire coast, with the design of simply obtaining the length of an arc of the meridian, those observations which are requisite to complete the principal triangulation to the east and west, not being taken; and the maps of Essex, Suffolk, Norfolk, Lincolnshire, &c., along that coast were, therefore, projected upon a secondary triangulation only fit for a military map, on a scale of one inch to a mile, and wholly inadequate in general accuracy of position for astronomical purposes.

In 1821, commissioners were appointed by the English and French Governments, to measure the distance across the channel, and to carry forward the connection again to the observatory at Greenwich. This triangulation was accomplished in the years 1821 and 1822, and has been published in the Philosophical Transactions. In Yorkshire and the north of Lincolnshire, the principal triangulation and survey is going forward.

THE SLAVE TRADE AT MOZAMBIQUE.—*Extract of a letter from a Naval Officer.*—The slave trade is here quite stopped. There is not a single vessel in any of the ports in this channel. The Portuguese Govern-

ment has given such peremptory orders to their governors, that they dare not sanction it. If any vessels slip through our hands they are seized by their own authorities. Mozambique is in consequence completely ruined.

LIGHTNING.—A short time since a paper on lightning-conductors, in connexion with the accident at Brixton church, was read at the meeting of the London Electrical Society. Its author, Mr. Walker, the secretary of the society, had made a survey of the damage done to the tower of Brixton church, and found in it so practical an illustration of Dr. Farady's opinion on the "lateral discharge," as to induce him to investigate the subject more closely. It seems that no arrangement of metals could have been better adapted than that met with in this steeple to invite a flash of lightning to do mischief. There was a regular series of stepping stones, as it were; first, an insulated metallic cross, then twenty feet of stone work; in passing this interval the roof of the lantern was shattered. Then come twenty or thirty feet of conductor, in the form of the clock wire, and a water pipe; and then a break of twelve feet. Here, again, was an explosion, and an immense mass of masonry was shattered away from the base of a column intervening between the termination of the water pipe and the commencement of the next series of conductors. Within the belfry "a lateral discharge" took place; the fluid passed from one conductor to a vicinal one for no other reason than to obtain a wider path. The author showed that electricity not only chooses a short, but also a wider path; and that the "lateral spark" arises from the latter property.

He then explained that it is not enough to have a continuous or an insulated lightning rod; but it is most important to have it far away from other metallic bodies; for, however capacious the rod may be, and however adapted to convey, not only what passes down it, but ten thousand times more, yet, if another conductor is near, a flash will pass between the two, and ignition of neighbouring combustibles will be the result. Fortunately, in the case in question, only a small part of the whole fluid passed within the tower, consequently the lateral explosion was not severe. As it is not always possible to place lightning rods entirely out of the neighbourhood of other conductors, Mr. Walker showed that the possibility of the fluid's passing between them should then be converted into a certainty by making metallic communication between them, and thus tracing out a path along which the fluid might pass without the developement of light and heat.

He spoke of the peculiar property of the points of leaves, twigs, &c., in drawing off quietly charges of electricity, and stated his conviction that tall trees would always be found valuable, if not in entirely averting, at least in greatly mitigating the force of a lightning shock. The theoretical opinions given in this communication were based upon the experiments of the Royal Institution, the object of the author being to show how closely they were illustrated on the grand scale of nature, and to direct the attention of the public generally to a closer study of the properties of lightning rods, a subject on which, perhaps, more than on any other practical point, more ignorance prevails than can be well conceived.—*Times.*

THE CALEDONIA AND QUEEN.—It has been often remarked, that whenever one of Sir W. Symonds's ships proves successful on trial, the fact is passed over, and not an allusion to it ever appears in those journals which are ready enough to give currency to the most absurd rumours that can be constructed to his prejudice.

Certainly it does appear remarkable, and somewhat disingenuous on the part of our contemporaries, who have the same means as ourselves of learning those things through their established correspondents, that they should lend their influence to a system which has neither the elucidation of truth, nor the benefit of the Service to recommend it. There are probably a score of letters now at the Clubs received by the last Malta mail—we have seen several—giving an account, more or less detailed, of a trial off Malta, of six days' continuance, under various circumstances, and all points of sailing, to test the merits of Her Majesty's ship *Queen*, in competition with the other vessels of the Fleet. We are able to assure our readers that in every case the ship upheld the character which Sir Edward Owen bestowed upon her on his arriving at Malta, after a very quick passage—namely, that, in his opinion, "she possessed all the qualities of a perfect man-of-war;" and nothing more flattering could be said in any vessel's favour. With the exception of the *Vanguard*, (the fastest ship in the fleet,) the *Queen* decidedly beat every vessel during the trial, on every point, and under all circumstances, without a single exception; and her stability is so great, that her utmost inclination did not exceed 7°, when pressed down by all the sail the masts would bear, and when all the other ships, (*Vanguard* excepted, her inclination being 5° only,) were heeling over from 12° to 16°. Such is the fact, and we are curious to know what quibble will be resorted to, to deny or conceal it. Doubtless the ingenuity of the detractors will devise some story to gull the public once more, and we shall not be surprised if a Member of Parliament may be found simple enough to give it currency.—*N. & M. Gazette.*

THE GENERAL STEAM NAVIGATION COMPANY.—Some remarks have been made upon the unhandsome conduct of the Belgian authorities towards the General Steam Navigation Company. Every possible obstruction, it appears, is thrown in the way of the business of the Company's vessels running to Antwerp, for the purpose of giving an advantage to those which belong to a Company formed in that city. It appears that the Rainbow having regularly cleared out at Antwerp, and paid all port-dues, was upon the point of starting, in company with the Belgian ship, Princess Victoria, when an endeavour was made to stop the Rainbow from proceeding on her passage. There is no doubt this atrocious interference with the rights of a British ship was intended as an intimation to the passengers on board the Rainbow that there would, in future, be no security for their quitting the port unless they took their passage in a Belgian vessel. The commander of the Rainbow, however, with great spirit and firmness, resolved to proceed, and to the great delight of the passengers, dashed down the Scheldt after the Victoria, and in a very short time passed her in gallant style.

If this system of annoyance is continued, it will be the duty of the British government to interfere for the protection of interests which, from their magnitude, may be considered the interests of the nation.—*Kentish Mercury.*

We quote the foregoing as we find it, fully applauding the spirited conduct of the officer commanding the Rainbow, and are satisfied that our countrymen need only to be informed of the case to give their patronage to the vessels of this Company, which such conduct cannot fail to secure to them, while the Company are no less entitled to general support for their long established character.

THE AMERICAN SURVEYING EXPEDITION IN THE PACIFIC.—We find the following brief notes of the proceedings of the American Surveyors in a late number of the *Hants. Telegraph.*

"The Vincennes and Peacock, American sloops-of-war, with the Porpoise brig, and Flying Fish, schooner, after spending the southern summer of 1839-40 in exploring the Antarctic circles, and amusing themselves with the discovery of land, through and past which our Terror and Erebus, on the following year, sailed over and four degrees beyond it, we find now have reached the Columbia River, on the west coast of North America, in the spot called by the Americans the Origen Country, and celebrated by Washington Irvin, in a novel called Astoria. This locality does not belong to the United States, but is the property of the Hudson Bay Company. For what purpose, therefore, the American exploring squadron visits it, except to breed disturbances, we know not. It is however, understood that the Americans have been somewhat punished for this visit by the loss of the Peacock, sloop-of-war, crew saved. The remaining ships were about to return to New York, viâ Manila, Singapore, and the East Indies. It will be seen from the following extracts from the New York Express, that these ships have behaved most brutally and disgracefully in their course through the South Sea Islands, and their conduct will be productive of much mischief to our whalers.

"HONOLULU, *June* 19.—The United States Ship Peacock, Captain Hudson, and schooner Flying Fish, S. Lenox, Commander, arrived during the week, after a long and protracted cruise to the south and west; officers and crew in good health. Their original destination was the Columbia River, where they expected to have joined the other vessels of the Exploring Squadron two months since, but a want of provisions compelled them to put away for this port. During their cruise they have surveyed most of the small islands directly to the southward of this group, and from thence proceeded to the Samoa Archipelago, at one of which, after firing some round and grape shot to disperse the natives at their settlements, they landed and burnt three of their villages, in consequence of their refusal to deliver up a chief who had murdered an American some time previously. From thence they went northward, visiting and surveying the numberless islands in that direction; at one of the islands discovered, the inhabitants having never seen white men before, were exceedingly astonished at their appearance, and stood in great awe of them.

"At the King's Mill Group, one of their men was murdered, and a fight ensued in consequence, in which a number of natives were destroyed. They are described as being more ferocious than even the Fejians. An unsuccessful search was made for the unfortunate Capt. Dowsett, at the Pescadores; very few inhabitants were seen upon them, and it is supposed that the party that captured him must have been a fishing party from some other island. From Pescadores the vessels came directly here, having been on half allowance of provisions and water for some time. We welcome them back to our waters again, regretting that their stay will be limited to a few days only. The result

of this cruise will be of exceeding value, particularly to whalers; as the charts of this part of the ocean were very incorrect, and had been but imperfectly surveyed previous to this cruise. Time and want of provisions only prevented them from visiting Strong's Island, Ascension, and the Caroline group.

"*June* 26.—The United States Exploring Squadron, though fitted out as a peaceful expedition, and with small armaments, has done more fighting, and been engaged in more contests than probably the remainder of the navy for the last ten years. At the Fejees from 78 to 100 men were killed on the part of the natives; at the King's Mill from 12 to 20; and at the Samos several villages were burnt. Besides these many petty attacks have been repulsed without any known loss of life.

"Many individuals in the United States may be inclined from ignorance of the character of savages, to condemn those acts as cruel and unnecessary, but those acquainted with all the circumstances, will consider them proper, and called for by the treacherous disposition of the natives themselves."

So much for the American account.

New Books.

THE LIFE OF AUGUSTUS VISCOUNT KEPPEL, *Admiral of the White, and First Lord of the Admiralty in* 1782-3.—*By the Hon. and Rev. Thomas Keppel, Rector of Warnham, &c.—In two volumes.*—Colburn, 1842.

We promised our readers some extracts from this work, the appearance of which we noticed in our last number, and we now proceed to redeem our pledge, with some of those useful traits which abound in the history of great men like Keppel. With the family descent of the Admiral, our readers have little to do, but it may be well to know that his origin was of a Noble family in Holland. But there is a trait in his early character which we must not lose sight of. In the course of his servitude as midshipman "he soon acquired a proficiency in marine surveying, which proved of great service to him in after life." Now if there be one class of persons to whom the knowledge of marine surveying is more useful than to others, it is to that of Naval Officers; and Keppel saw this and profited by it. But he was no less devoted to Seamanship, his skill in this main branch of his profession having been held up to admiration, and placed on record by no less a personage than one John Hamilton Moore, a sage who lives in the memory of our veteran officers, but whose fame only has reached those of modern date. So much devotion to professional pursuits gave early indications of that talented mind which secured him friends, and with them, advancement. We shall proceed at once with our extracts, and here is an instance of one of those half measures we have already alluded to.

"THE circumstances which led to the equipment of Anson's squadron, form an epoch in the history of the eighteenth century, both as leading eventually to improvements in naval economy, and as marking the first departure from that sound policy which, under a Whig Government, had for so many years secured to this nation the blessings of peace.

"Our traders in the West Indies had for a considerable time carried on a contraband traffic with the subjects of Spain, in South America; and the captains of the Spanish Guarda Costas had, in retaliation, imprisoned the crews, and confiscated the cargoes of several vessels in the employment of the British South Sea Company. The whole country was aroused by the accounts which every arrival from that quarter brought of insults and atrocities committed against British subjects, and called loudly for revenge. Among the few who did not share in the almost universal frenzy was the prime minister, Sir Robt. Walpole. Steadily adhering to the pacific policy which had so long characterized his administration, he endeavoured by negociation to avert the calamities

which he foresaw would befal this country, if hostilities once commenced. But in spite of his advice and remonstrances, war was formally declared against Spain in the autumn of 1739,* and the remainder of Walpole's public life was harassed by the guidance of measures which his judgment condemned, and over which he exercised but an imperfect control.

"Walpole's measures were well conceived, but badly executed. Aware that Spain derived her principal resources from her settlements in the West Indies, the South Seas, and Manila, it was against these points he determined to direct his attack. For this purpose he dispatched two squadrons, the one under Admi. Vernon to the West Indies, the other to the South Seas, under Commodore Anson. These it was intended should finally co-operate across the isthmus of Darien,† a project rendered abortive by the failure of Vernon's attack upon Carthagena. Walpole was peculiarly unfortunate in the selection of the principal officers for the West Indian expedition. Neither Admiral Vernon nor General Wentworth, who upon the death of Lord Cathcart, became his coadjutor, had the requisite temper for carrying on a combined system of operations. Smollett, an eye witness of the conduct of these officers, makes Roderick Random compare them to Cæsar and Pompey. 'The one,' says he 'would not brook a superior, and the other was impatient of an equal,' so that, between the pride of one and the insolence of the other, the enterprise miscarried.‡ A similar fault cannot be imputed to the minister with regard to the South Sea expedition. The service could not, perhaps, have afforded an officer better fitted than Anson, for the arduous duties assigned him, by the energy of his character, by his firm and even temper, and by the solidity of his judgment and professional knowledge. Yet, although the selection of a commander was fortunate, there were many errors both in the dispatch and equipment of the squadron, for which the premier, or his colleagues, were highly censurable.

"The first of these errors was the unjustifiable delay in the dispatch of the expedition. Anson received his commission on the 10th of January, 1740, but it was not until the 18th of the following September that he was enabled finally to take his departure. The consequences of this detention were most calamitous; the opportunity was lost for sailing at a favourable period of the year; the Spanish settlements were put on their guard, and the squadron suffered such disasters, that out of the six men-of-war and two store-ships, of which it was composed, the Centurion alone returned to the British shores.

"With respect to the equipment of the squadron, a heavier charge than mere procrastination lies against the minister of the day. If ever an armament required a crew in the full vigour of mind and body, it was that which Anson commanded; yet the mode in which the ships entrusted to him were manned, is at once irreconcilable with policy, and repugnant to humanity; and it seems almost incredible, that such an outrage should have been offered to public decency and feeling, without awakening, at the same time, public inquiry and indignation.

"A regiment of infantry had originally been assigned to the squadron, but it was afterwards resolved to replace them by 500 out-pensioners of Chelsea Hospital, of whom, however, only 259 and those of the most feeble, were embarked. 'The imagination can hardly conceive a more distressing scene than the embarkation presented. The men were conscious of their unfitness for the service; the pride of youthful confidence had long been extinguished in their bosoms; their heads were grey, their limbs injured and frail, and the only glow they felt was that of indignation, to be sent upon a service in which, without the ability to perform their duty, or the chance of having their sufferings terminated by encountering the enemy, they saw only the prospect of uselessly perishing by lingering and painful diseases.'§

* Letters o marque were issued in July. War was declared in October, 1739.
† Smollett' History of England, vol. 3, p. 41. ‡ Roderick Random, p. 215.
§ Campbell's Lives of British Admirals, vol. 6, p. 343.

"The account of the departure of the squadron is from the private journal of Philip Saumarez, third lieutenant of the Centurion, who a few years afterwards was killed in Hawke's action with Letenduer, while gallantly engaged with a ship of greatly superior force.

"'On the 18th September, 1740, we made sail with his Majesty's ships—

Squadron designed for a secret expedition	Centurion	60 guns	Commodore Anson.
	Gloucester	50 do.	Capt. Norris.
	Severn	50 do.	Capt. the Hon. E. Legge.
	Pearl	40 do.	Capt. Mitchel.
	Wager		Capt. Kidd.
	Tryal sloop		Capt. the Hon. J. Murray
	And two store ships.		

The St. Albans, (Capt. Vincent,) and Lark, (the Right Hon. Lord Geo. Graham,) the two convoys for the Turkey and Mediterranean ships, in all, twenty-seven sail.'"

"On the 20th of September, the squadron was joined by one hundred and twenty merchant ships, and five men of-war, under Captain Barnet; when 'the Commodore, who seemed hitherto only to command as senior officer, thought fit to assume his proper rank and character, and ordered the private pendant at the mast-head to be struck, and a broad red one to be hoisted. Our squadron now amounted to one hundred and fifty-two sail. The prospect of such a number of ships lying-to to receive us, joined to the serenity of the air and smoothness of the sea, afforded a most amusing entertainment, which was much heightened by the salutes of his Majesty's ships at the Commodore's joining them,'

"At one, we made sail down channel, with a fair wind.*

"Here follows a list of the line of battle, and order of sailing. Saumarez then continues:—'In this order we proceeded as strictly as circumstances of wind and weather would permit, and the next day esteemed ourselves clear of the channel—an event much wished for by all the merchants in general.'

"The wind shifting round to the W.S.W., the Commodore tacked to the southward, in expectation of more favourable weather. The reason for this hope is thus philosophically explained by the worthy lieutenant:—'Naturalists observing, from the situation of the British and French coasts, an extraordinary suction to ensue, whence the attraction of vapours, and impurer parts, whereby the tendency of the whole body of the lower air being carried in a stream parallel to the course of our channel, produces those successive causes of east and west winds which generally preside most parts of the year.'"

We have no more room at present, but shall return to this work in our next.

IRON AS A MATERIAL FOR SHIP-BUILDING, *being a communication to the Polytechnic Society of Liverpool.—By John Grantham, C.E., President.*—London, Simpkin and Marshall.

Iron steam-vessels are now become so common that a history of the application of this material to Naval architecture was a desideratum. This Mr. Grantham has supplied, and the whole subject with its various branches is of so much importance, that we shall find opportunity of often recurring to it. Iron as a material for ship-building, sounds strange to the ear. Comparing it with wood which one is prone to do, it appears at first absurd, but to the initiated it presents so many important considerations, that at least, it is not to be thrown aside hastily; and to secure the advantages which it offers, it is worth while to look well at the objections, to see if they can be remedied, even on the largest scale. Whether iron will ever become a material for the con-

* Saumarez's Journals.

struction of a vessel of war, is a question, we would not take on ourselves to answer, but we will hear what Mr. Grantham says on that subject hereafter. Of the early history of iron vessels Mr. Grantham in this very interesting paper says :—

"It is a common error to suppose that vessels have but recently been constructed of iron, and that the principle is only advocated by a few whose interest, as workers in iron, leads them to promote it. Many therefore, naturally enough, still view the subject with distrust, and regard it as one of the visionary schemes of this wonder-working age, which will soon be relinquished and forgotten. But I trust I shall be enabled to prove that the construction of iron vessels is not an invention of recent date; that the value of iron as a material for ship-building has long been known; and that it has for many years been making a sure, though slow, progress towards the improved state it has already attained."

"*Iron Canal-Boats*—The first traces that I can discover of the construction of iron vessels, are of those built for the canals of this country. Of these, a few, I believe, were built as far back as forty years since, and it is stated by those who have had a good opportunity of knowing, that some of them may still be in existence. During the meeting of the British Association in Glasgow, after a paper had been read on the subject of iron vessels, several gentlemen communicated facts, which had come within their own knowledge, with respect to their early introduction. A friend, in writing on this subject, states that a gentleman in Staffordshire was at that time cutting up some iron vessels which had been at work twenty-eight years. My partner, Mr. Page, was engaged in building several canal boats of iron, upwards of thirty years since; and I have myself seen iron vessels in Staffordshire, of a still greater age, but the precise date of the construction of which I could not ascertain. These facts are interesting, not only as proving that the subject has long been under the attention of practical men, but as evidence of the strength and durability of iron vessels, points to which I shall hereafter more fully allude."

"*The Aaron Manby, Iron Steamer.*—The first iron steam vessel, and the first that ever put to sea, was built by the Horsley Co., for the Seine, and called the "Aaron Manby," after the name of the projector. I have lately been favoured by Mr. Manby with the particulars relating to this vessel, which are very interesting as recording the origin of iron steam vessels. He states in his communication, dated 19th February, 1842, that under a patent which he took out in France for iron steam boats, in 1820, he, with his friend Captain (now Admiral Sir Charles) Napier, formed a Society, and immediately began to construct their first boat at Horsley, but owing to some circumstances connected with the parties at Paris, she was not completed till the end of 1821. She was then sent to London in parts, and put together in dock. She took in a cargo of linseed and iron castings, and Captain Napier took charge of her, and navigated her from London direct to Havre, and thence to Paris, without unloading any part of the cargo, she being the first and only vessel of any description that ever went direct from London to Paris. Mr. Manby continues—"Some time after, I built another iron steam vessel of the same description, with a few alterations, at Horsley; but, owing to the navigation laws in France, she could not be admitted, and was obliged to be shipped in parts, and I put her together at Charenton, near Paris, where I had then established iron works, and where I subsequently constructed two other iron steam boats, the whole for the navigation of the Seine. They continued prosperously at work till 1830, when, owing to the revolution, and some disputes among the shareholders, they were sold to a new society. In this new society I had no further interest, but they continued navigating up to the period of my quitting France, and I believe are all at work at the present time. From 1822 to 1830 the hull of the Aaron Manby never required any repairs, although she had been repeatedly aground, with her cargo on board."

"This vessel does not appear to have been very fast, but excited consider-

able attention, as will be seen by the following extract from *Le Constitutionnèl*, of 13th of June, 1822 :—" Le bateau à vapeur en fer, l'Aaron Manby, Capt. Anglais Napier, est arrivé hier, Lundi, à huit heures du soir au Port St. Nicholas, avec un chargement de graine de tréfle, qu'il avait pris à Rouen, et de quelques pièces de fonte et de mecanipues, venant d'Angleterre. Le bateau Français à vapeur, Le Duc de Bordeaux' arrivé de Rouen samedi au soir, avec un chargement complet qu'il n'avait pu mettre à terre en entier, était parti du port à quatre heures du soir pour aller à la rencontre du bateau Anglais qu'il a atteint à la hauteur de Saint Cloud, en face des cascades. Ils sont partis ensemble, de la pointe de L'Isle Seguin, et le bateau Français, dont la manœuvre est visiblement supérieure, est arrivé au Port St, Nicholas quarante minutes avant l'Anglais. Les curieux ont été, pendant toute la journée, visiter les deux bateaux."

The iron steamers on the Shannon are next noticed, and we are then introduced to Mr. Laird's vessels, of which we have long since given an account. We shall, however, follow Mr. Grantham, in another number, and in the mean time cordjally recommend his useful paper to those of our readers who are interested in naval architecture with iron.

New Charts.

The Chusan Archipelago.—Our announcement of Charts published since our last can include only the important Archipelago of Chusan in two sheets, by Commander Collinson, R.N. In our next we shall insert directions to accompany them. Among the valuable collection of charts resulting from the Beagle's voyage is a plan of Valparaiso, which will be found in our present number, and in which we shall be thankful to any of our readers who will mark the position of the lighthouse, or send us the data for it.

Wreck of the Sir George Arthur.—The hired transport ship Sir George Arthur, with stores for Government, and 80 convicts for the Hulks at H.M. Naval yard, under the medical charge of Dr. Williams, struck on the rocks at the west end of these islands, about eleven o'clock on the night of 2nd June. The weather at the time being very boistrous she was driven over the outer reefs by the force of the sea, when she let go her anchor. Signal guns were fired on board, and blue lights which were observed from the shore ; when a number of boats from Somerset notwithstanding the tempestuous weather and heavy rain falling at the time pushed off to her assistance. As soon as they boarded, finding the vessel in a very leaky state, and impossible to be kept free, they immediately set about landing the passengers and crew. The first boat from her reached H.M. Dockyard the next day, at about eleven o'clock which was the first intimation, received there of her being a government vessel, when the authorities immediately despatched one of H.M. Dockyard steamers, and other craft of the yard to the assistance of the sufferers, but they were all compelled to return, or seek shelter, owing to the very heavy weather, and a swell occasioned by a strong south-west wind. The termination of the Sir George Arthur's voyage was truly distressing; but not more so than the painful suspense the passengers were kept in, during the latter part of the voyage, occasioned by the mutinous proceedings of eleven of the crew, (who are now in prison at H.M. Naval yard) in refusing to do duty, and who were consequently placed in confinement, leaving the vessel to the mercy of the convicts, whom they likewise endeavoured to incite to revolt but without success; and the ship was worked the remainder of the voyage by the very men who were placed on board as prisoners, expressing their determination " to take the ship in safety to her port of destination as far as we are capable." We trust the good conduct of those men will not be overlooked, and that they will be rewarded as they deserve.

The captain latterly became very intemperate, and almost incapable of doing duty, and was in a great measure the cause of the loss of the ship. He and the mate refused to come on shore with the others from the vessel, and during the night of Friday both disappeared, along with the life boat: it is feared they have met with a watery grave. We hope this will be a warning in future not to intrust so many lives, and so much valuable property to so reckless and unprincipled a man as this captain proved himself to be.

The [illegible] suffered severely by losses, but the government stores or the greater part [illegible] will be saved, [illegible] the hull and rigging. The ship was 45 days from Portsmouth.—Bermuda Gazette.

GIBRALTAR.—May 26. Extract of a letter.—"On the Queen's birthday the Governor had a grand review, the ships being dressed with flags and firing a royal salute at noon. An American frigate doing the same, which compliment was acknowledged by the [illegible] hoisting the American colours from her [illegible]. [illegible] a display of fireworks was made on the esplanade, at ten the [illegible] again fired a royal salute, and at half-past ten the [illegible] was most brilliantly illuminated, bright lights appearing in every port, while her [illegible] by extending a ridge rope from the [illegible] showed a fourth row—thus did she appear a four-decker; in about fifteen minutes, from each yard-arm, jib, driver, and swinging boom ends, the lights [illegible] up, and as they expired, flight after flight of rockets [illegible] which were again succeeded by blue-lights; the illumination continued until midnight, when another royal salute was fired, her band playing 'God save the Queen!' thus loyally ending one of the most beautiful sights seen at Gibraltar."

ADMIRALTY ORDERS.

Admiralty, May 2[illegible], 1842.

It is the direction of the Lords Commissioners of the Admiralty that the use of [illegible] Bricks be [illegible] discontinued on board her Majesty's ships.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, June 1, 1842.

With the view of affording further encouragement to the seamen gunners at present in the service, and also to such men as may hereafter, on receiving their gunnery certificates, be discharged from the Excellent to sea-going ships, their Lordships are pleased to direct, that all seamen gunners shall receive [illegible] a month additional pay for the first period of five years, from the date of their passing certificates in gunnery, [illegible] a month after the expiration of that period for the next five years, and [illegible] a month for all subsequent service, provided they re-enter forthwith on the completion of each period of service.

By command of their lordships,
SIDNEY HERBERT.

To Commanders, &c.

Admiralty, May 14, 1842.

The Lords Commissioners of the Admiralty are pleased to direct that Fuse Caps shall in future be considered as articles of charge, to be accounted for by the gunners of her Majesty's ships, and that when the shells to which the said fuse caps belonged have been expended, they shall be returned into store.

My Lords also direct that the use of the wad-sticks now supplied to her Majesty's ships shall be superseded by a cork wad, or by a circular rope wad without cross-pieces.

By command of their lordships,
SIDNEY HERBERT.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

APPOINTMENTS.

COMMANDER—A. Kennedy.

LIEUTENANTS.—E. D. Ashe—D. H. McNeil, W. C. Alexander, R. A. E. Scott, A. J. Burton, G. R. Wolrige.

SURGEONS—A. Stuart, J. Rees, H. H. Hammond, J. Little.

CAPTAIN—G. F. Rich (1823) to *Calcutta*.

PROMOTIONS.

COMMANDERS—J. Fulford (1840) to *Camperdown*—H. R. Henry (1838) to be acting flag capt. to *Queen*—C. O. Hayes (1839) to *Wolf*.

LIEUTENANTS—A. Lavie (1830) add. to *Calcutta*—T. Heard (1840) to *Albatross*—A. Kortwright (1828), P. F. Shortland and Ross to *Columbine*—T. Baillie (1837) to *Rose*—J. C. Snell (1841) to *Cambridge*—A. Young (1842) to *Satellite*—G. J. Napier (1842) and T. Hodgkinson (gunnery) to *Pique*—H. Courtenay (1815) to *Isis*—G. Snell (1825) to *Lightning*—R. A. E. Scott (1842) to *Madagascar*—C. G. Butler to *Ætna*—D. P. Dumaresq to *Winchester*—G. Harper (1837) to *Tweed*—J. Robinson to *Devastation*—A. J. Burton to command *Romney* receiving ship at Havana—E. Peirse (1834) to *Indus*—W. M. J. G. Pasco (18[illegible]6) to command *Kite*—R. B. Harvey (1841) and G. E. Patey (1840) to *Wolf*.

MASTERS—T. Driver (1809) to com-

mand *Dee* st. v.—J. F. Rees (1841) to *Philomel*—T. W. R. Pike (act.) to *Columbine*—H. Paul (1841) to *Wolf*.

MATES—J. Dunbar to *Talbot*—T. E. Saunders and G. T. Graham to *Satellite*—C. G. Glinn, P. Good, D. M. Gordon, C. Cerjat, and F. B. Quin to *Excellent*—R. J. D. Waddilove to *Geyser*—M. Lowther to *Caledonia*—A. G. West to *Camperdown*.

SECOND-MASTERS — H. Hutchings to *Camperdown*—E. H. Garwood to *Ætna*—E. McKenzie (act.) to *Columbine*—E. J. Gibbon to *Seaflower*—F. J. Kent to *Speedy*—W. Roberts to *Dee*.

SURGEONS—C. R. Kinnear to *Albatross*—J. M. Deas, M.D., to *Columbia*.

MASTERS ASSISTANTS—J. W. Lowe to *Winchester*—H. Woodham to *Columbia*.

SURGEONS-ASSISTANTS—C. C. Easton to *Ætna*—H. Gamble, M.D. (1841) to *Satellite*—H. R. Banks (act.), E. Evans (act.), F. Negus (act.), and J. Roberts to *St. Vincent*—M. G. French to *Philomel*—J. Gordon to *Talbot*—G. West to *Melville*—A. J. Little (act.) to *Phœnix*—Mould to *Inconstant*—J. Mitchell to *Albatross*—R. Scott to *San Josef*—J. C. Sabban to Portsmouth Dock yard—A. Brown to Greenwich Hospital—R. Telson to Haslar hospital—J. Domville to Plymouth hospital.

MIDSHIPMEN—The Hon. Henry Cochrane to *St. Vincent*—F. A. B. Crawford and F. A. Short to *Excellent*—W. G. Crowder to *Monarch*—W. Ford to *Satellite*—A. Chetham to *Albatross*.

VOLUNTEER 1st Class—W. Scovell to *Satellite*—J. E. Nicholls to *Albatross*—E. Haig to *Columbia*.

PURSERS—C. Walker to *Satellite*—S. Rains to *Wolf*.

CHAPLAINS—A. C. Frazer to *Aigle*—W. R. Payne to *San Josef*.

CLERKS—H. Nettleton to *Albatross*—G. W. Hodgskins to *Satellite*—W. F. Henna and W. J. Miller (add.) to *Excellent*—J. C. Aldridge (in charge) to *Dee*—J. Roberts (add.) to *Talbot*—J. C. Dryden to *Columbine*.

COAST GUARD.

Lieutenants D. R. B. Mapleton, G. W. Wilkinson, W. Southey, and A. Kennedy to be in command of Coast Guard Stations.

Chief Officers—Mr. C. A. La Fargue, (mate R.N.) act., and Mr. J. C. Hughes, (mate R.N.).

Removals—Lieut. A. Wall, to Gunn Island—Lieut. J. Robinson to Sand End—Lieut. R. J. Woolver to Romney—Lieut. J. B. Kooystra to Ballamacan—Lieut. W. L. Stephens to Whitehouse—Lieut. W. T. Strettell, to 31 Tower—Mr. J Hungerford to Dunree Fort—Mr. W. T. Standbridge to Shoreham.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ÆTNA, 6, commissioned at Portsmouth by Lieut. C. G. Butler, to command.

ALBAN, (st. v.) Mr. J. King, June 13, arr. at Portsmouth from Lisbon.

COLUMBIA, (st. v.) June commissoned at Woolwich for survey of Bay of Fundy by Capt. W. F. W. Owen.

LARNE, 18, Com. P. Blake, June 19, arrived at Spithead, sailed for Sheerness.

MALABAR, 74, Capt. Sir G. Sartorius, June 5, left Plymouth for Rio Janeiro.

PIQUE, 38. Capt. Forbes, June 3, arr. at Spithead from West Indies, 6th paid off, 14th recommissioned by Lieut. Mc Dougall.

PLUTO, (st. v.) Com. W. Blount, June 6, arr. at Plymouth from Sierra Leone, 8th sailed for Woolwich to be paid off.

RAVEN, 4, Lieut.-com. Shiel, June 13, sailed from Portsmouth.

VOLCANO, (st. v.) Lieut. C. Smith, 15th June left Portsmouth for Southampton to attend on the Queen Dowager.

WEAZLE, 10, May 27, arr. at Plymouth from Mediterranean, 31st sailed for Chatham, 11th June paid off.

WINCHESTER, 50, Capt. C. Eden with flag of Hon. Rear-admi. Percy, June 9, left Portsmouth for Cape of Good Hope.

AT SPITHEAD.—Boyne (transport), Christopher Rawson, (freight ship).

PLYMOUTH.—*In harbour.*—Excellent, St. Vincent, Victory, Caledonia, Satellite, Royal George yacht, San Josef, Wolf, Albatross, Philomel, Ætna, Star, Pique, Lively, Echo and Confiance steamers, Drake, lighter, Adventurer, naval transport.

PAID OFF.

EXCELLENT, at Portsmouth, 2nd.
PIQUE, at Portsmouth, 2nd.
WEAZLE, at Sheerness, 11th.

COMMISSIONED.

EXCELLENT, at Portsmouth, 3rd.

Pique, at Portsmouth.
Wolf at Plymouth, 15th.

ABROAD.

Acorn, 16, Com. J. Adams, Mar. 6, arr. at Cape, April 9, at Sierra Leone.

Actaeon, 26, Com. R. Russell, Feb. 25, at San Blas.

Aigle, 24, Capt. Lord Paget, May 28, sailed for Vourla.

Alecto, (st. v.) Lieut.-com. W. Hoseason, May 28, at Malta from England.

Apollo, (troop ship), Com. Festing, Feb. 3, left Rio for Cape.

Basilisk, 6, Lieut. J. C. Gill, Feb. 5, at Callao from Arica.

Beacon, (sur. v.), Com. T. Graves, May 29, left Athens for Poros.

Bittern, Com. Carey, April 6, arr. at Pernambuco.

Bramble, Mr. C. B. Yule, April 20, arr. at Madeira, 24th sailed for Cape.

Calcutta, 84, Capt. Sir S. Roberts, cb., June 2, at Malta from a cruise, 6th sailed.

Curacoa, 24, Com. W. Preston, Dec. 26, at San Blas.

Curlew, 10, Lieut.-com. T. C. Ross, Mar. 13, arr. at Cape from Rio.

Cyclops, (st. v.) Capt. H. C. Austen, May 29, at Alexandria.

Devastation, (st. v.) Com. Henry, June 1, at Malta.

Dublin, 50, Capt. J. C. Tucker, Feb. 5th, at Callao from Yslay.

Endymion, 38, Captain Hon. F. W. Grey, April 7, left Sanger for China.

Ferret, 10, Lieut.-com. Oake, Mar. 3d, at Cape Coast Castle on way to Whydah.

Fly, Capt. H. P. Blackwood, Ap. 20, arr. at Madeira, 24th sailed.

Howe, 120, Capt. W. O. Pell, May 19, arr. at Malta from Tripoli, 20th sailed with the fleet.

Illustrious, 72, Capt. J. Erskine, 6th April at Jamaica.

Isis, 44, Capt. Sir J. Marshall, April 10, at Rio.

Locust, (st. v.) Lieut.-com. J. Luna, May 24, at Malta from Constantinople, June 1st, sailed for Tripoli.

Magicienne, 24, Capt. Warren, 4th June, at Malta from Beyrout.

Magpie, (s. v.) Com. T. S. Brock, May 29, left Athens for Falconera.

Pantaloon, Lieut. Lapidge, April 5, arr. in the Gambia.

Phoenix, (st. v.) Com. Richardson, May 25, arr. at Malta.

Pickle, 5, Lieut. Montresor, April 29, arr. at Bermuda from Jamaica.

Pilot, 11, Commander G. Ramsey, April 24, left Bermuda for S. America.

Queen, 110, Capt. G. F. Rich, May 26, left Malta with the fleet.

Rapid, 10, Lieut. Earle, Mar. 26, at Cape Coast Castle.

Ringdove, 16, Com. Sir W. Daniell, May 7, arr. at Bermuda.

Rodney, 92, Capt. R. Maunsell, May 14, at Alexandria from Malta, 15th sailed for Beyrout.

Rover, 18, Com. Keele, April 3d, arr. at Barbados from Grenada.

Sappho, 16, Com. Parry, April 3d, arr. at Bermuda from Nassau.

Savage, 10, Lieut. J. H. Bowker, 3d June, left Malta for Tunis and Tripoli.

Serpent, 16, Com. W. Nevill, Mar. 5, arr. at Cape.

Snake, 16, Com. Hon. W. Devereux, May 25, at Malta from Corfu.

Spartan, 26, Capt. Hon. C. Elliot, May 7, left Bermuda for Port au Prince.

Stromboli, (st. v.) Com. Louis, May 27, at Constantinople.

Termagant, 10, Lieut.-com. H. F. Seagram, Mar. 26, at Cape Coast Castle.

Thalia, 3, Capt. C. Hope, March 5, arr. at Cape.

Thunderer, 84, Capt. Pring, June 2, at Malta from cruise, 6th sailed.

Tweed, 20, Com. H. D. C. Douglas, Mar. 8, arr. at Havana.

Vernon, 50, Capt. Walpole, May 26, at Malta from Corfu.

Vestal, 26, Capt. J. Parker, April 23d arr at Jamaica.

Vesuvius, (st. v.) Com. Ommaney, 9th May, arr. at Malta.

Vindictive, 50, Capt. J. T. Nicholas, April 1, arr. at Port Praya.

Volage, 26, Capt. Sir W. Dickson, April 25, left Jamaica for Santa Martha.

Warspite, 50, Capt. Lord John Hay, April 22, at Bermuda from New York, May 7, sailed for Barbados.

Wellesley, 72, Capt. T. Maitland, Mar. 7, left Singapore for England.

Malta, May 26.—Disposition of the Fleet:—

Ships in Port.—The Queen, 110, bearing the flag of Vice Admiral Sir E. W. Owen, commander-in-chief; Howe, 120, bearing the flag of Rear Admiral Sir F. Mason, second in command; Impregnable, 104; Thunderer, 84; Vanguard, 50; Calcutta, 78; Cambridge, 78; Vernon, 50; Magicienne, 24; Snake, 16; and and Phœnix, Devastation, and Vesuvius, war steamers; Locust, steam tender; and Ceylon, receiving ship, bearing the flag of Rear Admiral Sir John Louis, superintendent of Malta dock yard.

The Rodney, 92, Inconstant, 36, and Hecate, war steamer, at Beyrout; the Monarch, 84, at Rhodes; Medea, war steamer, off Xanthus; L'Aigle, 24, at Vourla; Stromboli, war steamer, at Constantinople; Cyclops, steam frigate, at Alexandria; Scout, 18, at Corfu; Alecto, steam packet, on her way from the Ionian Islands with the mails; Polyphemus, steam packet, at Genoa, awaiting the arrival of Lady Canning and family, for conveyance to Constantinople; Formidable, 84, Jaseur, 16, and Wizard steam tender, at Gibraltar; Belvidera, 38, at Cadiz; Savage, at Tunis; Beacon and Magpie, at Port Nassau in the Archipelago, prosecuting their surveying labours.

Movements.—The Oriental, contract steamer, took her departure for Gibraltar and England on the 30th ult., the letters from the fleet having been brought in by the Vesuvius. On the 30th, the Alecto was dispatched to the Ionian Islands, and Patras with the mails, and on the 31st, the Locust went out of harbour and joined the fleet in the offing, whereupon the Devastation was sent in on the 1st inst. On the 3rd, the Savage was sent away to Tunis. On the 30th ult., the Vernon arrived from Athens and Corfu. On the 2nd instant, the Calcutta and Thunderer came in; and on the 4th the rest of the squadron, consisting of the Queen (bearing the flag of the commander-in-chief), Hawke, Impregnable, Vanguard, Cambridge, and Locust. These ships have been into no port since leaving Malta a fortnight ago, their cruise having been confined to the channel between Malta and Sicily, during which they were exercised in sailing in line, firing at a target &c. It is said the fleet will put to sea again about the 13th, for the eastward. The Magicienne arrived on the 4th inst. from Alexandria.

P.S.—May 29.—The Devastation arrived yesterday afternoon, in twenty hours from Tripoli, with despatches for the admiral (the substance of which has not transpired), and since these have not been sent on, it is naturally supposed that the fleet, which has not been seen since the 24th, is expected back immediately. The Oriental has just arrived from Alexandria.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Orlock Hill, county Down, the lady of Lieut. Burt, RN., of a daughter.

At Devonport, on the 16th June, the lady of J. C. Sabban, Esq., RN., of a son

On board H.M.S. Naiad, Portsmouth, 15th June, the lady of Lieut. J. Inglis, of a daughter.

On the 16th June, at New Lodge, the lady of Capt. Castle, RN. of a daughter.

At Dover, June 4th, the lady of Capt. L. Smithett, of H.M. Packet Service, of a daughter.

At Shroton, Blandford, 21st May, the lady of Capt. Ryves, RN., CB., of a son and heir.

At Southsea, May 3, the lady of J. C. Giles, Esq., RN., of a son, still born.

In Regent's Park, June 22nd, the lady of Capt. Manners, RN., of a son.

At Broadstairs, May 26th, the lady of Capt. T. L. Peake, RN., of a daughter.

Marriages.

At Brighton, the 1st of June, George A. Graham, youngest son of General Vernon, to Louisa, daughter of Capt. B. Cator, RN.

At Plymouth, Lieut. W. Samwell, RN. to Emma, eldest daughter of the late P. Woolf, Esq., of Plymouth.

At Guildford, Surry, 4th June, Lieut. Deacon, of the 19th regt., to Ann, second daughter of Capt. Norton, RN.

Deaths.

Admiral W. Wolsey, (red); lieutenant 1778, captain 1782, rear-admiral 1808, vice-admiral 1812, admiral 1812.

Rear Admiral A. J. Griffiths, (white); lieutenant 1790, commander 1797, captain 1802, rear admiral 1837.

Lieut. W. Smart (1815)

Mr. G. H. Toulmen, purser, RN. 1800.

Mr. B. Crocker, purser, RN., 1799.

On the 1st June, J. Scott, Esq., MD., of St. Thomas street, Portsmouth, late surgeon and lecturer of the Royal hospital, Haslar.

Capt. G. J. H. Johnstone, lieut. 1821, commander 1825, captain 1827.

Assist. surgeon, A. D. R. Hoggan, MD. 1841.

Lieutenant A. Thomson, (1812), Coast Guard, Dingle.

Lieut. E. P. Prosser, RM., 1782.

Lieut. B. Sayer, RM., 1782.

At Southsea, aged 15, Sarah Anne, daughter of Com. Morgan, RN.

On the 7th June, in Upper Harley-st. Henrietta, relict of Admiral Sir C. M. Pole, Bart., GCB., aged 76.

At Montrose, May 19, Dr. R Shand,

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr W. Rogerson, of the Royal Observatory.

From the 21st of May, to the 20th of June, 1842.

Month Day	Week Day.	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind.				Weather.	
								Quarter		Stren.			
		9 AM.	3 PM.	3 PM	9 AM	Min	Max	A.M.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	S.	29·70	29·73	56	58	48	60	SW	S	4	4	od (1	od (3
22	Su.	29·77	29·77	56	62	49	63	S	S	3	4	bc	bc
23	M.	29·83	29 88	57	63	46	64	S	S	3	3	bc	bc
24	Tu.	29·87	29·83	54	60	50	58	SE	N W	2	2	or (2)	bcp (3)
25	W.	29·87	29 90	53	61	43	63	SW	SW	4	4	bcp (2)	bc
26	Th.	29·80	29·81	57	64	50	66	SW	SW	2	4	or 1)	bc
27	F.	29·94	29·98	58	67	47	69	SW	S	3	2	bc	bc
28	S.	30·01	30·05	53	63	51	65	NW	W	3	3	or (1)	b
29	Su.	30·13	30·07	59	67	46	68	SW	SW	2	2	b	b
30	M.	29·98	30·03	61	71	50	72	SW	W	3	4	b	bc
31	Tu.	30·14	30·18	58	70	50	71	W	W	3	3	bcm	bc
1	W.	30·26	30·23	67	72	48	74	SW	W	2	2	b	b
2	Th.	30·26	30·29	64	69	57	72	NW	N	2	2	bc	b
3	F.	30·34	30·30	64	73	46	75	W	W	1	2	o	b
4	S.	30·14	30·12	69	77	50	80	W	W	2	1	b	bcm
5	Su.	29·99	29·94	65	73	53	78	SW	SW	3	3	b	bc
6	M.	30·00	30·05	64	75	52	76	NE	NE	2	3	b	b
7	Tu.	30·23	30·26	63	74	50	75	NE	NE	2	4	b	b
8	W.	30·30	30·30	65	77	53	79	NE	NE	3	5	bc	b
9	Th.	30·26	30·24	63	76	50	78	NE	NE	4	5	b	b
10	F.	30·16	30·16	64	77	51	79	NE	NE	4	6	b	b
11	S.	30·22	30·26	66	82	51	83	NE	NE	2	4	b	b
12	Su.	30·35	30·36	68	83	55	85	NE	E	3	4	b	bcl
13	M.	30·32	30·25	64	79	54	81	NE	NE	3	2	b	bcl
14	Tu.	30·16	30·13	69	81	57	82	W	N	2	3	bc	bctlr (3
15	W	30·09	30·12	66	72	57	73	N	NE	5	4	bc	bc
16	Th.	30·05	30·04	63	69	51	71	NW	NW	4	4	bc	bc
17	F.	30·09	30·16	63	67	54	72	SE	NE	1	3	bc	bc
18	S.	30·08	33·02	63	63	51	71	E	S	3	3	bc	op (3
19	Su.	29·80	29·74	58	68	51	69	SW	SW	3	4	bcp 2)	bctlr (3
20	M.	29·76	29·74	65	70	52	72	S	S	4	4	bc	bc

May—Mean height of barometer = 20·930 inches; mean temperature = 55·1 degrees; depth of rain fallen = 2·40 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

We direct the attention of seamen to the notice in p. 497, of a new light on the Berlings, Coast of Portugal. The notice is brief but the table in our January number will have prepared the wary and attentive navigator for so sudden an announcement.

The papers of "Argonaut" have reached us, and increased our obligation to our worthy contributor.

Mr. Biddlecombe's "heaving up" at Constantinople in our next.

The account of the Nornalup, or Deep River, of Western Australia, in our present number, is well worthy the attention of Emigrants. It requires little foresight to discover that at no very distant period, it will become the grand focus of Western Australian commerce. Further accounts of it will appear in our next.

Errata.—In p. 376, line 31, *for* N.W. ½ W. *read* N.b.W. ½ W.

The Typhoon of July 21st, 1841, *in the Canton River.*

[We have received the following account of the typhoon of July (alluded to by Commander Collinson, in our last volume, p. 859, as that in which the cutter Louisa was wrecked,) with the annexed letter, the gratifying nature of which must be our excuse for printing it, although it is not the first of its kind that has reached us:—

Liverpool, June 29th, 1842.

Sir.—The kind encouragement held forth in the pages of the *Nautical*, has induced me to come forward with my mite,—an account of the Typhoon of July 21st, 1841, in Canton River, and which I will vouch to be accurate.

Being in possession of the *Nautical* from the period of its commencement up to October 1840, at which time I sailed from Liverpool, I take this opportunity of expressing my acknowledgements for the valuable information I have received from it, and which I have found to be of the greatest service.

I am, Sir, yours, &c.

To the Editor. J. B. C.

It is pleasing to find our labours appreciated by those for whom they are intended, and to receive proofs that they are so in the contribution of such "mites" as these from our valuable correspondents J. B. C., Capt. Petrie, and many more we might mention. Usefulness, even in preference to entertainment has been, and will continue to be our first object, as our pages will shew, and the support which we have received has proved us right.]

The last typhoon of any consequence which was experienced prior to this visitation was that, of August, 1835, in which H.M.S. Raleigh was dismasted. The absence of a storm for such an unusual length of time, naturally produced alarm, as the season approached, that a hurricane was now almost inevitable, and that when the tempest burst it would awfully atone for its unwonted slumber. The sky too became portentous during the early part of July; immense dusky masses of wild looking rolling clouds gathered after sunset on the summits of the lofty hills forming the north-eastern boundary of the bay of Hong-kong; those clouds seemed to be violently agitated by winds, of which, the moan only was heard by those on board the squadron in the harbour below; the surface of the water being unruffled, when a cooling breeze would have been hailed with joy by sufferers tossing upon their couch during a sleepless and weary night, with a thermometer at 90°; those ominous vapours cradled lightning of a fearful appearance, which in every variety, sheet, chain, zig-zag, and forked, accompanied loud thunder, pealing incessantly until daylight. Threatening as the weather appeared during the nights, yet the sun usually rose in all his glory, to dispel the fears excited by the phenomena of the preceding hours of darkness. However, persons either timid or cautious, viewed with distrust the hourly fluctuation of the barometer, almost amounting to a pumping motion; lso, the variableness of the wind, and the suffocating sultriness of the air, which daily created a greater vacuum.

The morning salutations of the Chinese comprador, or of the fast-boatman usually were "How do, captain, what typhoon pigeon-glass makey talk to-day?" At the same time taking a look at the barometer in the cabin, of which, it is needless to say that many of them have

no other than a vague idea that "Fankweilo, or red devil captain have got glass which makey show typhoon pigeon, and makey ship catchee go England." On asking them what their opinion was, they generally replied, "I no sauvee, but I tinkey weather very qui si; I tinkey for sure, we catchee typhoon this moon:" ask them the grounds on which they form their opinion, and the enquirer must rest satisfied with "Maskee, I no sauvee, but I tinkey so." Matters remained in this state up to the 19th of July, on which day there was a strong breeze from N.E. with fine clear weather; on the 20th the wind was very variable, veering from W. to E., and back again; but *always* round by the northward, until 2h. 30m. P.M., when it fell calm, with sun obscured. A few large drops of rain fell at this time, the sky very gloomy and lowering, particularly so from N.N.W. to N.N.E.; the air was very sultry and oppressive, and seemed to be subdued into an unnatural stillness.

At 7h. P.M., the rain descended in torrents, a noise, as of the roar of pent-up winds, was heard, but with exception of a slight squall none was felt. At 8h. 30m. P.M., the rain had ceased, and all was still, the night, however, set in very gloomily; the mercury also was falling rapidly. It remained calm until two in the morning of July 21st, at which time a light breeze from N.W. sprung up, a good deal of thunder and lightning was experienced during the night.

At 4h. A.M., squalls from N.W.b.N., with heavy rain, and increasing gradually in violence, prognosticated some bad weather: at daybreak the ships-of-war were busy sending yards down, housing topmasts, and making all the preparations necessary for encountering a hurricane. Several of the merchant ships and transports were also occupied in making everything snug; there were some, however, at six o'clock with *royal yards across* and *awnings blowing about*, their crews seemingly unconscious of the rapidly increasing gale. A few ships which had been lashed alongside of others for the facilities of transhipping stores, goods, &c., were now hastily casting off and seeking berths for anchorage; the bay too, was rather crowded in consequence of its being the anchorage of all the men-of-war, store ships, and transports, forming the fleet attached to the China expedition. There were also great numbers of merchant ships from England; Bombay and Calcutta country ships, opium vessels, and receiving ships, all huddled together in a manner which afterwards occasioned serious damage upon their starting their anchors in the height of the gale.

At 7h. 30m. A.M., it blew strong from N.N.W., with thick haze to the eastward: at 8h. A.M., wind from north blowing hard, a few vessels beginning to start their anchors; however, several small trading junks and fast-boats had been driving upwards of an hour. The wind at ten o'clock blew tremendously from N.N.E., the squalls rapidly increasing in violence, great numbers of vessels driving fast; the harbour now began to exhibit all the horrors of shipwreck; planks, and spars blown about like feathers, ships' boats lifted by the wind and torn away from the davits; the heavy launches that were afloat and veered astern of the vessels, either broken adrift or swamped, in many cases with unfortunate men on board, sent to bale the water out. The destruction of the Chinese boats was terrible, some going down thwart hawse of the

ships, and others fairly riven to pieces by the violence of the wind; and all having several men, women, and children on board. The number of unfortunate beings driven past the shipping, and clinging to pieces of wreck, the remains of their only homes, was almost incalculable. One sinking fast-boat, which drove past our vessel, presented a harrowing spectacle. To the fore part were holding with the grasp of those struggling for life, a woman and three small children; a fourth was slung at her back, according to the native custom. The mute terror painted in their upturned countenances, and the glance of helpless despair, can never be effaced from our recollection. In the arched mat cabin in the middle of the boat were crouched three or four men. When close to us they looked out, a rope was hove on board them, which, however, they made no attempt to catch; there was an apathy in their faces quite unaccountable, whether occasioned by the excess of terror, or intoxication of opium we were at a loss to say. We heard on making enquiry that, such cases of apparent disregard of life were not uncommon during the day. This boat we were informed went to pieces a few minutes afterwards, close to one of H.M. ships, lying some little distance astern of us.

At 11h. A.M., the typhoon was raging in all its fury, the wind had now veered to N.E.b.E., mercury by our instruments (barometer and sympiesometer,) being at its minimum 28·50. The roar of the gale was appalling, and its violence irresistible; it was impossible to stand the deck without firmly grasping something, and the gusts catching the ship on either bow, laid her (although deep in the water, and everything struck,) gunwale to every squall. The view was limited to thirty yards at farthest; the harbour being shrouded in a thick cloud of spray, the summits of the waves being borne aloft in a white shower of salt as high as the tops of a line-of-battle ship. We cannot positively speak as to there having been rain during the height of the gale, but should imagine there had been.* Although great numbers of ships were driving, it was impossible to see them until almost athwart hawse. Many drove nearly as fast as if no anchors had been attached to the cables; their hulls and outlines of spars dimly seen for one moment looming through the haze, and the next whirled from view by a furious squall. We ourselves were continually in apprehension of some of the large ships getting foul of us as they were swept by; fortunately we escaped without injury.

At 42 minutes past 11, the first rise of the mercury was perceptible in both barometer and sympiesometer, the wind being east southerly, yet the violence of the typhoon was increased to a frightful extent; the roar was stunning, and would have drowned the reports of all the broadsides in the harbour had they been fired. At noon the wind had veered to E.b.S. ½ S., and mercury rose a tenth, weather still the same: at 1h. 15m. P.M. wind S.E.b.E. ½ E., mercury in barom. 28·90, in sym. 28·70; the former rising more rapidly than the latter, although both instruments agreed during the height of the gale. At this hour there was a very

* Before the violence of the wind had filled the air with salt, there had been rain, and it still continuing to rain after the typhoon had abated, leads us to the supposition that it had not ceased during the height of the gale.

perceptible change for the better, in the appearance of the weather, the squalls having decreased in violence, and the intervals between them being greater: at 3h. P.M. it rained heavily, squalls accompanying, and wind backing half a point to the eastward again: at 8h. P.M., fresh breeze from S.E.b.E. with heavy rain; bar. 29·20, symp. 28·95. At 10h. 40m. P.M., a fresh steady breeze from east inclining to north, with dry weather. We now considered the typhoon as over. However, the night continued dull and lowering, with much lightning in the eastward.

The extent of damage done by this typhoon in the Typa and bay of Hong-kong was, as accurately as we could ascertain, nine vessels totally lost; viz. two barques, one ship, one brig, four schooners, and H.M. cutter Louisa; four driven on shore but afterwards got off; ten totally dismasted, including H.M.S. Sulphur, Royalist, and young Hebe; eleven with loss of bowsprits and one or more masts, two ships lost their rudders and several more were damaged in hulls but not in spars. Nearly the whole of the vessels lost one or more boats and in some instances all; five or six large prize junks were driven on shore and wrecked; one cast upon the island of Cawee-chow was laden with field guns and artillery stores, the conductor and soldiers were saved; and some time after the guns were got up out of very deep water. Great numbers of Chinese cargo boats, fast-boats, and tanka boats were destroyed; the bazaar, temporary barracks, and other houses blown down at Hong-kong, and the government wharf much injured. The loss of life in the harbour of Hong-kong was computed at 300 persons, chiefly Chinese.

It appears that this storm raged with greater violence in the harbour of Hong-kong and among the islands in its immediate vicinity than either at Macao or the Typa. There was, however, a good deal of damage done at those places. The distance between Hong-kong and Macao is by the Lantao passage about forty-five miles or thirty-five as the crow flies. At Whampoa it blew merely a strong gale and the shipping received no injury.

Captain Fraser of the ship Good Success from Bombay to China, was at noon of the 22nd, the day after the typhoon, S. ½ W. twenty-nine miles from the Grand Ladrone, where he succeeded in saving forty-six Chinese from a sinking junk. He also picked up, *clinging to* some wreck, an unfortunate Portuguese sea-cunny, the sole survivor of the crew of the schooner Rose which had foundered the day previous. Captain F. says that, on the 21st he encountered so heavy a gale from S.W. with such a tremendous sea that it would have endangered the ship had she ran, consequently was hove to under a close reefed main topsail for nearly eighteen hours. This vessel must have been in round numbers 100 miles to the southward of the Grand Ladrone at the time she was compelled to lie to. She was hove to nearly eighteen hours, say from noon of the 21st to daylight of the 22nd, drift twenty-nine miles, then distance run to noon, six hours, at the rate of say seven knots, $6 \times 7 = 42$; and at which time the Grand Ladrone was N. ½ E. twenty-nine miles, total 100: we assume the eighteen hours the *ship was* hove to, as being from noon to daylight, it not being very probable that an experienced seaman would run down for such a labyrinth of islands as those scattered in the entrance of Canton river, during the fresh gale

and cloudy weather of the night of the 21st. It appears that the Good Success experienced the greatest strength of wind from the S.W., from whence it veered by the southward to S.E., moderating as it hauled round.

On the 21st of July the ship Bussorah Merchant, Captain Ferrier, from Sydney to China was in lat. 16° 26′ N., long. 113° 56′ E. at noon, steady breeze from S.W. and fine clear weather. Spoke on same day H.M.S. Conway from China to England with treasure. Both those ships although only about 330 miles from the Grand Ladrone were it seems so far to the southward as to be completely beyond the limits of this storm. Happening to be in Manila in December, we were there told that a storm had blown across that city about the time of the typhoon of the 21st July, and that the Spanish ship Dos Amigos, and English schooner Thomas Crisp had been dismasted at the same time, when in that part of the China sea between Manila and the Ladrones. We, however, could procure but very vague information upon the subject. In the upper part of the China sea, the indications of a very heavy steady north-easterly gale, not gyratory, are sometimes perceptible at the great distance of 200 miles, although not attended by any fall of the mercury; an instance of it occurred to ourselves.

Bound from Singapore to China, and in lat. 17° 58′ N., long. 111° 34′ E., we were 200 miles astern (*i.e.* to the S.S.W.) of the ship Mayaram Dayaram from Bombay to China, she being in lat. 20° 56′ N., and long. 113° 13′ E. The following is an extract from her log book:—May 8th, A.M., blowing a heavy gale from E.N.E.; at 4h. A.M., ditto weather. At daylight gale increasing; at 7h. A.M., in fore topsail and fore topmast-staysail and hove the ship to under a close reefed main topsail. Noon strong gales and cloudy with constant rain and a tremendous high sea, sent down fore and main top-gallant-masts. P.M. Hard gales from E.N.E. with constant rain and a very heavy sea on, ship labouring heavily. At 2 P.M. set fore topsail; at 7h. 30m. set mizen topsail, midnight decreasing gale, wore ship to the northward.

I now give an extract from our journal:—May 7th, Midnight light breeze from S.E., a dark bank of clouds rising in the N.E., symp. 29·20, therm. in the cuddy 85°. May 8th, 2h. 30m. A.M. a heavy black cloud in the N.E. quarter, with a very high swell rolling from that point, and the weather having a gloomy unsettled appearance; angry streaks driving across the moon, which was fringed with Cumulo-strati. Took in all studding-sails, light sails, &c., heavy peals of thunder with vivid lightning in the N.E. Noon, fine weather, all possible sail set, wind south, strength 2, symp. 29·25, ship pitching stern windows under, while stemming the N.E. swell. From this period until we arrived at Macao, which was on the 14th of May, we had light breezes from S.S.W., south, and S.E., with very fine weather.

The following is the abstract of the progress of the Typhoon of July 21st, we having regularly noted the various changes as they occurred, and which we were enabled to do with the greatest precision, in consequence of having had no other employment; the ship having had topmasts housed, jib-boom run in, lower yards on the gunwales, boats secured, &c., beforehand.

Typhoon as observed in the harbour of Hong-kong.

Date.	Hour.	Bar.	Sym.	Winds.	Remarks.
July 20	h. m. 8 30 PM.	29·10	29·10	Calm	Night, very gloomy and dark, vivid lightning.
21	2 AM.	no ob.	no ob.	N.W	Light breeze, with thunder and lightning.
"	4 30AM.	28·80	28·70	N.W.b.N.	Squally with showers of rain.
"	8 AM.	28·50	28·50	N.	Blowing hard, and gale increasing every moment.
"	10 AM.	28·50	28·50	N.N.E.	Blowing a hurricane, several vessels driving past us.
"	11 AM.	28·50	28·50	N.E.b.E.	At 11h. 42m. A.M., typhoon at its greatest height, yet the mercury is perceptibly beginning to rise.
"	11 42AM.	28·50	28·50	E. Southrly	
"	noon	28·60	28·60	E.b.S. ½ S.	Storm raging in all its violence.
"	1 15PM.	28·90	28·70	S.E.b.E.½E	Blowing very hard during squalls.
"	3 PM.	29·5	28·75	E.S.E.	Blowing strong in squalls accompanied with rain.
"	6 20PM.	29·15	28·90	S.E.b.E.	Heavy squalls of wind and rain, but at more distant intervals.
"	8 PM.	29·20	28·95	S.E.b.E.	Blowing fresh gale, heavy rain.
"	10 PM.	29·26	28·97	S.E.b.E.	Wind abating a little, rain also taking off.
"	10 40PM.	29·28	28·97	E.Northrly	Steady strong breeze, and dry weather, with lightning in the eastward; typhoon over.

J. B. C.

NOTES OF A PASSAGE UP THE CHINA SEA, *along the coasts of Tsiompa and Cochin-China, in May*, 1841.

SIR.—Having seen in the *Nautical* for December 1838, an account of the Corsair Rock, said to be in lat. 9° 54′ N., and long. 108° 35′ E. I beg to send you a few extracts from my journal of a passage from Singapore to Macao, and which may assist in forming your opinion as to its existence or non-existence.

Singapore, April 16*th*.—Got underway at daylight, light breeze from S.W.; at 6. P.M. proceeding through the south channel at low water. Saw distinctly *all* the dangers to the southward of Pedro Branca appearing well above water.

19*th*.—Light winds from east, and fine weather, shoals of small fish resembling whiting following the ship, lat. 4° 15′ N., long. by chron. 105° 14′ E., bar. 29·50, therm. 98°.

21*st*.—Light airs from south to south-east with alternate calms. Average height of therm. 100°, the sky is cloudless and the water of a clear blue; at night sea and sky are blended into one vast shadowy circle, with the appearance of a phantom ship suspended in the midst:

every star is reflected with a long wavy scintillation on the surface of the deep, which, together with, numerous moluscous bodies contributing their gleams of phosphoric light, and casting a glare upon the sails, present a most singular *coup d'œil:* we have experienced a slight drain of current from S.S.E. lat. 5° 12′ N., long. 105° 49′ E.

26*th.*—At 8 A.M. southern extremity of Pulo Condore bore N. 7° W. and north point N. 1¾° W., body of the island five leagues. It seemed to be very precipitous and in some places well wooded; it is indented by several small coves fringed with sandy beaches, and towards the northern extremity are long ranges of downs faced with chalky cliffs. The White Rock which is to the N.N.E. is very remarkable; it resembles the Button Island of the Straits of Sunda in shape, and is of a dazzling whiteness.

Most of the prominent parts in the foreground of the sketch, which at 8 A.M. appeared as belonging to the main island, resolved themselves in the afternoon into large islands separated from the principal one by wide channels. P.M. Calms and light airs from E. to S. 5° E.; experienced a strong westerly current. Pulo Condore was garrisoned by the English East India Company in the commencement of the eighteenth century; however a short time after settling there, the native soldiers mutinied and cut off their officers, upon which it was totally abandoned.

27*th.*—Light winds and fine weather. Noon wind E.b.S. lat. 9° 36′N. long. 107° 21′ E. At 4h. P.M. saw main land of Tsiompa; at 7h. weather looking very threatening, and a very uneasy swell getting up, reefed topsails; Cape St. James bearing N. 7° W., Cape Thiwoan N. 3° W., and Mount Taicou N. 2½° E; at 8h. P.M. being in seventeen fathoms wore to the S.S.E.

30*th.*—Noon, strong breezes from E.N.E.; squalls experienced when nimbi in passing to leeward were vertical; lat. by two sextants 9° 48′ N., long. east of Greenwich by three chronometers 108° 34′ E.; at the same time the Great Catwick was in sight N. 3¾° E., distant twenty-five miles, and Pulo Sapata N. 5½° E., twenty-nine miles. This would have placed us six miles from the Corsair Rock, which is stated to be twenty or twenty-five yards in length, and fourteen feet in height. However, although the most vigilant look-out was kept from the topsail and topgallant yards, and the day was beautifully clear, we were unable to see anything of it. Both the Great Catwick and Pulo Sapata apparently are volcanic productions; the surface of the former seemed to be rugged and covered with scoriæ. A heavy sea was beating upon these desolate rocks, which do not possess the slightest patch of verdure as a relief to the dazzling whiteness of their summits, these being coated with the the deposit of sea fowls, which in countless numbers find there a secure resting place. Pulo Sapata in particular is completely white, and when viewed upon the bearing of north, looms through the haze like an embattled fortress or lofty ship. The Little Catwick or Pyramid was several times reported as a sail by our masthead-men during the two days we were in the vicinity of these rocks.

May 2*nd.*—At 6h. P.M., the S.S.W. point of Pulo Ceicir de Mer bore S. 2° W., and Cape Padaran N. ½ W. At 9h. 30m. P.M., being close under the land of the Gap of Padaran saw two very large fires burning

on the side of the mountain. Tacked to the south-east, being only five miles off shore. The island of Ceicir de Mer appears to be well cultivated, and is laid out in fields divided by hedgerows; some few plantations of low trees are scattered here and there. From the northern end are several awkward looking rocks just peeping above the water; they seem to extend some distance. A low barren island lies off the south-western extremity. These outlying dangers, together with Pulo Ceicir itself, being very low land, require caution when approaching the neighbourhood during the night.

3rd.—Wind from E.N.E. moderate; at 6h. P.M., Cape Padaran bore S. 5½° W., and False Cape Varela N. 1¼° W. This part of the coast is very bold; its features are high mountains, rugged hills, abrupt chasms, and immediately bordering the sea, steep precipices, having at various places the appearance of a cordon of rocky islets. It is impossible to mistake the entrances to the harbours of Padaran and Camrahn, they are so accurately defined: at 8h. P.M., being four miles from the land, tried for soundings at forty fathoms, no bottom; tacked; large fires burning on the mountains.

5th.—Begins with very fine weather and a light breeze from E.N.E., at eight in the morning the northern extremity of Cape Varela bore N. 3½° W., distant about fifteen miles. This is a very remarkable promontory, and once seen can never be forgotten. When viewed from the southward it seems to be divided into two lofty ridges, and upon the south-westward and highest peak is a gigantic natural obelisk of great height. It is almost constantly shrouded in the mists which continually creep up the sides of its mountain pedestal. This stupendous pillar which recalls remembrances of the fabled Titans of old, gives the designation of Pagoda Cape to this mountain, in addition to its more generally received name of Cape Varela. The line of coast towards the south is for several miles a succession of brown rock, sandy beaches, sand hills, and cliffs of yellow clay with a back ground of high wooded mountains. We observed some rocky islets of a basaltic formation, the precipices resembling those of the Giants Causeway, or Caves of Staffa. During the forenoon it was a perfect calm, the ship drifting to the N.N.W.; but along shore there was a light breeze from the westward, of which, several small vessels of the Cochin-Chinese were availing themselves. There seems to be a struggle between the monsoons, the variable weather testifies it. At noon this day the carry is coming rapidly from the south-west, yet the wind is from north-east with a heavy swell; bar. 29·20, therm. 85°.

9th.—Calm; at 11h. A.M., the ship is surrounded by patches of scum similar to that upon the surface of stagnant waters; the extent, as far as the eye can reach. Upon examination we found it to be a very fine description of grass seed. Last night the smell of newly cut hay was perceptible to all on board, and which must have been of this deposit drifting down upon a north-east swell. The struggle between the monsoons still continues; dense banks of clouds rising in the north-eastern horizon slowly sink again under the influence of the gentle south-wester stealing up. This, however, steads not our old ship, the heavy easterly swell resisting our progress, and setting us bodily to the south-west. For the last two or three days we have observed

cumuli forming in the north-west, a short time before sunset; their foundations, however, gradually become sapped, and they fade away as the last glories of day, and our hopes of a "breeze that follows fast," depart with them. Lat. in 18° 16′ N., long. 111° 28′ E. of Greenwich, bar. 29·30, symp. 29·25, therm. 86°. The ship has drifted from noon of yesterday to that of this day, S. 6½ points W., seventeen miles.

10th, 11th, 12th, and *13th.*—Light and variable winds from south-east to S.S.W., accompanied by a very heavy swell from the north-east, and a chilly wetting dew at nights; the weather is also hazy, and the horizon very limited.

14th.—At 3h. A.M., the wind hauled from south-east back to north-east; however, having anticipated the probability of a change of that description from the warning given by Horsburgh, in which, he says that, it is advisable at this period of the year to get the Grand Ladrone upon the bearing of north, we kept up a point or two to the eastward, so as to fall in with the Ladrones bearing about N.N.W. It was fortunate we did so, as two very fast ships, which had passed us near Pulo Sapata, and had made the land four days ahead of us, but unfortunately to leeward of the islands, were hampered in the neighbourhood of St. John, having been obliged to anchor. One of them arrived the day before us, and the other an opium-clipper passed us near Potoe or Passage Island, a few miles from Macao. We brought up in the roads about an hour after she did. When daylight appeared, the loom of high land was visible through the damp morning haze, which shrouded the Ladrones, Lemas, and high lands about Montanlia: as the sun rose the mists were partially dispelled, and revealed to our expectant gaze the chain of islands forming the barrier of the Pearl river of Canton. At first it was rather difficult to identify the various islands, on account of their summits being covered with fog, and which gave them the form of a long line of table land. However, about nine o'clock, the fleecy vapours rolled away, and we saw the lofty peaks of Lintin and Lantao; the Bell mountain, and Ky-Poong or the Asses Ears, a very remarkable island surmounted by two high pinnacles which greatly resemble the auricular organs of a very extensive donkey. This island bore from us north-east about twenty miles. The sea was literally covered with fishing vessels of about 15 to 30 tons burthen each. The wind being light, some of the flowery race boarded us, bringing a quantity of very fine fish for sale. We offered them beef or pork in exchange. However, nothing would do for Fok-hi but the tolah (dollar), and the price they asked was so very exorbitant that we made no purchases.

At 10h. A.M., a fast-boat, with a blue flag flying, pushed off from under one of the islands and came alongside. Two gentlemen came on board, and the tallest making a graceful half kotow introduced himself as Mr. Jemmy Apoo from Whampoa. His companion he begged to introduce, as "One number one o' first-chop-pilot-man"; himself he says "Is comprador to English ship, and he come down outside island to try catchee more ship to make comprador pigeon with." The pilot asked twenty dollars for his services to take the ship to Macao Roads. We, however, bargained with him for twelve! A pilot from the islands to Macao is in our opinion unnecessary. However, as we had a very

valuable cargo of fine goods on board, and the ship drew nearly 19 feet water, we did not like to refuse one when he offered: and friend Jemmy was very communicative, he told us "Every ting quite ploper, all makey selly, plenty man-of-war ship at Hong-kong, no makey fight pigeon, merchant ship catchee plenty of cargo, (which last was true, the merchants then being shipping off teas at high freights in consequence of the unsettled state of affairs,) he tink there be no more war, he tinkey war very qui si pigeon." Upon our rating him for some little discrepancies in his accounts of the res gesta he exclaimed with great naiveté "Ah! Cappen, you see sav my make good clebber comprador, 'pose a man not fittey rogue he stupid."

With a light, but favourable, breeze, we passed Potoe or Passage Island at 7h. P.M., and at 10 we brought up at low water in $3\frac{3}{4}$ fathoms, the lights of the houses at Macao bearing W. $\frac{1}{2}$ S. about five miles distant.

J. B. C.

Typhoon of November in the China Sea.

London, July 4th, 1842.

Sir.—Observing in your valuable Magazine the discussions on storms, I beg to send you an abstract of my journal, from the 12th to the 18th of November last, while on a passage up the China Sea, in command of the Slains Castle, from Madras.

I refer you to an account of a typhoon experienced by the ship Ardasair of Bombay, one of the opium clippers, in lat. 14° 36′ N., long. 114° 40′ E., on the 16th November, 1841. Copy of an extract from the Canton Register of 1st of February, 1842, detailing the circumstance, I annex, wherein it appears she was compelled to cut away all her masts to prevent her foundering, and ultimately was obliged to relinquish the voyage to China, and bear up for Singapore under jury masts. The Medusa and Ariadne steamers, were both, (I believe) in the north-eastern part of the China sea about the same time, one of which reached China, and the other had to return to Singapore: and several ships arrived in China about the same time the Slains Castle did, having encountered very heavy weather in the eastern part of that sea. I presume the Slains Castle must have been on the outside of the south western range of what disabled the Ardasair on 16th November, and were copies of the journals of the two steamers obtained, along with the Ardasair's, some idea might be formed of the extent of the typhoon's range.

I am, &c.,

J. Petrie.

To the Editor, &c.

Abstract of Slains Castle Journal, from the 12th to the 18th of November, 1841.

Nov. 12th, noon.—Lat. obsd 8° 25′ N., long. chrs. 108° 56′ E., bar. 29·75, symp. 29·25, therm. 82°.

At noon this day got the wind S.Westerly.

Nov. 13th, noon.—Lat. obsd. 9° 47′ N., long. chrs. 110° 12′ E., bar. 29·70, symp. 29·30, therm. 82°.
These twenty-four hours the wind continued S.Westerly, with very gloomy appearance, increasing in strength after midnight, with squalls of wind and rain.

14th, noon.—Lat. 11° 36′ N., long. chrs. 111° 41′ E., bar. 29·75, symp. 29·40, therm. 83°.
Steering N.Ely., the wind continuing S.Wly., with squally thick weather, and occasionally rain.

15th, noon.—Lat. obsd. 12° 18′ N., long. chrs. 111° 59′ E., bar. 29·85, symp. 29·40, therm. 83°.
Light airs and calms throughout the twenty-four hours from S. until 8. A.M. when had light airs and fine weather from N.E.

16th, noon.—Lat. obsd. 13° 3′ N., long. chrs. 111° 57′ E., bar. 29·60, symp. 29·30, therm. 82°.
The wind continuing N.Ely. increasing in strength to a strong breeze, and a heavy swell from N.E. all the twenty-four hours.

17th, noon.—Lat. obsd. 13° 41′ N., long. chrs. 113° 40′ E., bar. 29·65, symp. 29·25, therm. 81°.
These twenty-four hours had the wind northerly, W.S.W. and southerly, and ending variable and S.W., steering E.N.E. and N.Ely., heavy squalls with rain, thick unsettled weather, and confused heavy sea, lightning to N.E.

18th, noon.—Lat. obsd. 14° 48′ N., long. chrs. 115° 9′ E., bar. 29·70, symp. 29·40, therm. 82°.
Steering N.Ely. with fresh breeze S.Wly. The following day had the wind W.N.W., and on the 20th got the regular N.E. monsoon, with which reached Macao outer anchorage on the 25th of November.

An Extract from the Canton Register of the 1st of February, 1842.

TYPHOON experienced by the Ardasair, November 16th, 1841, in lat. 14° 36′ N., long. 114° 40′ E., during which she was compelled as a last resort, to cut away all her masts. At two in the morning the barometer gave indications of the approaching tempest, by falling from 30 to 29 inches, the hatches were battened down and preparations made to meet the gale. In a few hours more it was blowing a perfect hurricane, with the sea rising in pyramids in every direction, and making a clear breach over the vessel, which was now nearly on her beam ends, with both her quarter boats carried away.

At half past eight A.M. an awful gust, accompanied by a tremendous sea, threw the ship on her beam ends, the sea coming up to the coats of the masts, and the lee bulwarks and part of the forecastle being under water. The dead lights were beaten in partly by the violence of the sea, so that the cabins and deck were covered with water, and she seemed to be going bodily down. With the utmost difficulty (owing to the fury of the blast, and the frightful sea that was breaking over her) the masts were at last cut away, and it appeared that nothing but their fortunately all going nearly at the same time, could in so critical a moment, have saved the vessel. She endeavoured to make Manila under jury masts, but was unable, therefore bore up for Singapore.

Reef off Marsa Zaphran.

Lieut. Lunn, commanding the Locust steam-vessel has reported a small boat harbour in the Gulf of Syrtis, known in the French charts by the name of Chebec. It is formed by a reef, but affords no anchorage for vessels. The following is Lieut. Lunn's account of it.

The reef in question lies about five miles eastward of Marsa Zaphran; it is one half of a mile from the shore, and shews itself plainly, as the rocks are above water. It extends in length about one quarter of a mile, running parallel, or very nearly so, with the coast at that part; and at the western side of the reef it appeared to run gradually towards the shore, but did not shew itself distinctly, as the rocks were below water. There were also some rocks which are above water on the eastern side of the reef at the same distance from the shore, forming thereby a channel of about two hundred and fifty yards wide.

The soundings in the entrance of this channel were four fathoms, very gradually shoaling directly towards the beach to one fathom. Inside the reef in mid-channel we found three and a half, three, two and a half, and two fathoms, gradually shoaling as you get to the western part of the reef, and close along the beach was one fathom. Inside the reef and close to it, we found two and a quarter, and two fathoms, gradually shoaling as it does in mid-channel in going to the western end.

This reef does not regularly appear in the Admiralty chart, it being on a small scale. The chart shews a few rocks close to the shore off Marsa Zaphran, but there is nothing in the charts which shews distinctly the position of this reef. It is more plainly pointed out in the French chart, of the Gulf of Sidra, it is there called Le Petit Port de Chebec.

Although this reef forms a sort of basin or small harbour, I do not consider it safe for the smallest vessel possible to anchor there, as the holding ground is not good, being hard sand and weed, and it being wholly exposed to the north and north-east wind. It is undoubtedly the best place for boats to land of any part of the Gulf we visited, as in fact, in all other parts where we landed, there is a constant, and at times, very heavy surf running, much endangering the boats.

There is anchorage outside the reef, two miles from the shore in seven, and seven and a half fathoms, hard sand; the holding ground is not good, and by no means safe for sailing vessels.

A Description of the Method of Heaving up the First Imperial and Royal Danube Steam Company's Vessel, Seri-Pervas, of 600 Tons, at Constantinople, in 1841.—*Under the direction of Capt. B. Ford of that Company, assisted by Mr. G. Biddlecombe, Master, and Mr. W. T. Mainprise, Second-master of H.M.S. Talbot.*

The difficulty was principally from the vessel having three extensive holes through her bottom, with the whole of the false, and great part

of the main keel gone, which rendered it necessary either to dock her, or heave her up, and as no dock was available, the latter was resorted to. This had to be done where the depth at the waters'-edge was ten feet, when it dropped immediately into four, four and a half, and five fathoms, which depth was at the extremity of the ways, these being carried out ninety feet from the shore.

Construction of the Cradle.—The cradle was 110 feet long, 13 feet 6 inches broad in the centre, narrowed a little at either extremity; was 4 feet 7 inches high abaft, 2 feet 10 inches in the centre, 4 feet forward, and 2 feet 6 inches thick, made of oak faced with fir, and constructed of three pieces on either side, strongly bolted together with a strengthening piece of oak of thirty feet, along the midships on either side. Two iron bars were run through on either side of the cradle to keep it together; one 7 feet from the fore end, the other near the centre; a cross piece of stout oak (with a shelving piece from the upper part of the cradle, went to the middle of it to direct the keel, if any remained) was run through the cradle, three feet abaft the foremost iron bar; and two other pieces of oak of the same description; one 36 feet from the fore end, the other 7 feet from the after end.

Two single fore guys of 7-inch rope, were secured to the foremost cross piece of the cradle, and led into the hawse holes. Two double guys of 7½-inch rope (and which were of the utmost consequence, bearing an immense strain as the vessel came up,) were secured to the after cross piece, then crossed and taken over the stern, and secured on deck. Three double guys of 4½-inch rope on either side, one at each extreme, and another in the centre to steady the cradle, when under the bottom, were passed over all and secured on deck.

Around the outside of the cradle was passed a chain of $1\frac{1}{16}$th-inch, rove through a hole in both parts of the after end of the cradle, secured along the side with a half turn over each of the iron bars, which projected, and had long forelocks to keep the chain from jumping off. At the end of each part of the chain was lashed a treble block to carry an 8½-inch fall, by which she was hove on to the ways.

Getting the Cradle under the bottom.—The difficulty was in sinking such an immense mass of timber to the depth of eight feet, which the vessel drew, after every thing was taken out, and all the keel gone. The bow of the vessel was placed close to the shore with guys to steady her forward and aft, when the fore guys of the cradle were passed along either side of her to purchases on the shore; and a hawser with an anchor astern to steady the cradle, which allowed it to be eased to the stern gradually, when the cradle was close to the stern-post. Pieces of plank were laid over the fore end of the cradle abaft the first cross piece, on which a quantity of chain was placed until the fore end sunk to the depth required, when the stern hawser was eased, and the fore guys hove on, and it immediately entered. The two foremost breast guys (which were marked to feet to keep the cradle square) were then taken inboard to steady it. The chain was then taken off, and the cradle hove in, until the next cross piece came close to the stern, when the chain was placed on as before. And in the same manner when the third cross piece came close to the stern, when all the breast guys were kept tort to secure the cradle from moving to either side.

The stern guys were then taken inboard, as before described, when the cradle was hove forward to the position intended, which was with the fore foot fourteen feet before the cradle, and the stern-post thirty-four feet abaft the cradle; when done the whole of the guys were hove tort and secured.

Besides the chain round the cradle, two hawsers of 8½-inch were passed round the vessel fore and aft four times, and in the bights were two treble blocks to carry 7-inch falls. The bights of the hawser astern of the vessel being placed as low as possible, (while the fore end was level with the waters'-edge,) which assisted the stern materially as the vessel dropped forward coming on shore.

Description of the Ways.—Ten spars of ninety feet long, averaging two feet in diameter at the butts, were first lashed together with the stout ends outward, on which were placed cross pieces of oak, eighteen inches square, 2 feet 6 inches apart, (but it would be better that the four outer ones should be close together,) and continued to sixty feet, when the same kind of pieces of eighteen inches were placed close together, and continued to within seven feet of the shore, under which, at the edge of the bank, piles were driven to support the ground, covered with several heavy cross pieces that were placed to take the end of the ways. Inshore of the solid work the same kind of oak pieces of eighteen inches were placed on the ground, forming an inclined plane at about three feet apart to the distance required for heaving her inshore.

From the outer extremity of the ways, the whole distance inshore, pieces of fir were nailed to make a railroad for the cradle, and which kept the upper part of the ways together, being bolted through all, as also the cross pieces which were bolted to the long spars, the railroad pieces being fir admitted of the ways bending without breaking.

In consequence of the ways being likely to capsize in sinking from the great depth of water, it was found necessary to place six large spars a thwart-ships under them, supported by lighters, which was done accordingly. A large lighter was anchored about sixty feet along the shore from the ways, and a tackle got over her stern, by which one extremity of the spar was lifted out of the water, until the other extremity took against the ways, under which it was to enter, when the end of the spars was chamfered away, and a large quoin of wood placed on it. A rope was then rove round the spar a little outside the quoin, in the bight of which a long capstan bar was entered, and a jigger clapped on the inner end, when it was boused down, which depressed the end of the spar until it entered, and by keeping the outer extremity suspended, with the lighter swinging towards the ways, it went under easily. When the spars were all under the ways, a lashing was passed round each to secure them from rolling up as the ways sunk. When all was secure the two lighters were placed ready on each side to hang the thwart-ship spars, so as to keep the ways steady, and save them from sinking more than necessary. This was done by a pendant being secured to the thwart-ship spars close in to the ways, and passed over the lighters round the outer part of the spar again, and up into the lighter, where it was made fast to ease away as the ways sank.

Sinking the Ways.—A pair of sheers were rigged of the vessels lower masts, and the heels stepped fourteen feet inside the extremity of the

ways, within the railroad, with an extra piece of wood across the spars under the heels, with very stout breast and four guys at the sheer heads, and one third down. Then two three-fold blocks were lashed, one at the sheer head, the other around the cutwater, and through the hawse holes, through which an 8-inch hawser was rove with a leading block lashed to the stem, which by heaving upon the capstans on shore it sunk the ways, and lifted the bow of the vessel until she entered. A hand-mast was stepped on either side at the end of the ways, and came up abaft the cathead with an up and down tackle, which materially assisted in sinking it, and keeping it steady. A piece of 5-inch rope secured to the end of the ways, and led over the catheads on either side, was slacked as the ways sank, until the lighters could be secured over the thwart-ship spars. Battens marked at six inches were nailed on either side of the ways at equal distances, to ascertain that the ways sunk square, and were of great use.

When the cradle was entered on the ways a sufficient distance, the whole of the purchases were rove and hove tort, when the sheers were taken away, and the lighters secured so as to admit of the ways sinking at the extremity to the depth required, which made an inclined plane from the extremity to the shore, and by continually supporting the extremity of the ways it saved any accident occuring as the vessel took on the shore forward.

The Capstans.—They were composed of four claws sunk eight feet into the ground, with cross pieces and piles, six long bars ran through their heads: the barrels being about twenty inches in diameter, made it a slow but strong purchase, and with 350 men the vessel was hove up twenty feet inshore altogether in five hours from her first entering the ways.

For this service the Royal Austrian Danube Steam Company at Vienna were pleased to direct that, a present of a gold watch each to Mr. Biddlecombe and Mr. Mainprise be presented, with a letter of thanks, for the assistance they had rendered during the operations of heaving the vessel up.

On the Improvement of the Thames.

It is universally admitted that the navigation of the Thames has long been subjected to inconvenience from the crowded state of the shipping which at times throng the river, and that it is still frequently and seriously interrupted, from a variety of causes, in defiance of law and the regulations which it has hitherto been found expedient to prescribe, as well as of the earnest endeavours and vigilance of the harbour-masters.

The interest which the Corporation of the City of London has in the prosperity of the trade of the metropolis, renders it imperative that, in order to secure to the public a clear and unembarrassed water-way, and thus establish a free intercourse with the fountain of commerce, every cause of impediment, however remote, extraneous, or artificial, should be investigated, and as soon as possible removed.

Some of these obstructions proceed from original shoals, which have, doubtless, operated in giving the bed of the river its present form, and are growing causes of impediments to the navigation of a river. This subject well deserves the consideration of the Corporation; for, whatever may be the difference in opinion, as to the ways or means to be employed in removing shoals which obstruct the navigation of the Thames, it is certain that some such means ought immediately to be devised; that the transit of ships be no longer delayed for want of water to carry them to their final destination—the docks.

An instance of the facility of deepening and preserving an uniform depth, as well as the advantages resulting from the operation, may be seen at the entrance to the St. Katharine's Dock, where there is now at low water, off the principal buoy, twenty feet, shallowing gradually to eight feet at the wharf; but as similar advantages are contemplated in the general embankment of the Thames, it is needless to dilate upon the subject.

The lower pool is occasionally in a confused state, and is at those times extremely dangerous, when the water-way is contracted by the tiers of colliers, even when the lawful space of 300 feet is preserved. But I contend that it is not sufficient to yield to the public the mere possibility of navigating a crowded river. The certainty, as far as human means will allow, ought also to be secured to them. Circumstances frequently arise to prove that the 300 feet is not sufficient for the purpose of a safe navigation, as well as to shew that a little timely assistance at that narrowed part of the river, would prevent many serious accidents. Positive means, and the facility of using them, ought therefore, to be provided and at hand, the expense of such aid being defrayed by the vessel requiring it; for, whatever produces danger, difficulty, or delay in the transit of the Thames cannot but be regarded as a grievance in a country where so much depends upon a good maritime approach to its metropolis.

The practice of colliers anchoring in the stream, at the entrance to and in the pool, while preparing to take their respective stations, and hauling out into the fairway before the proper time to sail, is a just cause of complaint, and productive of serious obstructions to navigation, as well as being a fertile source of accidents and injury. On no account whatever, therefore, should this malpractice be permitted to endanger the public safety.

The harbour-masters should be armed with authority to remove forthwith the obstructing vessel or craft, charging the offender with the costs, who should also be liable to a penalty. Each vessel ought to be provided with a boat well manned, a good kedge, and warps, in readiness to run out the latter to the nearest vessel in the tier, and thus obviate the necessity of letting go the anchor, and encroaching upon the already too limited space assigned for navigation. An alteration in the bye-laws of the Port of London to this effect would confer a lasting benefit on the public.

The inshore navigation (or transit for small craft) on each side of the river, is also improperly obstructed by coal barges, which crowd the inner passages on the one side, and the loaded coal and timber barges,

mischievously and unnecessarily detained, on the other, converting a serviceable portion of the river into floating warehouses; and is, in consequence, so great a source of hindrance as to call loudly for strong remedial regulations.

It cannot be denied, however, that the increasing state of the coal trade in the Port of London loudly calls for dock accommodation, as, during the first six months of this year, the arrivals have exceeded the last or preceding period, by nearly 600 ships and 167,000 tons of coals; and, as the consumption of the article from the progressively increasing population, and the erection of manufacturing establishments, steam navigation, &c., is daily augmenting, the day is not far distant when some direction of the Corporation will be found necessary to oblige colliers to discharge in wet docks, and thus clear the river of an obstruction which now of necessity is tolerated, but which is, nevertheless, highly prejudicial to the trade of London.

The recent excellent plan of placing colliers in sections, is a positive benefit to the community, and calculated to effect a permanent improvement in the navigation of the Thames.

The quantity of rubbish daily and hourly thrown into the Thames, calls for serious consideration, and for the most energetic measures on the part of the Corporation to put an immediate stop to such irregularities, the tendency of which is to ruin the river. An Act of Parliament, 54 Geo. III. c. 159, has amply provided for these grave offences. And if due notice was given to every steam-boat that the laws on this head would be rigorously put in force, the fear of punishment, or information, might, in some measure, deter them from the open practice of such delinquencies.

The same act of Parliament refers to the landing of rubbish upon the banks of the river, which ought to be placed above high water mark, spring tides, and out of the influence of storms or land floods, &c., on pain of fine or imprisonment.

This being the case, nothing more is necessary than the strictest supervision in order to detect the offender; as there are proofs on record, that this shameless practice has been carried on from time to time, until it has become seriously detrimental to the river.

Next to those who wilfully and wickedly throw rubbish into the river, stand those who negligently allow their wharfs, banks, or forelands, to fall into it; and although the offence itself may not be of so serious a nature, the effect is the same; and, as it is the duty of the authorities to punish delinquency on the one hand, so it will be in the execution of their office, as conservators of the Thames, to protect it from the effects of negligence on the other. And as it can be easily proved that the results are the same, it becomes the imperative duty of the proprietors of such lands to enclose safely that portion which is liable to be washed by the high tides, or exposed to the wave caused by steam-boats.

FRED. BULLOCK,
Captain, R.N.

Report on the River by James Walker, C.E.

SIR.—The object of the Survey which, in company with the City Solicitor, Capt. Bullock, R.N., Capt. Fisher, R.N., principal Harbour-master, the Water-bailiff, and Mr. Leach, Clerk of the Works, I have made of the Thames between the London Stone at Staines and Gravesend has been to enable me, with the co-operation of the above-named gentlemen, to point out a remedy for the present defects of the river, in respect to navigation, as well as to salubrity and to the comfort and convenience of the inhabitants and owners of property on its banks.

During the thirty years that I have known the river, and have been professionally employed upon some of the principal engineering works on its shores, I am not aware that an inquiry to the same extent has been gone into; although the evils existing in the river have been long felt, and partial measures have been adopted for their removal.

The first of these was immediately after the fire of London in 1666, when Sir Christopher Wren proposed the construction of a commodious quay or open wharf from Blackfriars to the Tower; in consequence of which, an Act was passed in 1668, to prevent the erection of buildings within forty feet of the river bank, between the Tower and the Temple, so as to leave an open space called the "Forty-foot way;" which Act, however, was in a great degree rendered nugatory by encroachments, and was ultimately repealed in 1821.

The next public measure of the kind was in 1767, just a century after Wren's proposal; when, in connexion with the completion of Blackfriars Bridge, the frontage to the river, from Paul's wharf up to and including the Temple gardens, was embanked under the direction of the late Mr. Mylne, the architect and engineer, in a straight line of half a mile in extent, at right angles with the bridge; the object being, as stated, "to remove the accumulation of mud, silth, and rubbish from the city side, which had rendered the wharfs inaccessible even at high water, was extremely offensive, and, in summer, often dangerous to the health of the neighbouring inhabitants." This measure, although partial and limited, is the greatest modern embanking improvement that has been accomplished on the river Thames.

In 1770, the proposal for embanking 100 feet into the river, in front of the space then called Durham yard, now the Adelphi terrace, was effected by Messrs. Adam, under an Act of Parliament which, for reasons now difficult to discover, was strenuously opposed by the Corporation of London in every stage.

Amongst the various schemes for improving the Port of London which were proposed at the end of the last and beginning of the present century, there were several for altering and amending the course of the river. Of these, one was a plan for wharfs and warehouses, by Mr. Jessop, then at the head of his profession in this country as a civil engineer; another was by Mr. Ralph Walker. Reports were also prepared by Mr. Mylne, Mr. Dance, Mr. Revely, and other architects; which, with the reports of committees thereon, were printed. These inquiries at that time terminated in the formation of the West-India, next the London, afterwards the East-India, the Commercial*, and,

* The Greenland Dock, now one of the Commercial docks, was constructed in the 17th century.

lastly, the Saint Katherine docks; but the river below bridge has, with some few exceptions, been left untouched*.

Mr. Telford's Report of 1823 referred chiefly to the probable effects upon the river by the removal of London Bridge.

The report of Sir John Rennie and Mr. Mylne, on the construction of a new line of quays along both shores of the river, between the bridges of London and Westminster, was made in 1831; and, in the following year, Mr. Scott and Mr. Firth presented a Report containing a concise historical account of the proceedings in reference to the river during the last two centuries, from which I have taken the above statement of the Act of 1668, and the improvement of 1767.

Last year I had the honour, as you are aware, to be selected by the Treasury, the Commissioners of public Works, and the Navigation Committee of the Corporation of London, to report and estimate on embanking the river between Vauxhall and London bridges. This became a subject of inquiry before a select committee of the House of Commons. The evidence I then gave has been printed by order of the committee: it contains my opinion of the defects and means of improving that part of the river; also, copy of the two reports before referred to, together with the objections to the scheme, elicited in the way of questions put to me chiefly by one of the members of the committee. A reference, therefore, to the examination before that committee, will be found useful in the present inquiry, and probably interesting.

But the object of the investigation now on foot is even more extensive, embracing the whole length within the jurisdiction of the Lord Mayor, from Staines nearly to the mouth of the Thames; a distance of upwards of 75 miles, with London near the middle of it.

It is to this middle portion, namely, between Chelsea and Barking Creek, a length of 16 miles, within which is comprehended the whole of the metropolis and the docks and public works connected therewith, that our attention has been principally directed. Mr. Leach's report embraces the part above Chelsea, which concerns the upper navigation; and there is comparatively little to remark upon the part below Barking Creek, except in respect of the shoals to which I shall refer, and the lines for embankments which are shown upon the plans.

The subject is very important, whether considered in reference to the commerce and shipping of London, with its extensive docks, and the country around and above it, or as the great drain of a very extensive district, calculated at about 6,000 square miles, including the first city in the world; and therefore affecting the health, wealth, and comfort of millions of human beings.

Without going into difficult questions as to the changes that may have taken place in the direction of the main stream of the river, it is evident that great labour and skill have been applied to confine it within its present banks, which, from London to the mouth of the river, a length of 40 miles, are chiefly artificial. The probability is

* The principal work within my recollection is the removal, by the Conservator of the river, of a dangerous rock of concreted grāvel from near the entrance of the West India docks, called the Blackwall rock, at considerable expense, about thirty-five years since.

that gradually, as the embankments were raised, the ground at the back of them became higher by the deposit consequent upon the diminished action of the waves upon it; and that the creeks and irregularities filled up: notwithstanding which, the marshes are still from 6 to 7 feet under the level of an average spring tide, and 9 or 10 feet under the highest tides. One of these tides, that of the 18th of October, 1841, the highest recorded during at least half a century, rose 3 feet 6 inches above the Trinity standard of average spring tides marked upon all the bridges; and was 10 feet above the level of the low marshes; so that, if the artificial embankments were cut through, the Thames would, at the very next tide, take possession of the large space which has been so long abstracted from it, and would be generally five times its present width. To watch over and prevent such a calamity, which would entail very serious loss of life and property, is the duty of commissioners of sewers, to whom juries of the counties make presentments, and through whose care breaches in the banks are of very rare occurrence; the last of great moment having been at Dagenham nearly one hundred and forty years since, the stopping of which, by Captain Perry, was probably the most important work done in the Thames in the course of that century. During the thirty years that I have been engineer to the commissioners for the part of the river extending from London to below Dagenham, a distance of from 20 to 30 miles, no breach of any consequence has taken place.

History, I believe, affords no trace of the time when these embankments were formed: the probability is, that they are the work of the ancient Britons, under Roman superintendence. That they are the result of skill and bold enterprise, not unworthy of any period, is certain.

As these banks, and the oldest erections upon the river, are suited to the present level of the water, there are no good grounds for supposing that the tides up the river now reach a much higher level than when the embankments were formed. If they do, it must be caused by the tides at sea being higher than in ancient times; for, it would be unreasonable to suppose that, when the river extended to the foot of the rising ground on the Kent and Essex sides, the tide would not attain a considerably higher level at and above London than it did at the entrance of the Medway, from the great width of the mouth and form of the river, or rather estuary, at that time.

At present the level at high water at London Bridge is two feet higher than at Sheerness,* a length of forty miles: and at London Bridge it is, on the average of a series of observations,† when the river was free from land floods, one foot lower than at Richmond Bridge, which is sixteen miles and a half above London Bridge, and only one mile and a half below Teddington, where the first weir is placed across the river: high water at Richmond being thus three feet above that at Sheerness.

The high level water is not, of course, attained throughout at the

* Mr. Lloyd's levels, published in the Transactions of the Royal Society, in 1831.

† The observations were made in 1823, previously to the removal of old London Bridge, under the superintendence of Mr. James Montague and Mr. Leach.

same instant of time. The difference of the times of high water at these places is about two hours each; and at Richmond being two hours later than at London Bridge, and at that bridge, on the average, two hours later than at Sheerness.

Whilst old London Bridge stood, the regular inclination of the surface of the water was disturbed, there being a "step down" of from six to eighteen inches, varying according to the strength of the tide at high water, and caused by the obstruction which the massive piers and starlings of the bridge presented to the flow of the tide.

But although the artificial embankments have not produced much effect upon the positive height of the surface of the water, at either high or low water, they have, by contracting the width, undoubtedly done much to increase the depth under low water, of the part between the banks, and thereby to improve the river for an extent of navigation for which, in its natural state, it would probably have been quite unfit, from the want of depth, and from the uncertainty of the channel. This deepening has been effected by confining the current downwards of the land or fresh water, united with the tidal water, to act upon a limited width instead of being diffused, and its force spent over a great surface: thus its velocity and scouring force have been increased, and the channel has been deepened.

An illustration of this principle has been afforded in our own time in other rivers; in none, perhaps, so much as in the river Clyde, which, chiefly from the operation of contracting the width, has, from having a depth at Glasgow only for boats and barges drawing from two to five feet water, at spring tides, become, all within the last eighty years, navigable up to the quays for ships drawing from thirteen to sixteen feet, with full cargoes from the East and West Indies, and elsewhere.

I name the above to show that, although the river Thames has numerous imperfections, there is, in its great outlines, much to admire; and that even its apparent defects ought to be treated with caution; and I wish not to be understood to say, that the narrowing or embanking has improved the sea entrances of the Thames, or at all lower down than where the embankments were formed; on the contrary by diminishing the back water, their effect below has been injurious.

As respects its fitness for trade, we have, with the exception of some shoals, to be afterwards referred to, a depth of from twelve to fourteen feet at low water,* nearly up to London Bridge; and a width nowhere of less than 700 feet; but generally 1000 feet at high water near London, a distance of forty miles from its mouth.

As respects salubrity, it is to be observed that, in addition to the river or fresh water, which even as high as Staines, thirty-seven miles above London, is very seldom less than 150,000 cubic feet per minute, and is much increased by the streams which afterwards join it, and still more by the springs which rise up under it in its course downwards, there is also the very much greater volume of tidal water, rising and falling in every twelve hours from fourteen to nineteen feet in

* This low water is that of 17 feet 10 inches under the datum high water of Trinity standard; both determined by that corporation in 1800. The high water is marked upon the entrance of the London Docks, and upon a pier of each bridge in the river.

vertical height, in constant motion, at a speed of from two to three miles per hour, carrying past London upwards of 70,000 tons, or from $2\frac{1}{2}$ to 3 millions of cubic feet of water at every minute of time. Even the defects which are at present apparent, and so much require removal, arise in a great measure from the altered state of things at the end of perhaps, fifteen centuries from the time when the Thames was embanked, rather than from the ignorance of the engineers, who, at that distant period had the direction of this great work. Could they have contemplated that, on a length of only five miles, there would be placed upon its banks a city containing two or three millions of human beings, whose only drain would be the Thames, and that the citizens would invent and adopt luxuries in their houses, which should discharge every kind of impurity into sewers and drains, to be built in every street and alley, which should all empty themselves into the river, more care would, probably, have been taken to equalise its channel, and so to contract the width at these densely peopled portions as to prevent the nuisances now justly complained of. Or, had they anticpated that lower down, at Woolwich, a great establishment would be formed for building and repairing ships-of-war, to float which, thrice the depth of water sufficient for their largest vessels, with a river wall, certainly not in the best direction for the tide, would be required, they might have kept the embankments above and below Woolwich in straighter lines, so as to have induced a stronger current, and to have prevented the troublesome accumulation of mud in front of that national establishment.

It is to be noticed also that the clumsy erection of London Bridge in the twelfth century much disturbed the uniformity of the river, as left by the original embankers. Its eighteen piers with starlings, each from thirty to fifty feet in thickness, reduced the width of the water-way from 920 down to 300 feet, and the sectional area in nearly the same ratio; and this small water-way was further interrupted by nine of the openings having the wheels of the London Bridge water-works before them. These erections, increased by the stone that was, from time to time, thrown in the openings and round the piers, to prevent them being undermined, and the bridge being carried away, acted as a solid weir or dam in diminishing the scour of the river, and causing an accumulation of matter above the bridge. Hence, not only the high water difference to which I have referred, but also the difference at low water; for, when the tide was out, the water above the bridge was prevented ebbing so low as it did below the bridge by from three to five feet: whereby the quantity and strength of the tidal current were lessened, and the solid bed or channel of the river above the bridge was raised from eight to ten feet higher than below it.

This great evil is now removed; the present new and elegant fabric, designed by the late Mr. Rennie, and executed under the direction of his sons, Mr. George and Sir John Rennie, which was opened in 1831, has a water-way of 690 feet in width, with a great increase of depth under the arches; the whole channel of the river above bridge, has since, from the increased current, been gradually lowering. Hence, already has it been found requisite to support, by piling round (within coffer dams, formed at great expense,) the piers of Blackfriars Bridge,

the water-way of which is 780 lineal feet; and the like operation is now in progress, also under our (Walker and Burgis's) direction, at Westminster Bridge, built by Labelye in 1740, of which the water-way is 820 feet. The piers of Vauxhall Bridge, which was built under my direction in 1816, are, with one exception carried down to the London clay, and are not, therefore, likely to be undermined.

What has thus so soon been rendered necessary for the bridges upon the river will probably in time be required for the buildings on its sides. When it is considered that the bed of the Thames at London is generally gravel, with a large mixture of fine sand, for a depth of from 10 to 14 feet under low water, where the London clay is reached, it is manifest that this point has not yet received the attention it deserves; nor will it, probably, until its effects become visible upon some public or other important building. Much was said on this head in my evidence before the select committee last year, which it is unnecessary to repeat here.

Dismissing, however, the subject of the buildings for the present, the ancient embankers of the Thames appear to have done their work so well that notwithstanding the great increase of traffic, little has been subsequently effected to improve the navigation of the river below Fulham Bridge, which is eight miles above London. Above Fulham, absolute necessity appears to have demanded an improvement for passing the barges. It was not, however, until 1777 that power was given to raise funds even to make a horse towing-path and to remove shoals; and still the navigation remained very imperfect until after the year 1810, when an Act was passed empowering the conservator of the river to erect locks, weirs, and other works, and to collect an additional toll upon the traffic, whereby a very great improvement has been effected under the able superintendence of Mr. Leach, who has directed the execution of all the locks and repairs done under the Act of 1810.

The Lord Mayor, as conservator of the Thames, through a committee of the Corporation of London, interferes to prevent encroachments and nuisances for the whole of the district between Staines and Yantlet creek, which is a few miles above the Medway. The corporation of the Trinity House, under their charter, raise gravel between London Bridge and the main sea for the ballasting of ships; and thus, if fit for ballast, but not otherwise, the shoals are removed, the object being to combine the supply of ballast to shipping with the improvement of the river. Above London Bridge, gravel and sand for repairing roads, making foundations, and other purposes, are raised by permission of the Lord Mayor as conservator of the Thames, and individuals thus authorized take such materials wherever the quality suits them, without sufficient regard to the improvement of the navigation. The Commissioners of Sewers for the City form and enlarge their outlets into the river, to discharge the mud from the streets and the contents of drains into the river; and the Commissioners of Sewers and Embankments, for the levels or marshes below London, support their embankments and sewers, to prevent the Thames from overflowing the banks and to carry off the rain water through the sluices which enter the river; but if a part of the river is too wide, causing a shoal in the middle and mud banks at the sides, both probably the effects of too great width,

I am not aware of any power with sufficient disposable funds to remove the shoal, or to narrow and straighten the river, even where there would be no private interest opposed to it. I am sure, at least, that very little indeed has been done in this way; and it is not therefore surprising that, from the alterations occurring in so great a lapse of time, there should be many things requiring attention and improvement. To state these, and the manner of effecting them, is the matter now to be considered; and when I say the manner I refer only to my own profession, the engineering part, without any reference to legal powers and authorities, which I leave entirely in other hands.

(To be continued.)

JOURNAL OF AN EXPEDITION TO NORNALUP, *or the Deep River of the Sealers, in the months of March and April*, 1841.—*By W. Nairne Clark.*

(Concluded from p. 460.)

March 1st.—Pulled up the river as far as the boat could go, and where we formerly stopped. On this morning we heard distinctly the bellowing of cattle, but could not obtain a sight of them, although their traces were perceived. I here left the boat accompanied by one of my men, and explored the country in a northerly direction. We climbed a high and very steep hill rising from the waters' edge to the height of about 600 feet above the level of the sea. Descending the other side from the top, in a due north direction, found rich feed for cattle and horses,—another hill in front of us; soil red loam. At the bottom of the valley between the two hills a brook of pure fresh water about two yards wide bubbled along, running with a purling noise. For the next five miles we passed over a great deal of good land, rather thickly wooded with large trees, and all at once struck the river, running from the northward through a very deep ravine. The banks were sheer and abrupt on each side, but, as usual, there was excellent land and cattle-feed. The river at this place was between seventy and eighty feet broad, and the water perfectly fresh. We followed it up for a considerable distance to the north and north-west, till it flowed into a contracted stream over a broad ledge of rocks, and poured its waters into small natural cascades. My time being limited, and my fellow-traveller rather tired, I reluctantly left it, and we retraced our steps by another and rough route to the boat. When I say rough, we had to find our way through tangled thickets, high above our heads, with no other guide than the compass.

Explored the right bank of the river (going up) opposite the place where the boat lay, and found very rich land winding round the base of the hills, having a gradual ascent. This, which may almost be called a flat, was about a mile and a half in length, and half a mile broad; soil rich black loam near the river, losing itself in red loam as the hills were ascended. I saw many blue and white gum trees of enormous growth, one had the immense diameter of no less than fourteen feet, or forty-two feet in circumference. If I had not seen this *tree*

with my own eyes, I would not have believed the fact. We had travelled about ten miles inland this day in a north and north-west course, but I could see no pasture adapted for sheep. It was all of too rich and strong a character for them, and the soil was too moist for such a description of live stock. In the evening we pulled down to the creek, called by me, " Fresh-water Creek."

2*nd*.—Although this was a rainy morning, I started from our encampment for the sand-hills near the sea coast, which, from their yellow appearance, indicated sheep pasture. After walking about three miles, I reached them, and found that there was fair sheep pasture for miles on each side of these hills, commencing about three miles from the river's mouth, and extending in an east and north-east direction as far as the eye could reach. I noticed several streams of fresh water winding around their bases, and meandering through a very rich flat or plain about three-fourths of a mile broad, and several miles in length, containing as fine cattle and horse feed as ever I saw. From the top of a sand hill our encampment on the creek bore due north, Nornalup estuary N.W.b.N., the open sea S.S.W., distant about five miles. The large plain abovementioned lay east and west. At this part of the journal I may as well give the bearings of the different reaches and depths of water on the large river.

The entrance from the estuary, course for three miles nearly E.S.E. 13 feet of water, E. ½ S. 3 fathoms, S.E.b.S. 3 fathoms, S.E.b.E. 13 feet, S.E.b.E. ½ E. 2½ and 3 feet water. This course was over the wide flats, and I may say it was nearly three feet. On getting over the flats, a very long reach, with 9, 10, and 12 feet water, appeared all through; N.N.E. 10 feet, fine large flat on the right side, going up. Near this was Fresh-water Creek. We stuck a board on a pole opposite the entrance of the creek, and fixed it in the river, with the words "1841, water," on it, for the benefit of future travellers. From this, east 10 and 11 feet of water, N.W.b.W. 11 feet, E.S.E. 10 feet, W.b.N. 11 feet, north 11 feet, east 11 feet, E.N.E. 10 feet, N.N.W. 10 feet, north-west the same, W.N.W. same depth, high, wooded banks, N.W.b.N. 9 and 10 feet depth of water, fine cattle feed all along on both banks, and indications of fresh water in many places by digging; west 10 feet, lofty wooded hills on each side, with splendid timber to the waters' edge; north-west 9 and 10 feet, rich soil to the very tops of the hills; north 10 feet, north-west 9 and 10 feet, N.W.b.W. 10 feet, very wooded and high hills; S.E.b.E. 9 and 10 feet, magnificent timber and high hills on the north shore, averaging between 600 and 1000 feet above the level of the sea. Here, as I have before stated, boat navigation ceased, about twenty miles from the mouth of the river, and twenty-four from the bar of Nornalup. If the impediments were removed, a boat could in all probability proceed upwards of ten miles further, but it would cost a great expense to cut a passage through the immense logs of wood which stretch right across the river.

Having now finished the explorations of these rivers, I returned to Sealers' Cove inside of the bar. It blew a very stiff gale all day, and rained occasionally.

3*rd*.—Very heavy south-west gale of wind, accompanied with rain. Remained snug all day in the cove.

4*th*.—Took the depths of the water into the estuary from the cove; and found at low water 7, 8, 9, 13, and 11 feet. Course into the estuary N.N.W. with 16, 12, and 11 feet of water. By various experiments, pretty accurately tried, we found the rise and fall of the tide inside the bar to be three, and, at times, six feet. At the same time I sounded the passage over the bar, when the tide was only beginning to pour itself slowly in. The depth near a black rock in the centre of the river, and on the left side of which vessels of small burthen can only pass, averaged from ten to twelve feet. We found twelve feet of water, but to be accurate, I made an allowance for a swell of the sea, making ten feet at low water the true mark. What the depth may be at high tide, or in the winter season, when the three rivers pour their freshes into the sea, I cannot pretend to say.

In rambling over the west side of the estuary to-day, for the purpose of more narrowly examining the sheep-pasture, I arrived, all at once, at an immense ravine, about sixty yards asunder, with banks to the height of 200 feet on either side. The bottom and sides were composed of the purest white sand, incrustated at places with what appeared to be red rocks, but which were quite frangible to the touch. I traced this deep ravine first to the inlet, and afterwards, retracing my steps, to the open sea; thus proving, by a simple matter of fact, that a communication has at one time existed between the two waters, and strengthening the supposition that the sea is gradually retiring from these shores.

5*th*.—Started farther to the westward, the wind being foul for our passage to King George Sound. On our way out, we again sounded the passage over the bar, and found twelve feet (tide only beginning to make) near the black breaker in the middle of the river. The course *in* is first west, and on passing the bar N.N.W. Of the birds in this district, I saw the black swan, common duck, diver, quail on the hills, in many coveys, parroquet, magpie, common crow, bronze-winged pigeon, pelican, black cockatoo and crane, common sea-gull, and shag or cormorant, sand-piper or beach-snipe, large and small, and the eagle-hawk, measuring about seven feet from tip to tip of the wings. Of these birds, the black swan, pelican, duck, sea-gull, shag, and, on the island off the coast, penguin, mutton-bird or sooty petrel, (the variegated petrel, white under the belly and wings, and black on the back), may be classed under the generic name of *anceres;* the magpie under the name of *picæ* or pye kind; the eagle-hawk and crow under the name of *accipitres*, or birds of prey. I saw none of the class *gallinæ*, or poultry kind, comprehending the emu, bustard, or wild turkey, swamphen, &c. Of fish, I found the snapper, mullet, sea-herring, whiting, rock-cod, and bream in the rivers where the water was fresh. So plentiful were the fish, that the rivers and estuary actually teemed with them, and I have no doubt that a valuable fishery might be established on these shores. It is said that during the winter months *whales* frequent the large bay into which Nornalup disembogues itself, embracing a distance of 17 or 18 miles from Point Rame to Point Nuyts. We again landed on Saddle Island, and although there was a very heavy swell outside, the island harbour was quite smooth, and I confidently assert that, according to all appearances, it is safe *for ships*

during all seasons of the year. The two other harbours had a great swell in them at this time, and can only be safe for ships during the winter months.

6*th*.—The wind still blowing strongly from the eastward, sailed for Cape Chatham Island, about 16 miles to the westward, and hauled up the boat for security, This island is one complete mass of granite rock, with a few symptoms of vegetation thinly scattered. It is full of sooty-petrel holes where ground appears. Walked to the top of the immense cliff of rock, and had a splendid view of the inlet designated on the map as Brooks Inlet, on the main land. My object being to search for fresh water, I soon found plenty of it—at one place a running stream from the rocks, and at other places pools of rain water on the very tops of the high stone cliffs. In the evening we caught plenty of the birds above described.

7*th*.—Sunday.—Williams called at the island to-day, in his boat, the Fanny, on his way to Leschenault. Reported having found fine land and a large river at Parry's Inlet.

8*th*.—Having now the opportunity, I determined to land on the main and explore Brooks Island. We accordingly left the island early in the morning, and landed in a snug little cove on the main hitherto unknown, where I took one man with me. We first travelled over a very precipitious hill, and walked in a N.b.E. direction, when we soon obtained a view of the inlet, but it was farther off than I imagined when I had the first view of it from Cape Chatham Island. After walking for some miles over an indifferent sandy country, we came to a stream of fresh water running into a bay, which, from its soft state, it was impossible to cross. We accordingly rounded it, and a walk of about 2 miles further brought us to a plain of rich soil, containing luxuriant cattle and horse feed, bounded on the N. and N.b.E. by a fresh water brook running in a strong current, and in many places about eighteen inches deep; fine rich grass all about. On crossing it we soon arrived at a hill, from whence we had a fine view of the estuary, and what appeared to be a river running into it from the eastward.

Descending from the hill, we reached a level plain of the richest soil I had yet seen, and of large extent, but what appeared to be a river was merely a swamp, having three streams of fresh water running into it, which we severally crossed. We then made direct for the inlet, through soft rich soil, pure black mould, but, crossing fresh water in beds at every 100 yards or so on, and puddling through it above the ancle, reaching the inlet after between three and four hours' hard walking from the boat, the distance from the main shore being about eight miles. It appeared to me, accustomed as I had been to the basin of Nornalup, to be, comparatively speaking, a small inlet of shallow water.

Observing an opening towards W.b.N., I rounded the beach of sand, when we came to its north-western extremity, where the water ceased, and gave place to a dead level plain of firm sand, which bore traces, from its extremely wet appearance, of having been lately flooded. We walked over this sandy waste for nearly two miles, by half a mile broad, when we arrived at an island in the midst, and, getting beyond

it, perceived a magnificent sheet of water stretching away *north-west* and west as far as the eye could reach. No water washed the bases of the island, but the sea had evidently been up there all along to the first estuary. We walked round the shore E.b.S., and crossed many fresh water streams running into the basin. Striking into the country surrounding it, I found the soil very good, with fine feed and plenty of surface water in all directions. We again made the beach of this large inlet, near a point designated by the sealers as a communication with the sea; but found that no such opening existed, a beach of sand, pretty high, extending between the sea and the inlet. A long tongue of land spread itself across the basin until it nearly met a jutting point from the main, forming an entrance of considerable magnitude, seemingly the two heads of a large river. Beyond this tongue of land the waters were seen to a great distance, bounded by hills in the extremity of the horizon trending towards the sea; so if there is any opening, it must be sought for in that direction.

The day being far spent, and having a long way to return to the boat, and being fearful that, if I remained all night in the bush, a change of wind might occur in my absence, I was compelled to leave this interesting scene. It has to be noted, too, that our provisions were expended, and we were living almost entirely on birds caught on the island, so that, however willing, it would have been attended with a risk of life to the men to have proceeded further to the westward on the main shore. The immense extent of this inlet would require, at the very least, a week's exploration by a strong party, despatched in different directions. I hope I may be more fortunate some other time.

We counted four islands in the basin on the east side of the tongue of land. To the northward several high mountains were distinctly seen in the far interior. A long walk in another direction, over a *country* alternately good and bad, brought us opposite Cape Chatham Island at nearly sun-down, when I fired off a shot, and the boat appearing from our harbour on the island, and pulling into the cove on the main, previously alluded to, enabled us to stretch our limbs for the night.

9*th*.—Detained on the island by a north-east gale of wind.

10*th*.—same gale.

11*th* and 12*th*.—Same, with increasing violence.

13*th*.—Wind south-east, blowing strong.

14*th*.—Started with a strong north wind for Nornalup, between pulling and sailing; pulling round point Nuyts, and between the reef off saddle island and the main, where there was sufficient water for the largest ship, we reached the bar about 10 A.M., and landed in Sealers Cove, tide making strong from the sea, and twelve feet of water accurately found. After remaining for a couple of hours to refresh ourselves, the wind about 1 o'clock, all of a sudden, chopped round to the west, blowing strongly, when we determined to start for King George Sound. Getting out of the river, the wind as suddenly veered round to the south-west, and through a very heavy sea, we made Williams Bay, on the map, whether named after his late Majesty, King William the Fourth, or Williams the sealer, I cannot pretend to say.

This bay is full of breakers that, sometimes shew themselves, and sometimes not. We found a safe boat harbour by our own exertions,

but not the Snapper-boat harbour, of which there has been so much talk at Albany. I saw the inlet, called Parrys Inlet, but it is barred from the sea by a sandbank, rendering boat navigation impossible and dangerous in the winter season, even if it is then open, of which I have *some doubts* from the general appearance of the coast. There is fine land all around, but chiefly to the north and north-west where it is said a large river disembogues itself. The want of provisions here likewise cramped me, and rendered a speedy departure necessary and absolute. On the following day, therefore, at the dawn of a rainy morning we arose, wet and wearied, embarked in the boat; and sailing a distance of sixty miles, through a dangerous and cross sea, outside, which wetted us all at intervals during the day, reached the settlement about 5 o'clock P.M.

From the foregoing narrative, the following remarks occur to me which I hope will merit the attention of his Excellency the Governor. *First*, I am glad that my report of this district is corroborated in general terms by Lieutenant Preston and Captain Bannister. The former gentleman states in his printed journal published by Cross, 18, Holborn, London, "at half past 12 (of 18th April, 1831,) rounded a point of land, and found a large estuary with an entrance that had ten feet water on the bar in going in, with a sandy spit on the right hand and a rocky shore on the left. The entrance is narrow, but certainly good anchorage for small coasting vessels not drawing more than seven feet. In going in there is a rock close to the left shore which always breaks, and which must be kept on the left hand." Here Lieutenant Preston was wrong. Substitute "right" for "left" sailing as close to this breaker as possible on the right hand going up when twelve feet of water is found, the tide making at the time. Mr. Preston goes on to state "employed all the afternoon in pulling round the estuary, which has a small island on it, landed several times, and found the soil to be generally good, particularly on a flat which appeared to be capable of producing anything. Killed two swans, and met the natives who brought us some broiled fish, and conducted us to their wells; parted very good friends; returned to the entrance and bivouacked opposite Sandy Spit.' 'This is all Lieutenant Preston's knowledge of Nornalup, and not one word is said about a single river flowing into the two estuaries.

Captain Bannister in reference to this district states, "on the 10th of January 1831, we made the coast, having for the last day traversed as rough a country as can be imagined. We travelled two days, and could only make seven or eight miles by toiling the whole day. By Mr. Smythe's observation we were only forty-three miles west of King George Sound, but it proved to be to the eastward of Cape Chatham, west of Nornalup nine miles, we had made, therefore, about twenty miles west since turning from our S.b.E. line on the fifth of January."

Mr. Smythe attributes the mistake in his observations to his not having a watch, and partly to the instruments with which he was furnished from his office, being out of order. He will I trust be able to give a satisfactory explanation to his Excellency. The trees were principally the blue gum, and if others had not seen them I should be afraid to speak of their magnitude. I measured one, it was breast

high, forty-two feet in circumference; in height before a branch, 140 or 150, we thought at least, and as strait as the barrel of a gun. From the immense growth of these trees I formed an opinion that the land upon which they grew could not be bad. What we did see was a brown loam capable of any cultivation, and where the underwood was not remarkably thick grass and herbage grew luxuriantly. We thought that an immense quantity of stock might be kept there in the driest months. Country intersected with swamps and vallies where there is a vast quantity of feed for stock, but not for sheep, &c. Some of the vallies are several miles in length and one or two broad, &c.

Second.—I am of opinion that there is a rich country commencing from the head of Parrys Inlet, crossing Irwin Inlet, then the Nornalup district, and afterwards Brooks Inlet far beyond Cape Chatham. The extreme length of this fine country in a westerly direction from Parrys Inlet, to the termination of Brooks Inlet, beyond Cape Chatham may be about fifty miles less or more. Wilsons Inlet has been so well described by Dr. Wilson, that an account of it would be tautology. It may be sufficient for me to state that Capt. Symers' establishment of horses and cattle, and a few sheep, are now depasturing on the border of this inlet, on *this* side next the sea, on what the overseer calls rich land and fine pasture. The journey by land, about thirty miles from Albany.

Third.—In my late excursion I directed my attention to the discovery of the alleged poisonous plant, correctly called by Mr. Priess, "Burtonia," and the "Lobella," belonging to the order *Campanulaceæ*, described as a plant with the juice of it extremely acrid, and not unlikely to act as a poison, but I am happy to state to his Excellency that I could find neither in any part of the country traversed by me. The soil was too rich for their growth.

Fourth.—With regard to the trees covering the surface of the ground, the stately timber, as I call it, a complete reverse takes place from what has been seen in the Swan River district. The blue and white gum trees, and mahogany, (Colonial names,) all *Eucalypti* in botany, rear their splendid trunks, and spreading foliage at the top, from rich red loam without a diversification of stone of any nature whatever. The *Banksia Grandis*, grows only on poor soil. I saw the small *genus Gievillia*, belonging to this order, with its splendid scarlet flowers and prickly leaves. I observed the peppermint tree, (botanically Metrosideros) but generally on sandy soil. The Melaleuca with its crimson feather was observed in swampy places. The tea tree of the settlers growing to considerable size in wet situations, with white flowers in the proper season, is a species of Melaleuca belonging to *Myrtaceæ*. The Aborigines call the bark of the tea tree, Yumback, and used it for covering their huts, and likewise for broiling fish. At this point of my narrative I may as well throw out a hint for the consideration of London capitalists. There is sufficient timber at Nornalup, to supply a navy of ships, and it can be floated down the rivers, and brought over the bar into the ocean for all available purposes, or if parties choose, worked up inside of the bar.

Fifth.—A fishery on a scale of considerable magnitude, including bay whaling, may be established on these shores.

Sixth.—Perhaps the British government are not exactly aware that upwards of 1 50 sail of American vessels, averaging about 300 tons each, are generally off this coast in the whaling seasons, and are obliged to put in to the harbours of Western Australia for refreshments, consisting of potatos, cabbages, turnips, fruits, &c. What a splendid field is this open for the cultivator of the soil? I am sorry to say that no British South-sea whaler has yet appeared, and that the Americans are carrying away the riches of the deep to their own country. The Tuscalooga, American whaler, was ordered out of Two-people Bay, by the Herald, sloop-of-war, some years ago; but at this moment she is riding in Princess Royal Harbour, preparing to go to the sperm whale grounds, and afterwards, in the winter months to one or other of our bays, where there is no government station. Another American whaler alongside of her called, I understand, the John and Elizabeth, is to adopt the same course, and to be piloted into a British bay by a British subject, for the avowed purpose of whaling.

Additional remarks, suggested on further reflection.—I left the large river on my pedestrian excursion it was coming from the north and north-west pouring its fresh waters over a very broad ledge of rocks forming the bed of the river, but from bank to bank about 120 feet wide, distance between ten and fifteen miles up from the place where the strewn timber checked boat navigation.

When in deep thought on the banks of this tremendous ravine, and looking down on the ledge of rocks, over which the water was pouring itself in small cascades, it struck me, that during the rainy season it must be a deep fresh-water river of considerable magnitude, its stream flowing with great velocity; but was obliged to leave the interesting scene, when, perhaps, on the verge of discovering fine sheep pasture further up.

Its source is to me a mystery, but if I may hazard a different opinion, it is not the Beaufort or Belgarrup Rivers, neither is it the Gordon, all these rivers being in the interior of the country mere pools of water scattered up and down the face of the land, alternately salt, and in other places comparatively fresh, but decidedly not the delicious fresh water of this fine river. I have crossed and recrossed the Belgarrup and Gordon rivers during the height of the winter season, but never saw them running, and on the Gordon pools the rains seemed to make no impression, I mean in expanding their size.

Nautical Rambles.—The Leeward Station during the War.

Port Royal and its Associations.

(Continued from p. 468.)

After this brief notice of the great city of the West, I will take my leave of it, and carry the reader's attention with us whilst we make the passage down to Port Royal.

Having been on a few days' visit to the family of a brother officer, I rose early to return to my ship, before the sea-breeze should set in. At

the market wharf I luckily fell in with an old Scottish mid, also bound for Port Royal, with whom I was acquainted. I found this landing place, even at so early an hour, crowded with men-of-war's men, waiting for their supplies of fresh beef and vegetables.

The middies were fully employed with the spruce bottles, and the Jew butchers, fat and greasy as a well-fed padre, in slaughtering turtle, some of which were of enormous size.

At the end of the wharf we found a lieutenant, (the noted "Jackey Buddle,") amusing himself by throwing into the water silver fivepenny pieces, which a black diver went down after in about three fathoms and a half and recovered before they reached the bottom. I remarked that the negro was a most expert diver. "By Jove! he is: he dives like a fish; I wish I had such a fellow on board of the 'Ballahou,' to examine the crab pots without the trouble of hauling them up," quickly replied the lieutenant. "I take it jack-shark would soon make crab-meat of him;" said I. "Not a bit of it, he does not like the scent of a black fellow. At Providence you may often see the conch-divers and the sharks swimming not far from one another. And it was only last week, when this very same Mungo was playing his aquatic pranks that, a lad fell overboard from the 'Augustus Cæsar,' (pointing to a large West Indiaman,) and was snapped up in an instant. All that was seen after the poor boy sank was, the tail of an enormous shark as he descended with his victim!" Shuddering at this recital, my friend Duncan and myself stepped into a canoe, shoved off, and with a light spritsail stole away through the tranquil fluid, under the pressure of a cool land wind.

The day had just began to dawn, and the eastern sky was diffused with a faint golden tint. The mountains sweeping round by the extensive city like an amphitheatre from the east, round by the north to the west, had their summits veiled; and immediately below lay horizontal lines of the stratus cloud. Over all the level lands a thick white vapour was spread out like an extensive bleaching ground covered with linen; whilst, generally, the middle space of the elevated lands was free from this vesture of Nature's manufactory, its dark shade of blue contrasting finely with the fleecy and pure whiteness of the exhalations below, and the vapoury snow-like canopy above.

The scene just developing from the obscurity of night, had riveted my attention; and as I sat musing, my northern friend seized my arm and exclaimed; "Weel, Jock, my mon, what a' ye kennin' sa steadily!" "I was admiring the strangeness of the scene spread out before us, and fancying as the vapour rises that it looks like an emblem of Time, gradually revealing the hidden things of the future." "Ah! by Saint Andrew, its a bewitchful sight; one can a'maist fancy one's-sel' under the verge of Coul-More and Coul-Beg, those cluids look sa much like sna'; and there too lies the calm blue-waters of dear Loch Broom:" pointing to the unruffled surface of the Sound. I looked upon the weather-beaten countenance of the old mid, with a degree of surprise, for it was not often I had seen it so animated; yet, there was a melancholy expression about it that claimed sympathy. I saw in an instant that his mind's eye was gazing down that long vista of remembrance which conjures up images of the past, with the associations of early days. To

divert his thoughts, I replied: "But we are too warm below, old boy to admit of such a deception." "Hoot awa' wi' ye; that may be a true in 'th abstract mon. I need na tell ye aboot sic things as waking dreams; ye ken tha' the imagination will sometimes wander awa' fra the locality, and cheat belief. What then becomes, mon, o' th' sensations of the body?

"'Ah! dear to me thy craggy peak and mossy dell,
Thy heather's bloom, thy torrents roar;
Ah! who is he tha' cou'd na love thy mountain fell,
Thou dear and bonnie bright Coul-More?'"

Poor Duncan could essay no more. Remembrance, like a great boulder of his own mountain glen, had choked up the outlet of communication. Utterance was effectually stopped, and the pearl drop which stood in his mild grey "e'e," showed how much the current of his thoughts had been suddenly thrown back upon the source of his feelings.

A wherry, opportunely, at this moment dashed past us, designedly too close, taking the wind out of our sail, and nearly upsetting our "frail bark," and the obstreperous huzzas of the boatmen completely broke up old Duncan's felicitous train of ideas, and sobered his mind to the reality. A *civil* growl followed as a matter of course.

I leaned over the side to take a glance at the early voyagers. The boat was full, principally with "soger officers;" a young mid sat astride of the stem-piece, with a leg dangling on either side; whilst two others were coiled up in the fore-sheets; old good-natured Paz, (very like the author of the "Amenities of Literature,") the Port Royal royal jew, and a handsome young dignity-lady, made up the remainder of the live freight. The "lobsters," each puffing a cigar, had their arms crossed, sitting at ease, one and all with their legs stretched out at full length. Old Paz was nodding, essaying, no doubt, for a few brief moments, if that were possible in such fiery society, to beguile his thoughts from the everlasting "shent per shent." And, the nankeen damsel was laughing heartily at some joke which the red-coated wag that sat next to her, was amusing her with; her beautiful white "head-rails," being conspicuously displayed.

Another, and another of these fine vessels came sliding through the mirror-like dark bosom of the Sound, similarly freighted. Lastly came a solitary canoe, with a *Post**-Captain, seemingly in deep meditation, sitting bolt upright, with his hands resting upon his regulation-sword, which he had placed vertically between his knees. As he drew abreast of us, we ordered the canoe-man to brail up the sail, and lifted our hats as a homage due to rank, which compliment the captain very methodically and gracefully returned. When his canoe had shot ahead, our sheet was hauled aft, and we followed in his wake. The beautiful frigate he commanded lay in the distance:—

* What was the origin of this monosyllable prefixed to the military title, and which is now discontinued? We may imagine the Master and Commander may have formerly navigated the ship, before the appointment to the distinct office of Master took place; but the reason for the former affix we are unable to explain.

"Who would not brave the battle fire, the wreck,
To move the monarch of her peopled deck."

Thus said Lord Byron, and thus many more, not poetic, have said in plain prose. The station assuredly is one to be prized, but is it one of unqualified happiness? The responsibility of the captain of a ship-of-war is great, beyond the conception of the mere shore-going man, embracing such multifarious and grave duties as to require qualities of no ordinary kind, to meet and deal with these, as they should be met and dealt with. It is a curious mode of life. A vast portion of the time which a captain commands is passed in solitary grandeur,—a hermit in his cell could not be more wrapped up in his silent, solemn, and meditative thoughts, than this "monarch" of the state-cabin. He is thrown, in a great measure, if not entirely, upon his own resources; if he is a reading man he may maintain some degree of happiness;* if not, pitiable indeed must be his lot, though embellished with the glories of station. The deck it is true offers some brief intervals of relief, but even here, the constrained, unnatural reserve he unconsciously, no, imperceptibly imbibes from the attainment of the *first* commission, augmenting in stringency as each successive rise in rank follows, until, in spite of himself, he becomes the unit of numbers; stern, inflexible, and imperious as an autocrat. Good Heavens! is this a state to be envied! Where is the beneficent spirit beaming from the eyes, those kindly feelings, the better feelings of our nature, those delightful sensations that swell the heart at the very thought of ministering to the happiness of those around us, where are these? Custom forbids their use! ah! ambition! what pangs to the sensitive heart do thy desires not entail!

If any man deserves well of his country, it is the Naval Captain. Only think of what he endures. The iron feelings which professional necessity (!) seems to imbue him, and which custom exacts with an unflinching severity is the "seal of his office." The nice unfluctuating rules of etiquette may be borne—these have a support in self-love; but the *anchor*-ite life a man of feeling and sociable nature is constrained to lead: the "iron mask" sort of existence cut out for him, must be a trial indeed, which nothing but patriotism and ambition commingled could possibly reconcile, and a forced habit endure. But, the evil does not cease with the supercession of command. The force of habit has stamped the manners. To the shore the captain carries with him the elements, aye, more than these, the hauteur of demeanour. Again, uneasiness depresses his spirits at finding his accustomed loneliness outraged when dropping at once into the busy meddling multitude of of society; there he finds "exclusiveness" can get no footing, he is "only a captain!"† The "potentate" attributes he disrobes himself of on the water, but the pressure still lingers, and makes all miserable for a time; but time, which mellows all our afflictions and affections does in a measure reverse and settle down these matters to a level with the ordinary condition of a shore life. This is a true picture drawn

* Nunquam minus solus, &c. "Never less alone than when alone."

† This is the expression of the shore-folk, and it seems to arise from the natural, but erroneous idea that the Captain of the Navy, and the Captain of the Army, are of the same rank. The captains of the Navy lie under a disadvantage in this respect.

from life; and I think that it will be subscribed to by all, that the high station of the captain of a man-of-war is not one of a "bed of roses."

When abreast of Greenwich, so conspicuous from its lines of tall cocoa-nut trees "waving on high their plumes of green," broad daylight had opened the extensive and beautiful panorama to our view. The important event, "another day has succeeded to the past," was announced to the little world around by the heavy report of the morning gun from the admiral's ship. As the flash crossed my eyes I involuntarily turned my sight to where the volume of smoke was unrolling its cloudy veil over the blue waters. The effect was very interesting, now hiding from, now opening to, the view, in succession, the different vessels which lay in the line of its progression, until, as it rose, it became undistinguishable from the clouds that reposed motionless above, brightened with the golden tints reflected from the beams of the rising sun.

The revellie, the spirit-enlivening orison came booming over the water, "like the faint exquisite music of a dream," then in full cadence, and anon so weak as scarcely to be heard.*

There was still a gloom hanging over the long line of houses in Kingston, occasioned, probably, by the over-shadowing ridge of high land aback of it. A forest of masts, however, was distinguishable; and a multitude of small white sails were seen just emerging from the shade. The white fleecy clouds which had shrouded the tops of the mountains, and the lines of stratas stretching horizontally along the slopes, had now disappeared; but the vapour, or exhalation spread over the low lands, though less intensely white and impervious, still held its place. The good folks of Port Royal town seemed to be enjoying their slumbers undisturbed, as, with the exception of the wherry and canoe men, I saw no evidence of animation; not so with the tars, the dissonant grating sound of the holy-stone, and the splashing of water, told that the busy round of daily toil had commenced.

We have now conducted the reader with us on the short voyage from the great emporium of commerce of the island, to the grand port of rendezvous for the ships-of-war which afford it protection. The whole scenery in the full bright light of day, when every object is distinctly visible, is most interesting to the sight. There is every feature, whether natural or artificial which can add richness and harmony to an extensive prospect; and when viewed under the influence of a refreshing sea-breeze, it is scarcely to be surpassed in the sensations of delight and pleasing emotions it kindles, by any other local scene in the charming island. I will now turn my attention to other matters embraced in the "associations of Port Royal."

I believe the majority of officers were better pleased when visiting any other harbour of the island than Port Royal, there being little society there; and the duties of refitment in such a warm climate not very agreeable, especially to the new-comer.

* The phenomenon of sound is an extremely curious one. Are we to attribute the variation alluded to, solely to the vibratory motion of the air; the sound, like a vessel on a billowy sea, being hid, as it were, from the ear, as the aerial wave rises or is depressed?

Among the customary duties of the port which were not conducive to health was that of rowing guard at night. It is well known that, in tropical climates, when there is an unclouded sky, the dew is very copious, so much so, at times, to saturate the clothes; and that the quality of the land-wind is deleterious. It is not improbable, therefore, that exposure to the one and the other, assisted to lay the foundation of the fevers which afflicted the ships' crews. There was, however, no remedy, the duty was indispensible, principally for the prevention of desertion, and of the escape of the prisoners of war from the hulks lying off Augusta forts, and at a short distance only from the main shore. It is obvious, however, that opportunities for the latter must necessarily have been frequent, whether taken advantage of or not, in as far as the presence of the guard-boat was concerned, as she, of course, could not be in all places within the area of a couple of miles, or so, at the same moment. Indeed, it was apparent to the officers that the mere practice of rowing round the harbour and the ships, was of itself quite inefficacious for the desired purpose; as, in fact, by dividing the attention of the guard-officer between the two sets of objects—the men-of-war and the prison-ships—was, to neutralize the good effect that would, perhaps, have followed had his duty been confined to the one or the other. The soldiers might have more effectually performed the duty themselves, if the vigilance of the guards or sentinels on board was insufficient to prevent the prisoners from escaping, by forming a cordon of boats around the hulks. Occasionally some of the more enterprising of the Frenchmen did effect their escape in defiance of all precautions; but the most remarkable was that of Capt. Love, already mentioned, who in the year 1794, also escaped from a frigate which conveyed him to England to be tried, the very same night she anchored in Plymouth Sound!

It is probale that, the guard-boats prevented desertion in some measure, but not commensurate to expectation, as many seamen, generally several at a time, found the means for evading detection and effecting their purpose, an enterprise at this place difficult of execution. The cause that could impel men to risk their lives where the hazard was extreme, must have been powerfully operative.

The unconquerable dislike which a vast number, if not the majority of the men entertained of the public service, may be gathered from the extraordinary risks run, and the total disregard of the severe punishment which awaited them if detected. The subject is one of grave importance, and should be handled without reserve, that the cause, or causes may be arrived at. The elucidation is of vital importance to the nation, in order that, if any remedy be still left unapplied it should be tried before another war breaks out; for, although by extreme and incessant vigilance aided by coercive measures, which to every officer of proper feeling must have been very distasteful, we managed to pass through a lengthened war with eclât; yet it is most desirable that, on any future occasion, our seamen, whom it is both policy and humanity to protect and encourage in every possible way, should be weaned into a contrary feeling, and be induced to consider the public service in a very different light to that which they did in the late war.

Looking back to the service at the period alluded to, it cannot now

be wondered at that desertions were so frequent, and that the men, especially those but recently impressed, would run any hazard to escape from a life to them far infinitely more irksome and spirit breaking than slavery ever was to the negroes. The horrid confinement alone, for an *indefinite* period of years, in most cases the best time of the individual's life, was sufficient to render the mind desperate; and nothing could show the sterling character of the British seaman, more conspicuously, than the patience with which this most tryiug restraint was endured by thousands, and this without expectation of future reward, if we except the harbourage at Greenwich. Of all the meliorating acts of the authorities at the conclusion of the war, not one did them more honor than the pensions allowed to the seamen; and it must have been received by them with double satisfaction, as being unexpected.

The circumstances of which I speak having long since passed away, and are inoperative during a peace; but may again be renewed in a war. I may revert to them with the hope of being able to show that they were real evils, and that they ought not to be allowed to occur in their strict severity at any future period. I am quite convinced that the principal, if not the only causes of desertion from the navy, and other violent breaches of military law, may be traced to the indefinite period of the seaman's service, to the rigid confinement on shipboard, which clearly displayed a want of confidence in his fidelity and honour as a patriot, and to the brutal system of "starting."

It is not absolutely necessary that I should narrate the facts, which I have witnessed to prove this, the recollection would be sickening to the heart, but I may state with a view to throw some light upon the important subject that, in one ship we served in, starting and corporal punishment were carried to the *ne plus ultra* of severity; not from violence of temper, or badness of heart, but from the blind pursuit of a corrupt system, aided by a want of knowledge of human nature. I will give here a fact which is worthy of serious attention:—In this extremely severe ship, the boats were often designedly sent on duty without an officer; the first lieutenant merely remarking to the coxswain that, he should look to him for the good conduct of the men, the confidence was not misplaced, as no fault was ever found with their conduct; but when midshipmen have commanded the boats, with the same crews, some of the men have deserted, whilst others contrived to get intoxicated.

I have heard of some experienced and humane captains who, with a degree of moral courage truly admirable, have, during the height of the war, when favourable opportunities presented themselves, allowed a portion of their ships' crews leave to go on shore; and, contrary to the expectation of others, were justified in this conduct by the general honour and fidelity of the men they trusted. In the established conduct pursued towards the seamen of the fleet during the long period of twenty years, most erroneous ideas prevailed respecting the proper mode of ensuring discipline and obedience to command; and it is truly wonderful, when we reflect, on the unmitigated severity exercised, that, success should have attended us throughout. This success, however, was not the fruit of coercion; it arose and became dominant from moral causes, which the rigid system had no power to subdue. And, it will be a lasting memorial of the worth of the noble spirits who rose superior to

their mental and bodily sufferings, to perform, even "to the death," their duty to their country. The pages of history can no where show instances of greater moral and physical excellence.

These reflections lead to the consideration of another subject, which is of vital importance to the nation—impressment. The right of exercising this power has been often questioned upon the assumption of its being unconstitutional, and an invasion of the liberty of the subject. If it be an undoubted point that, every able-bodied male is under an obligation to defend his country from foreign foe, and such does appear to be the natural duty of a subject, is it equally clear that, as a seaman, he is also, bound to go to any part of the world to fight aggressive battles in her behalf? *

The authority for the unlimited exercise of the power seems to be obscure; it has, I believe, been considered a consuetudinary law, or such as have come into use without the direct sanction of the legislature; at least, as much may be gathered from an expression of the great Lord Chatham.

I do not know whether the sages of the law, of the present day are of the same opinion, for lawyers, like doctors sometimes disagree. If we admit that subtility of phrase, the utter disuse of punctuation, tautology, and the avowed practice of fiction, are calculated to puzzle the brain, then we may not feel surprised at the opposite conclusions arrived at by these learned gentlemen.

At all events impressment has been exercised rigorously, undoubtedly more from necessity than choice, or, probably, from any opinion of its justness; but, the power, arbitrary as it may appear, is of too vital an importance to be negligently yielded; every effort, however, is being used to render its application unnecessary in a future war.

The condition of the seaman has been considered in every possible way conducive to his comfort, as a mean whereby to remove the undisguised dislike which that valuable class entertained towards the public service during the late war.

Unquestionably such a measure is both wise and humane, and it has to a certain extent justified expectation, but it still hangs on too frail a tenure to be alone relied on should a war suddenly break out; something further seems necessary for its completion; and, I shall endeavour to show in the sequel, what that something is, in the mean time I may make one or two remarks, and submit a suggestion.

The system of pension is a mode of reward much prized. We know what a magnet the boon is to the sea-faring man; indeed, how could it be otherwise; a provision for old age is a very comfortable reflection, provided no difficulties are thrown in the way of obtaining it. Every man who is desirous of serving out his time should be allowed to do so, in some way or other. Many who wanted only a few years to complete their period of service were rejected as being too old. This was both unwise and unjust. Some of the very best seamen on board of our

* The question is one we cannot pretend to answer; it would, perhaps, puzzle the lawyer. The case of the Militia-man is not a parallel one, he is under compact.

["There is now not the slightest difficulty in procuring men for the navy."—*Shipping Gazette.* We have copied the foregoing from a paper before us.—Ed.]

ships during the war were 50 years of age, and upwards; besides, those seamen whose activity is on the wane, may be very usefully employed in the guard ships, harbour vessels, and as riggers. Allowing the men to retain their pensions is a just act, which is creditable to those who rectified the grievance, for such it assuredly was.

A law making it imperative on all sea-faring persons, excepting master-mariners, the three classes of mates, and the apprentices, to serve a given number of years in the Royal Navy, would assist greatly in doing away with the necessity of impressment. The men should be entitled to their discharge at the expiration of the time of servitude, or as soon after as the nature of the service on which they are employed will admit, unless desirous of re-entering to serve out the remainder of their time for obtaining a pension. In all cases each man should be provided with a printed certificate. And, in counting the time for pension, those who have served in the East or West Indies, or who may have been severely wounded in action, or, maimed by accident, or whose constitutions have been broken from disease contracted whilst serving, should be allowed an additional year for every three served. This liberality would not be thrown away. Exertion will always prove energetic in proportion to the means adopted to reward it; and encouragement to a faithful discharge of duty is far more efficacious in binding men to a service of peril and privation, than all the rigorous measures that could be adopted to ensure it.

In any urgent case, in the event of war, when men are required to fit out ships expeditiously, the Treasury purse-strings must be loosened; and why should not seamen be offered bounty-money to volunteer as well as the soldiers? In such a case many hands would come forward, knowing as they must, how much the condition of the man-of-war's man has been improved.

Under such regulations it may be presumed that the fleet, in all probability, would obtain the required number of seamen, without resorting, but in a slight degree, to impressment; and not the least useful part of such a system would be, the relief from anxiety and risk afforded to those who, having served their allotted time, sail in merchant vessels, free from seizure, and detention for an indefinite period of years.

But, I have long thought, and see no reason now to alter the opinion, that, we have not hitherto paid that attention to the rearing of seamen exclusively, in the first place, for the public service, which the nature of our situation, as an insular empire, imperatively demands.

We have no National Marine Schools. Of what avail is the lamentation of a want of seamen for the fleet, if we will not go the right way to work to ensure a sufficient supply? What we want is a source which will, like a perennial spring, throw out a quantity equal to the demand; and there is no public measure which calls for immediate and careful attention more than this. Our very existence as an independent nation is mainly guaranteed by the perfection, as well as the numerical force of our fleet; and unless we can at all times command a sufficiency of practical seamen to man that fleet, we should be in the situation of the giant with his arms pinioned. Our other sea-defences would aid us but little in arresting invasion. The establishing Marine Schools in the principal sea-ports of the United Kingdom, with a ship fully equipped

attached to each, for the reception of boys to be professionally educated, and to receive moral and religious culture, is of the first importance to this nation; and unless attended to, it is not probable that we shall ever be enabled to man the fleet, in war, without having recourse to impressment. Independent of the abstract benefit of having lads properly brought up and instructed, to fill the useful station of A.B., &c.; there are others which would flow from it. Voluntary servitude is at all times most desirable; and, the fact cannot have escaped observation that the majority, if not nearly the whole of the *deserters* from the fleet, were *impressed* men, who had been brought up in the merchant service, and looked upon a man-of-war as a "perfect hell" upon water. What a consoling fact, that this painful impression no longer exists, to the extent at least, that it did during the war.

There were very many men who had in a great degree become reconciled to the service; and those who had grown up to manhood in the navy, became from long habit, if not entirely easy in their stations, to a considerable extent attached to the profession; their feelings were less excited by the rigid confinement, or their hopes destroyed by the protracted length of the period of servitude. In whatever trade, profession, or place, a person has been brought up, he becomes, in almost all cases, attached insensibly to it; habit has been termed "second nature," and so it may very well be considered in the practice of most things.

The expense of such establishments, if based on a liberal plan, would no doubt be considerable; but the benefit to be expected from them would be much more than equivalent to the outlay and annual expense. Economy, indeed, is proper every where, by which we mean the rejection of disbursements for things not absolutely necessary, or such as may be dispensed with without detriment to the state; but, in every thing which concerns the navy, cost should not be made a bar to improvement, or perfection, as far as that can be attained. If we are to look to our ships—our "wooden-walls," and our "tars" for protection, that protection must not only be paid for liberally, but every project which it is certain will advance the prosperity and excellency of the service, must be met and upheld with an unsparing purse. This is a palpable truth that requires no logic for its support. But is it followed? To a very great extent it is, the same energy and decision which advanced the small item of twenty millions of pounds, for the emancipation of the black slaves, if exerted for the establishment of Marine Schools, by the appropriation of a mere fractional part of the abovenamed sum, would complete a work at least of as paramount importance to the country's weal as the other.

(To be continued.)

Notices of Japan.—No VII.

(Continued from p. 482.)

Since the year 1822, it appears that the Japanese government has taken compassion upon the Dutch deputation, and given them an additional day in which to go through their visiting labours. Siebold, who

performed the same journey four years later, says, that only the five state councillors of the first class were visited by his party on the day of audience, the eight of the second class on the following day; and the visits described by Fischer, in his attendance upon president Blomhoff, as paid on the second day, were then deferred to a third.

The day dedicated to the continuance and termination of this round of complimentary visits was even in 1822 less fatiguing than the first, and the energies of the visiters were supported through it by more substantial hospitality. Four dignitaries only are named as visiters—to wit, the two "temple lords," as the Dutch designate the ministers to whom the department of religion is committed, and the two governors of Yedo, who respectively take charge of the eastern and western halves of the capital, and they entertain their guests, whom only the Yedo governors receive in person, with a hot meal and saké. Doeff makes no mention of the governor of Nagasaki (who could not be burnt out every time,) in his lists of visits; but Fischer explicitly says, "The governor of Nagasaki did not receive us, probably, because he is very plainly lodged here, and, among such numbers of grandees, wished to conceal his mean estate from us. In fact, in the imperial palace, we saw the same man, who held himself so high at Nagasaki, trotting about like a servant."

For the few days that the Dutch remain at Yedo after the audience, the physicians and astronomers visit them openly; but how many of their other acquaintance come thus omote-muki, as the Japanese call the opposite of their naïbon, is nowhere stated; it only appears that the visits of princes and of ladies continue invariably of the latter class.

More than three or four days are seldom suffered to elapse, after the first compliment and tribute-paying audience, ere the Dutch deputation is summoned to an audience of dismissal. The ceremonial of this audience is said to be precisely the same as that of the former; but it is far less honorable, inasmuch as the siogoun does not accept the kotow* of the opperhoofd in person. The state councillors only receive him in the hall of a hundred mats, where the governor of Nagasaki reads to him the same proclamation that he annually hears read at Nagasaki, as already mentioned. After these commands have been communicated, the Dutch president retires for a short time, and on his return to the hall receives the siogoun's present, consisting of thirty robes of state; he withdraws again and again returns to receive twenty from the crown-prince. He then goes home, where, in the afternoon, the secretaries of the state, councillors, temple lords, governors of Yedo, and commissioners of strangers, bring him their masters' leave-taking compliments, thanks for the presents received, and return presents, consisting likewise of silk robes, but inferior in quality to those given by the siogoun and his heir, and wadded only with cotton. Each bearer of these gifts receives a present of sweetmeats, a paper of Dutch tobacco, and two gilt pipes.

This is the whole of the ceremonial now practiced at the court of Yedo, in the reception of foreigners, as given by writers of the present

* The mode of paying the compliment in Japan differs from the Chinese kotow, in being a simple kneeling with the hand near or upon the ground, and no knocking at all; this is the highest mode of paying a compliment, and of course paid only to the highest personages, and to deities.

century. It differs not much from the forms described by Kæmpfer, as observed nearly 150 years ago; but the modern relations want the second part of the former. A comparison of the two accounts, including this second part, which seems to be now obsolete, can hardly be uninteresting. Kæmpfer, though admitted to the imperial presence, was like his successors, excluded from the tribute-presenting audience, his description of which agrees with Fischer's. Still, as the quaint and somewhat prolix old German physician is both more explicit and more graphic, the extract about to be taken from his book may as well begin with this audience.

"As soon as the resident entered the hall of audience, they cried out, 'Horanda Capitan!' which was the signal for him to draw near and make his obeisances. Accordingly, he crawled on his hands and knees to a place shown him, between the presents ranged in due order on one side, and the place where the emperor sat on the other; and there, kneeling, he bowed his forehead quite down to the ground, and so crawled backwards like a crab, without uttering a single word. So mean and short a thing is the audience we have of this mighty monarch. Nor are there any more ceremonies observed in the audience he gives, even to the greatest and most powerful princes of the empire; for having been called into the hall, their names are cried out aloud, then they move on their hands and feet, humbly and silently towards the emperor's seat, and having shown their submission, by bowing their forehead down to the ground, they creep back again in the same submissive posture. The hall is not well lighted, and it is no easy matter to see him. Besides that the audience is too short, and the person admitted to it, in so humble and submissive a posture, that he cannot well have an opportunity to hold up his head, and view him. This ceremony is otherwise very awful and majestic, by reason chiefly of the silent presence of all the councillors of state, as also of many princes, gentlemen of the bed-chamber, and other officers who line the hall of audience, sitting in order, and clad in garments of ceremony. In the second audience, seemingly an extra audience, for the diversion of the ladies of the court, and immediately following the first, the emperor, and the ladies invited to it, attend behind screens and lattices, but the councillors of state, and other officers of the court, sit in the open rooms, in their usual and elegant order. As soon as the captain had paid his homage, the emperor retired to his apartment, and not long afterwards we three Dutchmen were likewise called up, and conducted through galleries, &c."

But it is hard for modern patience to extract the circumstantial detail; and we proceed *per saltum* to the more private audience-hall, where every one, Dutch and Japanese, is at length arranged in his proper place; Bengo, the emperor's favorite and prime minister, sitting on a raised mat, between them and the emperor.

"After the usual obeisances made, (bowing and creeping towards the lattice,* behind which, sat his majesty,) Bengo bade us welcome in the

* These lattices Kæmpfer says, are made of reeds, split very thin, and covered with a fine transparent silk within, with openings about a span broad for persons to look through. They are adorned with figures the better to hide the persons standing behind. They are also, sometimes at least, made of ornamented paper.

emperor's name; the chief interpreter received the compliment from Bengo's mouth, and repeated it to us. Upon this, the ambassador made his compliment in the name of his masters. This the chief interpreter repeated in Japanese, having protrated himself quite to the ground, and speaking loud enough to be heard by the emperor. The emperor's answer was again received by Bengo, who delivered it to the chief interpreter, and he to us. The mutual compliments over, the succeeding part of the solemnity turned to a perfect farce. We were asked a thousand ridiculous and impertinent questions. Thus, for instance, he desired to know, in the first place, how old each of us was, and what was his name? Which we were commanded to write on a bit of paper, having, for this purpose, taken a European ink-horn along with us. This paper, together with the ink-horn itself, we were commanded to give to Bengo, who delivered them both into the emperor's hands, reaching them over, below the lattice. The captain, or ambassador, was asked concerning the distance of Holland from Batavia, and of Batavia from Nagasaki? Which of the two was the most powerful, the director-general of the Dutch East India Company at Batavia, or the prince of Holland?

"The following questions were put to me:—What external and internal distempers I thought the most dangerous and the most difficult to cure? How I proceeded in the cure of cancerous humours and imposthumations of the inner parts? Whether our European physicians did not search after some medicine to render people immortal, as the Chinese physicians had done many hundred years? Whether we had made any considerable progress in this search, and which was the remedy most conducive to long life that had been found out in Europe? The name (of a medicine) was minuted down behind the lattices, for which purpose I was commanded to repeat it several times. They asked whether I could make it up? Upon this, our resident whispered me to say, 'No;' but I answered 'Yes, I could make it up, but not here.' Then it was asked whether it could be had at Batavia? And having answered that it was to be had there, the emperor desired that it should be sent over by the next ships.

"The emperor, who had hitherto sat among the ladies, almost opposite to us, at a considerable distance, did now draw near, and seat himself down on our right, behind the lattices, as near us as he possibly could. Then he ordered us to take off our kappa, or cloak, being our garment of ceremony; then to stand upright, that he might have a full view of us; again, to walk, to stand still, to compliment each other, to dance, to jump, to play the drunkard, to speak broken Japanese, to read Dutch, to paint, to sing, to put our cloaks on and off. We obeyed the emperor's commands in the best manner we could, and I joined to my dance a love-song in high Dutch.

"In this manner, and with innumerable such other apish tricks, we must suffer ourselves to contribute to the emperor's and the court's diversion. The ambassador, however, is free from these and the like commands, for as he represents the authority of his masters, some care is taken that nothing should be done to injure, or prejudice the same. Having been thus exercised for about two hours, though with great apparent civility, some servants, shaved, came in, and put before each of

us a small table with Japanese victuals, and a couple of ivory sticks, instead of knives and forks. We ate some little things, and our old chief interpreter, though scarce able to walk, was commanded to carry away the remainder for himself. We were then ordered to put on our cloaks, and take our leave."

This is assuredly a curious scene in the annals of diplomacy; but the reader, who considers how completely in the dark the Yedo government must have been relative to European states, and their colonial dependencies, will, probably, not think the siogoun's political questions so very impertinent. The medical interrogatory has been shortened, by omitting the physician's evasions, conquered by imperial pertinacity.

But we must not quit Yedo without adverting to a fancy, entertained by most students of Dutch there, and, indeed, by many friends of the strangers for receiving a Dutch name from their European visiters. This whim appears to have begun with a man who, in honour of his few words of broken Dutch, had persuaded an opperhoofd of the last century to new-name him, and gloried in the appellation of Adrian Pauw; and it was followed up at Dezima by an under interpreter obtaining the name of Abraham. The bearers of these two Dutch names became objects of envy to such of their countrymen as cultivated the acquaintance of the foreigners, and the natural consequence was, that Doeff received at Yedo divers petitions for names; amongst others, one from the learned astronomer, Takahaso Sampei, who was appointed commissioner of inquiry in the affair of the Russian Golownin, and another from one of the imperial physicians. The worthy president was loth to nickname such respectable men as these, but yielding at length to their importunity, dubbed the former Globius, the second Botanicus; names too mellifluous for Dutch. A son of the siogoun's father-in-law, the prince of Sutzama, and his secretary, were more honestly indulged, the latter with the name of Pieter van der Stulp, his master with that of Frederik Hendrik, the name of one of the early stadtholders.

A somewhat original banquet, given to president Blomhoff by his gobanyosi and his landlord, must not be omitted. Fischer says:—"It was extremely splendid, and no expense was spared in order to display the luxury and etiquette of Yedo. On this occasion, many of those who called themselves friends to the Dutch appeared in Dutch clothes, which, having been gradually collected from olden times, formed a most grotesque whole. By all this, as well as by many prompt services, they gave us the most undubitable marks of friendship and goodwill." Blomhoff and Fischer remained twelve days at Yedo, in such *friendly* intercourse, after the audience of leave, which appears to have been an unusual indulgence.

(To be continued)

The Variation of the Compass.

(Continued from p. 473.)

Royal Observatory, Greenwich, July 14, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Declination for May 1842—23° 11′ 39″.

Mean Magnetic Dip for May 1842.

At 9 A.M.	At 3 P.M.
68° 45′	68° 46′

R. Main, *for Astronomer-Royal.*

Chinese Intelligence.

The following official notification of the success of the British forces has been promulgated by Her Majesty's Plenipotentiary :—

(Circular.)

To Her Britannic Majesty's Subjects in China.

Her Britannic Majesty's Plenipotentiary in China has great pleasure in announcing to Her Majesty's subjects the complete repulse of two bodies of Chinese troops, which attacked the British positions at Ningpo and Chinhae, at daylight on the morning of the 10th of last month.

During the whole of February almost daily intelligence reached the head-quarters of Her Majesty's forces, showing that the Chinese high authorities contemplated some active operations, but they were from time to time deferred on such frivolous pretences, that it appears their Excellencies, the Naval and Military Commanders-in-Chief, have gone over to Chusan to make arrangements at that place preparatory to a forward movement of a portion, at least, of Her Majesty's combined forces.

In this state matters remained until the date and hour above mentioned, when a considerable body of Chinese, estimated at from 10,000 to 12,000 men, advanced upon the south and west gates of Ningpo, got over the walls, and penetrated to the market-place in the centre of the city, where they were met by our troops and instantly driven back with great loss; in fact, it would seem that the moment the Chinese troops found themselves so warmly received, their sole object was to get out of the city as fast as possible; and in their retreat to the south gate, the field guns, drawn by ponies, came up, and opened on the dense mass with grape and canister, at a distance of less than 100 yards. Above 250 dead bodies were found inside the walls, and when the accounts came away Her Majesty's 49th regiment had not returned from the pursuit of the discomfited and flying enemy.

Whilst these operations were progressing on shore, a number of fire-boats (sampans,) lashed together with chains, were floated down the river, and were towed into the mud by the boats of the Sesostris steamer. In the meantime a gun was brought down a lane in the eastern suburb, (across the river,) and as the inhabitants had been previously warned that any such attempt would bring chastisement upon them, Her Majesty's ship Modeste opened her guns, and did great execution in that quarter.

The attack on Chinhae was much more feeble. The enemy advanced to the north gate, where they were driven off by the guard, and followed by one com-

pany (afterwards reinforced by three others) of Her Majesty's 55th regiment, who killed thirty men and two mandarins in the pursuit.

Simultaneously with the attack on the city of Chinhae, fire sampans chained together were set adrift to burn the shipping at the anchorage, but they all went on shore above the ships-of-war and merchant vessels, and did no sort of harm.

Shortly before these repulses occurred, the Nemesis steamer was sent from Chusan to reconnoitre the island of Taisam, where it was understood Chinese troops were collecting with the purpose of attacking Her Majesty's forces at Tinghae. The steamer sent her boats into a creek, where they were fired on, and in consequence Commander Collinson and Lieutenant Hall landed the steam-ship's company, when the Chinese fled with the loss of about thirty killed and a number wounded. The steamer's boats then set fire to a number of junks which had also fired on her, and returned to Chinhae.

Their Excellencies, the Naval and Military Commanders-in-Chief had gone back to Ningpo, and proposed to follow up the repulses the enemy had experienced by active measures.

It affords Her Majesty's Plenipotentiary the highest satisfaction to close the circular by stating that in these attempts of the enemy, Her Majesty's combined forces have not lost a man.

The latest intelligence from the head-quarters of the Chinese army south of the Hangchow river speak of the troops being in almost a state of insubordination, and in want of supplies, &c.

The emperor had ordered, that the provinces which are the seat of the war, should bear the expenses of it; and as the inhabitants seem resolved to make no further sacrifices, there appears every probability of the army dissolving itself, and becoming totally disorganized.

God save the Queen.

HENRY POTTINGER,
Her Majesty's Plenipotentiary

Macao, April 1st, 1842.

We subjoin another notification by his Excellency, from which it appears that the Chinese will be suffered to use their own discretion in fortifying the banks of the river between Whampoa and Canton; but that if they venture to erect new works below the former place, hostilities will be immediately resumed:—

Government-House, Hong-kong, March 22nd, 1842.

GENTLEMEN.—You are aware that some of the Hong merchants lately paid a visit to Macao, and it is probably by this time known to most of you that the object of that visit was, to find out whether the Provincial Government of Canton would be allowed to rebuild the Bogue and other dismantled forts, or to erect new ones on this side of the Whampoa anchorage.

Although I, of course, declined having any sort of intercourse with the Hong merchants, I took advantage of the kindness of a friend to let these individuals know in distinct terms, that orders had been long issued to prevent the repair of the old, or the erection of any new forts lower down than Whampoa, and that the consequence of any attempt of the sort would be the renewal of hostilities in the Canton river; the stoppage of trade, and the consequent distress to the province and city.

I trust this warning will have the desired effect, and that matters will be allowed to go on in their present tranquil course; but I nevertheless think it my duty to acquaint you with what has passed, as well as with my resolution, which has been fully approved and confirmed by the experienced judgment of the senior officer of Her Majesty's navy in the Canton River; and in doing so I would request you individually and collectively to give the earliest possible

notice of any collecting of material, assemblage of workmen, or other apparently defensive (though in reality offensive) preparation that yourselves or your agents may perceive on the river below Whampoa. It is superfluous for me to observe that the safety of the shipping and their crews at the anchorage, imperatively demand every precaution and vigilance, and I feel assured you will cheerfully aid me in the manner I have pointed out.

I am, &c.

To the Mercantile Community of Hong-kong, &c.

HENRY POTTINGER,
Her Majesty's Plenipotentiary

CHINA.—*Canton, Whampoa, and the Canton River.*

THE defences of the river from Whampoa to Canton are now all nearly, and some quite finished, and fully armed; on every spot great activity is apparent, and the practice of great guns and small arms is incessant, day and night.

It is reported in Canton that a ship of about 350 tons has just been launched near the Fate (flower ground) gardens; she is said to be pierced for twenty-six guns; and has been built by some rich individuals, for a present to the government.

One large boat and one or two of smaller size are propelled by paddle-wheels in imitation of our steamers; they are frequently seen exercising both below and above Canton, and they make very good way against both wind and tide; we suppose they are worked by winches, and turned by hand at the bottom of the boat.

At Shameen a large and very strong fort has been built, in which, about thirty-five guns are mounted; they were proved about a fortnight ago. The foundation of a fort on a smaller scale has been laid close by, and nearer the foreign factories. The small fort opposite, on Honam (Rouge fort,) has been thoroughly repaired, as also the old Dutch folly. A new fort of great strength has been erected on the side of the French folly. On the western side of Salt river there is a formidable field-work, flanked by two smaller ones, all completely armed and manned. The river assumes its most formidable appearance at the opening of the Whampoa passage. Junk river is strongly staked throughout its whole breadth, excepting a narrow passage for boats only under the walls of a very extensive fort on the north shore; crates of stones and sand having been sunk between the stakes, the latter are then strongly bound together by branches of trees and iron clamps, the oxide of which metal combining with the sand will soon consolidate the whole into one mass of rock.

The upper part of Whampoa creek is also staked on each side, reserving a passage only of about 40 feet breadth in the centre for chop boats; the tide, being prevented from flowing through the old channel (Junk river), rushes through this slip at a fearful rate, and at times the run of this rapid is very dangerous for chop or ships' boats; the former frequently meet with great difficulty in getting through it. On looking up the river from this point, say from Howqua's folly, you observe on the immediate left a large fort, in which from thirty to forty guns can be mounted. On the side of Napier's folly a circular fort has been erected, and about 400 yards up the northern passage is another of about the same size.

All the embrasures of the fort can be closed at will with thick wooden doors, plated with iron, and the forts have battlements on which gingalls are mounted; some have also a square tower in the centre, on the roof of which four or ten gingalls are also mounted; but, as the men serving these pieces must be completely exposed to the fire of the assailants, it is not likely they will be very obstinately served.

At present there is no appearance of preparation for the erection of any new

works below Whampoa; but it is reported in Canton that the provincial government has been ordered to rebuild the Bogue forts, and that the orders must be obeyed. Materials are probably in course of separation at Fuhskan, and we have now little doubt they will attempt to reline and rebind the Lady's Side, (Anunghoy,) and rebuild the fort on north Wangtung.

The quiet of Canton is likely to be disturbed by an accident which occurred in Whampoa reach on the night of the 9th inst. A well-known Chinese smuggler was approaching one of the opium vessels in a tanka boat, to make a purchase of the drug; he was hailed, but did not answer, and a person on the deck of the English vessel fired his musket and shot him dead on the spot. This much-to-be-lamented and censured proceeding happened just after the boat's crew of the English ship Autumnus had been seized, maltreated, wounded, and carried to Canton.

The officer of the boat had mistaken the channel leading to Canton, and had gone through the Junk river; he was hailed, and fired at, when he immediately turned his boat's head towards the shipping at Whampoa; he was chased by a number of Chinese boats, but still kept ahead of them, and was fast nearing the vessels lying ahead at Whampoa reach, when one of his oars broke, and he was overhauled and captured; the Chinese cut at the unresisting and unarmed crew with their swords, and wounded some of the men and a boy severely. They were taken to Canton, accompanied by a great number of Chinese, and carried before the kwanchowfoo; their captors reported they had come to the spot where they had been hailed with hostile intentions. "Very well," said the kwangchowfoo, "as you have taken the boat, you have, of course, taken their arms; bring them hither." No arms were to be found; the boat was unarmed. The Chinese soldiers then changed their ground of accusation, and said the boat had come to sound the river, and "spy about." "Well," said the kwangchowfoo again, "they could not sound the depth of the river without a lead and line; bring those hither." But none were forthcoming, for neither was on board the boat. The kwangchowfoo, finding the charge was false, and his own people in the wrong, dismissed the Autumnus officer and boat's crew, returning the boat to them at about 11 P.M. the same evening.—*Canton Register*, March 18.

By the departure of Mr. James Matheson from China, (but we are happy to learn that his departure is not final) the British mercantile community have lost one of the ablest, most enlightened, and liberal of their body.

It is not too much to say that the success which has attended the general British trade with China since June 1832, from which period it has been mostly conducted outside of the port of Canton, is principally to be attributed to the firmness, perseverance, skill, and unwearied industry of this gentleman, and therefore James Matheson has performed eminent public services, and has deserved well of his country, in having been the principle means of the large import of tea into England for the last two years and three quarters, and thus having enabled government to collect a great portion of the revenue, which otherwise must have been raised by the imposition of new taxes on the people of the United Kingdom.

Such services as James Matheson has rendered to his country are highly deserving of some mark of public distinction from Her Majesty's government.

Nearly the whole of the English and Parsee residents in Macao attended Mr. Matheson to the water's edge, and his Chinese servants stunned the ears of the assembled multitude with the noise of crackers fired off in festoons. He embarked on board the Honourable Company's armed steamer Ariadne. —Roberts, Esq., I.N., commander, at about half-past ten on last Thursday morning, and was conveyed to the British clipper barque Tartar, Captain Luce, in which vessel he proceeds to Bombay.

His departure is felt as a general loss; he infused a spirit of liberality in the mercantile community, which, we trust, will not languish during his absence.

Mr. Matheson will probably return to China within two years.—*Ibid.*

The following letter from our Ningpo correspondent was received this morning:—

A private of her Majesty's 55th has shot his corporal, and the latter has since died.

A most melancholy occurrence took place on the night of the 18th February. The launch of the Ernaad transport was on shore at a small creek close above Chinghae, filling water-casks. Towards evening the boat grounded, and could not be got off, owing to the fall of the tide. The consequence was, that Mr. Whitaker, the officer in charge, and eleven lascars forming the crew, had to remain with her during the first watch. When dark, two Chinamen and a boy came down to the boat, and by signs intimated that they could procure some "female society" for those who wished for it. Most unfortunately, Mr. W. was tempted to accompany them, and took with him two lascars. As has come out in evidence, the Chinese arranged their plans admirably. Mr. W. went first, followed by a Chinaman carrying a lantern, then a lascar followed by the other Chinaman, then the other lascar, and the boy bringing up the rear. When they had gone a little way the boy disappeared, and his place was supplied by a Chinaman, who made his appearance from some of the houses they had to pass. They all walked on for some distance, nntil they were beyond the village, which is close to the watering-place. The first Chinaman then handed his lantern to Mr. W. as if to enable him to see the path more distinctly, and thus leaving his own hands free; and in answer to an exclamation of poor W. pointed to a house surrounded by trees as the place they were going to. Soon after some signal was given, and about 40 or 50 Chinamen rushed from all sides on their victims.

The lascar, who made his escape, saw Mr. W. holding out his pistol, when he was himself knocked down. He rose again, and in some way or other, he does not know how, made his escape to the boat. As soon as it was light a party was sent ashore from the Blonde to the place where the attack had taken place. Poor W's. body was found in a small lake, without the head, and above thirty wounds on his body. He seems to have fought to the last rather than be taken alive. However, some of the wounds seem to have been inflicted for the purpose of torture, the wrists and knee joints being cut into, and cuts being made between each finger up to the wrist. The other lascar seems also to have been wounded, but from the traces for some distance he has been carried off alive.

The Jacks played the devil amongst the inhabitants of the place where this sad catastrophe occurred; every one they came athwart, up with the butt end and on his head. Thirty Chinese were brought on board the Blonde, and they say eleven have confessed to have a share in the murder. These fellows, of course, should swing. The general has issued a proclamation, that if the mate's head is not produced he will burn the village. The authorities must be here in disguise, as very few people are to be seen, and Bourchier has ordered that no one should go on shore without arms.

Not long back rewards were promised by the Chinese authorities for barbarians, dead or alive; and the above is one of the proofs how little the Chinese are to be trusted, although professing gratitude for the kind manner in which we invariably treat them.

Not long ago a butcher belonging to the 49th Regiment was taking away at Chusan, or at least went in search of a bullock which was missing, and has not since been heard of.

Another party of two or three officers and some men went out to Chusan to procure bullocks. One of them straying from the others was suddenly attacked and knocked down, but was rescued by the approach of the others.

We have heard that Corporal White, who came to Ningpo to intimate that a commissioner (Shoo) would make his appearance to treat, although fed from the general's table, and taken up in a man-of-war's boat, close to Takee, made a report that he had been most cruelly treated and just escaped with his life!

It is said that the only terms about which we will treat at present are the payment of 20,000,000 of dollars, half to be paid before we leave Ningpo; and further, that Sir H. Pottinger is to be received at Pekin.

The Chinese troops seem to be collecting round us, they are said to be in force at You-Yaou-Seikee and Fongehei; there has been also an appearance of some force on the right bank of the Tahseen, not far from Chinghae. There is also a report that soldiers have been embarked at Chapo, to be landed on Chusan; so that, if there is any truth in the above accounts of their movements, the Chinese seem to have a plan of attacking Ningpo, Chinghae, and Chusan, at one time.

Yib-kin, the Emperor's nephew and generalissimo of the Chinese forces, is said to have arrived in the neighbourhood.

The large quantity of mace (the Chinese brass coin) which was found in Ningpo has been embarked on board our ships—rather a bulky medium of exchange, seeing that 1,000 dols. worth weighs about 10 tons.

About 70,000 dols. worth of silver goes round in the Miriam transport to Calcutta.

The Mysore transport is to be discharged soon, and I hear their master has brought a quantity of the sugar seized here, which she intends taking either to the Sydney or English market.

The latest reports state the Chinese forces, in all are not above 40,000.

We are training a number of the stout ponies found at Ningpo to pull the light field pieces: this will be a great assistance when we take the field.

The weather is improving, but not settled fine. Our men keep in very good health.—*Bengal Hnrkara*, May 9.

Captain Warner's Invention.

House of Commons.—Sir C. Napier wished to ask what steps had been taken with regard to Captain Warner's invention. Captain Warner had, he (Sir C. Napier) understood, expressed a desire that Lord Hardwick and Lord Ingestrie should be appointed on the commission to investigate the merits of his invention, and had complained that Sir Byam Martin and Sir Howard Douglas had demanded of him that he should make known all his secrets, without having any guarantee given to him that they would not be divulged. Captain Warner further stated, that Sir George Murray was fully cognizant of what had taken place, and that he (Captain Warner) was desirous of unbosoming himself to the right hon. bart., (a laugh,) and that, after the merits of his invention should have been tested, he would leave the question of compensation entirely in the hands of the right hon. baronet. He also stated, that if a three-decker were placed before him, he could destroy it immediately. He, (Sir C. Napier) therefore, thought that government ought to ascertain whether or not Capt. Warner was a charlatan.

Sir R. Peel, said that, since the last mention of this subject three weeks ago, application had been made by several individuals to have personal interviews with him on the subject of secrets which, they stated, were entitled to the utmost consideration on the part of the state. He did mention that in disparagement of Captain Warner's invention. Shortly after his (Sir R. Peel's) appointment to office he had had an opportunity of seeing the extraordinary effects produced by Captain Warner's invention, and he signified that he was willing,

but only in the regular authorised way, to make experiments with respect to the discovery, that he thought it rested either with the Admiralty, or the Board of Ordnance to judge of the invention; but that he himself was wholly incompetent to form a judgment upon it; that he must submit to the heads of these departments the charge of instituting experiments of the kind. He, therefore, wrote to Sir George Murray, the Master-General of the Ordnance, to request him to name two officers to whom no possible exception could be taken; who had the most professional knowledge, and the greatest practical skill in gunnery, and everything respecting the destruction of human life—(laughter.) He had also stated that he thought it very hard that Captain Warner should be put to any expense in the course of conducting the experiments, and proposed that the expense should be borne by the public. He asked, then, the house, whether or not, knowing the number of similar applications that had been made, he could have taken any better course. The two gentlemen whom Sir George Murray had appointed for the purpose of making the experiments were Sir Howard Douglas and Sir T. Hastings; and he would appeal to any person conversant with those subjects whether more suitable parties could be selected. What he thought right was, that the experiments be taken in the first instance, and let them judge of them afterwards. That was the course which he would assure the hon. and gallant admiral was absolutely necessary. With respect to the danger of human life in conducting these experiments, the Board of Ordnance would take the greatest precaution to guard against it. No experiment would be undertaken that should be attended with danger. That was the course which he had pursued, and he would venture to say there would not be one guinea left in the Treasury if they were to give way to all the suggestions of persons who thought that they had made discoveries, not only in things pertaining to the art of war, but to every other art.

After a few words from Sir C. Napier the subject dropped.

Steam between Liverpool and Halifax.—We lay before our readers from an authentic source a statement of the time occupied in making the passages between Liverpool and Halifax, being all those made by Cunard's successful line since its commencement to the month of June last. The document is a most important one in Steam Navigation, first as not only showing the certainty of a quick communication across the Atlantic at all times of the year, but the average rate at which it may be made. The passage out gives 7·86 miles per hour, while that home influenced by prevailing wind and current gives 9·3 miles.

The mean between these, may be taken as the average speed obtained at sea, or what may be called the *Sea-rate*. In this case the sea-rate is 8·58 miles per hour. It will be seen in our volume for 1837 p. 752 that the sea rates of the Atalanta and Berenice in those comparatively early days of Steam Navigation, varied from 6 to 9½ miles the average of *all given* being 7½ miles. When it is considered that the passages of Cunard's line have all been made across the stormy Atlantic, while those above quoted were, at least two-thirds of them in moderate latitudes, there is every reason to congratulate Mr. Cunard on the result. We shall conclude these remarks with the following extract from a contemporary journal:—

"The passage of the Columbia steamer to England is an era in steam navigation, showing, as it does, that with increased and continued duty, the steamers go on progressively improving, and that so far from the slightest manifestation of less effective management than was observable at the outset, there is a constant infusion of renewing energy, and most vigorous power of execution, in every feature of their conduct and regulation. It is, indeed, most gratifying that the opponents of these enterprises have been utterly disappointed in their prognostications as to a continuation of success; and the friends of extended commercial prospects have equal cause for delight, in

knowing that steam voyages between the countries, if properly supported and encouraged, will not only go on in their career of usefulness, but that in proportion to the increase of support awarded, so also will be their determined spirit of continued energetic success.

"Nothing can exceed the universal feeling of pleasure which has marked this late notable feat of the Columbia home; and when we tell our readers that in eleven and a half days from the time of American papers being printed, the same journals and part of the mails were actually delivered in London, we know they must join in rendering all just praise to that admirable system of efficiency which could bring about such a marvellous consummation. The whole mercantile body of England, and the continent of Europe, were perfectly amazed at so early a delivery of their correspondence; and, although we have now gradually become accustomed to extreme regularity of communication, and to constant and invariably quick steam passages, yet we must confess, that to hear of a vessel crossing the mighty Atlantic Ocean in *nine days and a half*, does, certainly, give rise to ideas that some super-mundane sort of influence must be brought to bear, in order to preserve such a rate of speed. Perhaps the most remarkable, and certainly not the least desirable, point in the matter, is the perfect order and effective strength which the steamers show on the termination of their passages. The machinery is always in a most perfect and complete state, no straining or appearance of overworking; everything seems to go on with precision and exactness; and the framework of these noble monuments of marine architecture, are now serving as models of excellence to all parties interested in the erection of steam vessels. When the Columbia arrived, after her recent passage of nine days and a half, she was in the most perfect condition, and the most scrutinising eye could not observe but that she was entering upon an outward passage, rather than just returned after perfecting the greatest feat of speed ever recorded."

Passages to and from Liverpool and Halifax of the British and North American Royal Mail Steam Ships, from July 4th, 1840, to June 4th, 1842.

Ships' Names.	No. Voy.	Sailed from Liverpool	Passage Out.		Passage Home.		Ships' Names.	No. Voy.	Sailed from Liverpool	Passage Out.		Passage Home.	
1840.			d.	h.	d.	h.	1841.			d.	h.	d.	h.
Britannia	1	July 4	12	10	10	0	Acadia	6	July 20	10	22	9	21
Acadia	1	August 4	11	4	11	0	Columbia	4	August 4	12	23	11	1
Britannia	2	Sept. 4	11	11	11	3	Britannia	7	Aug. 19	11	20	11	23
Caledonia	1	Sept. 19	12	9	10	22	Caledonia	6	Sept. 4	11	19	10	21
Acadia	2	Oct. 4	11	5	12	4	Acadia	7	Sept. 19	13	11	11	3
Britannia	3	Oct. 20	11	23	11	7	Columbia	5	Oct. 5	13	19	10	20
Caledonia	2	Nov. 4	11	23	11	21	Britannia	8	Oct. 21	14	4	12	6
Acadia	3	Dec. 4	14	17	10	16	Caledonia	7	Nov. 4	11	20	11	23
1841.							Acadia	8	Nov. 19	15	15	11	5
Columbia	1	Jan. 5	13	3	12	0	Columbia	6	Dec. 4	14	17	11	17
Britannia	4	Feb. 4	15	9	12	0	1842.						
Caledonia	3	March 4	14	0	10	18	Britannia	9	Jan. 4	14	12	11	3
Acadia	4	March 20	16	13	12	18	Caledonia	8	Feb. 4	put back			
Columbia	2	April 4	13	3	11	15	Acadia	9	Feb. 19	16	8	12	8
Britannia	5	April 20	13	17	11	1	Columbia	7	March 4	20	17	15	12
Caledonia	4	May 4	12	6	10	18	Britannia	10	April 5	12	22	10	14
Acadia	5	May 19	11	23	10	15	Caledonia	8	April 19	13	21	10	18
Columbia	3	June 4	10	19	10	7	Acadia	10	May 4	14	15	10	8
Britannia	6	June 19	12	5	10	2	Columbia	8	May 19	11	22	9	17
Caledonia	5	July 4	11	5	10	11	Britannia	11	June 4	11	17	10	10

Mean out 13 days 6 hours—Home 11 days 5 hours.

Nautical Heroism.

A gale of wind from the southward, and a very high tide, following the intense heat lately experienced. The gale commenced on the night of the 17th and continued until the evening of the following day, when it abated. Early the next morning (18th) and during that day the mirador, and atoteas of the Commercial-room, as well as the beach, Alameda, &c., were thronged with persons interested with shipping affairs; all anxiously watching the effects of the storm. At two P.M. something which looked like a capsized long-boat, was observed floating in the vicinity of the inner roads, with people upon it. A man could be distinctly seen waving a handkerchief. The feelings of the spectators at this sight cannot well be expressed: there was a feverish restlessness manifested, which, when some declared they saw a woman, increased to almost frantic anxiety. One noble-minded gentlemen, in the full burst of benevolence, offered a thousand dollars to any one who would venture out to save them.

There were some whale-boats, which had not gone to pieces, being drawn up high on the beach and many entreaties and offers of all kinds were made to the crews of them; but such was the awful appearance of the water, and so threatening the danger, that no entreaties or promises could prevail on them to put off and make the attempt. However, when all hope of saving the persons in peril seemed lost, a boat was observed to be lowered from a French schooner of war, the Eclair, and another from the English merchant brig Gazelle, of Dundee; in the latter were Mr. Hugh Stewart, mate, and William Petty, a seaman. Both boats were hailed with general shouts of joy, useless, except to give vent to the feelings of the spectators on shore, for so high and fierce was the wind, and so noisy the breakers on the beach, that the loudest cheers could not have been heard more than a few yards from the shore, and both vessels lay above a mile off the land.

At length, after a most fearful and anxious struggle, the Gazelle's boat succeeded in reaching the raft, a small frail thing of rushes, about eight or nine feet square, bound together merely by a bridle and the stirrups of a saddle. A man, a boy, and a dog were found upon it; the saddle and the dog were the things that fear had magnified into a woman. The Eclair's boat in endeavouring to gain the shore, filled, and the Gazelle had the additional satisfaction of picking up their gallant, but less fortunate, competitors in the benevolent enterprise they had been engaged in. The raft, with those on it, driven from between Quilmes and Ensenada, a distance of about seven or eight miles, had floated about for several hours at the mercy of the wind and waves.

During this terrific gale two equally intrepid actions were performed by boats from the French barque Louisa Marie, and the British brig Bernard; the first saving three, and the latter one man. The British merchants and others at Buenos Ayres, in approbation of the conduct of the Gazelle's crew, presented them with 250 dollars.

Leadenhall Strvet, July 7th, 1842.

Sympiesometers.—Sir,—In the *Nautical Magazine* for the present month there is another letter from "Audax;" he has called on me since the last communication he sent to you, and states that he never saw my reply to his letter of April 1841, in your Magazine. I am, therefore, desirous of making it generally known that I have always elongated the degrees as the temperature increases, or in other words suited the thermometer scale to the actual expansion of the gas, for a scale that is gradually elongated will not always answer, the expansion of the gas from 52 to 72, being in many instances greater than from 72 to 92 in sympiesometer tubes, which is caused by the pressure of the fluid, at high temperature; the gas is considerably more elastic, and the fluid has a greater mechanical force on the gas. There cannot be any error from

these causes that is perceivable in comparing the observations with a barometer, as the scale is taken every ten degrees at one inch rise or fall of the barometer, the error then divided, which is extremely minute, and allowed for in the scale. Sympiesometers thus made will range with the barometer to the $\frac{1}{100}$th part of an inch, which convinces me that "Audax" would not have been deceived or perplexed if he had used my instrument.

With respect to those makers, whom he states, point their instruments at the heat of the common place of manufacture, I should not be inclined to think they do, as by those means it is plain they must guess at the scales. He should not write so bold, and say that all sympiesometer makers do manufacture them in such rude manner, until he had tested the instruments of different makers, for I am perfectly sure he has not used my Patent Mineral Sympiesometer, which he acknowledges, and likewise congratulated me on the success I had attained in bringing my instrument to such perfection.

In the last part of the letter there is doubt placed as to the instrument ever attaining mathematical perfection, which, I think, he is not justified in stating; for the instruments he draws his conclusion from are not by any means first rate, and the methods employed to discover the errors I place no faith in. If eventually they should be used for measuring the height of mountains, I have little doubt, but that I shall succeed in making them mathematically correct with the aid of tables. This extreme accuracy every one knows is not required at sea. The sympiesometer is much more correct than the marine barometer, is sooner affected, it does not require as "Audax" thinks gimballs if the barometric scale is a reasonable length, *i.e.* 1½ inch to 1 inch of the barometer, or thereabouts, not more, which is an error I think he has fallen into in the instruments he has caused to be made for his own use.

I am &c., CHARLES CUMMISS.

TIDE OBSERVATIONS.—*North Sea.—Professor Whewell's Theory.*

H.M.S. Shearwater, Harwich, July 18, 1842.

SIR.—I have the pleasure to acquaint you that, at length, we have been so far favoured by the weather as to allow us to carry out that part of your instructions which directs me "to lose no opportunity of repeating observations on the rise and fall of tide in the middle of the North Sea;" and the results would seem to prove the truth of Professor Whewell's theory that, "there exists a space of some extent about halfway between the coasts of Suffolk and Holland, in which there is no sensible rise or fall of the water."

On Tuesday the 12th inst., we were in lat. 52° 15½′ N., long. 3° 15′ E. of Greenwich, or about fifty-six miles from Lowestoft, and forty from the Brielle, and although this spot is on the extreme eastern edge of the space in which the cotidal lines meet, as represented in Mr. Whewell's Chart of Cotidal Lines, which illustrates his sixth series of "Researches on the tides," inserted in the Philosophical Transactions for 1836; and the time the second day after the highest springs, still I would not lose the favourable opportunity afforded by smooth water and a light breeze from the westward, and we proceeded accordingly to

take steps for measuring the tides with every precaution in our power for securing accuracy. The detailed results are recorded in the accompanying table; but I may state as a summary, that on carefully measuring through two whole ebbs and one flood, the water was only found to fall *sixteen inches* on two trials, and *eighteen inches* on the third; and had we been able to make the experiment fifteen miles farther west, which is the centre of the blank space in the before-mentioned Cotidal chart, I have little doubt but that we should have found no rise and fall at all.

On examining the results two or three points present themselves as worthy of notice, and *first*, That the level of the water remained quite stationary during the strength of the stream of tide, but the moment *that* slacked the water suddenly rose or suddenly fell; so much so that the whole rise and fall in each of the three instances to which our observations refer, took place in one hour and a half.

Secondly.—Both the rise and fall of the water occurred while the stream of tide, although quite slack, still drained to the north-east; that is while the *flood* stream, as it is called on the Dutch coast, was yet felt.

Thirdly.—In the P.M. observations the water began to rise, reached its level, and again fell to its lowest point in five hours and a half.

Fourthly.—That the water remained stationary at its lowest point for nearly seven hours.

Fifthly.—That assuming the times of high water to be at the mean interval of the water remaining stationary, the stream continued to run to the north-east for three hours after the time of high water, and to the south-west two hours after low water.

Sixthly.—That the stream of tide turned round *against the sun*, and from careful observations at a series of ten stations at eight miles apart entirely across the sea in the parallel of 52° 15′, we are now enabled to state that it always does so half way across from the coast of Holland, and the contrary, or, *with the sun* half way across from the coast of England, the meridian of 3° east is probably the exact dividing line.

Another remarkable confirmation of the correctness of Mr. Whewell's views with respect to the cotidal lines is also shewn by our results. On reference to the before named chart, it will be seen that the 2 o'clock cotidal line passes Katwyk on the coast of Holland, curves to the westward, and vanishes just at our station, now if we apply the corrected establishment at Katwyk 2h. 5m. to the moon's preceding, or lower transit, 3h. 30m. on this day, we have 5h. 35m. A.M. for the time of high water, and 6h. for the afternoon's tide, which corresponds exactly with our observations.

With respect to the fact of no rise and fall taking place during the strength of the stream, I may observe that the same peculiarity is found on the Leman and Ower Shoals (where the inward fall is twelve feet at springs) as first noticed by myself in 1826, when in the Protector, with that experienced surveyor, the late lamented Captain Hewett; and it would be a curious enquiry whether the same circumstances occur on other outlying banks in the North Sea, for if so, mariners should be on their guard, as in the event of being obliged to cross them they may be very much deceived as to the depth of water to be found on

them at what might be considered half-flood. Smiths Knowl, the Dudgeon, Races Bank, Outer Dowsing, and even Hasborough Sand may be thus circumstanced.

The greatest rate of tide stream observed by us is less than two knots at the springs.

Capt. Hewett has so fully detailed in his letter to you the method pursued in the Fairy in 1840, only fifteen miles further north, in measuring the rise and fall, that it seems unnecessary to say anything farther about it, except to point out in what we differed from him. Instead of seeking out a knoll or overfall, we sought the *flattest ground*, and instead of mooring our boat head and stern with the tide, we selected the lightest boat we had, (our tender's fourteen feet dingay,) and moored her with three whale line cables from the stem or bow, bousing them down at slackwater as tort as they would bear, leaving the boat's stern free to swing with the tide, thus there was little or no strain on the boat, and I do not think that her stem, which was the spot at which we sounded, moved six inches from its place during the day; the soundings were taken from another light boat which was allowed to drop with the tide, the lead being kept plumbing, and just lifted off the ground till the lead line touched the dingay's stem. I need hardly say that, the lead line was old and well worn, and we measured several times during the observations. The cables were of whale line thoroughly stretched, and the anchors were treble the weight of the usual boat's anchors, and every other precaution taken which common seamanship would suggest to ensure accuracy.

The depth at high water was 111 feet, or 18½ fathoms, and to shew how slight was the irregularity of the surface of the bottom, I may state that, on sounding around it was found that at seventy yards south-west of the boat the depth was only *three inches more;* at the same distance south-east it was nine inches less; at the same distance to the north-west twenty-three inches less, and to the north-east twenty-three inches less also, shewing a gradual slope of the ground from north to south of an *inch* in *three yards,* or less than one in a hundred.

It remains to add that the securing the boat, and measuring the depths during the whole day was done by Mr. E. K. Calver, master and assistant-surveyor of this ship, assisted by Mr. W. Woods of Aldborough, Trinity-pilot, and Moses Hunt and W. Marshall, Quartermasters; while, that we might not lose the opportunity of such calm weather for our survey, Lieutenant Cudlip, Senior Assistant-Surveyor, sounded in the ship over upwards of fifty miles of track in the course of the day.

In conclusion, I beg to offer my congratulations to Professor Whewell on the verification of his theory; and in common with all sailors, and with all interested in maritime affairs, to express to him and to Sir John Lubbock our best thanks for the able manner in which they have investigated the subject of tides, and the labour they have bestowed upon them during the last ten years, as evidenced in their valuable "Researches, &c." published in the Philosophical Transactions. It remains but for us sailors to supply them with correct data, and they will have little difficulty in reducing the Theory of Tides to almost the same accuracy already attained in other astronomical problems.

I am, Sir, &c. JOHN WASHINGTON, *Captain.*

12th July, 1842.
☽'s preceding transit 3 30 AM. } H.M.S. SHEARWATER. position { Lat. 52° 15½′ N. Lon. 3 15 E.

Mean Time at Place.	Height of Water.	Rise and Fall.	Stream of Tide. Direction.	Rate	Wind. Direction.	Force.	Weather	Remarks, &c.
A.M.	fm ft in	inch						AM.
5 0	18 3 0	—		1·2	S.S.W.	1		☾ preceding tran. 3 30
30	3 0	—		"	S.W.	1		Corrected establishment at Katwyk 2 5
6 0	3 0	—		1·0	"	1		
30	3 0	—	N.E.b.N.	"	"	"		
7 0	3 0	—	"	0·6	"	2		
30	2 9	3	"	"	"	"	ov	H.W. . . . 5 35
8 0	2 3	6	N.N.E.	0·2	W.S.W.	"	"	
30	1 8	7	N.	"	"	"	"	
9 0	1 8	—	W.S.W.	0·1	W.	"	"	
30	1 8	—	S.W.	"		"	"	
10 0	1 8	—	"	0·4		"	"	
30	1 8	—	"	"		"	"	
11 0	1 8	—	"	0·6	N.W.b.N.	2	"	
30	1 8	—	"	"	"	"	"	
12 0	1 8	—	"	1·2	"	"	"	L.W.
PM.								
0 30	1 8	—	S.W.		W.b.N.	1	bcv	The slight inequality of the surface of the bottom may be judged of by the following depths:— 70 yds S.W. of boat 0 feet 3 inches, above " S.E. " 0 9 under " N.E. " 1 11 under " N.W. " 1 11 under
1 0	1 8	—	"	0·6	"	2		
30	1 8	—	"	"	"	1		
2 0	1 8	—	S.S.W.	0·2	"	2		
30	1 8	—	S.E.	"	"	1	"	
3 0	1 8	—	E.b.S.	0·6	"	"		
30	1 11	3	E.N.E.	"	W.S.W	1		
4 0	2 4	5	N.Eb.E.	1·4		"		
30	2 10	6	"	"		"		
5 0	3 0	2	"	1·5	S.W.	1		
30	3 0	—	N.E.	"	S.W.b.W.	1		
6 0	3 0	—	"	1·1	"	"		
30	3 0	—	"	"	"	"		
7 0	3 0	—	"	0·6	S.W.	1	"	
30	2 8	4	N.E.b.E	"				
8 0	2 1	7	"	0·4				
30	1 6	7	N.N.E.	"				
9 0	18 1 6	—	N.	0·2				
30								
10 0	too dark	for	further	obse	rvations.			
30								
11 0								
30								JOHN WASHINGTON, *Captain.*
12 0								

RESULTS.

High water at 5h. 35m. AM.		Rise	
Low water at	noon	Fall AM. . .	16 inches
Flood stream ended at	2 0 PM.	Rise PM. . .	16 "
Ebb	8 0 8 30	Fall PM. . .	18 "

Chief Observer—Mr. E. K. Calver, Master and Assistant-Surveyor; assisted by Mr. W. Woods, Trinity-Pilot; Moses Hunt and W. Marshall, Quarter-Masters.

General Steam Navigation Company.—We have seen, latterly, frequent references, in the English journals to the conduct pursued by the authorities of Belgium towards the boats of the General Steam Navigation Company plying to Antwerp and Ostend. We cannot believe, the authorities, however anxious for the prosperity of Belgian steamers, would be guilty of such ingratitude, such meanness, or folly, as to countenance the disgraceful acts complained of. Winter and summer, for more than twelve years, have the company's boats been plying at Ostend: it is now two years and more that the company, to give every facility and access to a thriving and commercial town, ran a splendid and powerful steamer, the Rainbow, to Antwerp; she always performed her voyage in two hours' less time than any other boat on the station: her fleetness and beautiful equipment induced many to pass into Belgium by a long sea voyage who would otherwise have chosen another route: tens of thousands have thus passed into Belgium that would never have trod its soil; the government must know, and though, in general, they are not very mindful of benefits conferred, still we think they should not forget that the company has the means of revenge in its own hands, and can afford to punish those who would unjustly, ungratefully, injure it. Let the company reduce its fares one half to Rotterdam and the Rhine, or to Hamburg, and charge two shillings to Ostend and Antwerp, how many passengers will patronise the government opposition in Belgium, or land there at all? We love fair play; we delight in an opposition where the parties are equal, or think themselves so; but every generous bosom, every Englishman, will rise in wrath against an opposition where a government, forgetful of past benefits, would strive to injure its benefactor, one, too, that patronised it when no other would hold out a helping hand to its wants or distress.

Every Englishman abroad is under certain obligations to the General Steam Navigation Company. Their boats are safe, well-manned, and, in general, commanded by civil and obliging captains; those to this port are particularly so: faults are found with the charges; we ourselves think that were they lower they would gain considerably by it, especially in the summer season; it would also render any opposition hopeless, for when the public think an old friend is only charging a remunerating price they will not desert him for any new comer. At the same time the public are justified, when they think their interests injured, to support every company or every boat which they think calculated to promote their object.

Universally, however, the General Steam Navigation Company are respected wherever their boats have appeared, and we have no doubt that the paltry annoyance a few petty officials have thrown in their path in Belgium will soon disappear, and the fair play they demand be wisely extended to them.—*Boulogne Gazette.*

Rodger's Anchors.—Every day seems to bring fresh confirmation of the opinion of Lieut. Rodger's Anchors. We refer our readers to the following:—

9, *Shawfield Street, King's Road, Chelsea, June 30th*, 1842.

Sir—Having recently received two most satisfactory letters relative to my Small-palmed Anchor, from an old officer, whose long experience in the Merchant Service, as well as in the Royal Navy, renders his opinions highly valuable, I beg you will do me the favor to give them a conspicuous place in your widely circulated journal. By the first you will perceive he had frequent opportunities of testing its merits in a merchant ship of 540 tons; and you will find by the second that he has given it so decided a preference, as to apply to my Lords Commissioners of the Admiralty for two bowers, a stream, and kedge, for H.M. steam-vessel Dee, under his command.

In justice to their Lordships, I think it but right to state that, any captain may have them by applying to the Board.

The Thalia and Carysfort frigates, and the Fly, Philomel, Satellite, and Albatross sloops, have recently been supplied with three each; and the Winchester, of 50 guns, with a bower; and, moreover, I have just received an order to supply three for H.M.S. Wolf, and two for the Columbia steam-vessel. This is, I conceive, as it ought to be; for the plan has already stood the test of more than eight years' trial in the merchant service, during which period upwards of 3,300 anchors have been sold, and are now in use on board vessels of every description, from the Indiaman of 1,000 tons burthen, down to the smallest coaster. And, I think, it will be generally admitted that, a plan which has been so extensively patronised by the Mercantile Marine, and universally approved of, is entitled to a fair trial in the Royal Navy. This, I feel persuaded, it will now receive at the hands of the present Board of Admiralty, whose liberal support I am desirous of acknowledging in the most public manner possible. I have now only to apologise for occupying so large a space in your valuable pages; and hoping that you will find room for this, and the subjoined letters, in your next,

I am, Sir, your most obedient servant,

To the Editor, &c. Wm. Rodger, *Lieut. R.N.*

P.S.—Since writing the above, I have received an order for a bower, stream, and kedge for H.M. steam-vessel Dee, and also for the following Ten Anchors, to be delivered at Woolwich Yard, viz., of 85 cwt., 60 cwt., 50 cwt., and 38 cwt., one each; and of 33 cwt., 28 cwt., and 25 cwt., two each.—W. R.

Peckham, April 27th, 1842.

Dear Sir.—In April, 1838, I commanded the ship Emerald Isle, of 540 tons, and on our passage down the River Hoogley lost two anchors. On arriving at Madras I tried to replace them, but could not get any of the proper size; but finding one of your Patent Small-palmed Anchors at Messrs. Binney's, I bought it, although it was only 18 cwt. 2 qrs. I ought to state, that one of my remaining bower anchors was a Bengalie, and not to be trusted, so that, on leaving Madras I had only two good anchors, including your light one. I arrived at Van Diemen Land in June, and during a heavy gale of wind the ship drove, although we had an anchor down of 26 cwt. and a whole cable out. I let go your anchor, which brought her up with forty fathoms of chain, and she rode out the gale. In July, at anchor in Sydney Cove, we again drove with our heaviest anchor down, and again brought up with the Small-palmed Anchor.

After this, I had so much faith in it as to make it my working anchor, it certainly being quite as good as my best bower, and hove up much easier. I rode out two heavy gales of wind afterwards, with this anchor down, and had no occasion to let go another, but I always rode with a long scope of chain out. I certainly would prefer your Small-palmed Anchor to those commonly used; they work lighter, and are easily weighed.

I am, dear Sir, yours truly,

To Lieut. Wm. Rodger, R.N. Thos. Driver.

H.M. Steam-vessel Dee, Woolwich, June 28th, 1842.

My Dear Sir.—I have this day written to be supplied with two bower anchors of 27 cwt., a stream, and kedge, of your Small-palmed Anchors, stating I have experienced their superiority in a ship of 540 tons, having rode out heavy gales with one of your anchors of 18 cwt.

If my feeble efforts could serve you, I shall be always glad to bear testimony to their superiority over the common chain anchor.

I am, my dear Sir, yours truly,

To Lieut. Wm. Rodger, R.N. Thos. Drivel.

Anson's Voyage round Cape Horn.—The first disaster happened to the Gloucester, as she was getting under weigh. From a difficulty in purchasing her anchor, she was obliged to cut her cable, and leave her best bower behind; and a few days after, she was nearly blown up by the accidental explosion of some gunpowder, which had been preparing in expectation of falling in with the Spanish fleet.

On the 5th of March the squadron made the land of Terra del Fuego, a chain of stupendous rocks rising in innumerable rugged points, and covered with perpetual snow.

The 7th of March was long remembered as the last cheerful day that the greater part of the expedition ever lived to enjoy. The sky was serene: the morning, although winter was approaching, was brilliant and mild, when the squadron entered the straits of La Maire, and was hurried by the rapidity of the current in about two hours to their southern extremity. The speed of their course, and the beauty of the weather, inspired all on board with the belief that their difficulties were nearly at an end, and that their dreams of 'Chilian gold and Peruvian silver' were presently to be realized; 'ignorant of the calamities that would so soon dispel these illusions, of the disastrous evening that would close upon that genial and hopeful day.'* For scarcely had they reached the southern outlet of the straits, when the sky lowered, the wind shifted to the southward, and blew in violent squalls, the tide at the same time turned furiously against them, and by the next morning the storm and current had driven them seven leagues to the eastward of the straits.

From this day forward, they had "a continual succession of such tempestuous weather, as surprised the oldest and most experienced mariners on board, and obliged them to confess that what they had hitherto called storms were inconsiderable gales, compared with the violence of these winds, which raised such short, and at the same time such mountainous waves, as greatly surpassed in danger all seas known in any other part of the globe.†"

The ship kept continually rolling gunwale-to, and with such violence that that some men were killed, and others greatly injured. What rendered these tempests still more dreadful was their inequality. At one moment the ship would be lying-to under bare poles; at another, the appearance of the weather would justify their setting topsails; when the wind, without any previous notice, would return with redoubled force, and tear the sails from the yards. To increase their distress, the blasts were accompanied with sleet and snow, which rendered the cordage so brittle that it snapped with the slightest pull, and the fingers and toes of many of the men became frost-bitten. At the same time, the Centurion had become so loose in her upper works that she let in water in every seam, and "scarcely any of the officers lay in dry beds."‡

After being nearly forty days in this situation, they had hoped that *their* fatigues were drawing to a close; but they discovered to their bitter disap-

* Anson's Voyage, vol. 1, page 115. † Ibid. page 117. ‡ Ibid. page 117.

pointment, that they had advanced no further than the southern outlets of the Straits of Magellan, when they expected they were at least ten degrees to the westward.

At this time a new source of misery opened upon them: the scurvy made dreadful havoc among the crew. In Keppel's log, between the 2nd of May and the 9th of June, there are only seven days in which a death is not recorded, and on several occasions as many as eight men are stated to have died in the course of the twenty-four hours. On the 16th of June, the day after their arrival at Juan Fernandez, Keppel's journal says, "We have lost upwards of 228 men since we left England. The reason I mention it here is, that I have omitted to insert in my log the deaths of several men." Between the 10th of June and the 2nd of July, he mentions the death of forty-five more men.

There was little or no amendment in the weather during April, but "in the succeeding month of May," says Mr. Walter, "our sufferings rose to a much higher pitch than they had yet done." Instead of giving Mr. Walter's more detailed account, a few extracts are inserted from Keppel's and Saumarez's journals, which will shew the nature of their distresses.

May 16.—"The main-top-sail blew clean out of the bolt-rope; the ship heeled to it prodigiously; Martin Enough, a brisk seaman, in going up the main-shrouds, fell overboard, and was lost—much wanted, and regretted."

May 17.—"Sent a main-top-sail up into the top, but our men were so sickly and few, that we were unable to bend him."

"These twenty-four hours a continuance of stormy, surprising weather, the elements seeming all confused; in the height of the squalls had several violent claps of thunder, before the explosion of which, a quick, subtle fire, ran along our decks, which, bursting, made a report like a pistol, and struck several of our men and officers, who with the violence of the blow were black and blue in several places; this fire was attended with a strong sulphureous smell."

On its clearing up, they discovered the island of Guffao close under their lee; the gale continuing, and a high sea running, filled them with consternation. Providentially, however, just as the night set in, they were "taken aback with a squall from the S.S.W." "The ship," says Saumarez, "refusing to wear, and our people not strong enough to haul the sail up, we lowered the main-yard. At seven, A.M., the wind abating, encouraged our hands to bend the main-top-sail, and set him close reefed, which with difficulty was performed, we being able to muster but twenty-seven men, and our people being dispirited and fatigued beyond what can be imagined."

May 19.—"Upwards of one hundred and sixty men incapable of duty, and and about one hundred and seventy dead; all the rest of our men are very weak, and falling down fast."

May 23.—"Split the fore-top-sail to pieces; shipped a very dangerous sea on the weather quarter, which gave us a prodigious shock; found three main-shrouds broke on the starboard side, and two on the larboard, and three of the laniards of the fore-shrouds gone; employed in securing the mainmast and foremast; set main-sail and main-top-sail, there being a very high sea; we found that the ship heeled two or three streaks to port, which is to windward, occasioned by the sea we shipped having shifted something in the hold."

After this, all hands capable of work, including the Commodore himself, were employed in repairing the damage sustained, no one being left to attend the helm but the master and chaplain.

On the 29th of May the weather became more moderate, and the Centurion having arrived in the latitude of Juan Fernandez, all on board were anxiously looking out for the island. "Our people," says Saumarez, "were now grown to the last degre infirm and sick; and the few that were able to do their duty falling down hourly.

"A.M., seeing no land, we began to give it up, and concluded we had not sufficient westing, but were now to the eastward of it. As the thing was uncertain, we continued our course to the eastward, knowing that we must either

fall in with it soon, or make the continent, from which we could take a fresh departure, and clear up all our doubts."

By the 3rd of June they were unable to tack the ship, in consequence of the disabled state of the crew, "not mustering above ten seamen in a watch, and several of them lame, and unable to go aloft; so that their chief strength depended on the officers, who formed an after-guard with the servants and boys."*

On the 9th of June they enjoyed the welcome sight of Juan Fernandez. Saumarez, who had this night charge of the middle watch, says, that having occasion to wear ship, in endeavouring to get up to the anchoring place, "I could muster no more than six seamen, besides two quarter-masters, in the watch, our assistance being from the officers and servants, and I was two hours in wearing."—*Life of Keppell.*

Nautical Notices.

Shoals near the Equator, *Atlantic.*— Ship Ann Mary of Liverpool, Mr. Rackham, Commander, on a voyage from Liverpool towards Bombay, commencing 1st January 1842.

Extract of a letter from Mr. Rackham to a friend in Liverpool, dated Bombay, 22nd May, 1842.—"Made Ferro 19th (January), 22nd passed the position assigned to Maria's shoal; water a little discoloured.—Passed to the eastward of Cape Verde islands, strong and steady trades. February 5th, light breezes, smooth water, fine weather; at 5h. A.M. was aroused from sleep by a violent shaking of the vessel, and a loud rumbling noise. My first idea was that the vessel was on one of the dangers hereabouts, the next that we had been struck by lightning, and that the masts were all tumbling down; by this I was on deck, looked over the side, the vessel going through the water, but shaking as if she would fall to pieces, so that the man at the helm could not hold it. All hands were now on deck, and panic-struck by this most awful earthquake; it lasted nearly a minute; 5h. 50m. a slighter shock, 9h. 45m. a fainter, and near noon, one scarcely perceptible. At noon observed in lat. 0° 44 S. and chronometer, brought down 20° 16 W. from 5h. A.M. made a S.W. course 26 miles. It is probable that this sub-marine ebulition may have left some danger, and it would be as well to apprise the Editor of the *Nautical Magazine* of it".

[We are assured that Captain Rackham is a man of superior intelligence and education, and that every confidence may be placed in his account. Our readers will probably remember Mr. Purdy's letter in our volume for 1835 (p. 641) to which we may refer them at present. It would appear that this was but the commencement of a series of subterranean commotion which terminated in the late destruction of Haiti.]

Supposed Bank West of the Cape.—The following is a further extract from Capt. Rackham's letter.—"14th March, noon, latitude observed, 38° 8 S. and longitude by account, 13° 49′ E., a high toppling sea, water of a green colour. Throughout the 15th, water still green.- 16th, P.M. water very green, high toppling sea, every appearance of being on soundings. Midnight strong gales, and an exceeding high sea, dipped the spanker boom in. At 1h. A.M. sea fairer; daylight, water of its usual colour, dark blue. Noon, latitude observed 38° 13′ S., longitude 20° 50′ E. Supposed that we had entered on a bank of soundings about noon 14th, and continued on it till midnight the 16th, believe we were then on its eastern edge, owing to the confused sea. Estimated

* Saumarez's Journal.

position 38° 17′ S. and 18° 14′ E. The above is my opinion, it may or it may not be correct, there is no harm done in stating it.

17th noon, 38° 12′ S. chronometer 21° 24′ E., water of a deep green, temperature 70°, air 72°, a good look out kept. 18th, at 30m P.M. passed close to a discoloured patch of water, of small extent, in the centre the water appearing mud colour, and the edges green, did not observe the sea to break, it had the appearance of a shoal, temperature of water 69° one degree less than noon. I firmly believe this must be a danger, yet one is almost afraid to make such a statement, as there is such a liability of being deceived by various causes. The positions of all the above may be about 20′ more E. as lunar observations gave, and on making the land here, find chronometer west of true.

"Anchored here 12th May, 130 days passage."

MARTINS REEF.—eastward of Gaudaloupe.

A letter received at Lloyd's from their agent at Antigua, dated June 7th, contains the following:—

"Captain Newbold, of the brig Transit, on her passage from Halifax to St. Vincent, in February last, discovered a shoal to windward of this island, in lat. 16° 42′ N., long. 59° 6′. He examined it as carefully as circumstances would permit, and describes it to be about 200 feet long and 80 feet wide, with three fathoms water in the centre, and much shallower on the edges."

Relative to the foregoing we have received the following observations:—

In the last edition of Purdy's "Atlantic Memoir," p. 451, the same shoal is described under the name of *Martin's Reef*. in about 16° 42′ N. and 58° 45′ W. as follows:—"A shoal was inserted hereabout on the chart of Bellin, 1742, who says that it is mentioned by many navigators. It was again seen in July, 1816, by Captain Martin, of the ship *John Manning*. The shoal seemed to consist of yellow sand, with seaweed upon it; to be about half a mile in length from east to west, and a quarter of a mile in breadth, from north to south."

And, also, that the reef was again seen by the ship *Cecilia* of Glasgow, 19th of July, 1823, by which the position assigned was 16° 44′ N. and 58° 50′ W. To the commander of this ship it appeared to be about 1½ or 2 miles long, and only about 30 feet wide; the western part, shaped like the bulb of a thermometer, seemed dangerous."

But, taking the longitudes 58° 45′, 58° 50′, and 59° 6′, given as estimated by the three mercantile commanders, we gain a mean of about 58° 53′ W.

There can no longer be a doubt as to the existance of the shoal, the greatest extent being east and west, and probably edged with a dangerous coral reef.

GERMANITUS.

LIGHTHOUSE AT ST. JAGO DE CUBA.—SIR,—We have the honour to acquaint you that a lighthouse has been erected on the Table land, about 300 feet to windward, or east, of the Morro Castle, intended to indicate the entrance of this harbour, and thus prevent vessels from running to leeward of it during the night.

The lantern was lighted on the 1st inst., and will continue to be so from sunset to sunrise. It is a revolving light, performs its complete revolution in two minutes and a half, is 240 feet above the level of the sea, and may be seen at a distance of 20 to 24 miles.

We are &c.,

LLOYD'S AGENTS.

REVOLVING LIGHT ON THE BERLING ROCKS, *Coast of Portugal*.—A revolving light was established on the rock called the Great Berling, on the coast of Portugal, on the 15th of this month.

It stands 365 feet above the sea, and may be seen 7 or 8 leagues; and making a complete revolution in 3 minutes, it presents a strong glare, followed by a sudden eclipse.

The lighthouse stands in latitude 39° 25′N. and longitude 9° 31′ W. of Greenwich.

Navigators are also informed, that the light at Peniche has been discontinued.

Light on Kull Point.—An open coal fire, on a hill adjacent to the present lighthouse, will be substituted for this light, till a new tower be constructed on which will be shewn a fixed light from lamps.

Falsterbo Light.—A temporary light from a large lantern will be shewn from the lighthouse on Falsterbo Point, till the requisite alterations are completed for substituting a fixed light, from lamps, for the coal fire hitherto in use at this lighthouse. The temporary light will be much less conspicuous than the former coal fire, but it is expected that the new light will be shewn in July 1843.

A new tower with a revolving light is to be erected at Morups Tange 4 miles to the northward of Falkenborg in the Kattegat.

Channel between the Barber and Cockle, *Yarmouth Roads.*—The channel between the Inner Barber and Cockle Sands has filled up, so that the depth of water therein at Low Water is reduced to Seven feet.—The North Inner Barber Buoy *(Red)* will therefore be taken away ;—and Masters of Vessels, Pilots and others, are hereby cautioned that the said Channel cannot longer be navigated with safety.

New Buoys off Goeree:—The Director-General of Marine has notified, under date the 16th of May, that two small buoys are placed at two most dangerous points of the channel leading along the Scheelhocks Sandbanks, from the southern shore of the Goeree to the Middleharnis—viz., one on the N.W. point of the so-called Scheelhocks, Middlebank. Bearings the steeple of Goeree, between the farm of Widow Lokers, and another farm, a house situated within the one of Widow Lokers; a second or innermost small buoy, on the southwest point of the Middlebank, bearings, the church and mill on Stellendam in one another, and the steeple of Goeree two ships' lengths west of a large farmhouse, outside of Stellendam, both in 33 palms water at low water; whilst on the grounds of the south shore, which with high water are at times overflown three beacons have been placed; bearings of the first, or outermost, the steeple of Goeree and a small cot in one; and the second, the steeple of Goeree and a large farmhouse outside of Stellendam; the north beacon bearing athwart the second farm inside of Stellendam.—*Shipping Gazette,* May 26.

Reid Shoal, Brazil.—The following has been communicated in a letter from Mr. Reid, of the brig Sweet Home, of Aberdeen, dated Rio Grande, March 14th, 1842. The vessel on her voyage from Liverpool to that port, struck on a shoal in lat. 31° 3′ S., and long. 49° 47′ W., at least 70 miles off the Brazilian coast. Luckily there was no sea on, and the wind was N.E. by E., which enabled her to clear the shoal immediately, making but little water. After his arrival at Rio Grande, the master of the Sweet Home ascertained that a Brazilian schooner had grounded on the same reef a short time before. The

reef or shoal alluded to has not been laid down in any chart, and lies immediately in the track of vessels bound to that port.—*Shipping Gazette*, July 1st.

Smith Shoal, Indian Navigation.—On my passage from Batavia to Singapore, via Banca and Rio Straits, I discovered a shoal not mentioned in any chart yet published, and, I believe, not previously known to exist. It is a very dangerous shoal, not having more than 16 feet water on some parts of it. It lies in lat. 1° 07′ S. Pulo Taya bearing N. ¼ W., and the Seven Islands E. ¼ S. It is, as near as I could judge while sailing across it, from 1 ½ to 2 miles long, with irregular soundings, varying between 5 fathoms and 2¾ fathoms, hard ground.—*Shipping Gazette*, July 1st.—E. M. Smith, of the Thomas Harrison.

Lights on the Coast of Norway.—We give the following as we find it in the Shipping Gazette of 1st of July.—The Royal Danish Marine Department has issued a preliminary notification that in the course of this summer two new lights will be placed on the Norwegian coast, and two new sea marks erected, all longitude east of Christiansand.

1. A flickering light off Quitholm, in the vicinity of Christiansand, showing a light every minute, lat. 63° 1′ 25″, long. 7° 12′ 15″, visible at the distance of 4½ to 5 sea miles.

2. Lights off Stavnas, at the entrance of Christiansand, fixed light, lat. 63° 7′, long. 7° 39′, visible at the distance of 3 sea miles.

3. Sea-mark on Hamborgoe, near Lillesand. This sea-mark will have the appearance of a windmill, the fans of which describe an angle of 45 degrees towards the horizon. This sea-mark will be painted yellowish, situate in lat. 58° 14′ 30″, long. 8° 36′ 15″, and be visible at the distance of 2½ to 3 sea miles.

4. On a rock called Reierskjar, at the eastern entrance of Brakkestoe, a cannon will be placed, visible at the distance of about half a sea mile, the latitude of the spot being about 58° 10′ 4″, and longitude 8° 27′.

Light on Turks Island.—The collector of her Majesty's customs has favoured us with the copy of a letter from the commissioners of customs, intimating that from and after the 20th of April last, the several lights recently erected on or about the Turks Island, by the Royal Mail Steam Packet Company, "with the exception of that which is situated on the north-east end of Grand Turk," were to be discontinued.—*Bermuda Paper.*

Trinity-house, Newcastle-on-Tyne, April 28, 1842.

Shields, *Buoy off the Herd Sand.*—A yellow buoy was this day laid down at the entrance of Shields Harbour, close to the N.E. point of the Herd Sand, in 7½ feet at low water spring tides, with the following bearings, viz.:—Tynemouth Light-house, N. ¾ W.; the High Light at North Shields, W. by N. ¾ N.; and the above High Light-house 2 sails' breadth open of the Low light-house.

Harbour Office, Aberdeen, April 22, 1842

Lights of Aberdeen Harbour.—Two leading lights have been established for the safer guidance of vessels entering that port, and lighted on the 10th of May, 1842. These lights have no reference whatever to the state of the tides, as they are to be exhibited from sunset to sunrise.

But on certain occasions, when, on account of speats or floods in the river Dee, or from too much sea on the bar, it is, in the opinion of the Captain Pilot, considered unsafe for vessels to attempt entering the port, the Lights will not be exhibited.

The lights are of a brilliant red colour, visible in clear weather at the distance of five or six miles, the one above the other, and are elevated, the one about 30 feet, and the other 47 feet, respectively, above high-water of spring tides.

These lights, when first distinctly visible, in coming from the northward bear

W.S.W. by compass, in coming from the southward, due west; and when seen in line, W. by S.¼S. nearly, and, if the depth of water permit, vessels may run for the harbour with safety.

Royal Naval Female School, *Richmond Surry*.—The usual half-yearly examination of the pupils of this institution, previous to the Midsummer vacation, took place on Tuesday, June 20th, on which occasion Lady Williams (the amiable relict of the late Admiral Sir Thomas Williams, founder of this interesting Establishment) and other Lady Patronesses, with several of the Committee attended.

The examination which occupied three hours, was by separate classes, and in the following departments of tuition; viz., Scriptural History, and Christian knowledge in doctrine and precept; ancient and modern History, French, Geography, Chronology, Arithmetic, Orthography, with specimens of Drawing and Needlework, and such exercises in Music as time allowed. The whole was most satisfactory, and evidenced fully, the care and attention which had been bestowed by the Lady Governess and her Assistants, in this interesting field of labour.

About Seventy-five young ladies all daughters of Naval and Marine Officers, most of whom had served their country faithfully and beneficially in other times, than those of Peace, were present; and it was most gratifying to observe the satisfaction afforded to several of the parents who also attended. The examination was conducted under the kind superintendance of the Rev. J. D. Hales, Minister of St. John's, Richmond, aided by Monsieur Corlier, the French Professor, and others in the several departments of instruction. The want of room for the due accommodation of the pupils, now eighty in number was plainly manifested, as in the largest room available for the purpose, many of the visiters, could not obtain entrance; and it has been deemed essential to the health, and prosperity of the Establishment, that a sufficient capacious Schoolroom should be erected during the vacation. For this necessary outlay, a special fund is immediately needed, and it is hoped that for this, as also for the permanent continuance of an Institution, commending itself at once to every parental, and we may add to the sympathies, of every British heart, there will not be found wanting, a full share of that aid, which those who are blessed with ampler means have the privilege of bestowing upon their more necessitous fellow creatures; and that the advocates for providing the Daughters of "necessitous" Naval and Marine Officers, with "a good, virtuous, and religious education" will not be permitted to plead in vain. A visit to the School in Richmond Green, or enquiries at the office of the Institution, 32, Sackville Street, will ensure its recommendation to every benevolent mind. We trust this appeal will not be made in vain.

Directions for Berbice.

Gravesend, July 14th, 1842.

Sir.—I beg leave to transmit to you the enclosed Directions for Berbice, written by Mr. John Petley, at present Second-Master and Pilot of her Majesty's Steam-vessel Flamer, that has been employed, upwards of two years, running the Mails, in the West Indies. It was composed at the recommendation of Lieut. Robson the Commander of the Flamer and several old trading Captains

in the country, under the impression, as they say, that its publication will be useful, by reason, the Charts and Book of Directions were in a measure defective, among other errors no mention whatever is made in them of the Light Vessel at the entrance of the River.

Respecting Mr. Petley's competency, permit me to add that, Lieut. Robson has certified to the Admiralty, that by day or night, he never found it necessary to take any other pilot, and Lieut. Bousanquet who commanded the Leveret, on the Coast of Africa, certified to the same Board that Mr. P. was well skilled in navigation, had shewn considerable zeal and aptitude in making himself acquainted with the pilotage of coasts and harbours; and I have ever found him correct in all his chronometrical, lunar, and other astronometrical observations; that he has paid attention to the system of winds and currents, that he is particularly well acquainted with the pilotage of the East coast of Africa, Madagascar, and all the adjacent Islands; and I have ever found him trustworthy and attentive as a Pilot, and I think he will be ever found as a steady, and valuable officer in any small vessel. I have been rather lengthy, and I fear tedious, on the qualifications of Mr. P., but my desire to shew what grounds you had for confidence to rest on him as an authority for an Hydographical notice will, I hope, plead my apology. After all, you will be the best judge whether the document be worthy or necessary to publish in your useful work.

I am &c.

To the Editor, &c. J. PETLEY, *Commander R.N.*

DIRECTIONS FOR BERBICE.—Latitude and longitude of the Light Vessel 6° 25′ 42″ N., 57° 26′ 00″ W.; latitude and longitude of the Stelling, 170 yards north of the Court House, 6° 11′ 48″ N., 57° 30′ 30″ W.; high-water full and change 4·00.

Berbice Light Vessel carries one fixed light by night, and a black ball at the foremast head by day, painted black outside and roofed over; has a smaller jigger-mast abaft, and lies in a quarter less three, low water.

From the Light Vessel to the entrance of the river the course is S.S.W., ten miles. To enter the river all vessels have to pass over a bar or flat of six miles in extent, having sixteen feet at high water, and only seven at low water, spring tides.

All vessels drawing from eleven to fifteen feet going up the river should leave the Light Vessel about an hour before high water, steering S.S.W., when about two miles from the Light Vessel the water will shoal to fifteen feet until a tree on a low point to the eastward is shut in by a bluff point bearing E.b.S. ½ S.; you will then be about two miles from the entrance of the river, the water will then deepen from eighteen to twenty feet when you will be over the bar, the channel narrows as you approach the river, there being a long mud flat extending about six miles to the northward on the westward side, which is sometimes dry at low water; and a hard shell bank to the eastward, on which the sea breaks at low water; it is steep close to it, the channel is between these two banks, and you can keep so far to the eastward as to shut in Crab Island halfway with the eastern point of the river, and to the westward so as to open Crab Island, a handspike length of the eastern point; when about three-quarters of a mile from the eastern point open the shipping between Crab Island, and the eastern point; when off the east point which is five miles from the town, steer by south or S.b.W. in half three, keeping close to the eastern shore, about three-quarters of a cable's length off shore.

To avoid a shoal off the south-east point of Crab Island, keep the Steeples of two Churches touching each other, or about half a cable's length of the bushes on the eastern shore.

Off point Canji there is a mud bank lying N. and S., of thirty fathoms in extent, having only nine feet water on it at low water, it is half a cable's length off shore, and the mud is very soft on it. After passing Canji creek you may haul out a little to the westward to anchor, with a flood tide, anchoring from 17 to 21

feet at high water. Vessels drawing 12 feet generally lie aground here at low water. Flamer's anchoring mark, Scotch Church, or Northernmost Church, on with the Court-House, centre of Crab Island, N. ¼ W.

J. E. PETLEY, *Second-Master and Pilot, H.M.S. Flamer.*

NAVAL COURTS MARTIAL.—Three Courts-Martial have recently taken place at Malta. The 1st on a boatswain of the Vernon, for insubordinate conduct, who was sentenced to degradation, loss of seven years' service, and removal from that frigate.—The 2d on two seamen of the Calcutta, for acts of obscenity, who were condemned to received 48 lashes on board the same ship, to be passed round all the ships of the squadron in port, the respective crews being on their action posts, and latterly to 12 months imprisonment in England.—The 3d, on a seaman of the Vesuvius, for threatening language to his first Lieutenant; he was condemned to death. The execution of this sentence, however, has been suspended by the Admiral, until the decision of the Admiralty in England, to whose mercy the Court has strongly recommended the prisoner.

SHEERNESS.—On the 8th July, a Special Court Martial took place on board the Admiral's flag ship, the Camperdown, lying off the Dock-yard, at which all the Officers in the harbour were present, to inquire into the charges brought against Mr. James Balscombe, late master of H.M.S. Larne, lately arrived from China, by his Commander, Capt. P. T. Blake, for neglect of duty. At the conclusion of the evidence, which was exceedingly voluminous, a verdict of guilty was pronounced against Mr. Balscombe, and he was sentenced to be dismissed from the Service.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

Admiralty, July 4.—Her Majesty has been graciously pleased to appoint Captain the Hon. Sir F. B. R. Pellew, Knt., CB., KCH., to be Naval Aide-de-Camp to Her Majesty, *v.* Captain Lord J. Townshend, deceased.

PROMOTIONS.

LIEUTENANTS—G. H. Richards—J. A. Dunbar—W. D. Wilkes—C. Brickdale.

APPOINTMENTS.

CAPTAIN—H. Forbes to *Pique.*

COMMANDER—J. A. Stevens, superintendent of Packet Service at Weymouth.

LIEUTENANTS—J. Macdougall, E. H. Kennell, R. R. Western, and H. M. Baker to *Pique*—H. Byng to command *Avon*—M. Mottley to *Thunder*—G. R. Woolrige to *Dublin*—W. P. Crozier to command *Sydenham*—H. W. Hire (add.) and D. H. McNeil to *Queen*—H. Davis to *Satellite*—E. Couch to *Blonde*—F. H. Harper, Sir F. Freeling, Bart., and W. C. Aldridge to *Talbot*—W. P. Chapman and J. A. Dunbar to *Illustrious*—R. A. E. Scott to *Salamander*—C. Bricklade to *Madagascar*—W. C. Alexander to *Winchester*—G. H. Richards to *Philomel.*

MASTERS—J. Brown, (act.) to *Philomel*—G. Filmer (act.) to *Pique*—Pyke to *Columbia*—J. W. R. Jenkins to *Salamander.*

MATES—T. P. Coode and A. Luckraft to *Excellent*—G. Pledge to command *Goodwill* lighter—G. K. E. Wright to *Ætna*—H. Parsons to *Thalia*—W. H. Moubray to *Caledonia*—W. J. A. Heath to *Pique*—G. H. Towsey to *Sydenham*—H. J. Grant to *Illustrious.*

SECOND-MASTERS—D. Roberts (act.) to *Dasher*—J. Grandy to *Chatham* (act.)—G. B. F. Swaine to *Avon*—W. Bryant (in charge) to *Monkey*—W. Byford to *Sylph* tender.

SURGEONS—W. Folds to *Pique*—J. Edwards to *Excellent*—H. F. Osman, MD. to *Wolf*—M. Hamilton, MD. to *Salamander.*

MASTERS'-ASSISTANT—G. Brookman to *Black Eagle.*

SURGEONS'-ASSISTANTS—A. D. Mac to *Pique*—T. R. Pickthorne to *St. Vincent*—G. M. McClune, MD. to *Excellent*—J. Henderson (act.) to *Philomel*—J. Donnelly to *Phœnix*—J. Mitchell to *Sydenham*—R. F. Cullen, MD., to *Albatross*—W. Warden, MD., to Chatham Dockyard—Anderson, MD., Sheerness Dockyard—J. Peters to *Dee*—Lowry to *Avon*—W. Macdonald to *Wolf*—J. Henry to *Salamander.*

MIDSHIPMEN—J. S. Darrell, F. R. Hawkins, E. W. Bridge, F. J. Partridge, Hon. H. Morton, and H. G. Maltman to *Pique*—M. Fox to *Philomel*—H. D. Graham to *Spartan*—G. Winthorpe to *St. Vincent.*

VOLUNTEERS 1st Class—B. C. Pym to *Sylvia*—A. Mitchell, J. Burgess, and

Fairholm to *Pique*—A. Campbell to *Vernon*—Collinson to *Dublin*.

PURSERS—C. Hillyer to *Salamander*—J. Ward to *Piqae*.

CHAPLAINS—Rev. J. Marshall to *Pique*—Rev. H. B. Illingworth to *Madagascar*.

NAVAL INSTRUCTORS—A. Salkeld to *Belvidera*—G. Foster to *Pique*.

CLERKS—J. C. Aldridge (in charge) to *Avon*—A. Wood and G. H. Jewell to *Pique*—C. Penfold to *Sydenham*—Pinhorn to be secretary's clerk to Rear-Ad. Thomas.

COAST GUARD.

Appointments—Lieut. W. H. Jones to command at Ecclesbourne—Lieut. J. Butcher to command at Skegness.

Removals—Com. C. J. F. Newton to Bridgewater district—Com. A. W. Jerningham to Harwich—Com. Spettigue to Falmouth—Lieut. W. Seaward to Cromarty—Lieut. H. Jeston to 31 Tower—Lieut. R. Connor to Pembroke—Lieut. C. D. Warren to Uzon—Mr. W. H. Walters (chief officer) to Sizewell Gap—Mr. H. F. Higginson to Lydd.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

H.M steam-vessel COLUMBIA has been commissioned at Woolwich, by Lieut.. A. Kortright, and will sail immediately to survey the Bay of Funday, under the direc- of Capt. W. F. W. Owen, RN.

AT HOME.

ACTAEON, 26, Capt. R. Russell, June 24, arr. at Portsmouth from South America, July 11, arr. at Plymouth to be paid off.

ÆTNA, 6, C. G. Butler, July 11, left Portsmouth for Liverpool to remain as receiving ship.

ALBAN, (st. v.) Mr. J. King, June 27, left Portsmouth for Gibraltar with Sappers and Miners.

ALBATROSS, 16, Com. R. Yorke, July 13, went from harbour to Spithead.

AVON, (st. v.) commissioned at Woolwich, by Lieut. H. Byng for Jamaica station.

GEYSER, (st. v.) Com. Carpenter, July 10, left Portsmouth for Mediterranean.

PIQUE, 36, commissioned June 14, at Portsmouth, by Lieut. McDougall for Capt. Forbes.

RHADAMANTHUS, (st. v.) Mr. T. Laen, July 8, arr. at Plymouth from Halifax.

SATELLITE, 18, Com. Gambier, July 12, went out of harbour to Spithead, and was paid wages.

SULPHUR, (sur. v.) Capt. E. Belcher, CB., July 19 arr. at Spithead; to pay off in the river.

TALBOT, 26, Capt. Sir T. Thompson, Bart., July 14, left Portsmouth for Madeira.

VOLCANO, (st. v.) Lieut. C. J. Featherstone, July 9, left Portsmouth for Bermuda.

WOLF, 10, commissioned at Plymouth by Com. C. O. Hayes.

AT SPITHEAD—Cleopatra, Satellite, Albatross, and Marquis of Hastings.

IN HARBOUR—St. Vincent, Victory, Excellent, Pique, Royal George yacht, Seaflower, cutter, Monkey, steamer, Lively and Drake, lighters, and Adventure, transport.

PAID OFF.

ACTAEON, at Plymouth.
LARNE and VESTAL, at Sheerness.
PIQUE, at Portsmouth.
ROSE, at Plymouth.

COMMISSIONED.

PIQUE, at Portsmouth.
WOLF, at Plymouth.

ABROAD.

AGINCOURT, 72, Capt. W. H. Bruce, May 20 at Madeira, 22d sailed.

ALECTO, (st. v.) Lieut. Com. W. Hoseason, July 5, at Marseilles.

ALFRED, 50, Commodore T. W. Purvis, May 19, arr. at Rio.

ANDROMACHE, 26, Capt. R. L. Baynes, Mar. 17, at Simons Bay, 25th sailed for Mozambique.

APOLLO, (tr. sh.) Com. C. Frederick, Mar. 22, arr. at Simons Bay, and sailed for China.

ARROW, 10, Lieut. Com. W. Robinson, May 20, at Rio from Falkland Isles.

BEAGLE, (sur. v.) Com. J. L. Stokes, Feb. 26, at Hobart Town.

BELLEISLE, 72, Com. J. Kingcome, Mar. 14, Simons Bay, 22d sailed.

BELVIDERA, 38, Capt. Hon. G. Grey, July 5, at Gibraltar.

BITTERN, 15, Com. Hon. B. Cary, April 11, at Bahia.

BRISK, 3, Lieut. Com. G. Sprigg, Ap. 15, arr. at Rio from Simons Bay.

CALCUTTA, 84, Capt. Sir S. Roberts, July 5, at Malta.

CALLIOPE, 26, Capt. A. L. Kuper, Ap. 1, arr. at Calcutta from Singapore.

CAMBRIDGE, 78, Capt. E. Barnard, June 15, at Malta.

CARYSFORT, 26, Capt. Hon. Lord G. Paulett, May 17, arr. at Rio.

CURACOA, 24, Capt. J. Jones, May 22, at San Blas.

CURLEW, 10, Lieut. Com. T. C. Ross, May 10, at Rio.

CYCLOPS, (st. v.) Capt. H. T. Austen, July 5, at Alexandria.

DEVASTATION, (st. v.) Com. G. T. Gordon, July 5, at Malta.

DIDO, 18, Capt. Hon. H. Keppel, Mar. 18, left Simons Bay for China, via Singapore.

DUBLIN, 50, Capt. J. Tucker, May 21, at Callao.

EREBUS, Capt. J. C. Ross, May 2, at the Falkland Isles.

FAVORITE, 18, Com. T. R. Sulivan, February 26, left Hobart Town on a cruise.

FLY, Capt. H. P. Blackwood, May 3, left Santa Cruz, for Australia.

FORMIDABLE, 84, Capt. Sir C. Sullivan, June 30, at Bermuda.

GLEANER, (st. v.) Com. J. Jeayes, June 24, at Bermuda.

GRECIAN, 16, Com. W. Smyth, May 6, arr. at St. Helena from west coast of Africa.

GROWLER, Com. C. M. Buckle, South America.

HOWE, 120, Capt. R. Smart, July 5, at Malta.

HYDRA, (st. v.) Com. A. Murray, Ap. 28, at Jamaica from Honduras.

IMPREGNABLE, 110, Capt. T. Forrest, CB., July 5, at Malta.

INDUS, 84, Capt Sir J. Stirling, July 5, at Malta.

ISIS, 44, Capt. Sir J. Marshall, April 25, at Rio.

LIZARD, (st. v.) Lieut. Com. C. Postle, July 5, at Gibraltar.

LYNX, 3, Lieut. Burslem, July 14, in the Tagus.

MADAGASCAR, 44, Capt. Foote, Mar. 22, at Cape Coast Castle.

MAGICIENNE, 24, Capt. Warren, 15th July at Malta.

MEDEA, (st. v.) Com. F. Warden, 5th July at Malta.

MONARCH, 84, Capt. S. Chambers, July 5, Athens.

NORTH STAR, 26, Capt. Sir J. E. Home, Bart., Feb, 25, arr. at Cape.

PILOT, 16, Com. G. Ramsay, May 12, left Jamaica for Honduras.

QUEEN, 110, Capt. G. F. Rich, July 5, at Malta.

RINGDOVE, 16, Com. Sir W. Daniel, June 24, at Bermuda.

ROVER, 18, Com. C. Keale, May 17, at Jamaica.

SAPPHIRE, (tr. sh.) Mr. G. H. Cole, Mar. 22, left Simons Bay for China.

SAPPHO, 16, Com. E. J. Parry, May 20, left Halifax, for Quebec, with specie for troops, June 10 returned.

SCOUT, 18, Com. Hon. J. Drummond, July 5, Corfu.

SCYLLA, 16, Com. R. Sharpe, June 24, at Bermuda.

SOUTHAMPTON, 50, Capt. T. Ogle, April 9, at Simons Bay.

SPARROW, 10, Lieut. Com. Tyssen, July 5, at Portsmouth, 8th, sailed for Chatham to be paid off.

SPITFIRE, (st. v.) Lieut. Com. H. E. Winthorp, April 23, left Jamaica for Honduras.

STARLING, (sur. v.) Com. H. Kellett, Jan. 7, at Trincomalee.

STROMBOLI, (st. v.) Com. W. Locke, June 15 Malta, July 5 Constantinople.

STYX, (st. v.) Capt. A. T. Vidal, July 2, at Fayal.

TERROR, Capt. R. Crozier, May 2, at Falkland Isles.

THUNDERER, 84, Capt. D. Pring, July 5, at Gibraltar.

TWEED, 20, Com. H. D. C. Douglas, June 24, at Barbados.

VANGUARD, 80, Capt. Sir D. Dunn, June 15, at Malta.

VERNON, 50, Capt. W. Walpole, June 15, at Malta.

VESUVIUS, (st. v.) Com. E. Ommanney July 5, at Malta.

VOLAGE, 26, Capt. Sir W. Dickson, May 17, at Jamaica.

WILBERFORCE, (st. v.) Com. W. Allen, Mar. 20, at Cape Coast Castle.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 19th inst., at Bath, the wife of Lieut. L. Bowell, First of H. M. S. Vixen, of a son.

In London, the lady of Capt. H. Manners, R.N., of a son.

June 29th, at Weybridge, the lady of Capt. Lushington, R.N. of a daughter.

At Sion Cottage, Bath, the lady of Lieut. Seymour Yorke Brown, R.N., of a son, still-born.

June 23, at Ealing, the lady of T. Mallock, Esq., R.N., of a daughter.

June 22, at Yeovil, the lady of Capt. Pascoe, R.N., of a son.

June 7, at Yoxford, Suffolk, the wife of Mr. Owen, Purser, R.N., of a daughter.

June 7, at Devonport, the lady of Com. Sulivan, H.M.S. Philomel, of a daughter.

June 4, at Sammerlands, near Falmouth, the lady of Lieut. Lewis, H.M. Crane, of a son.

Marriages.

At St. Thomas's Church, June 25, Lieut. W. L. Sayer, R.N., son of Capt. G. Sayer, R.N., to Henrietta, daughter of the late T. Slight, Esq., of Portsmouth.

On Tuesday, the 21st June at Trinity Church, Gosport, W. Ayling, Esq., of Gosport, to Jane Hart, of Portland-place, Gosport, daughter of the late Peter Hart, Esq., R.N.

June 7, at Fermoy, T. Fitzgerald, Esq., of Rockview House, Cork, to Frances, eldest daughter of Capt. Crotty, R.N.

June 9, at Totness, F. Cooper, only son of G. Farwell, Esq., to Louisa Whitbread, only child of Capt. Michell, R.N. of H.M.S. Inconstant.

In Dublin, Capt. G. Daniell, R.N. to Alice Catherine, daughter of the Right Hon. F. Blackburne.

June 14, at Henstridge, Somerset, Sir T. H. Roberts, bart., to Anne Elliott, only child of W. Langdon, Esq., R.N.

At Gittesham, Devon, C. A. Parker, Esq., to Louisa, youngest daughter of Capt. Geary, R.N., Weymouth, Dorset.

In London, on the 24th inst, J. Beckett, Esq., to Miss Mulcaster, eldest daughter of the late Capt. Sir H. Mulcaster, R.N. K.C.H.

June 25th, at Pancras Church, George son of W. Hogg, Esq., of Biggleswade, to Mary, daughter of Capt. Harness, R.N.

At Remenham Church, Berks, Jane Octavia youngest daughter of E. F. Maitland, Esq., to R. H. Valpy, Esq., only son of Capt. Valpy, R.N.

Lately, at Maker Church near Devonport, W. Parrymore, eldest son of Lieut. Stanbury, R.N., to Sarah, daughter of the late Commander Joseph Priest, R.N.

At Kingston, 26th ult. Mr. T. Hollis, of Landport, to Ann, daughter of Mr. W. Huit, R.N.

July 4, at Stoke, Devonport, Mr. W. Cornish, R.N., to Mary Jane, daughter of Mr. J. Crozier, R.N.

Deaths.

Admiral of the Blue, W. Shield, Esq.; lieut. 1789, commander 1794, capt 1796, full admiral 1840; had a retiring pension of 500*l.* per annum as a Commissioner, late of Plymouth Dock-yard.

Lately, Vice Admiral of the Blue, R. Hall, Esq., entered navy 1772, lieut. 1782, commander 1796, capt 1799, vice admiral 1837.

On the 23rd of Feb. Mr. H. V. Craven, son of Fulwar Craven, Esq., who, on his passage in the Apollo, to join the fleet in China, fell overboard when off the Cape of Good Hope, and was drowned.

On the 28th ult., at Hutton Lodge, near Malton, aged 56, the Right Hon. Lord James Townsend, of Yarrow House, Norfolk, captain R.N., K.C.H., and one of the naval aides-de-camps to Her Majesty.

Lately and suddenly, Mr. W. Every, master, R.N., 1838.

Capt. John Wilson, (1814), lieut. 1796, com. 1807.

Lieut. W. N. Hastie, R.N.

June 20, at Moretonhampstead, Ann, relict of the late Lieut. William Hooper, R.N.

At Mullion, Lieut. S. Cock, R.N.

At Paignton, Mrs. Kestall, relict of the late Lieut. John Kestall, R.N.

June, 20th at Pooll, Mr. James Douglas, Master R.N., (1806,) in his 78th year.

June, 27, at Bishopsteignton, Devon, Charles Gill, Esq., C.B., capt. R.N.

July 3, at Bishopsteignton, Devon, Harriet, the relict of the late Charles Gill, Esq., C.B., a Capt. in the Royal Navy, having survived her husband six days only.

Feb 17. on his voyage home from Calcutta, Lieut. John E. Vallack, R.N., late of H.M.S. Britomart.

On board the Star packet, 21st July, Mr. Alexander Fletcher, Assistant-Surgeon, aged 33.

At Southsea, aged 55, Lieut. James Clark, R.N. (1813) after long suffering.

July 2, on board the Braganza, st., on his passage to England Mr. W. R. H. Mattacott, late Master of H. M. S. Inonstant. His remains were interred at Lisbon.

June 20, at Boulogne-sur-Mer, Capt. Sir Edward William Corry Astley, R.N.

July 10, at Southampton, aged 72, Lady Bullen, wife of Rear-adm. Sir C. Bullen, K.C.B., K.C.H.

May 8, drowned in the West Indies, Joseph Baily, R.N., (1814), aged 48.

EDWARDS' PATENT POTATO.—We have much pleasure in again directing attention to this valuable and useful article. Capt. Clark of the brig Vigilant, in a letter to the Patentees (see Advertisement,) speaks very highly of its good effects in cases of Scurvy. We recommend all of our outward-bound friends to give it a trial.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of June, to the 20th of July, 1842.

Month Day	Week Day.	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Stren.		Weather.	
		9 AM.	3 PM.	9.AM	3.PM	Min.	Max	A.M.	P.M	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Tu.	29·70	29·70	64	68	56	74	SW	S	4	4	bc	bctp (3
22	W.	29·82	29·80	62	69	53	71	SW	SW	4	4	bc	bc
23	Th.	29·86	29·90	59	70	49	72	NW	W	3	5	bc	qbc
24	F.	29·72	29·72	61	69	56	70	SW	SW	5	6	qod (2	qbc
25	S.	29·82	29·76	64	65	54	68	SW	SW	6	6	qo	qod 3) (4
26	Su.	29·72	29·86	60	69	54	70	W	W	6	5	qbc	qbc
27	M.	30·19	30·26	60	70	50	72	NW	NW	6	5	qb	bc
28	Tu.	30·31	30·27	61	76	48	78	SW	SW	4	4	b	bc
29	W.	30·14	30·11	65	78	52	80	SW	SW	2	2	b	b
30	Th.	29·96	29·90	64	69	55	71	NE	NE	2	3	od 2)	bclr 4)
1	F.	29·76	29·90	51	62	50	64	N	NW	5	4	qor (1) (1	bc
2	S.	29·90	29·90	61	62	52	64	SW	W	6	5	qbc	qebp (3)
3	Su.	30·10	30·02	62	68	49	69	W	SW	4	2	bc	bc
4	M.	29·80	29·78	66	76	55	77	SW	SW	3	4	o	bc
5	Tu.	29·72	29·82	64	70	57	71	SW	SW	4	6	bc	qbcp (3)
6	W.	30·10	30·16	60	66	49	67	NW	NW	4	4	bc	bcp (4
7	Th.	30·15	30·06	62	57	47	65	SW	S	2	2	o	odr (3) (4
8	F.	29·85	29·80	61	67	51	68	SW	SW	3	6	bc	qbcp 4)
9	S.	29·76	29·78	59	60	53	63	W	SW	6	4	qbc	od (3)
10	Su.	29·95	29·97	57	69	51	71	SW	SW	3	4	bc	bc
11	M.	29·73	29·68	71	76	52	77	S	S	5	5	qbc	qbc
12	Tu.	29·88	30·00	63	73	54	74	NW	W	3	4	bcm	bcm
13	W.	30·20	30·24	66	74	52	76	SW	SW	6	6	qbc	qbc
14	Th.	30·40	30·43	62	72	51	73	W	W	4	4	bc	bc
15	F.	30·45	30·39	61	75	49	76	E	NE	2	3	b	b
16	S.	30·25	30·18	61	71	48	72	E	E	3	5	b	b
17	Su.	30·00	29·96	64	70	53	71	E	E	4	5	b	qbc
18	M.	29·87	29·92	66	76	56	78	NW	W	2	2	bcm	bcm
19	Tu.	29·89	92·84	63	69	59	71	E	SE	2	2	bcp 1)	op (3
20	W.	29·79	92·77	62	66	55	76	W	NE	2	2	b	bcptl (3) (4

JUNE—Mean height of barometer = 30·65 inches; mean temperature = 63·7 degrees; depth of rain fallen = 1·18 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

Again we direct attention to the concluding account of the Nornalup River in our present number, both with regard to Emigration and Whale Fishing.

Z. is thanked for his *forbearance!*

MR. FORBES's letter in our next.

CAPT. MILLER's letter has been received, and will be noticed in our next.

Erratum.—In our list of Deaths, in last Number, *for* "J. Scott, Esq., MD.," *read* "the lady of J, Scott, Esq., MD."

On the Seychelle Islands.—*By Capt. F. Moresby, R.N., C.B., while commanding H.M.S. Menai,* 1821.

The numerous errors I discovered in every chart I could procure, as well as those supplied whilst cruising amongst the Archipelago of Islands situated to the northward of the Mauritius as far as the 3rd degree of South latitude, and from 65° east, westward to the coast of Africa, imposed a duty on me to rectify them, as far as my ability would allow, and the various duties I had to perform would give me leisure.

During the whole of the year 1821, and until the 30th June, 1822, I navigated in these seas, Lieut. Hay of the Menai, detached in command of a colonial schooner, had strict injunctions to note the situations of the various islands and shoals he might fall in with. His lunar distances whilst at anchor near them were given to me, and subsequently verified by my own observations and chronometers.

By the accuracy with which I have been enabled to ascertain the positions of all the islands, I trust that those who follow me, may navigate in their neighbourhood with greater confidence than heretofore; and those that are bound to India will find that the route by the eastern coast of Madagascar is not studded with so many dangers as has been supposed, and is by far preferable to that which leads near the Cargados, or over the Saya de Malha Bank, which should be avoided by every ship that has the power to do so.

I, however, leave to the better judgment of others the route they may choose through those seas, confining myself strictly to the positions of the islands and dangers I encountered; and of the few I did not visit I have indicated their positions, as given me by persons on whom I could rely. I have noted also the winds and currents, and whatever may appear to give confidence to those whose possessions or pursuits lead them to this part of the globe, strongly recommending them to possess themselves of the latest edition of "Horsburgh's India Directory."

To all the islands I visited in the Menai, and where I had an opportunity of taking lunar observations, I assigned a position, meaning between those observations and that shown by chronometers, which seldom differed more than eight or nine miles; and, for greater accuracy, when my departure exceeded ten or eleven days from a well established meridian, such as Port Louis, in 57° 28′ east, I took the difference of time shown by chronometer on my arrival at another known meridian, using 55° 32′ 45″ east, the anchorage of St. Ann Roads, Mahé; from this meridian I have calculated the Amirantes Isles, African, Coetivy Isle, Platte, Alphonse, &c. My chronometers and lunars both placed the anchorage of Johanna in 44° 30′ 45″ east; from this the anchorage of Zanzibar, and the island of Pemba, are also calculated, agreeing with my lunars within four miles. The latitudes observed by meridian altitudes of the sun, moon, or stars.

For the plan of the Seychelle Islands, I am indebted to Messrs. Rodoul, (father and son,) both of great intelligence and active zeal. When I examined the passage between Mahé and Praslin, and from thence between Curieuse and Praslin, as well as the channel between the latter island and La Digue, I found the plan of the Rodouls so

correct that scarce the smallest alteration was necessary. Rodeal, the elder, piloted me.

When I speak of this group it will be seen, how necessary it is that an officer should, if sent to these islands, make himself acquainted with their navigation. The latitude and longitude of the islands are from my own observations.

Amirantes Islands.—These islands have been so little known, and consequently so erroneously laid down that, I have placed on one side all observations made on them, except those of Mr. Russell, master of H.M.S. Topaz. Mr. Russell's track was supplied me by Mr. Madge, the Government Agent at Mahé, who accompanied Mr. Russell in a small vessel, when the Topaz lay at St. Ann Roads, (Mahé,) 1820.

The islands laid down by Mr. Russell agree so nearly with my own observations, that I have no hesitation in assigning to Isles African, which neither Mr. Russell nor myself visited, a position from their bearings from Isle Remire, more especially as it differs but seven miles from the result of numerous lunar observations made on the South African, by Lieut. Hay.

Jean de Nova.—The position of these islands were ascertained by Lieut. Hay, from numerous observations when he landed on them, and the proof of his correctness is, my subsequent visit to Providence and St. Pierre, when the island of Jean de Nova was again seen by Lieut. Hay, whose signal I had made in the Wizard to look out for it. To prove with what uncertainty I at first navigated these seas, I copy from my log the following observations:—

March 14th.—Lat. obs. 11° 40′ S., lat. D.R. 11° 26′ S., long. chron. 52° 50′ E., D.R. 52° 45′ E., current south fourteen miles, barom. 29·91, therm. 89°, long. by moon and star Regulus, 52° 40′ E.

AM, light winds and fine weather; at noon the same; appeared to cross rapid veins of current at 6h. 30m. P.M.; variation 7° 36′ 45″ W. per ampld.; do. by azimuth 8° 30′ W.

15th.—Lat. obs. 11° 4′ S., ditto D.R. 11° 5′ S., long. chron. 51° 30′ E., D.R. 51° 25′ E., barom. 29·93, therm. 83°; at 7h. 30m. P.M., long. per moon and star Aldebaran, 51° 43′ E.; at 8h. 30m. PM. per moon and star Spica, 51° 41′ 15″ E.

AM., light winds from W.b.S.; at noon, fine clear weather; for the last three days we have experienced rapid veins of current, in which the surface of the water was much agitated, but the dead reckoning not materially affected.

16th.—Lat. obs. 10° S., ditto, D.R. 10° 13′ S., long. chron. 52° 7′ E., D.R. 52° E., lunars brought forward 52° 8′ E.

AM., light winds and fine weather from the N.W.; at 1h. 30m. a heavy fall of rain, in which the wind shifted to the westward; at 8h. fine weather; noon, ditto weather.

According to the position assigned Jean de Nova in Lislet Geoffroy's chart of these Islands, we must have passed nearly over it; Horsburgh makes it 10° 5′ S. to 10° 24′ S., long. 52° 20′ E.; Admiralty charts 20 miles further east: we have frequently tried soundings with 100 fathoms of line. At noon hauled to the southward to endeavour to make the island; many sperm whales round the ship, and numerous birds. At sunset hauled our wind to the northward under easy sail, sounded occasionally. At 9h. 30m., longitude per moon and star (Spica) 52°

17′ E.; at 10h 41m., latitude per meridian altitude of the moon 9° 58′ 46″ S. Midnight, light winds, with showers of rain at intervals.

March 17th.—At 2h P.M., wore to the southward; at 7h. P.M., lat. 10° 10′ S., kept away E.b.S., longitude brought forward from chronometer 52° 17′ E., lunar 52° 9′ E. In this parallel we ran fifteen miles until noon, when finding that by the chronometer, we had been set twenty-two miles to the eastward, hauled our wind to the northward; it is, therefore, probable, we may have been set past Jean de Nova, but, I think it impossible, the night being clear, and near full moon, the deep-sea lead also kept constantly going, I, therefore, conjecture Jean de Nova to be placed much too far eastward in the Admiralty charts.

The following are the positions of the ship at various times when we supposed ourselves in the neighbourhood of the island.

March 15th.—Lat. at noon 11° 4′ 30″ S., long. chron. 51° 30′ E., long. D.R. 51° 25′ E., long. per moon and star Aldebaran, 51° 26′ E., do. per Spica 51° 24′ 15″ E.; 7h. 30m. PM. lat. obs. 10° 49′ S., long. per moon and star Aldebaran, 51° 42′ 45″ E.; 8h. 30m. PM., lat. 10° 48′ S., long. per Spica 51° 41′ 15″ E.

16th.—At 4h. AM., lat. 10° 40′ S., long. chron. 51° 54′ E., long. per lunar brought forward 51° 50′ E., long. D.R. 51° 48′ E.; at 9h. AM., lat. worked from noon 10° 12′ S., long. chron. 52° 5′ E.; at noon, lat. 10° S., long. chron. 52° 9′ E.; at 6h. PM., lat. 10° 6′ S., long. chron. worked back 52° 52′ E.; at 9h. 30m. PM., lat. 10° 1′ S., long. chron. 52° 26′ E., long. per moon and star Spica, 52° 19′ 15″ E.; at 10h. 40m. PM., lat. per meridian alt. of moon 9° 58′ 45″ S., long. per 2nd set moon and star 52° 17′ 15″ east.

17th.—At 4h. PM., lat. 10° 4′ 39″ S., long. chron. brought forward 52° 24′ E., D.R. 52° 18′ E.; at noon, lat. 10° 10′ S., obs. long. chron. 53° 1′ 45″ east. By which we find that a current has set twenty-two miles these last twenty-four hours to the eastward; and according to the position assigned Jean de Nova, we must have passed over it.

Thus convinced, that, not only the situation of Jean de Nova was a great error attached, but also to Isles Providence, St. Pierre, &c.; and as I intended cruising in the neighbourhood of these dangers to prevent the slave trade, which had hitherto been carried on uninterruptedly, I at once began a correction of the general chart. It is rather remarkable that, whilst looking for Isle Alphonse, on the 20th of March, we fell in with a French slave brig, who trusting to the accuracy of the old charts, endeavoured to run me on the Amirantes; and which I captured after forty-one hours' chace in the vicinity of Coetivy.

Isles Glorioso.—The Isles Glorioso, which have hitherto been considered doubtful, I also examined on the 21st of July, 1821, and ascertained their position by excellent distances of the sun and moon, agreeing with chronometer.

Mahé.—In lat. 4° 35′ S., long. by sun and moon agreeing with chronometer 55° 33′ E., variation 7° 0′ W., rises in most places precipitous from the sea, and I should judge it to have 2,000 feet elevation; it is crowned with wood, and may generally be seen twelve or thirteen leagues; in a clear day I have seen it twenty leagues. Its eastern side is bordered by extensive coral reefs, the openings of which opposite to

St. Ann form the port, capable of holding five or six large ships of war moored, and sufficient room for many small vessels.

The anchorage between the coral reefs and St. Ann is excellent, the centre of St. Ann bearing east three-quarters of a mile; the town of Mahé W.S.W. in eight to thirteen fathoms, sandy bottom. There are three coral patches between St. Ann and the entrance of the port, having a quarter less four fathoms in some parts, which must be avoided by large ships. It seldom blows fresh, and never hard; in the south-east monsoon, heavy gusts come from the land in which the wind varies. In this season ships might conveniently lie between St. Ann and Isle Moyenne; there is a good passage between these islands; a large ship has been known to come to the roads of St. Ann between Isle Cerf and the main, but the passage is most intricate and dangerous. During the south-east monsoon there is also a good anchorage on the western side of Mahé, but heavy gusts come from the high land, when the winds are moderate and steady on the eastern side. The tides rise about six feet at high water, 3h. 45m. full and change. Water and wood may be procured either at St. Ann or Mahé. A large boat loaded cannot come over the coral reef at low water.

Provisions.—A supply of cattle of 150 head could be obtained; refreshments for the sick in any quantity, except wine, at a moderate price; and a large quantity of rice could also be procured. Mahé is without fortifications, easy to defend from its precipitous hills and deep ravines, nor could ships approach sufficiently near the town to fire effectually without entering the port, which is narrow and intricate.

Trade and Supply.—Their trade is carried on in a few small schooners to the Mauritius, exporting cotton, cocoa-nut oil, tortoise-shells, &c.; at present some individuals expect to succeed by the quantity of tortoise-shell that in two or three years they will be able to supply, by forming parks or square enclosures, into which the tide flows, having a sandy bank in the rear where they deposit their eggs: much coffee has of late been planted and succeeds well. The value of cotton is so depreciated from that of Georgia superceding it in the European markets, that the inhabitants are obliged to direct the labours of their extensive slave population to other pursuits: they complain of the hardships they incur from not being allowed to trade but through a regular entry at the custom-house at Mauritius, which they affirm is not in the spirit of the Order in Council, declaring the Mauritius and its dependencies free ports. One or two small vessels go occasionally to India. The language of the country is French; the disposition of the inhabitants hospitable and mild. A minister of religion is unknown amongst them, nor do they seem to entertain much thoughts about any person of that description; their moral character is, however, good, with the exception of the general feelings they possess in favour of the slave trade, and that from interested motives.

Praslin.—In lat. 4° 20′ S., long. 55° 47′ E. true, bearings from Mahé N. 58° E., twenty-three miles; has about the same elevation as that island, but not intersected with so many deep ravines; it is *now* inhabited by thirty families, who cultivate cotton by numerous slaves.

Dangers between Praslin and Mahé.—Northward of the anchorage off St. Ann, about four miles, are the Brisans, two rocks which bear

from each other by compass S.E. ½ E., and N.W. ½ W. N.b.W. of the North Brisan, three-quarters of a mile, is a small coral patch, having six fathoms; between the Brisans and the Mammelles, the ground is uneven, having at one cast seven, then thirteen and fifteen fathoms. A musket-shot W.N.W. of the Mammelles is a rock with six feet water over it, on which the sea generally breaks; but in calm still weather it is difficult to be seen. Two ships' length from the north point of the Mammelles, is also a sunken rock; half way between the Mammelles and Praslin are two dangerous rocks covered at high tides, they are distant from each other between two and three cables' lengths N.E. and S.W. In the south-east monsoon the sea generally breaks high, but when I saw them, and passed within two cables' lengths, the southernmost one appeared now and then above water, and the northernmost one the sea only indicated its position by the reflux of the water. The marks for these rocks are the highest point of St. Ann on with the Mammelles, south point of La Digue bearing east, Silhouette W. ¾ S. E.b.N. ¼ N. from these rocks is a bed of rocks called the Trompeuse, from their being often mistaken for the rocks just mentioned. North-east of Trompeuse are two islands called the Cousins; between the South Cousin and the Trompeuse the channel is intersected with dangers, and a ship cannot with safety pass; but between the Cousins there is a safe channel, as well as between the North Cousin, and the reef extending from Isle Praslin. North-west from the North Cousin, four or five miles, there exists a small dangerous rock, called the Balliene, covered at high tides. I searched for this rock, but not having any decisive marks, I could not find it; it is, however, frequently seen, and generally awash at half tide. W.N.W. of the North Cousin is a coral patch half a mile distant, having two and a half, three, and four fathoms; I passed between this patch and the Balliene, steering for Isle Aux Fous, leaving on the starboard hand a coral patch with four fathoms on it, situated half way between Isle Aux Fous, and the north-west point of Praslin, when Isle Aux Fous and Isle Aride are in one, bearing N. ¾ W., S. ¾ E. of each other. Isle Marianne being just open of Isle Curieuse, a ship may haul up with safety to anchor or pass between Curieuse and Praslin.

Curieuse.—Is a small island of moderate elevation north of Praslin, between these islands, the channel is from one mile and a half to two miles and a half broad, where there is excellent anchorage at all seasons of the year. Off the south-east end of Curieuse, a mile distant is a coral patch with four fathoms on it, a detached rock off the north-east end of Curieuse bearing N.b.W. Between Praslin and Les Sœurs the ground is generally uneven from six to twenty-five fathoms, but there are safe channels, between Les Sœurs and Isle Felicite. A bed of rocks extend from Les Sœurs southward, but they are principally above water. Isle Ave Marie is about half way between Praslin and Felicite; a bank extends a cable's length south-west of it.

La Digue.—Is inhabited by thirteen families; it is surrounded by a reef, and landing is difficult. Between La Digue and Praslin, mid-channel are two dangerous rocks, covered at half tide, distant from each other, nearly one mile in a S.S.E. and N.N.W. direction. I sounded round the southernmost rock, and had six fathoms a boat's length from

it, nine and twelve fathoms a ship's length; but I should not recommend passing between these rocks until the passage is better known. S.S.W. of the round island, joined by a coral reef to the east end of Praslin, two or three miles distant, are two rocks above water, called the Requiems. They bear from each other about N.N.E. and S.S.W., distant two or three cables' lengths; the south point of La Digue on with the south point of Marianne will lead to them. North, a little easterly of La Digue, five miles, is a bed of rocks, called the Chimneys, and W.N.W. of these rocks one mile is a dangerous rock covered at half tides.

Isle Aux Fregate.—In lat. 4° 32′ S., long. 56° 10′ E., is the most eastern of the Seychelle Group, with a reef and rocks over which the sea breaks off its south-west end; it has an elevation of 550 feet, and is about two miles and a half in length. Ships running for St. Ann roads in hazy weather will pass this island before they see Mahé, and sometimes as far as Isle Recif. North-west of this island the Chimneys will be seen. Isle Aux Fregate is inhabited, and has anchorage under its lee.

Isle Recif.—In lat. 4° 34′ S., long. 55° 49′ E. with the island bearing S.S.E. one mile and a quarter distant, we anchored in seventeen fathoms water, sand and shells. It is elevated about 150 feet, is about one mile and a half in length, the resort of millions of birds. It has a remarkable white rock, like a building on its top, which has its colour from the birds that resort there.

Silhouette.—South end 4° 33′ S., long. 55° 15′ E.—Is the most elevated of the Seychelle Islands, abounds with timber, and has five families residing on it; the landing is difficult from the surf, which breaks over the coral reefs. The island is nearly circular about twelve miles.

Isle Nord.—Has also a considerable elevation, but great difficulty in landing.

Isle Aux Vaches.—In lat. 3° 40′ S., long. 55° 8′ E.; is a small sandy island with a few shrubs on it, surrounded by a coral reef and bank about one mile and a quarter in length. L'Hirondelle, French privateer, with 180 people on board was lost on it, having sailed the day previous from Mahé to cruise in the Red Sea; they procured water by sinking a pit in the sand; remained there twenty-two days, until they constructed a raft on which a part arrived at Mahé. A bank rises from the south end; when six miles distant there is nine fathoms sand and coral.

Isle Dennis.—About ten leagues east of Isle Vache is in every respect a similar island.

To be concluded in our next.

THE BONIN ISLANDS,—*their situation, productions, &c., as noticed by the Japanese in* 1675; *and subsequently by Captain Beechey in* 1827; *more recently by a correspondent of the London Metropolitan; and in August,* 1834.

THESE islands, which are about twenty-nine degrees east of Canton, and eight from Jedo, "are most conveniently situated for watching

the trade of China on the west, the Philippines on the south, and Russia on the north; and if any intercourse is soon to be opened with the Japanese, they form the position from which it could be most easily effected." The earliest account which we find of the Bonin Islands is contained in Kæmpfer's history of Japan. "About the year 1675," says the historian, "the Japanese accidentally discovered a very large island, one of their barks having been forced there in a storm from the island Fatsisio, from which they computed it to be 300 miles distant towards the east. They met with no inhabitants, but found it to be a very pleasant and fruitful country, well supplied with fresh water, and furnished with plenty of plants and trees, particularly the arrack tree, which however might give some room to conjecture, that the island lay rather to the south of Japan, than the east, these trees growing only in hot countries. And because they found no inhabitants upon it, they called it *Bunin sima*, or the Island Bunin, (in Chinese *woo jin* 'without people,') the uninhabited island. On the shores they found an immense number of fish and crabs, some of which were from four to six feet long."

The following description of the islands is from a Japanese work published in Jedo in 1785. "The group is composed of eighty-nine islands, of which the most considerable are two large ones, two of middling size, and six smaller. These ten are spacious, and covered with herbs and trees; their plains offer an agreeable residence for man. As to the other islands, they are nothing but steep, sterile, and uninhabitable rocks. This archipelago is in latitude 27 degrees north, the climate is warm, and the vallies, situated between high mountains, are fertile, and watered by rivulets. The islands produce vegetables, grain of all kinds, great quantities of sugar cane, with extensive pastures. Some of the trees are large, and the wood is hard and beautiful. Palm trees, cocoa-nut, the betel-nut, camphor, red sandal-wood, mountain fig, mulberry, cinnamon; the tallow and the wax trees, are found there. Among the plants are the *Smilax China*, and others used in medicine. Few quadrupeds are seen; but birds are in abundance. There are several kinds of parrots, also herons and partridges.

"The chief productions of the mineral kingdom are alum, green vitriol, stones of various colours, petrefactions, &c. In the sea are whales, great lobsters, enormous shell fish, and sea eggs. The largest of these islands is about forty miles in circuit, another is thirty-two, the other eight are from six to twenty miles round."—(*Canton Register*, March 20th, 1833.)

In his voyage to the Pacific, Captain Beechey, whilst steering eastward from the Lewchew islands, on the 8th June, 1827, had the satisfaction to descry several islands extending north and south as far as the eye could reach. They all appeared to be small, yet they were high and very remarkable, particularly one near the centre. On the 9th, the Blossom entered a secure harbour and came to an anchor in eighteen fathoms, almost landlocked. This harbour is situated in the largest island of the cluster, and has its entrance conspicuously marked by a bold high promontory on the southern side, and a tall quoin-shaped rock on the other. It is nearly surrounded by hills, and a plan of it upon paper suggests the idea of its being an extinguished crater.

Almost every valley has a stream of water, and the mountains are clothed with trees, among which the *Areca oleracea* and fan palms are conspicuous. There are several sandy bays, in which green turtle are so numerous that they quite hide the colour of the shore. The sea yields an abundance of fish; and the shores are the refuge of snipes, plovers, and wild pigeons. At the upper part of the port, there is a small basin, formed by coral reefs, conveniently adapted for heaving a ship down; and on the whole it is a most desirable place of resort for a whale ship. By a board nailed against a tree, it appeared that the port had been entered in September, 1825, by an English ship named the Supply. Captain B. would not allow so fair an opportunity to escape of taking possession of the islands; and accordingly in due form he "declared them to be the property of the British Government, by nailing a sheet of copper to a tree, and the necessary particulars engraved on it." The harbour he called Port Lloyd, out of regard to the late bishop of Oxford, and the island in which it is situated he named after Sir Robert Peel.

They continued in Port Lloyd till the 15th of June; and enjoyed frequent opportunities of examining the surrounding country. Peel Island is entirely volcanic, and there is every appearance of the others to the northward being of the same formation. Basaltic columns were noticed in several parts of Port Lloyd, and in one place they were divided into short lengths as at the Giants Causeway. Many of the rocks consist of tufaceous basalt of a greyish or greenish hue, frequently traversed by veins of petrosilex, and containing numerous nodules of chalcedony or cornelian. Zeolites were not wanting; and the stilbite, in the lamellar foliated form, was abundant. Olivine and hornblend were also common, and the druses were often found containing a watery substance not unlike alum. Coral animals have raised ledges and reefs of coral around almost all the bays. The hills about the anchorage were wooded from the waters' edge nearly to the summit. They found among these trees, besides the cabbage tree and fan palm, the tamana of Otaheite, the *Pandanus adoratissimus*, and a species of the purau, also some species of Laurus, of Urtica; the Terminalia, *Dodonæa viscosa*, *Eleocurpas*, serratis, &c. Wood for building boats was found, which answered well for knees, timbers, &c. They saw no wild animals of the mammalia class, except the vampire bat. Of birds, besides the heron, plovers, snipes, and pigeons, they saw rails, the common black crow, a small bird resembling the canary, and a grossbeak, all very tame. The sea abounded in fish, some of which were beautiful. "We were," says the captain, "surrounded by sharks so daring and voracious, that they bit at the oars and boat's rudder, and though wounded by the boathook, returned several times to the attack. At the upper end of Ten Fathom Hole (a part of the above mentioned basin which was so named in consequence of their being ten fathoms of water all over it,) there were a great many green turtles; and the boat's crew were sent to turn some of them for our sea stock. The sharks, to the number of forty at least, as soon as they observed these animals in confusion, rushed in among them, and to the great danger of our people, endeavoured to seize them by the fins, several of which we observed to be bitten off. These turtles weighed from three to four hundred weight

each, and were so inactive that, had there been a sufficient number of men, the whole shoal might have been turned."

Captain Beechey, unable to visit the southern islands, confined his observations to the northern group which "consists of three clusters lying nearly N.b.E. and extending from the latitude of 27° 44′ 35″ N. to 26° 30′ N. and beyond, but that was the utmost limit of our view to the southward." He further says.—

"The northern cluster consists of small islands, and pointed rocks, and has much broken ground about it, which renders caution necessary in approaching it. I distinguished it by the name of Parry Group. The middle cluster consists of three islands, of which Peel Island, four miles and a fifth in length, is the largest. This group is nine miles and a quarter in length, and is divided by two channels so narrow that they can only be seen when abreast of them, neither of them are navigable by shipping. The northern I named Stapleton, and the other, Buckland. At the south-west angle of Buckland Island there is a sandy bay, in which ships will find a good anchorage; but they must be careful in bringing up to avoid being carried out of soundings by the current: I named it Walker Bay. The southern cluster is evidently that in which a whale ship commanded by Mr. Coffin, anchored in 1823, who was the first to communicate its position to this country, and who bestowed his own name upon it. These clusters of islands correspond so well with a group named Yslas del Arzobispo, in a work published many years ago in Manila, entitled "Navigation Especulativa y Practica," that I have retained the name, in addition to that of Bonin; it is extremely doubtful from the Japanese accounts of Bonin sima, whether there are not other islands in the vicinity to which the latter name is not more applicable. In the Japanese accounts, the two large islands are said to be inhabited, to contain several villages and temples, and to produce leguminous vegetables, and all kinds of grain, besides a great abundance of pasturage, sugar canes, lofty palm trees, cocoa-nuts, and other fruits; also sandal-wood and camphor. But the group which we visited had neither villages, temples, nor any remains whatever. There were no cocoa-nut trees nor sugar canes, no leguminous plants, nor any plains for the cultivation of grain, the land being very steep in every part, and overgrown with small trees."

Captain B. found two individuals on Peel Island, who had resided there about eight months. They were a part of the crew of the William, a whale ship belonging to London. They informed the Captain, that in winter there is much bad weather from the north, and north-west; but that as summer approaches these winds abate, and are succeeded by others from the southward and south-eastward, which prevail throughout that season and are generally attended with fine weather, with the exception of fogs, which are prevalent. They stated also that earthquakes were frequent during the winter.

To the learned editor of the London Metropolitan it appears that nothing more is required to add both the Sandwich and Bonin Islands to the British colonies, "than to send out a frigate to each group of islands, with a large proportion of artificers in each, and their wives to be permitted to go out with them, the captains of the frigates to be the governors of the islands. In a very short time, more would be

effected by this means, than by the usual expensive system of colonization, which up to the present time has been resorted to. His correspondent maintains the same opinion, and regrets that such a measure was not adopted in 1824; for their "discovery, civilization and christianity, would have been more effectually advanced, and British commerce would long ere this have supplanted that which is now almost exclusively carried on by our more enterprising friends, the Americans. The two positions are of great importance, as they are situated in the line of communication between western America and China.

"Eventually, I little doubt, that the Mails from China, when Mexico shall have become a settled state, will find their way by this route, viz.

"From England to Vera Cruz. In N. lat. 19°	say	6 weeks.
Overland to San Blas, N. lat. 21° - -	2	"
San Blas to Sandwich Islands, N. lat. 21° -	2	"
Sandwich Islands to the Bonin, N. lat. 27° -	2	"
Bonin to Canton, N. lat. 23° - -	2	"
Allowance for delays, &c., say - -	2	"

"Thus the passage to Canton will occupy only sixteen weeks.

"The passage cannot be performed in much shorter time than one hundred and twelve days.

"By this conveyance the trade winds can be depended on throughout the whole distance, and the wear and tear of a packet will be trifling."

The correspondent of the Metropolitan is quite safe in saying that the passage, according to the present mode of travelling, cannot be made in much shorter time than sixteen weeks. We are assured by good authorities, that three weeks would be considered a quick run from San Blas to the Sandwich Islands; and that it would require a still longer time to sail from the latter to the Bonin Islands. During the most favourable seasons, passages round the Cape of Good Hope, have been made *from* England and the United States in 98, 104, and 110 days; and passages *to* the same places have been made in 96, 100, 104 and 110 days (perhaps sometimes, even shorter than these;) but in the favourable seasons, no one ever thinks of sending by San Blas, or the Red Sea.

How quick the passage will be performed when steam vessels are made to traverse the Pacific, and railroads are built across the continent from Europe to eastern Asia, we will not venture to predict.

Our latest and most authentic information concerning the Bonin Islands, is from an English gentleman, who visited them last autumn, and who has very obligingly furnished us with the following particulars: some of which corroborate, and others contradict, those contained in the foregoing statements. Port St. George, or Lloyd, as named by Beechey, he found by careful and repeated observations to be in lat. 27° 6′ 30 N. and long. 142° 16′ E.; he says, "In August 1834, the American barque Volunteer, touched at the Bonin Islands to procure supplies. Having been informed at the Sandwich Islands that the settlers had gone to the South Islands, we made for the first, and after a fruitless search for them of three days, we found them on the south of the North Island. On the 24th of August, under the pilotage of Mr. Mazarra, we worked into the harbour, named by Captain Beechey, Port Lloyd, but by the

settlers, Port St. George. Mr. M. is the person who fitted out a vessel at the Sandwich Islands, and brought the present settlers from thence to the Bonin Islands, about six years ago. We found the harbour large and safe, there being two reefs which form a breakwater, and perfectly shelter vessels from the south-west winds, from which point the harbour is most exposed. The upper part of the harbour forms a basin, in which vessels of light draught can moor in perfect safety. The harbour is capable of containing from thirty to forty sail."

The settlers cleared, and now have under good cultivation, large tracts of land on which they raise Indian corn, yams, sweet potatoes, melons, plantains, onions, beans, salad, and pumpkins. They have had cabbages and Irish potatoes, but they did not thrive. For all these vegetables the settlers find a ready sale, when the whale ships visit the islands. During the seasons 1833 and 34, sixteen of these vessels arrived. The settlers have also a great many hogs, and in a year or two more, goats will be plentiful. On their arrival, they turned a bull and cow into the woods; but there is every reason to suppose that the bull was maliciously shot by a runaway sailor from one of the whalers. Abundant supplies of water and wood are procurable, and at very moderate prices. The following are the prices we paid for our supplies.

" Indian Corn	3	dol.	per barrel.
Sweet Potatoes	2	"	"
Yams	3	"	"
Hogs	6 to 7	"	each
Fowls	3	"	per dozen.
Pumpkins	10	"	per hundred.
Melons	6	"	"
Beans	4	"	per bushel.
Onions	4	"	per barrel.

"The settlers have built themselves snug wooden houses; and considering the short period they have been on the island, they deserve much credit for the exertions they have made in clearing the ground, it being very thickly wooded with considerable underbrush. The cabbage tree affords them excellent material for fences, &c. The greatest difficulty they had to encounter, was the transporting of timber from the woods to the places where they wished to use it, a distance of three or four miles. For the first two years, they had only four natives of the Sandwich Islands to assist them; they have now eleven males and nine females. But this number is totally insufficient, should the whale ships continue to resort there for supplies of vegetables, wood, and water. The settlers have been put to great inconvenience by the masters of some of the whale ships turning refractory seamen on shore. These men having no employment, and being generally too lazy to work, have become a heavy tax to the quiet settlers, who have been obliged to furnish them with food. In 1833, the whaler Cadmus turned fifteen men on shore, among whom were several daring characters, who put the settlers at defiance. But not being inclined to work, eight of them attempted to cross over in a whale boat to the South Island, a distance of twenty-five miles; but they all perished, the boat having been upset by the strong tide ripples; the remainder have since left the island in different vessels.

Port St. George is admirably situated for the whalers to go to the coast of Japan, being immediately in their way, and they are on the fishing ground at the very entrance of the harbour. There is no doubt that in a very few years, when the port becomes more frequented, vessels which, after the whaling season is over, on the Japan coast, have had generally to repair to Guam, one of the Ladrone Islands, or to the Sandwich Islands, to refit, and procure a supply of vegetables, &c., will find Port St. George to afford them every facility, and save much time and expense. It usually takes about five weeks to reach the Sandwich Islands, after the season is over.

Many masters of ships have thought the place unsafe, from the circumstance of the loss of the William, in 1826. But it is very clear she was lost through neglect. Vessels having good ground tackle need have no apprehensions for their safety. We remained in the port forty-two days, and had two strong gales in September, which the vessel rode out well. There are generally one or two gales every year, but they are not regular as to time. The settlers look for bad weather in May and October. The sea yields a good supply of fish, and plenty of green turtle during the season. It would be a great safeguard to the settlers, should government deem the place of sufficient consequence to induce them to send out a person vested with authority, who would put a stop to the masters of ships leaving any of their crews behind, as they have hitherto done.

There are twenty-six Europeans on the islands, English, American, and Portuguese, exclusive of the Sandwich settlers mentioned above.

The tree to which a sheet of copper was nailed by H.M.S. Blossom in 1827, stating that the Islands had been taken possession of on behalf of his Britannic Majesty, having been cut down, the copper is now affixed to the house built by Wittrein and his companions, after the loss of the William in 1826.

Directions for Port Adelaide and its Approaches, *Australia.*—*By Mr. S. H. Pullen, R.N.*

Entering Gulf St. Vincent from the westward through Investigator Straits. After passing Althorp Island keep Kangaroo Island close on board (which is high and bold,) and on making Point Marsden, a single hummock, steer over for the high land about Onkapaninga, into nine or eight fathoms, (this will carry you well clear of Troubridge shoal) then with Mount Lofty bearing E.b.S. in five fathoms stiff clay, you will get about the best anchorage in Holdfast Bay; Mount Lofty is the highest peak of the range. The bay is exposed to south-*westerly* gales causing rather a heavy sea, but as they do not last long, with good ground tackle it may be considered safe. They may be expected at the full and change, and with a little attention to the weather and barometer, you may judge of their approach. They will commence generally from N.N.W., haul round by west to S.S.W., then begin *to lull.*

If ships do not wish to anchor in Holdfast Bay but to proceed directly to Port Adelaide, when Mount Lofty is in sight stand up in about ten fathoms, and gradually shoal to five fathoms and a half; then with the

Peak on a south-easterly course you will be directly off the bar, where a light vessel is moored, with pilots always ready to take ships in. The anchorage outside the bar is good, and the shoals from the mast-head are seen very distinctly.

For Port Adelaide from the southward or westward through Back-stairs passage, pass on either side of the Pages as they are steep to, but give Cape Jervis a good berth, and as high up as Onkapaninga do not approach the shore nearer than ten fathoms, above to the Port six and five fathoms.

Port Adelaide is an arm of the sea, the entrance being over a bar of about three-quarters of a cable, formed by the accumulation of sea weed and sand, which with a steam dredge might be easily removed.

The least water on the bar is nine feet, the average range of tide being eight, but I have known it ten, even eleven, and it depends greatly on the strength of the winds; strong south-westers cause it to rise and keep up twenty-four hours on a stretch, and northerly winds have a contrary effect.

After passing the bar you have good anchoring ground; four miles within it is a shoal stretching right across, (termed the inner bar) on which you get ten feet at low water. The port is capable of admitting ships of 600 tons which may lay alongside the wharfs; larger craft may lay outside and have lighters to discharge until sufficiently lightened to take the bar.

The land and sea breezes are prevalent, a smart craft may turn up for a mile above the north arm, where the port becomes more contracted. A small steam-tug would be of great benefit and pay well.

The north arm is about four miles from the present port, but eventually it will become the chief anchorage, there being the best water and room to swing.

Ships are moored head and stern opposite the wharves, in good holding ground, in fact after crossing the bar you get into a perfect millpond, the tides are irregular.

The accommodation for loading and unloading is good, and merchandize may be either stored or taken to Adelaide six miles distant, over a good and level road.

Supplies may be easily obtained, water and fire-wood close at hand. Ballast is supplied by the Government, but very dear; in July 1841, five-shillings the ton.

ON MERIDIAN DISTANCES.—*By Mr. J. Jackson, Master R.N.*

H.M.S. Endymion, Aden, Jan. 7th, 1842.

SIR.—Having measured carefully the following Meridian Distances with the chronometers named below,* which were rated by equal altitudes at each place, and found to retain their rates uncommonly well, I beg leave to transmit the same, knowing that in this part of the world the longitude of many places is not correctly known.

* No. 1329, by Arnold & Dent; No. 2272, by Molyneaux; No. 244, by Carter; No. 1612, by E. J. Dent.

	H.	M.	S.		°	′	″	
From Simons Town to Johanna Town - -	1	43	47	or	25	56	45	E.
Johanna to Rass Marbat, Aden - -	0	2	25	"	0	36	15	E.
Rass Marbat to Bombay light-house -	1	51	29	"	27	52	15	E.
Bombay lt.-h. to Karack fort, Persian Gulf	1	29	56	"	22	29	0	W.
Karack fort to Muscat cove - - -	0	33	2	"	8	15	30	E.
Muscat to Rass Marbat, Aden - - -	0	54	29	"	13	37	15	W.
Rass Marbat to Barburra, Abyssinia -	0	0	5	"	0	1	15	E.
Rass Marbat to Ambaboo, Bay of Tajurra	0	8	36	"	2	9	0	W.

[We insert these for the consideration of our esteemed correspondent Lieut. Raper, and request that Mr. Jackson will oblige us with the *places* of observation; which should always accompany information of this kind. There seems to be a difference of six seconds of time in the two measurements between Bombay and Aden.—Ed]

Remarks on Heaving Down a Seventy-two Gun Ship; *shewing the strain to be resisted, and in what manner the established allowance of Stores may be rendered available.—By Com. R. Harris, R.N.*

Clearing the Ship.—The ship should be cleared of every thing excepting the spars, running gear, which will be required for lashings, anchors, chain cables, runners, and all the tackles and luffs.

The hammock nettings should be taken off, the loose bulk-heads removed, and every thing that is not applicable to the operation to be performed, as it is desirable to have the ship as light as possible; in teak ships this is very necessary. The lower yards should be kept aloft till the outriggers are placed: the boys, idlers, and convalescents, should at once be employed to pick oakum.

Choice and Position of the Stores and Outriggers.—If large spars are not to be obtained, the following may be used for outriggers; three of which will be required for each mast.

Main-mast.—1 main-top-mast, 1 main-top-sail yard, and 1 yard-arm, or bowsprit piece. Foremast.—1 fore-top-mast, 1 fore-top-sail yard, and 1 cross-jack yard. (If you can get other spars the yards should not be used.)

These spars should be placed in the main deck ports immediately before and abaft the masts. When these are placed, the lower yards, caps, tops, and cross-trees may be sent down and landed.

The shores should then be placed with their heels resting on the spare fishes, close to the side, and their heads between the trussle-trees, before and abaft the masts.

Mast-head Shores.—Main-mast.—1 main-top-mast and 1 16-inch hand-mast. Fore-mast.—1 fore-top-mast and 1 14-inch hand-mast.

In preference to using belly shores, it will be better to fish the main-mast with the two mizen-top-masts, and the fore-mast with the two jib-booms. If no other spars are to be had, the top-gallant studding-sail booms must be cut up for shores for the decks and out-riggers.

Artificers' Work.—While the ship is being cleared, the blacksmiths should be employed in making ten span shackle bolts for securing the out-riggers, they should be of 1¼ or 1½ iron: some of these bolts are allowed, but they are not long enough; plates, washers, and forelocks

must also be made for them. When this is done the blacksmiths may be employed in making pump spears, the carpenters in making pumps, shoring the outriggers and decks under the beams on which the mast-head shores rest; and in building, if necessary, a main purchase-block; two good stages should also be prepared. The span shackle bolts being finished, the copper should be stripped where they are to be driven, viz., before, abaft, and between the outriggers, as low as convenient for forelocking them on the orlop deck, or as the water-line will allow; the holes should be bored slanting upwards, so that the martingales will rather tend to set them in than to draw them out: the shackle should then be well parcelled.

Securing the Outriggers.—In the meantime a party of seamen should be employed to fit the martingales and outrigger shrouds; and to warp the straps for the purchase blocks.

Martingales.—The size of the martingales must depend upon the angle which you are able to give them, as their size must increase as the angle becomes less. If the bolts are near the water-line three parts of 8-inch for each outrigger will be found sufficient, and for this purpose, the lower deck breechings will be available, they may be set up to the bolts by a laniard having a thimble seized in the lower end, and a clinch round the outrigger, or otherwise, as most convenient to avoid cutting the rope.

The main outriggers should be cleated about eighteen feet from the side, for the rigging: the heels should be shored down and securely lashed, they should be gammoned to the breeching bolts, and shored by diagonal shores in the angles of the portsills; these shores should be so cut as to fit the upper corners of the portsills that the spars in rising will bring both a vertical and lateral strain; for if the pressure were entirely vertical they would probably strain the top sides. The outriggers should also have a midship lashing to the train bolts. If the top-sail yards are used (which is not advisable when other spars can be obtained,) the inner yard-arms must not be allowed to butt the ship's side, they should have chain snotters, and must be shored in all directions.

The fore outriggers should be cleated fifteen feet from the side and secured inboard as the main.

In addition to the martingales, the three outriggers for each mast may be connected by luffs boused well taut, and the stay tackles may be used for fore and after guys, which bring all to a fair strain. Any further security that may suggest itself at the time, according to circumstances, should not be omitted, as you will never err by being on the safe side.

Straps for Purchase Blocks.—The straps for the main purchase blocks should be warped of new 3-inch rope.

The upper one will take three coils which will give twenty-eight parts in the strap; the strap being middled, and the block seized in, the eyes should pass round the mast-head and lash on the same side as the block, and above it, which will give four times, twenty-eight parts, of 3-inch in the neck of the strap.

The length of the lower strap must vary according to the pit you heave down to, it should contain at least thirty parts of 3-inch, and also have four parts of the strap in the neck. If the pit is deep, it will

be better to warp two separate straps of half the length for the lower blocks.

The jeer blocks being used for the fore-mast, may be securely lashed as most convenient; but neither of the blocks should be lashed at the mast-head till the outrigger shrouds are over, set up hand taut and matted overall.

Preventive Shrouds.—For the main-mast.—Two lengths of the stream chain cable (well parcelled) may next be put over the main-mast head; these may be set up through the lower deck ports, and kept clear of the channels by short outriggers (of hard wood with grooves in the outer end to receive the chain), resting in the channels, butting against the ship's side, and cleated round the heel, to form a step; the outrigger shrouds for each mast may then go over, they should either be of chain or 11-inch rope; if the former, they must be well parcelled; dead eyes or blocks may be used to set them up, as convenient.

For further security, the following purchases may be used for the main-mast:—Two main-top tackles lashed at the mast-head, one set up at the chess-tree, the other to the after quarter-deck port; two mast-head runners to assist the main-stays; two belly stays of 11-inch lashed one-third down the mast, and set up to the skids on the "weather" side; two main-yard tackles lashed one-third down, one set up at the chess-tree, the other to the after quarter-deck port.

For the foremast:—To assist the lower rigging, two threefold purchases lashed to the spare chain plate bolts; two launch's purchases lashed at the mast-head and set up: one to the cat-head, one to the after part of the fore chains; two runners lashed at the mast-head; one set up to the cat-head, one to the chess-tree and skids; two belly stays 11-inch, one-third down the mast and set up half way in on the bowsprit; two fore-top tackles, one-third down the mast, one to the cat-head, one to the chess-tree.

The bowsprit may be secured by the two fore-yard tackles hooked on the weather side.

The mizen-mast may be shored with one shore at the mast-head, and the mizen burtons may be used to assist the rigging.

Caulking, &c.—While the foregoing preparations are being made, the chain pumps should be shortened to work on the lower deck. The carpenters and caulkers should be employed upon the side that is to be hove down, stopping the air-holes on all the decks, and thoroughly caulking every seam or hole that will either be immersed or exposed to the action of the water that may find admittance, particularly in the wake of the hammock nettings that have been removed, and round the quarter galleries. The caulking should be considered a very important point; the smallest hole that can admit water must be carefully stopped. The main deck ports must be filled up in the centre with plank well caulked, and covered with tarred canvas, the lower deck ports and scuttles thoroughly caulked in, the holes for the port pendants plugged, cross caulked, and payed over, and the scuppers made tight in the same manner, and it must be remembered that want of attention to these particulars may cost you hours of labour at the pumps, or, perhaps, oblige you to right the ship at a moment when you might advantageously continue the repair. The hawse holes and stern ports need not

be stopped, they will not be near the water when the ship is keel out.

Arrangement of the Pumps.—As the water must be raised more than 30 feet, two sets of pumps will be required. The lower ones must throw the water into tubs or tanks placed on the lower deck. The upper ones must be placed in these vessels, and raise it from them to the upper deck, for this purpose, nine or ten pumps will be required. They may be built square of plank, caulked in the seams, well parcelled and woulded, or, if timber can be had, may be formed by sawing straight spars in half lengthwise, and rejoining them after they are hollowed, then parcelling, tarring, and woulding over all.

The number required being completed, the lower and orlop decks must be scuttled, to allow the pumps to be placed at the required angle (about 37° with the horizon) so that their ends may rest a little below the orlop wing gratings: the main and upper deck pumps may be sufficiently sloped in the hatchways with their heels in the vessels, which are raised on platforms inclined at an angle of 20° with the horizon, to preserve their level when the ship is down.

The pumps should have long hoses to their nozzles, and troughs should be made to carry the water over the skids to leeward on the upper deck.

Substantial platforms must be secured at the same angle, in convenient positions for the men to work the pumps.

The pumps should be tried before you heave down to see that th y are tight, and also, when in position, to see that the brakes work clear of the beams and combings.

Fresh water should be slung in barricoes for the pumpers to drink.

Any fire engines that can be procured should be worked in the hold or on the lower deck, on similar platforms, with their hoses led on deck.

Ladders, &c.—Battens four inches deep should be nailed fore and aft on each deck; knotted ropes and Jacob ladders should be placed at convenient distances to secure ready access to every part of the ship, which is more difficult, when she is down, than would be imagined.

The hatch-way ladders should all be lashed.

Anchors and Cables.—The sheet, and spare anchors, may next be laid out a beam across the tide, as tripping anchors, at such a distance according to the depth of water, as may ensure their holding; one should be abreast of the fore-mast, the other opposite the main-mast. A stout hawser should be bent to the ring of each, and brought in at the second lower deck port abaft the main-mast, and first port abaft the fore-mast, on the same side as the anchors are laid out.

The chains to these tripping anchors should be tailed with the stream chain, which is to pass under the ship's bottom, and in at the quarter-deck port abaft the main-channels, and second port on the forecastle; these ports should be well lined, and two stoppers fitted ready for fleeting; a three-fold purchase, stretched across the deck, may here be applied, so that when you have tripped the ship off by the hawsers, you may bouse the cables in taut, stopper and rack to the breeching bolts. In tripping off, you must be careful to keep the ship parallel to the pits, or you may chance to bring one anchor home.

The bower anchors may be used to moor the ship head and stern,

they must be laid in the line of the tide; they should also be tailed with small chain if you can get it. The cables should be taken in, on the side that is to be hove down.

Setting up the rigging.—The wedges being taken out, and the masts drawn over to the opposite partners, the shores may be cleated and lashed above the rigging, and below the trussle-trees with good worn rope of 3-inch or 3½. The lashings should be passed on both ends with racking turns, hove taut by a Spanish windlass, the ends frapped round all parts and secured. The heels should also be lashed to the side so that they can have no play forward and aft.

The outrigger martingales being well set up to the span shackle bolts, and secured otherwise as before mentioned, the lower rigging and outrigger shrouds may be set up, to a fair and equal strain respectively; the outrigger shrouds may be a little tauter than the rigging, because they have a longer drift, and are less strained when offering the same support, in the proportion of two to three; the additional purchases may then be set up.

There is one point in the foregoing arrangements that merits peculiar attention. Having once measured the distance between the mast-heads, and established that distance between your lower blocks, you must be careful to preserve the same distance between the mast-heads whenever you may have occasion to set up, afresh; if you neglect this, your masts spread apart as the ship comes down, and the stays or rigging are unfairly strained.

The slack of the opposite rigging should then be taken in, and a swifter should be rove, to keep it from hanging in a bight as the ship goes down.

When the masts are thus secured, the purchase blocks may be lashed, and the shores wedged under the heels, until they have taken part of the strain off the rigging; care should be taken that the heads are clear of the trussle-trees, the strain should not be wholly upon the shores and deck, but each shroud and purchase must bear its proportion.

The fore and main masts are supposed to have been fished on the same side as the shores, with the spars before mentioned.

Purchase blocks.—Main.—A "seventy-two" is allowed one 30-inch double scored four-fold block, and one 30-inch double scored three-fold block, which should be quite equal to the work required.

The four-fold block should be aloft, and the standing part of the fall below, which, with the assistance of a top block for a lead, will give you eight parts in the fall; but if you think it better to use two four-fold blocks, one may be built of elm or any close grained wood, the sheeves may be taken out of the fore and main top-masts, and if you have a lathe, a main-deck iron staunchion will make the pin: when the block is built, a crown should be fitted to fill in between the block and the strop to support the two middle partitions; if this is not done the pin is liable to bend, and the center sheaves to sink so as to increase the friction.

Remarks upon a four-fold purchase.—It is usual in calculating the power of purchases to divide the strain equally amongst the several parts of the fall: it is needless to remark to practical men that such a divi-

sion of strain is incorrect, as the strain is always greatest on the running part, and after the first friction is overcome, it appears probable that the increase of strain on the several parts will be in the ratio of their respective velocities. An experiment is added which was made when the parts were at rest, or rather when the first friction was just overcome. The writer is far from wishing to found any fixed principle upon a single observation, but would only direct the attention of those who are curious in such matters, to an important part of our profession.

The purchase was rove four-fold with the standing part aloft, making in all nine parts.—50·5 lbs. on the fall gave 12 lbs. on the ninth part. 28 lbs. on the seventh part.—32·4 lbs. on the fifth part, &c.—so that if we had 80 tons to raise, and wished to know what sized rope would be equal to it (when rove as a four-fold purchase). Let c, be the circumference, then $\frac{9c^2}{5} = 80\ c = \sqrt{\frac{400}{9}} = \sqrt{44} = 6.6$ in. or $6\frac{1}{2}$ rope, nearly, is the answer, supposing the strain to be equally divided, but the strain *on* the ninth part is to that *on* the running part, as 12 to 50; divide 80 in that proportion, and it gives roughly $6 + 14 + 16 + 19 + 25 = 80$ so that the running part must bear 25 tons to raise 80 tons, now $\frac{c^2}{5} = 25$ tons, or $c = 11$ (nearly) so that instead of $6\frac{1}{2}$ you must use 11-inch rope.

Purchase blocks.—Fore.—Two jeer blocks may be used, and if you wish the purchase to be four-fold, add a top block above and below.

Purchase falls.—Main.—Shroud hawser 11-inch, tailed with your best 8-inch hawser, and again tailed with $3\frac{1}{2}$ or 4-inch, if you have only your own resources; but two 11-inch hawsers tailed with 4-inch would be better.

Fore.—Fore and main jeer falls tailed with 3-inch.

N.B.—At least three coils will be required for each mast.

In reeving, you save trouble by using the capstan; in overhauling the falls, which is a work of considerable time, your clue jiggers fleeted alternately, will assist you.

Mast-head stoppers.—Two good stoppers of 11 or 13 inch should be fitted to each mast, they may go with a clove hitch round the mast-head, the ends being long enough to reeve through the strop of the lower block, to hitch and seize back. A small jigger and two balls of spunyarn for each purchase should be ready. The top blocks may be used for leading the fall, and stoppers must also be fitted for each of them that it may be necessary to use.

The greatest attention is required to the lead of the fall, as the slightest rub, with so great a strain, might prove of serious consequence. A sharp axe should be ready at each fall. Relieving tackle will not be necessary for a ship of this class.

The pit.—The formation of the pit in which your lower block is secured, must vary so much with locality, that no general rule can be given, but in another page is a description of one used by the Melville.

Weight for tipping.—The rigging being set up, the purchase falls rove, the pumps rigged, and all the foregoing preparations made:—fifteen or twenty tons of water in casks may be placed on the side to be hove down, and lashed to the breeching bolts, &c., on the quarter-deck and forecastle.

Preparations for heaving.—The ship may then be hove off by the tripping hawsers to the distance of seventy or eighty feet from the pier, and the tripping cables boused well taut.

The men required to work the pumps and engines should be on board with a proportion of carpenters to stop small leaks, clear the pumps, attend the masts in the partners, &c.; the hand pumps should be used as long as they will act, so as to keep the ship perfectly dry, the "spells," should be to leeward on the upper deck, to assist (with their weight) the purchases. At slack water you may commence heaving; the ship will incline 15° before the slack of the falls is through, and will continue to close the pits till she is down to 35°, she will then begin to go off. It must be remembered that the main-mast is to heave the ship down, the fore purchase is only an assistant, and must not be unfairly hove upon; the capstans should be spelled every half hour. A wooden "shoe," (shaped like a mallet with a tapered head) should be used to keep the falls up, so as to avoid surging as much as possible; the moment the pumps will draw, they must begin to work; the last few degrees, viz., from 68° to 74° will be the heaviest part of the heave. When the ship is down, the falls must be stoppered and racked, the mast-head stoppers passed, boused taut and secured, you may then walk back, and reverse the falls upon the capstans, taking a turn round the bitts with the running part, which is to be hove off by the capstans as you ease up; this, with the assistance of the "shoe," will cause less surging.

Stages.—Substantial floating stages having been previously made for the carpenters, should now be ready to haul in; a large boat containing tool chests and the stores necessary for stopping the leak should be in attendance; when the ship is down, not a single second should be lost; let your men sing, or cheer at the pumps, and forgo that part of your discipline, for a short time, which might be a hindrance to your immediate object; watch narrowly the purchases, and be ready to ease up at a moment's warning, if they slacken, or any of the gear carries away. In easing up, when the lower deck scuppers are out of the water, hold on, take the lead or canvas off that secured them, and let the water escape from the lower deck; you may get rid of several tons thus without labour.

The carpenters must be careful (in clearing the injured part) not to increase the leak, by undertaking more than they are able to perform, and as a general rule make all as tight as possible before you think of easing up.

[We have taken the foregoing from a pamphlet published a short time ago by Commander Harris, with a view of diffusing information on this *important* subject, and shall complete it in another number.—Ed.]

On the Improvement of the Thames.

(Concluded from p. 536.)

Mr. Leach's report states the defects and desiderata from Battersea Bridge upwards, and the obstructions caused by the awkward positions of the bridges, and the small openings between the piles or piers. These bridges are indeed altogether unworthy, as respects utility and appearance, of the situations so near London which they occupy. The following suggestions are directed chiefly to the part from Chelsea Bridge downwards.

The greatest defect in the river is the irregularity in its present width and depth; and in the line of the wharfs and banks that form its sides. As examples, the width half a mile below Fulham Bridge is 820 feet.

Two miles lower, or half a mile below Battersea Bridge, it is 745 feet.

One mile lower, opposite the Chelsea waterworks, 1000 feet.

One mile and a quarter lower, opposite the Penitentiary, only 600 feet.

Three-quarters of a mile lower, opposite the Houses of Parliament, before the new river wall was built,* it was 1030 feet, and now is 924.

Half a mile lower, opposite Hungerford market, 1450 feet, which is nearly two and a half times the width opposite the Penitentiary.

Three-quarters of a mile lower, below Blackfriars Bridge, 995 feet.

Three-quarters of a mile lower, below Southwark Bridge, it is contracted to 720 feet, just half the width opposite Hungerford market, which is one mile and a half higher.

The irregularity is less below London Bridge, with the exception of the contraction to 770 feet opposite Limehouse-bridge dock, three miles below London Bridge; so that the great inequalities are chiefly in the wharfed part at London.

Now, on reference to the accompanying plans, and the table of widths and observations appended to this Report, it will be seen generally that where the river is narrow, there it is deep and comparatively clear of mud, excepting where the bends divert the strength of the tide to one side; but where the width is great there are shallows and muddy banks, which are injurious to navigation and to health. A main object, therefore, is to take means for removing these evils by an approximation to an uniform width and depth; and, with the exception of the cases where the shore between high and low water is used for coal barges and floating timber (for which a special provision can be made by recesses or docks, as is hereafter referred to, but explained more particularly in the evidence before last year's committee), it is generally the interest of the owners of the particular property, as well as of the public, that they should be removed.

One of the causes of the present great irregularity upon the shores of the river, even where embankments have been formed in modern times,

* The new Parliament wall is in the line of the proposed embankment on that side.

has been the want of a general system or plan for guiding the lines of wharfs and embankments; so that each party has proceeded either without authority, or the Navigation Committee has granted or withheld the authority, and defined the line, as the applying or opposing party had the stronger argument or interest, without having more before them than limited information of the part of the river which was proposed to be embanked. Thus necessarily, although often with the best intentions, sanction may have been given to what was injurious, and resistance offered to what would have been beneficial, to say nothing of the effects of private interest and influence operating in the same injurious manner, where the committee, of which all the members were not likely to be conversant with such matters, had no general guide before them, and where the duties of the conservator were therefore discharged with difficulty and uncertainty.

The plans now presented are intended to supply in some measure the above defect. They extend from Putney Bridge to Gravesend. In the portion between Putney and the river Lea below Blackwall the proposed river lines are marked, which after our survey and consideration, we concur in deeming as regular as circumstances will admit, and therefore as advisable. We reserve the right of correcting any errors. In the portion above Vauxhall Bridge we have conferred with the parties principally interested. Between Vauxhall and London bridges the lines are, with some partial and local modification, the same as I proposed, and which formed the subject of the enquiry before the select committee of the session 1840.

Between London Bridge and the river Lea, the lines where wharfs at present exist are not such as to admit of great variation, and, from the knowledge of, or professional engagement with, the owners of the parts that are not yet wharfed, I do not anticipate any great objection.

The line from the Lea downwards to Barking creek is laid out with particular regard to the effect of removing the nuisance caused by the mud opposite Woolwich dockyard, and the shoals in the navigation, the worst in the course of the river. To effect the improvement suggested here of straightening the channel of the river by the removal of the quick bends above Woolwich on the Essex side and below Woolwich on the Kent side, would be a public work of great labour and cost, in which the Admiralty must feel a strong interest, the means heretofore taken to effect this important object not having succeeded; nor are any similar measures which do not increase the velocity of the tide close to the wharf wall likely to do so. In stating this I do not wish to be understood as saying that nothing less than the alterations here proposed in the course of the river will effect the object; and I beg to add that caution is, at the same time, required to avoid producing a velocity which might be inconveniently rapid.

In an extensive measure of this nature a general agreement of the owners of premises to extend at once to the recommended line is not to be expected, although for the public reasons I have stated, as well as on account of the addition to the extent of property, and getting rid of the banks of mud which affect so injuriously the beauty and healthiness of the houses abutting upon the river, the probability is that, even supposing the extension to be optional, the applications for licences

will be numerous, if parties knew how far they may extend. To prevent doubt and all suspicion of partiality, the line throughout, with the terms and conditions, should be defined, and made generally known; and if the value set upon the acquired ground (as was done where the Blackfriars embankment was made) be understood to form a fund to be exclusively appropriated to the purpose of improving the river, the amount would generally be contributed without grudging.

One of the improvements to which I refer, and for which the funds will be applicable, is the reduction of shoals, where they consist of a material like silth and clay, the value of which will not pay for the removal. In the works of Blackfriars and Westminster bridges a surface of this nature, lying over the gravel, has been met with; but, after this surface was removed, the gravel under it was taken up without charge to the committees. It will be essential, in the removal of shoals, not to go under the regular level, but to leave the bottom, at a proper and uniform depth, with a well-defined navigable channel in the middle, gradually becoming shallower towards the sides.

When the scheme for embanking between Vauxhall and London bridges was before the select committee of the House of Commons in 1840, the question of the work being optional with each individual, or compulsory as a general measure, had not been decided by the Crown or the City. I was asked as to the accommodation to be given to those trades for which the sloping shore would be preferable to an embankment wall, and I stated that for such the shore might be left as at present, but that the outside (which would be in the line of low water, and of the adjoining embankment wall) would have to be supported by close piling, of which the top would be level with the present bed of the river, to prevent the ground between this piling and the shore from drawing down towards the middle of the river by the deepening of the navigable channel. I explained that, where it was not the wish of the individuals to have an embankment wall, the portion of the river in front of their premises would thus form docks or recesses for coal and timber craft, &c. The sections, printed and appended to that report, illustrate this, and I cannot now see any difficulty; but, on the contrary, I think that barges and timber would generally be more conveniently placed in the recesses or docks than in the stream of the river. Queenhithe dock is an illustration, where the expense of keeping the mud down to the proper level is very small. The plan of dwarf-piling the sides, removing the sharp turns and the shoals, and regulating the depth, has been adopted, under my superintendence, in the river Yare, between Great Yarmouth and the sea, and has much improved that navigation.

It is, however, almost impossible to do a great good without producing a small evil, or at any rate without raising an objection; but I have no hesitation in saying that, whether compulsory or voluntary, the uniform new embankment and deepening would be a great public, and, generally, a private benefit. It would be discreditable that the irregularities in the present bottom of the river above London Bridge should be suffered to remain, when the immense importance of the navigation is considered. These irregularities have increased, as well as become more apparent, since the removal of old London Bridge,

which has lowered the water above and near the bridge four or five feet; the effect lessening as the distance increases, that at Westminster Bridge being from two to three feet.

The conveyance of passengers by steam-boats is a new feature in the river, which has in a few years become a matter of great magnitude, and one requiring attention. As they must land and receive their passengers at all times of the tide, and as they cannot come to the shore of the river, or to any wharf, at low water, various contrivances of platforms, floats, &c., chiefly of a temporary kind, have been carried out to them. If the wharfing, or embankment, were extended, these expedients would, with few exceptions, be done away with. In most cases a float alongside the wharf, with steps to accommodate the various levels of the tide, would be sufficient, as at the Brunswick iron wharf, near the East India docks, which was made under my direction eight years since, and also at the new wharf at Greenwich, finished last year under Mr. Martyr's superintendence. There may be cases in which this cannot be immediately effected; but it is undoubtedly desirable to avoid all irregular projections of piers; and, where allowed at all, they should be considered temporary and subject to removal when they can be conveniently dispensed with, and should be placed under proper superintendence, as respects construction and future use. To improve the landings, and to terminate the disputes and inconvenience which have been created by these irregular encroachments, run out from the want of something defined and permanent, will be important objects gained.

To the owners of the passage steam-boats, as well as to all watermen and lightermen, the deepening and equalizing the river will be of immense importance in preventing the damage and obstruction which they sustain by the shoals; in which all I have spoken to agree. There was, I think, evidence to the same effect before the select committee of Parliament in 1840. A small rate per passenger, to be applied to the improvement of their course and its terminations, would, like the tolls upon the turnpike roads, be more than compensated for by the resulting advantage.

Various schemes of terrace roads, railroads, &c., have been proposed upon the bank of the river, between Westminster and the city. I have been applied to by Sir F. Trench, Mr. Martin, the celebrated artist, and other ingenious gentlemen, respecting them. As regards the embanking of the river, it might be sufficient to say that the recommended line does not interfere to prevent the formation of any of the terrace or road schemes, which is the case; but, as our attention has been drawn to the road improvements upon the banks of the river above Vauxhall Bridge, where Mr. Thomas Cubitt is displaying that enterprise by which he has individually done more than any man living to enlarge and adorn the south-western part of the metropolis, it would be improper not to refer to this, as a result of the projected embankments, which Mr. Cubitt will probably be the first to carry into effect on an enlarged scale upon the estates of the Crown and the Marquis of Westminster; indeed, he is already making preparations for so doing.

So far as we have been able to judge, from the opinions of those most largely interested, there appears a probability that a carriage way will be formed along the bank of the river from Chelsea nearly to the new

houses of parliament. The east side of Millbank street is the first interruption. If, upon the site of the worst part of Westminster, the property of the dean and chapter, or upon the vacant Crown land round the Penitentiary, a basin or dock were formed, with an entrance near the Horseferry, for the trade of the present Millbank-street wharfs, the houses in that street, which are of value chiefly as connected with the wharfs, might be taken down, and the site of them with the embanked ground of the river applied to form a terrace attached to the houses of parliament; the view of the river from the drive would be uninterrupted from Chelsea until reaching the houses of parliament, where the road would necessarily leave the waterside for Palace yard, Parliament street, and Whitehall; it might then turn down Whitehall place or Scotland yard, whence it could be carried upon arches, springing from piers in the new embanked ground, down to Blackfriars Bridge, and thence by a direct street to St. Paul's and the Royal Exchange, or might fall into some of the new and improved streets in progress or projected by the city authorities. A splendid communication would thus be formed from Chelsea or from above it, along the river, into the heart of the city. It may be some time before all this can be accomplished; but it would be easy to show that from Chelsea to Millbank, and from Millbank to Blackfriars, it would not be a very difficult or expensive work, that it would not interrupt the trade of the wharfs between Whitehall and Blackfriars, and that the proposed line of embankment would be in furtherance of this object.

It may not be irrelevant here to observe that the principle "that the banks of navigable rivers are public highways" may have been of general or even universal application at one time, but it is to be taken with numerous exceptions in the present state of this country. In many cases an immediate communication between the shipping and the wharfs may be more important, even to the public, than the right of way which intercepts that communication. Generally, however, the right has been so long lost on the Thames, near London, as in the case of the Forty-foot way, without reference to considerations of this kind, by the gradual encroachments of individuals, always alive to their own interests, and by neglect on the part of the public, that particulars of of the right have been forgotten, and the encroachment has become so fixed and established as to render its removal difficult. Such rights of way have been to a great extent lost without any equivalent, which might have been obtained had attention been paid and a bargain been made at the time. This matter requires the instant and vigilant attention of the conservator and his officers wherever buildings and waterside alterations are in progress; without it, the difficulty of preserving the walks which still exist, and of forming the terrace roads to which I have referred, will be much increased, if not rendered insurmountable.

Correct plans and descriptions, with periodical surveys, would be most useful.

The Thames is at present the great drain of London and Westminster: towards it the ground, the streets near it, and all the sewers incline; and, although there are imperfections, there never was nor is there, I believe, a city in the world so perfect in its system of sewers as London. A stranger can have no idea of their number and magni-

tude; and I believe there is nothing in England that would more surprise a foreigner, could he be made acquainted with the detail, than the drainage of the metropolis. It is to these sewers, and to the water sent into the houses by a power of about 2,000 horses, chiefly by engines belonging to eight water companies, and then passed through the sewers into a river of the magnitude and with the flow and ebb of tide already described, that densely-peopled London owes in a great measure its present state of healthfulness. But it is still desirable that the contents of these sewers should be carried off without entering the Thames above or opposite to London. Can this be done?

On the Surrey side, where the ground is low and nearly level from Lambeth to Greenwich and Woolwich, a great sewer might be formed, which would intercept and convey the contents of the principal sewers into the river as low as Greenwich, or just above Woolwich; but on the city side there would be greater difficulty. Mr. Martin was, I think, the first to propose a sewer being carried under his projected river terrace, and thence to the Regents-canal basin at Limehouse. The interference with the coal trade would be the greatest objection to the above plan, so far as the terrace would extend, which could not I think be lower than Blackfriars Bridge; and to continue the sewer lower, either under or in front of the wharfs, and in front of, or round the St. Katherine's and the London docks, would be a work, to say the least, of immense difficulty and expense. Mr. Thomas Cubitt has suggested to me a great sewer on the north of the city, extending from the extreme west to east, beyond the river Lea, which would be more practicable, and would take off a vast quantity of the filth that is now an annoyance to the city. This subject is however too great to be fully discussed in this report.

Taking, therefore, the Thames as the general recipient, the evil arising from the sewers will be very much reduced by the proposed embankment and contraction of the width, which will quicken the velocity, and get rid of the vast beds of mud which pollute the banks of the river. The water from the sewers might be discharged under the embankment wall, and even confined in cast-iron trunks laid in the bed of the river, and reaching further out into it under the level of low water, as has been done by the committee for the repair of Blackfriars Bridge, with the Fleet, one of the largest sewers.

The mud on the sides of the river Thames near London, between high and low water, is of a different kind from that of rivers in the country; it appears in a state of constant fermentation, and is covered with animalculæ which are generated in it, and which give the surface a red colour. This arises I conceive, from the animal and vegetable matter discharged from the sewers, united with the washings down of the broken clay of the banks into the stream, with which it is mixed, and is carried along by the current, until it finds a place upon the bank, where the diminished velocity, caused generally by the excessive width, is insufficient to move it further on. These broken banks are therefore an evil, and the evil is much increased by the wash of the steamboats. One would think that generally the owners of the land would, by means of some wharfing or other defence, prevent the wasting of their land, and the danger to their embankments; but it does not appear

that they always do so: and if there be a power of compulsion I think it should be exercised. The extent of land above Chelsea and below Greenwich, which is in the position I have decribed, is very great. This appears to me to be a principal cause of the muddiness of the Thames at and below London. But for this evil, the action of the steamers and the paddle-wheels upon the bottom, as well as on the sides of the river, is beneficial in stirring up the mud and carrying it down the stream. It may be remarked generally that in but few parts of the river within our survey is there mud in the bottom under low water. It is nearly all upon the sides, and its marginal line is well defined generally at the low water mark of low tides under which the stream is sufficient to prevent so light a body as mud from remaining. The bottom of the river, under low water generally, excepting in the deep holes made by the ballast-lighters, is gravel or sand, lying over the original formation, the London clay; and in some places there is peat and silth above the gravel, which the strength of the stream, where the river is wide, has never removed; and which, from not being taken as ballast, the barges of the Trinity House do not raise, and would not I believe be justified in raising at the cost of the corporation. By a grant or charter from Charles II., this corporation was indeed authorized to receive certain fines and contributions to be applied in removing shelves and annoyances in the river; but these fines having long since been otherwise appropriated, and the Trinity House being therefore left without funds available for this purpose, the grant has been, I believe, in this respect a blank letter. Captain Fisher and Mr. May (draughtsman to the Port and Navigation Committees, who has assisted us throughout,) inform me that ten years since the bottom of the river, above bridge, consisted in many places of mud where gravel is now found. I consider this to have been caused by the increase of scour since the removal of old London Bridge, as well as by the action of the paddle-wheels of the steamers already referred to.

Greater care than was required previously to the introduction of steamers is now necessary in preventing bricks, or similar hard materials, being laid within the influence of the wash by the paddle-wheels. This is even worse than laying mud, as such heavy materials are gradually washed down, become indurated with the sand and silth, and form hard shoals in the bottom of the river. It appeared to me that this remark was quite necessary in reference to the Surrey side below Battersea Bridge, where much rubbish had been laid even upon the slope of the river. This should be prevented by some more effectual way than the promise of the workmen, who are generally paid by measurement, and with whom therefore the temptation to throw the load overboard is very great. If a wharfing were made in the proper line, the owners of the ground would be interested in having their wharfing backed; but the wharfing should be done before the material for filling-in is brought to the place.

I should have supposed that the coal-ashes from the steam-boats would, as a material for making a strong mortar, and other purposes to which a dry hard substance is applicable, have been too valuable to be thrown overboard as is at present the case, and is openly done whilst

the steamers proceed: judging from the number of them, the quantity of ashes must be very great. This ought to be prevented.

Were the embankments to be general, the material which forms the shoals might be taken up and advantageously placed so as to raise the ground behind the walls.

Of all the various matter which the Thames receives on a large scale, none appears so deleterious as the lime-water, containing a portion of ammonia, from the gas works; and, in consequence of the proximity of some of the establishments to the river, the prevention of this seems a matter of great difficulty. Chemistry may find a way of converting this to a profitable use, as has been done to a great extent with the ammonical liquor, and then the evil is sure to end. At present, evaporating the aqueous portion of the lime-dregs under the furnaces appears the only permitted way to get rid of it and to prevent the illegal course of turning it into a drain, and thence into the Thames, which has required the constant vigilance of the officers of the conservancy. It is to be hoped that the use of gas, now almost indispensable, is not inconsistent with the avoiding so great a nuisance in the river, and that if the directors of gas companies were sensible of the evil they cause they would take effectual means to prevent their officers from being guilty of the offence. Wherever the drains from the gas works empty directly into the river, the matter is visible on the water; and thus the discovery is more easy than when it is discharged into covered common sewers. In each case all the communications from the gas works should enter the river above low water; they should be well understood by the river authorities and be carefully watched, and the law should be strictly enforced. To relax is clemency to the few and injury to the many. I am assured from good authority, that there is no sewer from the chartered gas company's large manufactory in Westminster; that all their liquids are evaporated under the furnaces; and that every gas company might do the like were they so disposed.

Independently of the above, the removal of the shoals which obstruct the navigation both below and above London Bridge, is deserving of particular notice. They are shown upon the plan with the depth in feet at the low water of spring tides. The following are the worst below bridge.

1. Ascending the river, the first bad shoal is below Erith, called Rand's hill, a patch in the middle of the river, about 300 yards long by 100 yards wide, which has upon it (at the low water of 17 feet 10 inches under Trinity standard) a depth of 8 feet*.

2. A little higher, Cold Harbour, a point of sand extending from the north shore to near the middle of the river, also 8 feet.

3. A shoal of sand in the same reach (Erith), 200 yards above the last, and having a depth of 6 feet.

4. Dagenham shelf extends from the north shore, nearly half way across the river, with 8 feet.

5. Barking shoal, one mile below Barking creek, nearly in the middle of the river, has also 8 feet.

* Very low tides ebb three feet lower, leaving of course three feet less water upon all the shoals than is stated above.

6. Barking shelf commences opposite the creek, continuing nearly half a mile down, and extends across nearly two-thirds of the river, with from 6 to 10 feet only in the line of navigation. This is considered the worst shoal in the river. The Trinity lighters have for many years worked at the place, and have taken up an immense quantity of gravel; but the greater part of the clay and peaty surface, which is the worst part of it, remains.

7. A shoal opposite Gallion's point extends from the north side about one-third across the river, with 7 feet.

8. Ham shelf, opposite Woolwich dockyard, extends from the north shore upwards of half way across the river, for a length of a quarter of a mile, exclusive of patches and projections higher up, and has upon a great part of it only 6 feet.

9. Bugsby hole is altogether a shoal water reach, in places only 8 to 9 feet; with some shelves and small shoals, having only 6 to 7 feet.

10. Immediately opposite the river Lea, a shoal extends from the north side to the middle of the river, with only 8 feet.

11. A little above the entrance of the Lea is a dangerous small rock of concreted gravel in the middle of the river, with only 9 feet.

12. Two "middle grounds" in the centre of the river, between Blackwall and Greenwich, have upon them 9 to 10 feet.

13. Whiting shoals, a little above the Commercial dock entrance, a dangerous shoal, in nearly the middle of the river, has in places only 7 feet.

14. Limekiln-shore dock, from the north side, goes nearly two-thirds across the river, with only a depth of 5 feet.*

From the last-named shoal up to London Bridge there are no other bad shoals.

I find, by calculation, that about 60,000*l.* would remove all these shoals from the line of navigation, and make a passage 12 feet deep at low water, were none of the materials suitable for ballast. The sum does not appear large, compared with the almost national object. The Birmingham Canal Company, for whom I am professionally concerned, are laying out nearly four times the amount in a new canal, 8 miles in length, fitted for the trade of narrow canal boats only, and intended, not for a new trade, or a new source of revenue, but to shorten the route for the present trade, chiefly of coals and iron, from the mines to Birmingham. A very small rate, say one eighth of a penny per ton, upon the trade, would effect it. The amount of tonnage which paid light dues on passing the Nore inwards in 1840, was 4,406,000 tons. My estimate for the still further improvement of the Clyde, for which an Act was passed in 1840, was 800,000*l.* Ought then the immense trade of the Thames to remain any longer impeded, and the vessels navigating it to continue any longer liable to delay and damage, if the cause of such impediment, delay, and damage can be removed for anything like the sum I have named?

Above London Bridge the character of the river is entirely different,

* The depths below bridge are taken from the excellent survey of Capt. Bullock, R.N., under the direction of the Admiralty. Those above bridge are by Mr. Comrie and Mr. May, under my direction.

owing, as has been before stated, to the piers of London Bridge, which existed for about seven centuries. Since their removal, some of the Trinity-House lighters have been employed at the request of the Lord Mayor and Port of London Committee, though above their legitimate range of action, and have taken upwards of 150,000 tons in the short space between London and Southwark bridges, which has cleared away the shoals there; but above Southwark Bridge they are so general, and so irregular in their position and depth, that it is difficult to describe them, except by reference to the plans and sections. The evil is increased by the gravel which is laid over the mooring stones, and raised improperly and unnecessarily above the general surface of the river's bed. It will be seen that many places in the middle of the river are above the level of low water, preventing all navigation for barges between half ebb and half flood, and making the passage for steam-boats tortuous and difficult between three-quarters ebb and the first quarter of flood, and such that when there is little land water in the river the smallest steam-boat cannot move at low water. The evidence already referred to, which was given on this subject in the session of 1840 by the masters of steam-boats, confirms this statement, if indeed that which may be so frequently witnessed by every passenger can require confirmation.

There are at present several wrecked vessels sunk in the navigable channel of the river. I do not pretend to know the law in such matters; but surely it is the duty of the owners of the vessels to raise, without delay, and remove such dangerous interruptions out of the highway of the river, especially as delay increases the difficulty of raising, and lessens the value of the wreck.

I have appended to this Report a Table, showing at various points the present and proposed width of the river, with the contraction on each side. It is not necessary for the public objects I have stated that every part should be embanked. To some it may be inconvenient in various ways; but if the unembanked part, or the dock, become private property, to be used only by the owner of the premises behind it, its value to him may thus be increased, and he might have the option of wharfing in the line of the adjoining quays, whenever he might wish to do so.

The effect of every erection between high and low water is to decrease the quantity of tidal or back-water, upon which the depth below these embankments mainly depends; and the embankments we are recommending for narrowing the river are of this character; but as the material for filling behind the embankments is to be taken *from the* bottom of the river, the effect of this will be to let the water ebb out lower, and thus to increase the space for the return of the flood and the back-water. I find, by calculation, that the lowering of the surface of the water above bridge one foot vertically for four miles in length will equal in cubic quantity the whole solid of the embankments *above* London Bridge.

In the time of heavy rains, the low lands up the river are liable to be flooded. Mr. Telford states that the height of low water at Teddington, during the land flood of December, 1821, was 7 feet above the high water of Trinity standard. The effect of the narrowing by

embankments will be to increase to a small extent, the obstruction to the descending floods at the first of the ebb; but this will be much more than compensated for by the additional depth which operates through the whole period of the ebb; so that the general measure will, as respects the drainage of the country, be a decided advantage.

Whatever wharfing is done in the proposed line should be done securely; and in case of failure a ready means of rebuilding, or at least of preventing a nuisance, is essential, whether it be a clay bank or a wharf wall. The public ought to be protected against damage by the owners of property abutting upon the river; and, if the owner neglect to do this, there is I apprehend, or surely ought to be, a power to compel him, as well as a summary way of abating the evil. This should extend to all unlawful or unauthorized erections within the line of high water.

I am afraid that in some points referred to in this Report I may have gone too much into detail—may have been in others too general—and may have entirely omitted matters of greater moment than those I have remarked on; but surely enough has been thought of and said to show the great, the almost national importance of the subject, and the capability of adding essentially, at comparatively little expense or trouble, to the commercial and general utility, and to the ornament of this noble river, for the navigation of which so little has been done during many centuries, and to the making of it still more instrumental to the comfort and health of the inhabitants, as well as contributing to the extent, beauty, and value of the property upon its banks.

I am, Sir,

Your most obedient servant,

JAMES WALKER.

23, *Great George Street*, 13*th Dec.*, 1841.

CURRENTS OF THE OCEAN.—Extract from a letter addressed to the President of the Royal Geographical Society, by the Chevalier Harnett, dated Chateau de Stangbihan, Concarneau, June 16th, 1842.

"Sir.—The enclosed paper was yesterday found by a fisherman, contained in a bottle in the Bay of La Forêt, situate on the coast of Britany, close to the sea-port town of Concarneau, who, not being able to read it, brought it to me.

"In compliance with the request contained in it, I should have at once addressed it to Mr. Purdy, but from the great lapse of time since the bottle was thrown overboard, it is a question whether Mr. Purdy is still in existence, and if not, my letter would consequently be lost.

"I am, Sir, yours, &c.

"LE CHEVALIER HARNETT."

ENCLOSURE.—"His Majesty's frigate Blonde, 28th September, 1826, from Bermuda to [England?] Lat. by sun mer. alt. 43° 30′ N., long. by four chronometers, 38° 30′ W.

"This bottle was thrown over by Mr. W. H. Hall, master of the Blonde, to ascertain the current. Whoever finds it will communicate the particulars by letter to John Purdy, Esq., Hydrographer, London, which will oblige Mr. H. and many others."

Remarks.—If I may venture a conjecture upon this subject, from the knowledge of currents already acquired, I should say that the apparent course of the bottle was more or less to the northward and southward of east, until it was carried by the south-easterly inset into the Bay of Biscay, whence it was operated upon, both by tide and current, setting it to the north and north-west until it reached the snug little nook of La Forêt, to the northward of the Glenan Isles, where it lay in a state of repose until found as above described, in 1842.

A bottle from the "Bolivar," on the passage from the Cape of Good Hope, in lat. 46° 53′ N., long. 18° 46′ W., August 29th, 1840, was picked up near the coast of Barre de Mont, (Vendee), early in December, of the same year, 1840.

I am, Sir, yours respectfully,

JOHN PURDY.

To the Editor, &c. *June 19th*, 1842.

[We place the foregoing letter on record from that careful and assiduous hydrographer, Mr. Purdy, the worthy compiler of those valuable works well known to our seamen, under the names of the "Atlantic Memoir," the "Columbian Navigator," the "Mediterranean Directory," and others that we might name, in order to preserve it for future reference in a general collection of the bottle tracks, in course of preparation for this journal.—ED.]

VARIATIONS OF THE COMPASS.—At a time when the subject of Magnetism is exciting general attention, the following results of observations, made evidently by a very intelligent Commander, may be acceptable. They were communicated to me some time ago by your respected friend and correspondent, Lieut. Evans of Bedminster, and I am unwilling that they should be lost.

An old Captain of the port of Bristol, named *Olive*, was a celebrated seaman of his day, and fought some actions when in command of the St. Andrew privateer.

In the year 1757, in lat. 50° 24′ N. long. 8° 20′ W. he found the variation of the compass to be 16° 11′ W.

In 1769, in the Strait of Florida, lat. 27° 45′ Var. 6° 30′ E.

1769	° ′	° ′	
May 28—Lat.	30 17	long. 76 20	Variation per amplitude 3° 45′ E.
30	31 24	75 37	at sun rise 3° E. sun set 1° E
31	31 36	74 23	sun rise 1° 38′ W.
June 1	32 38	72 15	sun rise 1 10 W.
4	33 1	66 45	sun rise 3 45 W.
5	32 57	65 37	sun set 2 30 W.
6	33 36	65 29	sun set 2 45 W.
7	33 54	65 29	sun rise 4 15 W.
10	34 56	62 48	3° W.
14	39 21	50 28	11° 15′ W.
15	40 12	48 27	12 34 W.
16	41 26	46 15	15 0 W.

(North side of the Gulf Stream.) The water still indicating soundings. At one P.M. perceived the colour of the water change to that of the deep ocean."

J. P.

The Mean Tide Level.

[It is right to state that, this paper was written a year or two ago, when the subject was brought under the notice of the British Association.—Ed.]

"That there is nothing new under the sun" is a proverb as old as the time of King Solomon. The announcement by a member of the community of some (so considered) discovery in the sciences, the arts, and among the phenomena of nature is, generally, followed by a prior claim to the merit in some other individual. Undoubtedly, Sir, among talented minds, whether in theory or practice, similar ideas, conclusions, inferences, and the detection of a particular mode of action in nature, may arise, and be apparent, without any one of these individuals possessing even a knowledge of the existence of the others, much less of their thoughts, inventions, or discoveries; so that, merit, in degree, may be conceded to any one of these, without prejudice to that which should belong to, or be claimed for another.

It is presumable that, the naval officer whose discovery has been noticed, never knew that any other person had preceded him in the detection of this law of nature: credit, therefore seems attached to both. The paper on the mean level of the sea in the June number of the *Nautical* is highly interesting as exhibiting the same phenomenon, on another part of the British coast: the writer, however, has left the matter just where it was before. No doubt of the correctness of the principle has been expressed; the brief notice of it in the Athenæum was noted as not affording to those readers who were only possessed of a superficial knowledge of the lunar theory, a clear idea of the process.

The notice was this, viz:—1. "A constant sea-level, ascertained to be at three hours before, and three hours after high water."—2. "One invariable mean height common to neap and spring tides, the half-tide mark." In addition, we now have—3. "A point in the vertex equidistant from high and low water of any one tide, is on a level, or coincides with the points half-way between high and low water of every other tide." The first impression arising from these brief descriptions is, that there can be no inequality in the rise of the tides in the locality of the discovery; because, if there were, the point half-way between high and low water, or, what is familiarly understood as *the* half-tide *mark*, could not be on the same level throughout a semi-lunation, when the tides undergo their various changes.

If the ordinary minded man had read only that *a* constant recurring-sea-level was found, in the estuary of the Mersey, to take place every tide, at three hours before high-water, and three hours after high-water, he might have been satisfied that he understood the fact; but, when he is informed that, this *constant* sea-level is "*the* half tide *mark*" which his practical observations point out to him is *inconstant* every tide for a given time,* he becomes perplexed, and requires farther expla-

* Coincidence in rise will happen in springs and neaps, which of course shows a coequal half tide mark.

nation to satisfy him that he has not been dreaming. It should be recollected by the gifted that, intuitive comprehension of the apparent mysteries of science, belong not to all mortals, and hence the delight expressed by every unproficient student after the perusal of such works as Herschel's Preliminary Treatises. Subjects in science given to the general reader should either be divested of the symbolical abbreviations, and technical figures of speech, or have plain explanations appended thereto. In a work professedly for the use of the learned, of course such would not be at all necessary. It cannot be disguised that, one of the most serious drawbacks to the advancement of knowledge exists in this very consideration. To make the present case quite plain, it may be stated that, the non-proficient in the lunar theory finds that, during the operation of springs, and neaps, the semi-diurnal half-tide mark, varies from 16½ feet to 11½ feet, at Liverpool, showing a difference of level 5 feet, but he is told that the half-tide mark presents one invariable mean height, how is he to reconcile this discrepancy? The average of all the half-tide marks may possibly give a constant recurring level at the assigned interval of three hours, (probably about 14 feet) but would this be a point equi-distant from high and low water.

It is presumable that the interval which brings the local tide-level in the Mersey is not invariably the same every where else, but only so where the half-flood and half-ebb are respectively found to perform their reciprocations in the regular period of three hours. For instance: how would it apply in the estuary of the Severn, which is filled by the flood in about two hours and a half, and where the ebb runs about nine hours? It appears that, when high water is at the Land's End, in Cornwall, low-water is at Kingroad, near the embouchure of the Bristol Avon.

The pendulum-like motion of the tide wave at these places can easily be imagined as producing a coequal line or level, at certain intervals, or, if in equal time from high water, less than three hours as, allowing half an hour for the cessation of the tidal action, or, as it was termed in Queen Elizabeth's time, "the still of the ebb" and two hours and a half for the flood, there would be "dead" low-water, at Kingroad, three hours before the high-water was attained. We have only to conceive that, as much as the water sinks at the Land's End, so much it rises in Kingroad, and produces along the line of coast a local tide-level; a phenomenon of great interest, and one, which upon the mere consideration of the interval of time which elapses between high water at two given points on a continuous coast, seems singular as not having been noticed long ago. As nature does not work by half measures, it is reasonable to believe that this operation is universal, and not occasioned by local circumstances at the two places of discovery. It is obvious, however, that, this tide-level cannot be every where of the same value, on account of the unequal rise of the tides in different parts of the world.

The phenomenon watched for on the various coasts of continents and islands, would no doubt afford some interesting details; indeed, the anomalies in the tidal action are so singular and so little understood that, the subject, with reference to distant lands, seems to call for the

particular attention of a Government expedition, or for the industry of competent individuals appointed by one of the learned societies. Assuredly, botanists and other naturalists set a laudable example to the rest of their compeers in science; and the recent voyages of the British philosopher who has just retuned from the "Good Hope," offers to the whole of the talented world, a memorable instance of devotion to science, most worthy of imitation.*

To instance briefly a few of these tidal irregularities, arising probably from local causes, of which, at present, we have no cognition, I may state that, at the Marquesas group (volcanic) as at Taheite, in the Pacific, high water is attained precisely at noon every day, the rise being very inconsiderable; but whether the flood be rapid, or gradual, we are not informed, if the latter, the twelfth part of a foot, and a fractional portion of an inch would, perhaps, measure its amount in the prescribed interval of three hours, whilst as a contrast, in other places, in less time the rise would amount to fifty feet!

In the Bight of Panama, the tide is reported as flowing and ebbing every three hours, and rising to a great height, here, it would be low-water in the given interval, or the true ocean level. If the reciprocation be coequal, that is to say, if it takes one hour and a half to flow, and the same time to ebb, and these alternations are equal in velocity, the tide-level would be attained in forty-five minutes. The Marquesas and Panama are nearly on coincident parallels of different denomination, one being in south, the other in north latitude.

On the north coasts of the south Shetland Islands, to the S.E. of Cape Horn (both, seats of volcanic action,) high-water sometimes continues for a period of twenty-four hours together! At other times, the water flows tide and half-tide, and high water remains for three or four hours, when the ebb commences. But generally, according to the observations hitherto made, there is but one tide of flood and ebb in the twenty-four hours, as in some parts of Australasia. It is impossible to say at what interval the coequal line would be attained in the first instance; but to twice only in a period exceeding twenty-four hours. The deficiency of particulars prevents any inference in the second instance. In the last, the tide-level would be attained but twice within the twenty-four hours.

The subject opens a very interesting field for enquiry, and I ardently

* Those who have read the Literary Bijou, giving an account of the discoveries of the eminent astronomer at the Cape, must have been sadly disappointed at the delicious fraud practised upon their credulity! There was just so much of truth mixed up with imaginary conceit as to create a sort of indescribable intense feeling in the reader, as he turned over the pages! and some I know who were seriously impressed with a belief of its reality. Great curiosity was excited at the time, to come at the clever author's name, and, perhaps, it has not yet transpired: some pronounced it to be the production of the talented Astronomer himself, as it was said to bear the stamp of a proficient in star and orb gazing; be that as it may, surely the compliment implied by this consideration, must be ample recompense to the "unknown," whose vivid imagination helped the expectant public to such a literary feast! Heavens! who could think of the "Vespertillio homo," without wishing for wings, like him, to take a dip into the crystal lakes of the torrid zone of this globe, when oppressed with langour from the noon-tide heat? Those who have not read it would do well to expend two shillings upon its purchase; it is pre-eminent; the very beau-ideal of a literary squib.

hope it will not, like the spark from a rocket, blaze suddenly upon our sight, and then be lost to the view altogether.

AN OLD FISH.

THE CROTON AQUEDUCT.—This stupendous structure is now completed, and in a few weeks at farthest the City will have a foretaste of the thousand benefits it is destined to confer. Our citizens may not be generally aware that in this magnificent work they are surpassing Ancient Rome in one of her proudest boasts. None of the hydraulic structures of that city, in spite of the legions of slaves at her command, equal, in magnitude of design, perfection of detail, and prospective benefits, this Aqueduct. The main trunk consists of an immense mass of masonry, six feet and a half wide, nine feet high, and forty miles long, formed of walls three feet thick, cemented into solid rock. But *this* water channel, gigantic as it is, is far from being all the work. The dam across the Croton, which retains the water in a grand reservoir, is a mound of earth and masonry, forty feet high and seventy feet wide at the bottom, and has connected with it many complicated but perfect contrivances to enable the engineer to have complete control over the mighty mass of water. The river, thus thrown back toward its source, will form a lake of five hundred acres, which will retain a supply for emergencies of some thousand millions of gallons, and also offer, as a collateral advantage, many picturesque sites for country seats upon the woody points which will jut out into its smooth basin. A tunnel leads the water from this reservoir into the Aqueduct, and eleven more of these subterraneous passages occur before reaching Harlem River, having an aggregate length of seven-eighths of a mile, and many of them being cut through the solid rock. At intervals of a mile, ventilators are constructed in the form of towers of white marble, which give to the water that exposure to the atmosphere without which it becomes vapid and insipid; and these dazzling turrets mark out the line of the Aqueduct to the passengers upon the Hudson.

The streams which intersect the line of the structure are conveyed under it in stone culverts, the extremities of which afford the engineers an opportunity of displaying their architectural taste.—Sing-Sing Creek, with its deep ravine, is crossed by a bridge of a single elliptical arch of eighty-eight feet span, and a hundred feet above the stream. Its unusually perfect workmanship was proved by its having settled *but* one inch after the centres were removed. The view of its massive grace from the narrow valley beneath is one of the most striking points upon the line. Sleepy Hollow, well known to the readers of imaginative lore, is spanned by a series of graceful arches.

The bridge crossing Harlem river has been the subject of much controversy. The admirers of magnificent symmetry and perfection, and those interested in preserving the navigation of that stream, have warmly advocated the erection of a bridge, over which the water might pass upon its regular level; while the friends of more measured economy recommended a lower and cheaper structure, to which pipes should descend, and rise therefrom after the manner of an inverted syphon.

The plan finally adopted is that of a high bridge, but still with its surfaces ten feet below the usual grade, which falls fourteen inches to the mile. It is a quarter of a mile long, one hundred and sixteen feet above high water, and its estimated cost exceeds three-quarters of a million. Across this the water is conveyed in huge iron pipes, protected from the frost by a covering of earth, four feet deep. Near Manhattanville is a tunnel, a quarter of a mile long, through the hill at that place; and its valley is crossed by pipes descending one hundred and five feet. Clendenning Valley is passed at an elevation of forty feet, and arches of appropriate size, upon the lines of the streets, leave symmetrical carriage-ways and footpaths.

We paid a brief visit yesterday to the two great reservoirs of this stupendous aqueduct. The receiving reservoir at Yorkville, thirty-eight miles from the dam at Croton river, is in two divisions, both covering a space of thirty-five acres, capable of containing one hundred and sixty millions of gallons. It is enclosed by granite walls of solid masonry, roughly finished. The bottom of the basin is the natural soil.

The distributing reservoir, at Murray's Hill in Forty-second Street, is a much finer and more expensive work. It is nearly square, and covers an area of about five acres. The bottom is made of puddled clay, as smooth, hard, and water-tight as marble itself. This area is four hundred and forty feet square at the base, and is divided in the centre by a wall of granite nineteen feet thick at the bottom, and four at the top. It is surrounded by a wall, also of granite, composed of three distinct columns of solid mason work. The outer column is five feet thick; the second six, and the third or inner one a lining of granite, about fifteen inches in depth, placed upon a concrete masonry above thirty feet thick at the base. From the outside to the middle wall, the thickness of neither included, the distance is fourteen feet; and from the extreme of the outer wall to the inner angle of the third, is sixty feet, the three walls uniting at the top. At a distance of ten feet from each other are thick cross walls with solid arches, thus binding the whole into one solid, imperishable mass. From the top of the north-east cornice to the level of the street the distance is fifty-six feet. The depth of the reservoir is forty feet; and it will contain water to the depth of thirty-six feet, or about twenty-two millions of gallons, as computed a few days since by James Renwick, Jun., one of the engineers employed on the work.

At the east end of the division wall a well has been sunk to the depth of fifty feet, communicating with a sewer below, and forming a waste-weir for the discharge of the surplus water, when it rises in the reservoir above the height of thirty-six feet. At the bottom of the well is laid a block of granite, weighing seven tons, and, still farther to break the fall of the overflowing stream, and to prevent it from wearing away the stone, water to the depth of six feet rests permanently at the bottom. From the well waste water is conveyed by a sewer nearly a mile to the North River.

The style of architecture is Egyptian, well fitted by its heavy and imposing character for a work of such magnitude. The summit of the walls around the whole area is flagged, and will be provided with a

heavy iron railing, forming a beautiful and sightly promenade twenty feet in width. The grounds immediately around the work have been purchased by the Corporation to protect it from encroachments. The receiving and discharging pipes are two in number, each about three feet in diameter. It is now nearly four years since the work was first commenced; and during the working season, on an average, about four hundred men have been constantly employed upon it, besides great numbers employed in the winter season in bringing materials.

During the whole time no lives have been lost by accidents. Two men had their legs broken by a downfall of the banks, and this is the extent of the injuries that have been sustained. The whole cost will not be far from 500,000 dollars. Above the door at which you ascend to the summit by three flights of eight, thirteen, and thirty steps, is the following inscription:—

CROTON AQUEDUCT.

DISTRIBUTING RESERVOIR.

Commissioners.	*Engineers.*
Samuel Stevens,	John B. Jervis, Chief.
Zebedee Ring.	H. Allen, Principal Asst.
John D. Ward.	P. Hastie, Resident.
Benjamin Birdsall.	*Builders.*
Samuel R. Childs.	Thomson, Price, & Sons.
Commenced.	*Completed.*
MDCCCXXXVIII.	MDCCCXLII.

From a New York Paper.

Remarks on the Action of the Waves on Large Steamers crossing the North Atlantic, &c.

As this is a subject highly interesting to the navigator, whether in a sailing vessel, or a steamer; and carries some degree of novelty with it, although the agitation of the briny fluid is as old as the succeeding condition of the globe after the flood, I shall enter at once upon the enquiry without farther preliminary; premising that whatever may be advanced with respect to the proportions of ocean waves, whether swell or sea, and the consequent depression which attends them, can be supported by no better pretension than the experience of observation, as the critical measure of their dimensions have never yet been ascertained; and I have no standard to guide me in the matter. It, therefore, often happens that incidental opinions are advanced, which appear to be at variance, according to the view taken by different writers, or the bias, without regard to any confirmatory fact, for the furtherance of the object entertained.

I may set off by asking this question:—Has such a novel sight as that of day-light appearing beneath the midship keel of any vessel that traverses the ocean been ever actually observed? In other words,—has a ship or a steamer been ever unsupported amidships, whilst both extremes have rested respectively on a wave? A canoe I have really seen in such a position whilst running under sail along shore; but, the swells of the Atlantic are wide apart, from one quarter of a mile to a mile,

and more, asunder; and in general* during ordinary breezes, the magnitude of the seas is regulated by the strength of the wind; the depth and breadth of the trough being proportionate to the height and latitudinal extent of the wave.

The probability of such a circumstance occurring to a ship or a steamer even of great length, seems more than questionable, and the possibility very doubtful, because, for its fulfilment it should follow that the depression be very great, and the waves not only high, but a very short distance apart, which according to the laws of the motion of fluids, are conditions which it may readily be believed the undulatory action of the deep ocean never assumes; and if so, that the apprehension of a ship or steamer being ever placed in a situation where her midship body would be unsupported, need not be entertained.

It appears to amount very nearly to an indisputable point, that where deep seated and keeled vessels are concerned, such as are in existence at the present day, the natural (not accidental) proportions between the waves and the aqueous vallies are such as to prevent the circumstance alluded to, from taking place. In the case of the canoe, the waves and depressions were not disproportioned: the causes of the effect arose from the extreme rapidity (14½ knots an hour!†) of the vessel, her great length, between 90 and 100 feet, and from her having a flat bottom without any keel. The peculiarity of the circumstance, therefore, is attributable solely to those causes, and not to any anomalous action of the waves in conjunction. From her astonishing length, and equally surprising velocity she positively outstripped the undulatory motion at the moment, by which she shot over the depression without losing her equilibrium, striking with her prow the antecedent wave, the posterior one going on with her; and thus, she was sustained by both, at the extremes, whilst there was a hollow space under her amidships, for a second or two. It is worthy of remark too, as strictly applicable to the assumed case of a steamer, that all the heavy articles were stowed in the centre part of the canoe, yet there was no strain whatever apparent. I was in a rival canoe that made the run in the same time.

The admittance of this curious fact, of which I was an eye-witness, does not necessarily confirm the hypothetical case with respect to the steamers of the North Atlantic, because the conditions would not be the same. A large ocean steamer draws from 16 to 18 feet of water; the canoe less than two or three feet; for the former to be unsupported amidships, it is clear that the depression must be nearly or quite as many feet deep as the vessel draws water; and when the trough is of that depth (which according to some writers of note, is within two feet of the entire hollow that any undulation is capable of producing,) the swells or waves I should expect to find at a greater distance apart than any vessel now traversing the ocean is in length.

I may remark, *en passant*, that Mr. Russell's Essays on Waves may

* I say "general," because it happens sometimes, as all sailors know, that in light winds and calms there is a heavy swell, occasioned from causes which may not be present, but be acting at a distance.

† Time ascertained by watch in hand; the distance twenty-two miles was run in an hour and thirty-five or forty minutes.

throw some light on the undulatory action of a fluid in a trough, canal, or river, but I apprehend that the conditions under which the observations of that gentleman were made, are very different from what may be expected in a vast and unfathomable ocean.

But I do not mean to lay any stress upon the assumption that, "no waves rise higher than 10 feet,"* because, I consider, from observed facts during furious hurricanes, and very violent north-west gales in the open ocean, that they do rise considerably higher; and I feel assured that where no adventitious circumstance intervenes, the swell or wave is proportioned to the trough or hollow which is subsequent on the rise.

The proportion with respect to depth and elevation is given in works on physics, 10 feet for rise, and 10 feet for the displacement, altogether 20 feet; but the breadth of the wave, and the lateral extent of the trough are omitted, an omission which leaves the subject incomplete, and throws, not an unreasonable suspicion on the correctness of the data from which the conclusion has been drawn, in spite of my respect for the authority. It is reasonable, however, to believe that they are equally proportioned, and that whatever the intensity or degree of the undulatory motion may be under different circumstances, there is a relative proportion observed throughout the natural system. Undue proportion can I imagine be expected only in shallow water, or where the depths are unequal from knolls or risings in the bed of the sea; and the action of waves influenced by these extraordinary causes may be classed among the "accidental."

If, therefore, the depression to produce a similar effect on a large steamer, as on the canoe adverted to, be 17 feet, the entire height of the wave above the lowest level, will be (arguing from the proportion given above) 34 feet. Now, the difficulty is, to determine what distance we are to assign to the space between the apex of one wave, and the apex of the other; in other words, the breadth of the trough. So little is actually known† of these proportions with reference to ocean waves, when the depth is profound, that we can do little more than form an estimation from information depending principally upon eye sight, and the exercise of habitual judgment. If there should be individual exceptions to this state of our general knowledge of the subject, it is to be ardently hoped that the persons so informed will afford your readers the benefit of their attainment.

Thirty-four feet would be a tolerable height for a large wave; this, no doubt, all will readily admit, and as the lateral extent of the trough, it is natural to suppose, is regulated in a great measure by the breadth of the wave, which although bearing a relative proportion, is much greater than the depth of the one, or the height of the other, as we may judge from the swells of the North Atlantic, I conclude that where the seas rise to the above height, the distance from the summit of the one to the top of the other would be likely to exceed 200 feet, but

* See *Nautical Magazine*, vol. iv., p. 602, et seq.

† This paper will not have been written in vain if it induces some of our scientific officers to grapple with the subject; and by actual and repeated experiments at sea, clear away our present difficulties.

whether the excess would amount to three, four, or five hundred feet, must be left for experiment.

Some of the steamers are upwards of 200 feet keel; let us admit the cross-span of the trough to be short of that, and seventeen feet deep. Going with the seas, is it likely that the vessel's velocity would be so great as to shoot her across the hollow, so as to leave her midship body unsupported; and, of course, for the time, the wheels powerless? Would she not drop from the force of gravity when outstripping the wave? and, the same when steaming head to wind, as the swell slipped from under her? I imagine, that though it were confirmed, a ship or steamer of large dimensions could be placed in such a position as that of the canoe adverted to, no injury would arise to her hull, even if she were to be fixed in such a posture for an indefinite time instead of a second or two only.

It should be remembered that the curved form given to the vertical framing of ships is, one of great strength, and that the transverse and longitudinal supports of her frame, add considerably to the firmness of the entire fabric, and to its power of resistance, especially in well constructed vessels, to the shock of an impinging aqueous body of great force. Equally admirable, and I think certain, is the capability of such a fabric to endure the pressure of the internal weight of a heavy cargo, even without the medium of a sustaining fluid. That I may not be taxed with advancing a theoretical and unsupported view of the case, I recall to the recollection of the seaman, the numerous instances of vessels with cargoes in, which have been left "high and dry" from the recession of the tide, without injury to their hulls.

The detriment to be apprehended to vessels of great length, which have not a corresponding breadth of beam to support them, would arise I imagine from the different effect of two forces at the extremes, by which a sort of twisting action is given to the hull, coincident with the depressing or elevating motion of the undulation. In ships that are not strongly built, or whose hulls have been shaked, the action alluded to is very perceptible in heavy weather, and it is not unusual to feel the tremulous motion of such vessels in a very great degree.

Experience informs us that vessels of a medium size, and those of great capacity, such as first rates, whose proportions are harmoniously contrived, are invariably the best sea-boats, under every variety of weather; and although it has been said, and perhaps with some degree of truth, that we have not yet arrived at the *ne plus ultra* of naval architecture, yet, it must be acknowledged, and this with pride, that a line-of-battle ship with her heavy ordnance and stores, or a West Indiaman with her dead weighty cargo of sugar, with the water-line nearly up to her scuppers, which have withstood for one, two, or three days the unceasing buffetting of a furious tropical hurricane, affords sufficient evidence that no mean advance towards perfection has been attained in the art of ship-building.

No person can doubt the propriety of making ocean steamers as strong as iron, copper, and wood can make them; and a just proportion of parts can insure strength. Of the London "Atlantickers" I have seen no voucher to this effect published, but it is presumable that they possess the first quality, as emulation and self interest would induce the

owners to be attentive to that point; the second more immediately devolves on the degree of skill and knowledge of the art possessed by the builder, who, doubtless, we may suppose, upon the same principles, would be stimulated in his endeavours to produce a fine model. With respect to the Great Western, I have seen the reports of the surveyor of Lloyds', which states that that steamer has accomplished her numerous and successful voyages across the Atlantic, without even straining her copper! From this fact may we not infer that her construction, if not altogether perfect, is well adapted to meet the exigencies of a perilous navigation? And if we turn our attention towards sailing ships, of which there are many that have performed well for years, among the multitude of crazy and ill-conditioned vessels which perish annually, do not such practical results force upon our conviction that, their entire material must be in harmonious proportion to the mould of their hulls? That the artificial cohesion of the frame, the nice adaptation of the masts, the yards, and the sails, to the body, to which, by the aid of the wind they impart a loco-motive power; the management of the helm, and the skill of the seaman; have proved sufficient to prevent strain amounting to injury, in the various positions the vessel is subject to be placed in deep water?

I do not advance these arguments as an apology for the want of a correct knowledge of marine architecture, which has been loudly proclaimed against British ship-builders, or intend the reasoning as a refutation of the assertion; I would rather be understood as implying that, among the "trash" we have many useful and strong ships, whether they may approach to perfect models, (a point, I believe, no one will concede,) or not. Of these, perhaps, the regular West India ships were the *elité*. But, even among this class there has been for some years a considerable alteration in their mould; and, it must be admitted, not for the better; our builders seem to fail in producing quick sailers, but still there are at the present moment many fine vessels belonging to London, Liverpool, and Bristol. Those of the latter port were once remarkable for their powers of endurance. The old "John" lasted upwards of thirty years; and some others, I believe, have run considerably longer. Now, when we reflect on the extremely dead and heavy cargoes which these ships carry, we are really amazed at the extraordinary degree of strength which those I speak of particularly, must have possessed to have gone year after year carrying such weight, and contending successfully with the lashings of the angry billows, and the ragings of the furious wind, in an eight-thousand miles voyage! It would be injustice, therefore, not to pay our shipwrights at least, a modicum of praise, if a full measure cannot be awarded them, for these instances of efficacy. If we were to take a glance (which is unnecessary) at the dark shades of the subject, we should not need doubtful inferences, or hypothetical conclusions to prove the necessity for constructing sea-going steamers and ships, in the strongest possible manner. Are there not abundance of instances annually detailed of the folly, nay, the villainy, of vessels being slightly and improperly built, sufficient to prove that?

In passing over the approaching vast swell of the North Atlantic, with an adverse wind, would a steamer be likely to shoot over the drop of the wave, as she might perhaps do in a short sea? I think not, as,

from its great latitudinal extent, and smoothness of surface, the depression is gradual, and not abrupt as in seas, and the vessel's fall would be equally so; there seems to me, therefore, no reason for apprehending that she would even show her fore-foot in the struggle against wind and wave. From experience in sailing ships, I should say that, her most awkward positions would be when descending into the aqueous valley, and again when ascending the billowy ridge; at which time her centre of gravity being altered, the pressure will be alternately removed from one extreme to the other; and a very extraordinary pendulum sort of motion it is. Diagonal bracings are of vast importance under such circumstances.

In ordinary gales, when the waves assume a totally different character, and are known by the name of seas; the condition under which a ship and a steamer, contending against a head-sea would be placed, is somewhat altered. In this case, the propelling power of the steamer enables her to stem (if her course be directly in the wind's eye) the very front and head of the advancing deluge. But it is clear that her rise and fall will be nearly proportioned to the action of the wave, unlike those of the sailing vessel which receives that action on her weather bow, or obliquely, and has her upward motion increased by the lifting power of the head-sails, and of course her plunge will be increased, because she would have a greater distance to fall, the heaving and setting being modified by the vessel's build. A short ship for instance, will labour in her up-and-down motion, in a much greater degree than a long vessel with good bearings.

When several vessels are in company, a fleet under convoy for example, to a spectator, these motions are particularly striking, they never fail to arrest attention. In the varied instances which have come under my notice, I do not recollect to have known more than a foot or so of the keel, beyond the gripe, exposed to view; as far aft as a vertical line plumbing from the cathead, may, probably, have been observed; but, as far aft as the chess-tree, I should think never has been visible; admitting it, however, I am very much inclined to believe that no strain amounting to damage would follow.

I remember to have seen a marvellous plate representing H.M. late frigate, Cleopatra, in the act of plunging, with her entire heel above water. She was a short thirty-two 12-pounder frigate, built at Bristol or Liverpool; withal, a compact enduring sort of craft. If I consider, which I believe was the case, that the draughtsman was on board of her at the time, should we not be warranted in concluding that he was not in the best position for observing such a fact? I may add that, as a mid I had some practical knowledge of her plunges, when perched like a "noddy" on her top-gallant yard, glass in hand, during hard frosty weather; but, although "going the rig"* in glorious style, I am pretty certain that she never sighted her lower gudgeon. I have seen a sight, however, little less extraordinary, that of a three-masted man-of-war schooner dashing through the tops of the seas instead of rising over them, and burying herself for a third or more of her length. She was supposed to have foundered at sea, no accounts having ever

* Abbreviation of Rigodon—Rigadoon, a Spanish dance.

been heard of her. I did not wonder at the circumstance after what I had seen of her diving propensity!

In cases where ships are upset, which is the extreme of disaster, not ending fatally, such for instance as H.M.S. Raleigh, in the typhoon she encountered, doubtless, a spectator on her weather beam (of course, in another vessel) might have had an opportunity of observing her entire keel exposed occasionally to view; but such a position does not bear upon my present subject.

If the large ocean steamers were built exactly after the model of a canoe, then, perhaps, a similar circumstance, might be reasonably expected to occur with them, as with the latter, the instance of which I have given; but, as they are now constructed, with a keel and deep body, we must first admit disproportion in the form, &c., of wave and trough, to suppose such an effect.

ARGONAUT.

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.
Port Royal and its Associations.

(Continued from p. 552)

THERE was another guard-boat duty, the examination of vessels departing and arriving, between daylight and 8 A.M.

In the performance of this, not always unpleasant, duty, the officers were sometimes obliged from the number of vessels seen in the offing, to pull or sail almost as far as Cow Bay. When this was the case they generally hooked their boat to the last, if there happened to be any breeze from sea-ward, and in that way eased the men's labour, and expedited their return to the harbour.

By the port regulations the guard report was to be delivered on board the flag-ship by eight o'clock; but it sometimes happened, from the number of vessels to be boarded being great, that this could not be complied with; in which case, notwithstanding a very good and reasonable excuse, a lecture from the *locum tenens* of supreme authority, the "first" of the flag, followed as a matter of course, and was duly, and, equally as a matter of course, silently and respectfully received; and if the daily reports had been sent off to the Admiral's Penn, the officer, who was late, had to row as far as Greenwich with his papers, where an orderly was always ready for such offices. There was also a day guard boat to board all vessels arriving.

Generally on the appearance of a fleet of merchantmen, the boats of the men-of-war in harbour, were upon the *qui vive* for the purpose of impressing the men. Sheltered, from the sight of the strangers, behind the point, they lay ready to pounce upon each vessel as she came dashing in, amidst noise and the flapping of sails, round the projection. There was no order or regularity observed, no taking precedence from seniority in these movements; every boat made its own choice as the ships rounded the point, sometimes two or three abreast, selecting its "own bird," the muskets popping off occasionally to bring the runaways to.

A swarm of wasps could not display more activity over a tier of sugar casks upon a wharf, than these busy searchers after "Poor Jack." The whole scene might, not inaptly, be termed a burlesque upon a cutting out fray, the eagerness to be first on board the large ships, the difficulty from their fresh way, the confusion from boating the oars, hooking on, holding on, and mounting the side, the "ho ye ho" of the sailors, the orders of the pilot, or the commands of the skipper or mate; and the creaking of blocks, the noise, eagerness, fuss and bustle no doubt appeared to the multitude assembled on the point, to be ludicrous enough; at least one might fancy so by the merriment, huzzas, and other vocal sounds proceeding from that quarter, in truth the performers themselves were relaxed, and a hearty laugh often issued from the boats. Then, the disappointments which so often followed, the excited and eager Luff darting on a fine young fellow, and exclaiming at the moment of seizing him: "Ah! my lad I have ye—come, down into the boat." "Oh he's protected," roars out the skipper. "The d—l he is! hand out his protection, if you please?" "Here it is." "Ah! that's too bad." Turning to another,—"Come my lad, *you'll* do, just the sort of smart young fellow we want, lots of prize-money, come dive." "Ha! ha! ha!" the skipper shakes his fat sides, whilst the mate bawls out, "He's an apprentice, Sir, no go this time." "An apprentice! why the ugly fellow is big enough for two, sight his indentures, no jokes Mister mate d'ye hear?" "Aye, aye, sir, here they are and no mistake." Lieutenant reads, and then to the cockswain in a disappointed tone "Come, Atkins, into the boat, and let us try that North country lump yonder, she's the wrong side of the Tweed for the 'seal,' be smart lads, shove off. Avast! it's of no use, there's old Kelson just left her with three *birds!* try that other craft with quakers." And so on.

Very little success generally attended these searches, at least among the regular West Indiamen, as the old hands prudently landed their best men who were unprotected, as high up as Morant Bay, from whence they leisurely took the safer land route to Kingston. Most, if not all of these ships had "stow holes," to which the men liable to seizure retreated whenever a ship of war's boat was observed approaching. The refugees were sometimes detected, but in particular cases given up again. The ships consigned to Mr. Simon Taylor,* the wealthy planter were safe. I recollect having been sent up to Kingston to search a ship that had just arrived. The Captain was perfectly indifferent about the matter, and behaved very civilly. I found out the "stow-hole" under the cargo. It was a capacious space, large enough to hold twelve or fourteen men, including two or three empty casks conveniently placed. The passage to it only admitted one person abreast, and was only about three feet in height; it ran along the kelson, from the fore hatchway to the main-mast. I found five or six fine young men, A. B.'s, and took them on board the frigate. Two days afterwards they were released by the Admirals's order. It is needless to say that the ship was consigned to Simon Taylor. No

* I had a letter of introduction to this gentleman, and spent a few days at his seat in the plain above Kingston; the admiral was also on a visit, and to his notice Mr. T. was kind enough to recommend me.

doubt the Commander-in-chief was justified in conceding the point, for the commerce of the country could not be carried on without seamen to navigate the ships: and I merely state the fact here to show the influence which a man of extraordinary riches will always command. This gentleman (Simon Taylor, a Bristolian,) was, in Jamaica, at the time the late Sir Watkin Williams Wynne was in North Wales, a sort of demi-god of mortal shape and material; and it is a little singular that, in personal appearance, they were very much alike, very tall and very thin.

Most of the ships of war were short of their complements; indeed I do not think that after a vessel had been six months on the station, she could muster a full crew. This deficiency arose from four causes,—deaths, invalidings, absence (sick at the hospital,) and desertions.

To succeed in the latter in such an isolated place as Port Royal, the men it is highly probable were not without assistance; for to have attempted it in a harbour where sharks were constantly prowling about, would have been almost certain death to the adventurer. It may be asked, "by what other means could they effect their purpose?" By canoes provided for the express occasion. By whom? The answer to this requires a little detail. In no part of the world was the avocation of *crimp* carried on with more activity than at Kingston. Most of the homeward-bound merchant ships when complete in their cargoes, were detained from the want of hands to navigate them, there was such a constant drain upon their crews to supply the men-of-war; and they were often constrained to put up with such a mixed company of various complexions and nations as to endanger the safety of the vessels.

Under such circumstances it may easily be conceived that to prevent a greater evil, that of long detention, money was circulated for the purpose of obtaining, at any rate, a sufficiency of sailors to conduct the ships home. That the merchants were aware to the full extent of the means adopted by the agents they employed to fulfil this object, I do not pretend to assert as an established fact, but it is not at all improbable that they were: the patriotism of him who holds self-interest as the pole-star of his existence, would, perhaps, be found to grow cold if it should at all clash with the advance of the other feeling. Yet we have, on particular occasions, some noble instances of a total disregard of self, when the interests of country claimed a sacrifice. If the merchants were really in possession of the secret mode of the crimps to serve them, they may have thought perhaps, that there was nothing very reprehensible in exercising the *lex talionis* upon the men-of-war, who had so often robbed them of their crews, and who could with perfect impunity help themselves whenever they pleased, and make up their deficiencies, their minds being biased by the general feeling that, when a man's property is at stake, patriotism is at a discount.

At Kingston every grog-shop bully was a professed crimp, and even the terror inspired by the very name of Jacky Mallado, the "Marshal's dog," did not deter these ruffians from prosecuting their calling in the most audacious manner when doubloons were the reward of their exertions. The constables, a set of dissolute fellows, were devoted to their service, and always at hand to support them in their resistance to naval officers when employed in the disagreeable duty of searching for

deserters. There seemed, too, to have been a disposition in the authorities of the city, who were generally commercial men, not to render justice to the officers of the navy, when they came in collision with these characters.

These harpies (the crimps,) upon one occasion which came under my own observation, carried their insolence so far as, not only to assault a lieutenant and a midshipman, belonging to a ship of the line, but to have them seized by the constables and conveyed to the city guard-house, where, on the lieutenant demanding the assistance of the militia officer, that simpleton "blessed with a little brief authority," placed him in the *stocks!!* A military officer of the line happening to see the indignity, hastened to Simon Taylor, who was the Colonel or General (I do not recollect which) of the Militia, and stated the case to him. He immediately sent an order for the lieutenant's release, and placed his own official under arrest. This stupid personage was tried by court-martial and "broke." But it was otherwise with the crimp and constables; when the affair was brought before the mayor, they escaped; and, the captain of the ship-of-war, was treated very cavalierly by the magnates on the bench, when urging them to convict and punish the delinquents.

The provoking situation in which the shipping merchants found themselves so constantly placed, from the rigorous system of impressment, and the great expense necessarily incurred in providing crews, was, indeed, very much to be regretted; but, unfortunately, there was no remedy for it at the time. These restraints upon maritime commerce, and upon the free-will of the free-man, can, we conceive, only be remedied by the institution of Marine Schools.

Various plans have been proposed to remedy the evil of impressment, conflicting opinions often lead to the truth; it becomes the duty of every experienced person to submit his views, for the consideration of the authorities. The deduction drawn from these, may possibly lead to the desired end.

It has been said that, the annual loss of our seamen, from shipwreck, the foundering of vessels, and from fire, amounts on an average to *one thousand!* This appears to be a very large number to be removed by such causes. If we were to refer to the yearly loss in ships of war from the same causes, the amount would I believe, appear a mere fraction; why, we need scarcely enquire. But it has long been thought desirable that the interference of the legislature should take place in order to rectify the evil, as far as it can be rectified by its interposition; yet, there is an evident reluctance on the part of government to meddle with a point which the merchants and shipowners themselves ought to be particularly concerned about.

What number of seamen die at home and abroad from disease and accidents, I have no means of ascertaining correctly, but, we may reasonably believe it to be great. Besides these, hundreds enter into foreign service,* as much, probably from a love of change, as from the higher rate of wages which their services will always command, especially from the Americans; the number of whose seamen bears no proportion to the

* It has been asserted that there are more than 40,000 British seamen now serving in American vessels; I think it highly probable that the number is much greater.

amount of their shipping, or to the vast extent of their maritime commerce. And there are, no doubt, a great many scattered over the world "vagabondizing."

The aggregate waste, or positive loss to this country of its hardy seamen must, indeed, be vast; much more so we may reasonably conclude, in comparison than with the deaths that occur on land, among the community. Are the supplies from various sources sufficiently great to meet the deficiencies which annually take place from the above named causes? We have no means from which we can give a decided answer to the question; but it is necessary in any enquiry for this purpose, not to lose sight of the important fact that, it requires at least six years to qualify a lad for the station of seaman.

The sources from whence the *raw material* (to borrow a commercial phrase) issues, are: 1. The school at Greenwich. 2. The school at Portsmouth. 3. Parochial apprentices (who, however, we understand are no longer bound to the sea.) 4. The general accession by voluntary entry from the community at large; affording by far the greater number. The total amount of these supplies, which we have no means of enumerating, although no doubt great, would appear, if we may be allowed to judge from the difficulty experienced for years, in obtaining men for the navy, not to be adequate to the demand.

Although some of the seamen who serve in the ships of foreign nations,* and a few of those wandering abroad, may return to this country in the event of a war, yet it would be unsafe to count on their services; they may be considered, therefore, as lost to it. And as the demand for seamen for the Navy during a peace is, comparatively small to what it would be in a time of war, and we find that it is extremely difficult and tedious, even by sending vessels round to the different ports to invite and collect them, when in the former state, what are we to expect when engaged in hostilities? That is a question which demands the most serious consideration of the Government, and in dealing with it *economy* must be "thrown overboard."

(To be continued.)

CHINESE CURIOSITIES.—Among the articles brought home in the Wellesley from China is the identical cage in which the unfortunate Mrs. Noble was confined for six weeks by the Chinese. (In the January Number, page 65, of the *Nautical Magazine*, see an engraving of it.) It measures two feet eight inches in length, one foot six inches in breadth, and two feet four inches in depth; the top, or cover, has a small hole for the head to come through. It is very roughly made of fir stakes, and will, we understand, be sent to the British Museum, where it may be of interest, as showing the mode of punishment to which the British have been subjected by the "Brothers of the Sun and Moon." The circumstance of Mrs. Noble's capture will be fresh in the recollection of our readers. She was the wife of the Captain of an East Indiaman, wrecked on the coast, where her husband and child were drowned. She herself only survived with a few others, who fell into the hands of the Chinese, to suffer treatment worse than death. Most of the crew of the Wellesley have brought home some trophy of their services in China of no intrinsic value, and we are sorry to hear that some of them have been deprived of these little gratifications by the Custom-house officers.—*Devonport Telegraph.*

* The circumstance, if true, related of the British tars, on board an American frigate at the Brazils, refusing to serve should a war take place with England, is a happy omen, and will go far to make Jonathan pause before he embroils himself in a quarrel with this country.

Captain Warner's Destructive Invention.

For several years past various rumours have bubbled forth, like the suppressed fire of a volcano through the fissures of its quiet crater, that a certain secret destructive power was in the possession of an individual, who from motives most patriotic, held it sacred in his bosom for his *country*, on receiving a reward proportionate to the advantage it would confer in the event of war! The details of this subject wearing an appearance of so much importance are now become matter of history. It was publicly brought forward in the House of Commons by Sir Francis Burdett, and a committee asked for, to enquire into it; and we make the following extract from the *Times* for preservation, which exposes it in its true light. Captain Warner, if he has not obtained the reward he anticipated in the shape of money, which from what Mr. Brotherton said may be doubted, at least has obtained it in the shape of justice.

The speaker had to ask thrice for a seconder; and not till the "third time of asking" did an hon. member (whose name we know not) on the Opposition benches respond to the call.

Sir H. Douglas then rose and said, he felt himself called upon to enter into some explanation. He had been requested (soon after his return from his late foreign service) by his noble friend then at the head of the Ordnance to form one of a commission (in which Sir E. Owen was associated with him) to inquire into the merits of Capt. Warner's alleged invention. He felt the strongest reluctance to undertake this duty, pressed though it was upon him by those whose opinions and wishes he respected: but he yielded at last, as he always should do, when he was given to understand that his services might be useful to his country. (Hear, hear.) He had stipulated several things, however, as that the commission should be gratuitous, and that it should have no reference whatever to prior proceedings of any kind, but be utterly unembarrassed by all former experiments, engagements, or expectations: that it should be, in fact, exclusively devoted to the ascertainment of the real practical utility and service value of the invention, as it would prove itself were it appropriated to service in some hostile armament in actual engagement. (Hear, hear.) He had further stipulated that the commissioners were to have nothing whatever to do with the question of compensation, which was to be left, on their report, entirely to the discretion of the Government. His colleague in the commission and himself had satisfied themselves speedily that the only important part of the projected invention was that by which it was proposed to destroy, by powerful projectiles, &c., at great distances, forts or fleets. (Hear, hear.) They had drawn up this minute as the basis of their arrangement on the 22d of January, 1842,—"The following is the course of proceeding which it appears will be most convenient for the board to adopt in this investigation:—1. To agree in a series of experiments on the value of Capt. Warner's invention in the presence of the commissioners. 2. To frame an estimate of the expense attending those experiments, to be submitted to the Treasury previously to any experiment being entered on. 3. That then the experiments should be proceeded with. 4. That detailed minutes be taken of every step in the investigation. 5. That subsequently the commissioners should draw up a report of all their conclusions, and submit the same to the Prime Minister. 6. That all proceedings be considered confidential."

Now, here there was not a word about any remuneration, or promise of remuneration (hear, hear); and to all these regulations Capt. Warner had expressed his cordial assent when he was called on to prepare the estimates for the experiments projected, the language used to him from the beginning having been—"We, the commissioners, are not going to extort from you any part of your secret; we merely wish to know the extent of the experiments for which we are to prepare, and if we put any question, to answer which you think would be to make the least disclosure of your secret, we desire you will on no account answer it; that you may confine yourself solely to the carrying on of the experiments; and as to the expense, that need be to you no obstacle, as the public

will bear all charges, provided you let us previously have an estimate of the cost." (Hear, hear.) Some delay had occurred on the part of Capt. Warner himself, in presenting his estimates; in the meantime, he (Sir H. Douglas) had the misfortune of losing his colleague, for whom was substituted Sir B. Martin, by whom the former regulations were perfectly approved of; the same arrangements were therefore made, and again the commissioners announced themselves ready to commence with Capt. Warner. They stated distinctly to him that they were resolved to make the experiments thoroughly satisfactory and decisive; that they must be made in all winds, all tides, and all weathers; and that nothing would be taken for granted. (Hear, hear.)

Capt. Warner now raised some preliminary objection about a guarantee for remuneration in case of succeeding, according to his own proposals, naming 400,000*l.* (hear, hear,) as the sum he expected for compensation; on which the commissioners informed him that they did not deem themselves at all qualified to enter into any such negociations or agreements; and the Master-General of the Ordnance had confirmed this decision as to the absence of all authority to give any guarantee about compensation. (Hear.) In respect to that part of Capt. Warner's discovery which related to the mere depositing of explosive materials in the water, to act in contact with any vessel, he (Sir H. Douglas) did not think much of it. (Hear.) As regarded, however, any power of destroying forts or fleets, the commissioners had been perfectly ready to enter on the experiments. At the same time, he repeated, they were determined to test the thing to the utmost, (hear,) to try it in no still standing water, no knocking about punts in fish-ponds, (hear, and a laugh), but real sea-work, (hear), amidst all the difficulties of rising and falling tides. (Hear.) From what had been seen of Mr. Warner it was admitted that he was not a man of science, but at the same time he might have made an important discovery; the question, however, resolved itself into this; would he at the distance of six miles direct his projectiles against forts and hulks so as to effect their destruction; could he do that under any circumstance of wind and weather? A fort had been selected for the purposes of experiment, and the question was could he destroy the defences of that fort, and could he, in addition to that, destroy animal life, (for it was proposed to place 200 or 300 sheep within the fort)? If he could accomplish such a feat it would be much more than he had yet effected, and much more than it was by many persons supposed that he would be able to effect. If, however, Mr. Warner could, under all circumstances of wind, of tide, and of weather, be able, at a distance of six miles, to destroy forts and animal life within them; if he could do all that with certainty, the country might advantageously purchase his secret, with a view to its suppression on grounds of humanity, or to avail ourselves of it in just and open warfare; and it would then, after all, be acknowledged that Mr. Warner, unscientific man as he was, unlearned man as he was, visionary as some supposed him, had still made a discovery, an omnipotent discovery, which would place his name beside those of Schwarz and of Bacon. (Hear, hear.) In conclusion, he hoped it would be considered no offence to Mr. Warner, if he (Sir H. Douglas),with the practical knowledge which he had, and the little science which he possessed, should remain incredulous as to the extraordinary powers imputed to Mr. Warner's invention, until he saw them actually exercised.

Mr. Brotherton observed, that the members of that house knew nothing about the matter, for as yet no evidence had been laid before them of experiments tried. He had received a letter, dated the 24th of June, which detailed pretty fully what had taken place in Portugal with reference to these supposed discoveries of Mr. Warner; with the permission of the house he should read some extracts from that communication. The hon. member then read as follows:—"In the beginning of February I was ordered to take the command of the outposts, the nearest to the enemy, at the village of Lordello, half way between Oporto and San Joao da Foz, at the mouth of the Douro. In a short time after, the enemy erected the formidable battery of Seralves, at half-musket

shot from my advanced sentries, and their shot almost shut up our line of communication between the sea and Oporto. My night and day thoughts were how to destroy this battery. I seldom had time to go to Oporto, but I heard there was an extraordinary man, a Capt. Warner, who could perform wonders of destruction with some new invention. I heard he was willing to sell his invention to the Portuguese Government, but they not having a farthing in their Treasury, of course first wished to prove the power. I went up to Oporto, and there met Capt. Warner. There were many wise discussions, and I became a firm and true believer in his inventions and powers. I pointed out to him that my outposts were at half-musket shot from the enemy's battery of Seralvas; that I knew every inch of the ground between; and that any night I could go there with half-a-dozen men without being discovered. This, I understood, was a sufficient force to carry the destructive matter, and I undertook to place it when it was ready. He told me it would take some time to prepare.

"As I permitted no one whatever to come within my sentries, I proposed to him, that no one might know his secret, that I should give him over a small house, as a laboratory, within my lines, over which house would be a sentry, and that I should give him over as an assistant, a Sergeant Mitchell, of the Rocket Brigade. To this Capt. Warner agreed. I sent for Sergeant Mitchell; I ordered him to obey all instructions of Capt. Warner, and on no account to disclose what he saw to any human being, not even to myself, as I had bound myself to carry the destructive stuff to Seralvas; but while I said this, I told him, as an honest man, he must not let me be 'humbugged.' I think I recollect some boxes, or small barrels, being brought down from Oporto to this house. I recollect Mitchell did no other duty. Being impatient to destroy this battery of Seralves, from which the enemy were firing day and night, I got impatient, and thought Capt. Warner took it very coolly, and did not come often enough. About this time Sergeant Mitchell came to me to say he suspected it was 'all stuff.' I began to have my doubts, and I recollect one day asking Capt. Warner some posing question. He then led me to understand that he required a peculiar sort of gun, and that he had written to Woolwich for either three or six brass guns, made in a peculiar manner, with which he could destroy any thing at any distance. These guns were to come in a schooner, and often did I get on the heights with my telescope to see this long wished-for vessel, as at this time we had little or no food, and the enemy gradually closing us in. The schooner, however, is not yet arrived, and I often used to laugh at myself. As Sergeant Mitchell has claims upon the Portuguese Government, I am sure his address will be got at 94, Mount-street, Grosvenor-square. You will there find that most intelligent officer Col. Barreiros, of the Portuguese army, who I think, must know all. Then there is Major-General Hare, Lord G. Paulett, Sir T. Lovell, now at Milan, and Col. Badcock, 15th Hussars. They may know more than I do, but I am not such a staunch believer in the 'wonderful invention' as I was."

But it was not alone to the Portuguese that Mr. Warner proposed to sell his secret, he offered it in Spain, as the following extract from a letter which he had recently received, would unequivocally show:—"As Mr. Warner values himself on his patriotic determination of not communicating his secret to any but his own country, you may dare Mr. Warner and his advocates to the denial of the fact of his having actually sold his said secret by contract to Don Pedro, Duke of Braganza, ex-Emperor of Brazil, and self-constituted Regent of Portugal, in the earlier part of 1833, during the seige of Oporto, for, I believe, 2,000 contos of reis, or 500,000*l.*; but declined to make an experiment *en grand* without the consideration-money being paid to him beforehand, which Don Pedro in his turn declined to comply with, after the possession of Lisbon had afforded him the means to do so, by procuring him credit for millions of pounds in the London money-market, of which he availed himself largely to bring the expedition of the liberating army to a close, and finally to eject the usurper Don Miguel from the kingdom; and this, notwithstanding the capture of the

Miguelite squadron by Admiral Napier (Count Cabo de San Vicente), and the surrender of the capital, occupied Don Pedro still from July 1833, to May 1834, and when having previously witnessed, at Oporto, a miniature experiment of Mr. Warner's (as Sir R. Peel did in Essex), Don Pedro would have been happy to pay the sum agreed upon at once, in order to save the effusion of blood, and the waste of treasure and time, had Mr. Warner been able, as he pretended, to blow up the strongest fortifications and armies, as he was requested to do the Monte Crasto, near Oporto, and Foz in 1833; but then his objection was 'money down,' which in 1834 would have been placed in the safe hands of the Ambassador of a neutral power, Lord Howard de Walden, for instance, when Mr. Warner might have deposited the keys of the Miguelite fortress of Santarem, so many months in vain blockaded by the Queen's troops; but no, nothing but money in hand would answer the conjurer's purpose. Mr. Warner's contract with Don Pedro, signed by him and the Duke of Braganza, must be still extant in the War-office of Lisbon, and be proveable by many of the surviving authorities, Mr. Warner having shown it to myself and others at Oporto."

Hon. members would recollect that the late Government had refused to purchase the secret of Mr. Warner, and he conceived that they had done wisely in so refusing. The present Government had followed that example, and to them he gave equal praise for the course which they had pursued.

Sir R. Peel said,—I am sorry that so much of the valuable time of the house should have been occupied with a subject of this description. Although I have arrived at a conclusion different from that which the hon. baronet near me has urged upon the house, yet I am perfectly ready to give him full credit for having brought the motion forward with the most perfect good feeling. I am quite satisfied that my hon. friend was influenced by the best feeling; but, nevertheless, I am bound, in my own defence and that of the Government, to lay the facts before the house, inasmuch as the motion for a select committee implied something like a reflection upon the line of conduct pursued by the responsible advisers of the Crown. The hon. baronet said that if there were a full house he had no doubt that he should be able to carry his motion. Now, if the whole 658 members were at this moment assembled, I do not believe there would be found amongst them 10 men who would support the hon. baronet on a question like the present. The proposition was, that we should have a select committee,—to do what? Was it intended that they should try experiments? If 15 members were selected from one side of the house, and 15 from the other, to try if Mr. Warner had fulfilled his undertakings, how could that gentleman's secret be preserved? It appears to me that to take this matter out of the hands of the Board of Admiralty and the Board of Ordnance implies a sort of reflection on me for not having more freely and decisively supported the views of Mr. Warner. I do assure the house that, though I am an unprofessional man, I still have given to this matter a great deal of attention; and with reference to all such real or supposed discoveries I have thought that my duty was to pursue a middle course. I think that on the one hand a public man is culpable if he wholly disregards suggestions of this nature; and, on the other, equally culpable if upon slender grounds he should lend himself too unreservedly to their support. Twenty years' experience has taught me that we are not to take things of this sort for granted, and pay 400,000*l.* for a secret the efficacy of which has not yet been tested. Every man in office has been in the habit of receiving applications of this nature, not a day passes without something of the sort, some most specious proposal.

But respecting this case, we have had rather a remarkable statement, in which, after a warm panegyric upon the character of King William, in which every one must concur, the writer states that that sovereign had given a distinct assurance to Mr. Warner that all his expectations would be realized. I think, looking at the professional experience of King William, that it was not very likely he would have given any such assurance; however, as he is now not living, we have no means of knowing from his own testimony how the matter

stood. As we can say nothing further on this subject, I wish next to recall the attention of hon. members to the frequency of applications of this nature, and to the fact that Mr. Warner is not the only person who lays claim to discoveries. I hold in my hand a letter dated the 11th of July, 1842, and which is in these words :—"Fourteen years ago I made experiments in Italy, before several officers, on implements of war, of power unsurpassed, and I was urged by them to come home to lay them before His Majesty's Government. By His Majesty, on the certificates produced, I was assured of every reward if I would disclose the secret. The prosecution of my professional studies suggested the composition to me. One species is superior to Mr. Warner's, as a single shot, striking a line-of-battle ship, would consign her to destruction. I cannot go the length required by the Ordnance, of 500*l.* deposit, to make undisclosed experiments." Now, with numerous applications of this kind, what course was open to me? I am sure hon. members do not think that I should have done everything that Mr. Warner required. (Hear, hear.) I am, however, enabled to tell the house that much more was done for Mr. Warner than has been done for any one else similarly circumstanced. His application was treated with a great deal more of consideration than is usual in such cases. The practice is to allow people in general to try their experiments, but at their own expense. If every man in society possessed the power of insisting that his theories and speculations should be tested by experiments at the public expense, the whole time of the public departments would be wasted and the cost would be enormous. (Hear, hear.) Therefore the rule is that experiments shall not be tried unless those who allege that they have made discoveries or perfected inventions give primâ facie evidence of their sincerity and good faith by trying the experiments at their own expense, the public departments affording them every reasonable facility. To show then the consideration with which this supposed discovery was treated, I will state one fact to the house, which is, that I said Mr. Warner's experiments might be tried at the public expense. (Hear, hear.) Mr. Warner stated, that he could cast his projectiles to a distance of six miles, with a force sufficient to produce the gigantic effects which he promised. This appeared most marvellous, but I was not deterred. Wonderful as it semed I did not scout the proposition.

The hulk was ready at six miles distance; two experienced and distinguished officers, Sir B. Martin and Sir H. Douglas, were ready to witness the experiments, and the secret was not to be divulged. With these facts before the house, I confess I am at a loss to understand how hon. members can agree to a motion thus reflecting upon us. Mr. Warner, before he would proceed to try any experiments, required that a sum of 400,000*l.* should be guaranteed to him by Her Majesty's Government in the event of his being successful. But then what is success? Could he accomplish these tremendous results in the face of an enemy? Could he effect them under all circumstances and with destructive results? This did not appear from the experiments which were tried, and, therefore, I would not guarantee him a single shilling. (Hear, hear.) I could not think of giving a guarantee for the payment of public money under hypothetical circumstances, though I agreed that the cost of the experiments should be defrayed at the public expense. It is not immaterial to observe that this matter has been under the consideration of the Executive Government ever since the year 1834. At one time, when there was a proposition for the trial of experiments before officers of both branches of the service, Mr. Warner required that Lord Hardwicke and Lord Ingestrie should be present, but I decidedly objected to Mr. Warner's appointing any nominees, though, of course, no one can entertain a higher opinion than I do of the two noble lords whose names I have just mentioned. At different periods since the year 1834 the subject has been under the consideration of successive Boards of Admiralty. The correspondence which has passed upon these subjects will best show what really has occurred, and with the

permission of the house I propose to read a letter addressed to Colonel Couper, and dated the 8th of July, 1834. It is in these words:—"I am directed by Lord Auckland to request you will acquaint Sir James Kempt, that an application has been made to his lordship by Major Fancourt, M.P. for Barnstaple, and Commander Warner, of the navy, for permission to have some experiments in gunnery, proposed by Commander Warner, tried before a mixed committee of Ordnance and naval officers; and that it is stated to his lordship by Commander Warner, that a promise was made to him some months ago, by Sir James Graham and Sir James Kempt, that an opportunity of trying his experiments should be afforded to him. Commander Warner further states that he will be ready in about a week to appear before a committee."

I shall next read to the house another letter to Col. Couper, altering, at Mr. Warner's request, the arrangements made by the preceding communication. It is dated the 14th of July, 1834, and is as follows:—"There has been, I am sorry to say, some little mistake in the matter of Capt. Warner's experiment, about which I wrote to you a few days ago. Capt. Warner has been at the Admiralty this morning, and produced a letter from Sir J. Graham, dated the 27th of February last, in which Sir James acquiesces in the proposition made by Capt. Warner, that the exhibition shall be a private one, and consequently Capt. Warner now objects to its being made at Woolwich. He also wishes that three officers only of each service should be present instead of six, and says that it would be more convenient to him if the day of exhibition were to be fixed for Monday the 21st, instead of Friday, the 18th. Lord Auckland, therefore, now proposes to make an alteration in the Admiralty minute to meet Capt. Warner's wishes; and I am to request you will move the Master-General to do the same with respect to the Ordnance, and to fix Wanstead-park, in Essex (10 miles from London), as the place for the experiment to be tried at, before three officers of each service, on Monday, the 21st inst., at 2 P.M." I shall now read the official report of what occurred after the time and place had been fixed for trying those extraordinary experiments:—

"*Woolwich, July* 21, 1834.

"Sir,—I have the honour to report, for the information of the Master-General, that in obedience to his commands, signified in your letter of the 15th inst., Colonel Williamson, Sir A. Dickson, and myself proceeded to-day to Wanstead-park to witness the intended experiment of Commander Warner; but after making every inquiry in the neighbourhood we could only at last learn that Commander Warner had left his house at Claybury this morning for London, and that his return was uncertain.

"Under these circumstances we returned to Woolwich to attend to any further directions which we may receive on the subject.

"I have the honour to be, Sir,

"Your obedient servant,

"A. F. FRAZER,

"*To Lieut.-Col. Couper, &c.*" "*Col. Royal Horse Artillery.*"

Thus ended the proceedings of that period. Then came the experiments which were to be tried in the presence of Sir Howard Douglas and Sir Byam Martin, and he met those distinguished officers by declining to try any experiments unless he received a guarantee for 400,000*l.* No doubt there may be, and we know that there are, compositions capable of producing tremendous results—nitrate of silver, for example. It is well known that a person recently engaged in experiments on that substance was himself blown to atoms, and the building in which he had been trying his experiments very materially injured. It is no new discovery, then, to announce that a combination may be produced more destructive than any which we now have in ordinary use. But the mode in which this invention is to be applied is a matter of much more difficulty than the question as to the material. Considering the demands which are made upon my time and attention I must say that I think I have given sufficient con-

sideration to this subject, and I hope, that as far as the claim of the hon. baronet to a select committee is concerned, I have succeeded in blowing Captain Warner out of the water. ("Hear," and a laugh.)

Captain PLUMRIDGE explained, that in seconding the motion he did not intend to throw any reflection upon Her Majesty's Government. He knew nothing of Mr. Warner, nor had he had any communication with him upon the subject.

Captain PECHELL expressed his satisfaction at hearing the speech of the right hon. baronet; it convinced him that the censures which were passed upon Lord Melbourne and the late Government for neglecting this invention were unfounded. He thought Mr. Warner had nothing to complain of, for when he was requested to attend the Board of Admiralty to explan his invention, he sent his aide-de-camp or friend (a laugh); so that when the Admiralty were called upon to make a report upon the subject, they had none to make. In an interview which he subsequently had with Sir T. Hastings, he was found to be an impracticable person; it was quite impossible to deal with him. He (Captain Pechell) had always supposed that Mr. Warner had offered his invention to Don Pedro, and now he had no doubt of it. At all events, he believed that the inventor would take it to the best market he could find, without caring for this country. He remembered that once, when engaged in a blockade, he was told to look out for catamarans; but they never arrived, and he always found that when the guard boats were sent out and a good watch was kept, they were of no use. He supposed much the same danger was to be apprehended from this invention of Mr. Warner, although he had boasted that he could destroy a ship of the line at six miles distance, and knock down Portsmouth battery from the Isle of Wight; but he did not say whether he was to go to the farther side of the island and fire his projectile through it. (A laugh.) He thought it might be put on a par with the inventions of Mr. St. John Long, of which the hon. baronet had some knowledge and experience. (A laugh.) He was happy to see that the present Government, as well as their predecessors, treated this matter as it ought to be treated; and he trusted that the committee would not be granted, for it was not probable that the hon. baronet could obtain any more information on the subject from Mr. Warner than had been obtained already.

Sir G. COCKBURN said, that since he had been in office he had named two persons to inquire into this subject, Col. Baillie and Sir T. Hastings, but as soon as Mr. Warner heard their names he objected to them. (Hear, and a laugh.) For the honor of the profession, he ought to mention that although Mr. Warner was styled "commander" in some of the papers which had been read by the right hon. baronet, he never was in the navy, and had admitted to him (Sir G. Cockburn) that he had not served his time in the navy.

Sir F. BURDETT replied.

The house then divided, and the numbers were,—

For the motion . . .	2	
Against it	72	
Majority	—70	

After this let us hear no more of Captain *Warner's invention!*

DOVER HARBOUR.—Return to an Order of the Honourable the House of Commons, dated July 7th, 1842, for a Copy of the Report of the Officers appointed by the Admiralty to consider the Plans of Mr. Cubitt, for constructing a Harbour of Refuge at Dover.

Admiralty, Dec. 10, 1841.

SIR.—In obedience to the orders of the Lords Commissioners of the Admiralty, conveyed to me by your letter of the 22nd of November, to put myself in communication with Lieutenant-Colonel Thompson of the Royal Engineers, and

with Mr. Cubitt, on the subject of forming a harbour of refuge at Dover, I lost no time in communicating with those gentlemen, and I have now the honour of enclosing our joint report.

I hope you will pardon the liberty I take in adding, that the more I have considered this subject, the more I am convinced that Government has never undertaken a work, the necessity of which was so urgent, nor the effects of which, whether in peace or war, would be so important.

I have &c.,

(Signed) F. Beaufort, *Hydrographer.*

To Sir John Barrow, Bart.

Proposed Harbour at Dover.—In obedience to the directions of the Lords Commissioners of the Admiralty, and of the Master-General of the Ordnance, we have this day met here, and having maturely examined the plan and estimates for the construction of an artificial harbour at Dover, which were submitted to the Lords Commissioners of the Treasury by Mr. Cubitt, civil engineer, and having discussed the whole subject personally with Mr. Cubitt, we feel ourselves warranted in making the following report :

That if, according to the plan above proposed, the breakwaters are to be detached from the land, there will be some considerable danger that the sand and shingle, which will be impelled from the westward by the swell and wind, and which will therefore enter at the western opening laid down in that plan, will be arrested in their progress to the eastward as soon as they become sheltered by the breakwater, and consequently must, by accumulating there, rapidly tend to fill up the proposed harbour.

That a similar effect would take place, though in a less degree, through the eastern opening.

That therefore instead of such a breakwater, detached from the shore, we would strongly recommend that both a western and an eastern pier be carried out simultaneously from the shore, each of them curving round so as to enclose a basin of equal dimensions to that in Mr. Cubitt's plan, but leaving an opening between the pier-heads of 800 or 900 feet, through which any ship can beat in and out with undoubted facility.

That these piers should be constructed on the principle explained in Mr. Cubitt's report, of framework caissons, ballasted with shingle, and floated into their places.

That the above opening or entrance should be fitted with an under-water threshold or semi-pier, according to Mr. Cubitt's original plan and highly ingenious suggestion, and that it should carry four-and-a-half or five fathoms at low water.

That the advantages of thus enclosing the harbour by two piers abutting on the shore, instead of an insulated breakwater, will be

1. The perfect protection of the harbour from the incursion of all moving shingle.

2. The immediate use of the piers as they grow out from the shore, for the purpose either of refuge, or of communication with mail packets, or for a station for revenue cruisers.

3. The advantage of ready communication along the piers to the batteries at their heads, to the lighthouses which would stand there, and to the stairs and cranes from which vessels in distress would have to be relieved.

4. The important saving of time in the formation of an available harbour, from the much greater rapidity with which these piers would be executed, when compared with the work of an insulated breakwater, as all the materials would be directly run out upon railways, and deposited with precision, instead of their being tediously embarked in well-boats, then towed out under the varying interruptions of wind, weather, and tides, and deposited with uncertain irregularity.

5. The equally obvious saving in the expense, which, from the moment the caissons are first placed, would pervade the whole series of work so constructed,

up to the final completion of the roadways and parapets. This saving may, of round numbers, be fairly assumed at two-fifths, or forty per cent. of that part in Mr. Cubitt's estimates which applies to the embankments, and which amounts to 850,000*l.* This sum diminished by two-fifths would only be 510,000*l.*, and would thus make the very considerable saving of 340,000*l.*, besides a proportionate reduction in the contingencies.

(Signed) Robert Thompson, *Lieut.-Col Royal Engineers.*
F. Beaufort, *Hydrographer to the Admiralty.*

Admiralty, Dec. 9, 1841.

The above report has been communicated to Mr. Cubitt, and he authorises me to say that "all the observations and suggestions therein have his entire concurrence."

December, 10. (Signed) F. B.
Admiralty, July 11, 1842. H. F. Amedroz, *Chief Clerk.*

Effects of Lightning.

Liverpool, 20th July, 1842.

Sir.—In an excellent work on Navigation by C. Guepratte, Docteur de Sciences, Professeur de Mathematiques, et Conservateur chargé de la direction de la Marine, au Port de Brest, at page 335, under "Explication et usage des Tables," is the following:—

"Nous terminerons enfin cette notice par l'indication d'un phénomène tres digne de l'attention des navigateurs; je veux parler du renversement des poles qu'une fort decharge électrique produit quelquefois dans l'aguille d'une Boussole: On conçoit en effet que, si le signe particulier qui, dans cet instrument, sert a marquer le *Nord*, passe au *Sud*, le mains trompe par cette fausse indication, pourroit, par un temps couvert, suivre une route diametrement opposée à celle qui'l leur importe de parcourir, et aller se perdre sur des ecuils dont ils croyaient s'eloigner. J'ai été *moi-meme* témoin d'un naufrage qui fut ocassionné par une circonstance de ce genre: Uu batiment Genois qui faisait route pour Marseille, fut frappe par le foudre à peu distance d'Alger; les aguilles des boussoles fires *tout* une demi-revolution, quoique ces instrumens ne parussent pas endommages. et le batiment vint en brise sur la côte, au moment ou le pilote croyait avoir le cap au *Nord.*"

The edition of Guepratte's work from which the preceding is extracted is in one volume; published at Brest in 1816, by Lefournier and Deperiers, "Libraries pour la Marine, Rue Royale, No. 84;" but Compte Rossi, (capitane de fregate,) shewed me another edition in 1825 in two volumes, published in Paris.

When the brig Inca, (late Mr. Lincoln, master,) was struck by lightning some years since in the Bay of Biscay, her compasses were changed about four points, and her two chronometers rendered useless. The master until he obtained observations was steering direct for America; and afterwards the chronometers, although repaired, were never good; and when I was last on board of her in dock here, the person who succeeded Mr. Lincoln in the command, told me "her compasses were never right." Probably some metal near the binnacle had acquired polarity from the effects of the lightning.

On Sunday, 22d May, 1842, (civil time,) light breezes, and beating along the Irish shore, and about two miles from Toe Head, near Baltimore, the brig Frisk, Whiteways, master, from Buenos Ayres, bound to Cork for orders, was about 2h. P.M. struck by lightning, which shivered her main-royal, and top-gallant-masts to pieces, driving splinters through the main-top-gallant-sail in so many places as to render it useless, and set fire to the rigging, which, however, was soon extinguished. From the main-top-gallant-mast the lightning descended by the chain topsail-tye, and afterwards by the chain topsail-sheets, without doing any further damage until about three fathoms from the deck, where the

topsail-sheets were frapped together with some rattlin stuff, when it exploded, completely shattering the remainder of the topsail-sheets, and showering the pieces about the deck; it then descended by the chain cable into the chain locker, and from thence it is supposed made its escape into the sea by the copper bolts which run through the kelson and keel.

When the vessel was put on the gridiron here for examination no damage had been sustained in her bottom, but one of the copper bolts had a *bright* drop of copper about half an inch long, hanging from it "*just like* a drop of rain," said the mate.

When the Frisk was struck by the lightning the master and mate, (father and son,) were standing at the gangway speaking to a Cork pilot. The master's thigh, and the mate's arm were both benumbed, and remained so for three days, and afterwards the skin became blotched like the scars remaining after a cupping instrument.

After the lightning descended into the hold the vessel was filled with a thick sulphureous smelling smoke.

Both the chronometer and a watch were found considerably wrong afterwards, but they did not notice that their compasses were far out until when coming from Cork to Liverpool, and having a pilot on board off Point Lynas, he ordered the vessel to be steered south-east, and next morning they found themselves notwithstanding, about ten or twelve miles to the northward of Orms Head, and then discovered the compasses were each about four points wrong.

I know not whether the preceding may be worthy of notice in the *Nautical Magazine*, but it seems to me to confirm Mr. Snow Harris's ideas.

I have six pieces of the topsail sheet chains, which are all snapped right across as short as broken steel would be, and it is my intention to forward them to you, when an opportunity offers.

I have the honor, &c.,

To the Editor, &c. ANDREW LIVINGSTON.

[The pieces of the chain topsail sheets which our correspondent has so obligingly forwarded have reached us safely, and shall be disposed of as he wishes. With respect to the effects of lightning on compasses and chronometers, there are many instances on record of them, particularly the former, and at some future opportunity we shall make a collection for our readers; it was the effect of lightning on the latter, we have been informed, that induced the late Mr. Arnold to introduce the gold balance spring into the chronometer, which although free from receiving any magnetical effect from the lightning like the compasses, proved to be a very inefficient substitute for steel, and has been therefore abandoned. We are not alluding to the gold springs as they are improperly called, lately adopted by Mr. Dent, and which are steel springs covered with a coat of gold, by the electro-galvanic process as explained by him; but the pure gold spring, the action of which, was pointed out long ago, in our volume for 1833. The effects of lightning on the Frisk, and the mode of its escape into the sea, as our correspondent observes, completely confirms Mr. Harris's opinions.—ED. N.M.]

ADDITIONAL PROMOTION IN THE COAST GUARD SERVICE.—SIR—My Lords Commissioners of the Admiralty having had under consideration your letter of the 28th Jan. with its enclosure, expressing the opinion of the Lords of the Treasury, that the interests of the revenue absolutely require that the Coast-Guard should be sustained in a state of efficiency, which cannot be secured without a due supply of efficient officers, I am commanded by their Lordships to request you will state to the Lords of the Treasury, that in order fully to attain this object, and to stimulate those who may be employed in the said service to increased exertion, my Lords consider that it will be advisable to extend the number of promotions, and that in addition to the one Commander, one Lieutenant, and one Mate, now promoted annually on the recommendation of the Commissioners of Customs, irrespective of their qualifica-

tions by service at sea, two other Lieutenants should be selected for promotion—one from the Chief Officers, and another from the Commanders of revenue cruisers, both of whom must have served two years in one or more of Her Majesty's sea-going ships; and as a further encouragement to officers on this service, my Lords will submit to Her Majesty in Council, that all Lieutenants who have served two years in one or more of Her Majesty's sea-going ships may likewise be allowed to reckon three years' service in the Coast-Guard, if Chief Officers, or eighteen months if commanding revenue cruisers, as equivalent to one year's service in any of Her Majesty's ships, provided such officers shall have certificates from the Comptroller General of the Coast-Guard, that their conduct has been active, zealous, obedient, and in all other respects perfectly satisfactory.

My Lords propose that those two additional Lieutenants shall be selected by them from lists of each class of three to be submitted to them by the Commissioners of Customs, and which lists shall consist of Officers who shall have been recommended to them by the Comptroller General of the Coast-Guard, as having most distinguished themselves as chief Officers or Commanders of the Revenue Cruisers respectively. It is to be understood that in the selection to be made from the list so given in, the object will be to reward the best service done in the Coast-Guard.

It is not proposed to make any change with respect to Mates being chief Officers; there are few of this class now in the Coast-Guard, and it is desirable they should be gradually absorbed, partly by the annual promotion, partly by returning to the general service—by promotion when they have good sea-time, or in their present rank, Mates being in greater request in the general service.

My Lords desire me to add that they are prepared to restore to the Board of Customs the appointment of chief Mates in the Revenue Cruisers, and they suggest that in the selection of Second Mates a preference should be given to those who may have been educated at Greenwich Naval School, or at some other Naval School of established reputation.

With respect to the admission of boatmen into the Coast-Guard Service, my Lords propose that the age should be extended to 35.

I am, &c.,

Sir George Clerk, Bart., Treasury. (Signed) J. Barrow.

Death of the Duke of Orleans, *Malta, August 5th*, 1842.—On the receipt of the intelligence of the untimely end of the Duke of Orleans, Vice-Adm. Sir E. W. C. R. Owen, Commander-in-chief of her Majesty's Naval Forces in the Mediterranean, testified the grief of the nation, by issuing the following general memorandum:—

"The melancholy fact of the death of His Royal Highness the Duke of Orleans being unhappily confirmed, Her Majesty's ships and vessels present will testify their respect for the memory of His Royal Highness by the following demonstrations:—At 8 A.M., the ships' flags and colours will be shown as usual: at noon the French standard will be hoisted at half-mast, at the main of the Queen, Howe, and Ceylon, flag-ships, and when so placed the flags, pendants, and colours of the ships are to be lowered, and left flying at half-mast in a neglected state, the yards are to be dishevelled, by bracing them into a neglected state, and the guards will parade with arms reversed, the bands playing a prolonged dead march with muffled drums. At sunset all must be replaced."

This was continued for three successive days, and, by a request of the Admiral, all Naval officers put themselves into mourning for the same period. His Excellency the Governor of Malta followed the Admiral's example by requesting the officers of the garrison and staff to wear crape round their left arm for a like term of three days, during which all places of public amusement were closed, and the Royal Standard at the Palace, and the Union Jack on the several forts and cavaliers throughout the island, were displayed half-mast high. These orders reflect the highest honour on the respective Commanders-in-chief from whom they emanate, and we consider them the most delicate compliments that could possibly be paid to a monarch, bereaved, as Louis-Philippe has been, of a beloved son, the hope of the French nation.

PENSION TO ROPEMAKERS.—The Lords of the Admiralty, in consideration of the hard labour experienced by ropemakers in her Majesty's employment for the use of the navy, &c., have ordered that in future their superannuation pensions should be from 20*l.* to 24*l.* per annum, according to their services. This will prove an acceptable boon to many hardworking industrious men when unfit for further service.

NAUTICAL NOTICES.

THE BONETTA ROCK AGAIN!—*Cape Verds.*—We thought that we had "blown this rock out of the water!" But no, here it is again; and it appears we only succeeded in dislodging it from the several positions in which it had located itself, to spring up again with that obstinate tendency for *growing* which coral is so well known to possess! "What can't be cured must be endured;" *coral will grow!* So for the present we shall satisfy ourselves, and (let us hope) our readers too, with giving them the following report from the Consul at the Cape Verds, and along with it an extract from the log of the Phœnix steam-vessel, which has been obligingly communicated to us for investigation, as containing data for determining the position of the rock. Since our discussion of this subject, which our readers will no doubt remember,* the following notice appeared in the papers:—"*Bonavista, Cape de Verds, Jan.* 12.—The Astrea, from Liverpool to Monte Video, was wrecked on the north-east shore of this island on the 6th inst., crew saved." We merely notice this to express our satisfaction that we had not an Astrea rock as well as a Phœnix rock to add to the already lengthened tail of the Bonetta. However, here are the accounts, from which, perhaps, some of our readers may be enabled to lay down the rock, and should they be inclined to send us their position of it with the reasoning by which they arrive at it, we shall have no objection to insert it with our own in another number:—

"*Cape de Verds, July* 4, 1842.

"Sir.—I have the honour to report that the steamer Phœnix, Emanuel Harrington, master, bound from Greenock to the Cape of Good Hope, put into Porto Praia, St. Jago, in great distress, having touched upon a shoal at the north-east point of this island on the 24th ult., at half-past 10 at night: supposed distance from land 22 or 23 miles, and lat. 16° 19′ N., and long. 22° 26′ W. It is also supposed to be the same shoal, upon which the Charlotte was lost in April, last year. The Phœnix, at the time of the accident, was under sail without steam, and drew 11 feet forward and 12½ feet aft, and the place injured is at the after part of the keel; and there being but little or no swell of the sea, these facts demonstrate that the shoal in question has more than 11 feet water over it.

"The Phœnix came here from St. Jago, for further repairs and a supply of coals, which has been obtained, and now proceeds to England to make good the damages sustained. Had the Phœnix not been a steamer, she must inevitably have been lost, as the water, before the steam was got up, nearly reached the furnaces. Some fat, however, being thrown into the fires, quickened the action of the steam, and the pumps soon kept the vessel free. As the existence of this shoal appears to be doubted, I beg to mention that this island is surrounded by coral reefs more or less, and therefore, although a reef could not be found five or six years since, it can be no reason for doubting the existence of the one in question, as it is well known that coral, in some places, is very rapid in its growth. As far as I am able to judge and to learn, I have no doubt of the existence of a sunken reef some considerable distance from the north-east end of this island, and it lying in the track of vessels bound south, I humbly submit it to be a subject deserving the immediate attention of the Lords Commissioners of the Admiralty."

* See the December number of last year.

EXTRACT FROM THE LOG OF THE PHŒNIX STEAMER.

H.	K.	F.	Courses.	Winds.	Remarks, Friday, June 24th, 1842.
1	4	4	S.S.W.	East.	P.M.—Steady breezes and fine weather,
2	5				ship under all sail.
3	5		S.W.b.S.	N.N.E.	
4	5				
5	5	4			6 PM.—Spoke the barque Tuscan, from
6	5	4			London, 30 days out; people employed
7	5	4			as yesterday.
8	5	4			
9	6			Variation 15° West.	
10	6				
11	5				
12	5				Midnight.—Steady breezes and clear,
1	6				all possible sail set.
2	6				
3	5	4			
4	5	4			
5	5	4			
6	5	4			Latter part moderate breezes and fair.
7	4	4			
8	4	4			
9	4				
10	4				Current S. 86° W. Lat. obs. 16° 54′ N.
11	4	4			Distant 11 miles. Long. 22 36 W.
12	4	4			Course S. 21° W., 129 miles.

H.	K.	F.	Courses.	Winds	Remarks, Saturday, June 25th, 1842.
1	5		S. ½ E.		PM.—Moderate breezes and cloudy wea-
2	5				ther, ship under all sail, got the anchors
3	5				out over the bows and bent the cables.
4	5				
5	4			N.E.b.N	6.—Clear weather, saw the Island of
6	4				Sal bearing N.W. ½ N., distance 8 or 9
7	3				leagues. At 8h. 30m. Bonavista bore
8	3				W.b.S. ½ S., 25 miles.
9	2	4	S.b.E.	Variation 11¼ West.	
10	2	4			At 10h. 30m.—Ship struck on Made-
11	1	4	S.E.b.E.		line reef, centre of Bonavista, W. ½ S.
12	1	4			by compass, distance about 20 miles;
1	6	4	S. ½ W.		soundings from 5, 7, 10, 14 fathoms, then
2	6	4			no bottom; in about 15 minutes the ship
3	8				came off after striking a number of times,
4	8		S.W.b.S.		and making a deal of water set the pumps
5	8				on, and got the steam up as soon as pos-
6	8		W.S.W.		sible. 11h. 30m. ship under full steam.
7	8				Daylight clear weather; at 9h. 30m. saw
8	8		W.b.S.		the Island of Mayo bearing S.W. Noon
9	8				ditto N.E.b.N. found the ship making a
10	8		S.W.		great deal of water, pumps continually
11	8				at work. Noon light winds and clear.
12	8		S.W.b.S.	Long. by bearing of Mayo 23° 14′	Lat. obs. 15° 3′
				by acc. 23 15	Chron. 22 13 30″

[One more remark we may add here, and it is this:—From the position of the Phœnix on the 25th at noon, the bearing and distance of the Hartwell reef off the north-east point of Bonavista is S. 8½° W. 45 miles; and the course of the vessel *by log* to the supposed place where she struck is S. 20½° E. 40 miles, without any allowance for drift, (the wind being well abaft her larboard beam,) heave of sea, a current well known, bad steering, &c.].

Currents of the Ocean.—Extract of a letter from Mr. J. K. Crowe, Her Majesty's Consul at Hammerfest dated *British Consulate, Alten Hammerfest, 2nd July*, 1842.—"The enclosed letter was taken out of a bottle, picked up on the 1st June last, off the North Kyn in N. lat. 71° 5′ E. long. 28°. I have again ventured to make this the subject of a Dispatch, considering it as, so far of interest, as tending materially to confirm the prevailing opinion, that the Gulf Stream, exercises considerable influence on the climate of Fuimar Ve. This is the third instance of the kind, within these few years, the fact may appear interesting to the Admiralty or Gentlemen of the Royal Society.

Lat. 60° 0′ N., long. 7° 30′ W., *October 20th*, 1840.

"Gentlemen.—I have to inform you that, on the night of the 18th inst., while lying to, we were run into by a brig, I do not know her name, but while in contact with her the whole of my crew went on board of her, with the exception of one boy and myself, and carried away our jib-boom, topsail yard, main boom, several of her staunchions, and split part of her covern board, which caused the vessel to come waterlogged; and when obliged to leave her, we were taken off by the American barque "Hull," bound to Boston, on the 20th inst.; and thought it hard to leave her, but seeing nothing but death before us. The boy along with me belong to Dungarwan.

To Messrs. J. Scott & Co., Merchants, Cove of Cork, Ireland.

"Gentlemen, your obedient servant,
"Richd. Hughes."

Equatorial Submarine Volcanoes.—In lat. 1° 07′ S., long. 21° 21′ W., on the 3rd July, at 4 am., we experienced a very heavy shock of an earthquake, which at first alarmed us very much, as we thought the ship was grinding over a bank or shoal; but the continuous steady noise, and agitation of the vessel, soon convinced us of the cause; as, had it been a shoal, from the sea there was running at the time, the vessel must have been wrecked; as it was, she never lost any way, but continued going at the same rate as before. The noise and sensation (as if a heavy chain cable were running out) continued about four minutes.

The Sarah Bell is the first vessel ever arrived at Liverpool from Port Philip with a cargo loaded there. John Richard Bell, Master.—*Shipping Gazette.*

[The foregoing is an extract from the report of the Sarah Bell of Hull, from Port Philip, South Australia, and adds another proof to the fact of the existence of Submarine Volcanoes near the Equator alluded to in our last number, p. 574.]

North Sea Goederede Light.—The director general of the Netherland Marine has notified on the 19th July, that the smaller light on the Island Goederede, at the North Battery, being in a damaged state, will, till further orders, not be lighted.

Swinemunde.—*Entrance.*—In order to mark the vicinity of the harbour of Swinemunde, and at the same time point out the middle of the channel, there

has recently been laid down in its roadstead, a black and white circular striped buoy, with a red bottom, larger than the others, which remain unaltered. This buoy is placed in 4½ feet water, in a line with two beacons, erected on the Eastern Harbour Mole and Strand-Down, N.N.W. ¾ W., and at ½ distance from the beacon light, on the summit of the eastern mole, three cable lengths S. ¼ E. distant from the outer beacon; which on entering the harbour must be left on the starboard of the white buoy, to be passed on either side, only taking care that by steering S.S.E. into the harbour, the two land marks before mentioned be always kept covered.—*Swinemunde, July 13th*, 1842.

Revolving Light on the Great Berling.—The following particulars given by Lieut. G. Burslem of H. M. S. Lynx, who has visited the Berlings, for the purpose of obtaining them, may be added to the notice of it in our last number.

This Lighthouse is on the S.E. side of the Island. The following are compass bearings from it. Peniche Light discontinued S. 32½° E., Cape Roca S. 29° W., East end of Great Faralhon North, and the top of the Great Estella rock N. 42½° W.

The tower is 75 feet high and the lantern 25, the latter 365 feet above the level of the sea. The light revolves and shows its brightest glare every three minutes, the glare lasting 12 seconds.

It was distinctly seen from the Lynx 20 miles distant, clear weather.

The Wolf Rock.—It appears by a notice from the Trinity House, dated 5th August 1842, that the pole and ball carried away from this rock in November 1840, have been reinstated.

Guadaloupe,—*Terre de Bass Light.*—Navigators are hereby informed that on the 10th July, 1840, a fixed light was established on the Islet called Terre de Bass Guadaloupe in lat. 16° 10′ 29″ N. and long. 65° 45′ 36″ W. at 604 feet from its eastern extreme.

The light which is 75 feet above the ground and 108 feet above the high water level of the sea is visible from all points of the compass, and may be seen at the distance of 5 leagues.

The light bears from extremity of Point de Chateaux S. 36° 45′ E., from Morne a Fregate de la Desiderade S. 5° W., and from the eastern point, called Doublè de la Desiderade S. 32° 15′ W.

The rock called the *Baleine du Sud* off the Petite Terre bears S. 19° W. 2920 feet from the Light. Ships coming from the Eastward will find from 13 to 20 fathoms water at the distance of two miles North or South of the light and should not approach it within those limits.

Edwards' Preserved Potato,—The following important testimonial from so high an authority as Dr. Ure amply confirms the favourable opinions which have been so repeatedly given of the valuable article prepared by the Messrs. Edwards' for the Mess table.

Analysis of the Patent Preserved Potato, by Dr. Ure.—I hereby certify that Messrs. Edwards' Patent Preserved Potato, contains by chemical analysis the whole nutritious principles of that root in a pure concentrated state; that it contains

60 parts in the hundred, at least, of starch; nearly
30 of a soluble fibrine of a demulcent antiscorbutic quality,
5 of a vegetable albumine of the nature somewhat of the white of egg, and 5 of a lubricating gum.

The fibrine and albumine render it more light of digestion, and the gum more demulcent to the stomach than wheat flour, with which, also, it may be regarded as nearly equally nutritious, and more so than peas, beans, rice, sago, or arrow root.

(Signed) ANDREW URE, M.D., F.R.S., &c.,
London, July 30th. *Professor of Chemistry and Analytical Chemist.*

RESTRICTIONS ON BRITISH VESSELS IN BELGIUM. The following correspondence has been received during the past week from Belgium:—

BRUSSELS, Aug. 9.—The *Independent* endeavours to defend the ordonnances that arbitrarily fix the days when the boats of the General Steam Navigation and Antwerp Companies are to be permitted to sail from Antwerp. It is pretended that these ordonnances are promulgated for the benefit of the public on the one hand, seeing that, as they forbid, under pain of paying certain dues, the steamers of the rival companies running on the same day, a vessel will, for the future, sail from Antwerp five days in the week instead of three; and on the other, to prevent the ruin of both companies likely to result from the present system of opposition.

This is all very fine; and the General Steam Navigation Company is, by inference, called on to be grateful for the disinterested interference; but the hollowness of the pretence is apparent, and the cover sought to be thrown over the attempt to ruin the English company too flimsy to bear a glance. If a care for both companies were the moving cause of these ordonnances, why is the best day out of the seven, namely, Wednesday taken from the English company, Wednesday being the day it has always run its boats, and Sunday given in lieu, Sunday being the day most Englishmen wish to avoid travelling at all? Again, how is it, if the Government only desire to see the companies run on equal terms, that ten per cent. is deducted from the duty of all merchandize entering Antwerp in one of the Belgian Company's boats, the freight being the thing that pays best! The Belgian Government is nothing more or less than a partner in the Antwerp Company, is directly interested in its success, and evinces its interest by seeking among other things to injure the rival company.

Some time ago an ordonnance was published in the *Moniteur*, forbidding the rival boats from starting from Antwerp at the same hour. The pretence for this was the danger of two steamers sailing in the river at one and the same time; but a truer cause may be found in the desire to prevent the English passing so gallantly the Belgian boats in the very face of the burghers of Antwerp, and thus giving the best possible answer to the boastings of the press, which assert the superiority of the Belgian vessels. As to danger, the thing is singularly absurd. Whoever saw ten ships in the Scheldt, which is no rivulet, at once? M. Nothomb, Minister of the Interior, perhaps never sailed from Gravesend to London-bridge. If all sorts of vexatious interference with the steamers of the General Steam Navigation Company be permitted, perhaps the Ministers, emboldened by success, may set about playing still worse pranks with all British ships that enter Ostend or Antwerp.

August 13.—Although I have twice lately referred you to the attacks of this Government on the General Steam Navigation Company, I think you will not deem the subject unworthy still further notice. While justice to an important body demands that this matter be understood by the British public, who can tell whether, if this interference with English commerce be passed over in silence, the Belgian Government may not be encouraged to extend its annoyance to other, nay, all vessels sailing under British colours?

That the ordonnances arbitrarily fixing the days of departure from, and threatening to fix also those of the arrival at Antwerp, of the steamers running between that port and London, were drawn up in the hope of driving away from this station the boats of the General Steam Navigation Company altogether, and giving the Belgian Company, of which the Belgian Government

may be fitly designated 'the managing director,' the monopoly of a trade created by its revival, few here seem to doubt; while the exultation of the favoured society shows how much is anticipated from their promulgation. But let the Antwerp Company be moderate in its expectations; for first, the ordonnances themselves are contrary to law; secondly, the General Steam Navigation Company may be found to possess too much vitality to be destroyed by a brace of Belgian ordonnances; and thirdly, the English Government may not be inclined to submit to this intolerable interference with British vessels.

And first, as to the legality of the two ordonnances. The one declares that if a boat of either company sail on any but the days fixed by the other, such boat shall be mulcted in certain dues, by treaty payable to Holland for the navigation of the Scheldt; dues which have hitherto in all cases been discharged by the Belgian Government; and both ordonnances rest on the authority of a law passed by the Belgian Legislature in June 1839, conceived in the following terms:—The toll payable to the Government of the Netherlands on the navigation of the Scheldt shall be reimbursed by the State to the ships of all nations; but if there exist in regard to one of the foreign flags grave and special motives, the Government is authorised to suspend provisionally in regard to it the effect of this law. It is the view (to say nothing of the folly of considering the opposition between the rival companies to constitute des motifs graves et speciaux) of lawyers, and those fully competent to give an opinion, that the proviso contained in the above act gives power to the Government to tax all vessels sailing under any foreign flag in the dues in question; but does not empower the Ministry, on its own responsibility, to select for this purpose particular vessels sailing under such flag, all others being exempted.

Had the ordonnances in question struck all ships hoisting the British flag, it would have been legal.

The words "un des pavillions etrangers" clearly contemplates foreign national flags generally, and cannot be restricted to particular ships sailing under any one flag. Were any other interpretation of this proviso correct, the Belgian Legislature would not have placed in the hands of the Ministers an instrument of petty annoyance to be used on any flimsy pretence (just as the Ministers thus construing it have done in regard to the General Steam Navigation Company), whereas, according to the construction above suggested, a construction which I am sure every lawyer would put on it, the Legislature cannot be accused of bestowing immoderate discretionary power on the Ministers, for it would be sure that they would think twice, and leave no possible doubt of the existence of *motifs graves et speciaux*, before venturing to impose an exceptive tax on the flag of any, even the least powerful, nation. Again, the General Steam Navigation Company may not be found so easy to crush; the Ministerial ordonnance complained of, subjects the English company's boats to the Scheldt dues if they sail on a Wednesday. This day has always belonged to the English company (before even the Antwerp one began to run at all.) It is, as I observed in a former letter, the very best day in the week, as experience has proved; it is moreover the day the company have advertised for years in journals and in hand bills throughout the Continent; therefore the day when travellers from Italy, Switzerland, and the Rhine borders, &c., expect to find one of their boats ready to sail for England.

This being so, I learned with infinite pleasure yesterday, that the company has determined to continue to run on that day in spite of the penal ordonnances, and pay the tax demanded under protest. I cannot help here expressing the hope that this spirited conduct will meet its reward, and that English gentlemen will make it a point of national feeling to sail only in the English boats. As to the third point, whether or not the British Government will interfere, I have only to observe, that I believe the Antwerp Company build their expectations of non-interference on this,—that in the multitude of engrossing affairs the scandalous treatment to which the General Steam Navigation

Company is subject in this country, will escape the attention of the Government of Great Britain.

In a letter inserted in your paper of the 9th inst, I informed you that this Government had, up to the day I wrote, advertised in the *British Gazette* that the British Queen was under the command of Capt. Keane, and stated my belief that this was done to induce confidence in the navigation of that fine steamer. The *Morning Post*, containing my letter, arrived in Brussels on Thursday, and on Friday the name of Capt. Keane was expunged from the advertisement; but the real captain's name was not added, which looks very like attempting to effect, by a silent untruth, what was ventured to be done in terms, till exposed.—*London Journal of Commerce*

COPY OF THE REPORT OF THE LOSS OF THE SHEARWATER'S BOAT'S CREW.

H.M.S. Shearwater, Sheerness, 26th July, 1842,

SIR.—It is my painful duty to report to you that the Cutter of this Ship was upset in a squall of wind yesterday afternoon, in Gillingham Reach, by which accident Mr. Thomas Corral, Surgeon, four seamen, and one boy were unfortunately drowned.

On the strictest enquiry into the circumstances of the case, it appears that after I had left the ship in the gig, to report my arrival to you, the first lieut. Dunlop, the Surgeon, and boats' crew, consisting of five men, shoved off from the ship to sail to Chatham about a quarter before one o'clock, in the cutter, a twenty-four foot boat, rigged with a sliding Gunter sail with a slight boom and jib fitted by the Dock Yard at Woolwich; it was blowing a fresh, but not a strong breeze at the time from the eastward with squalls, and the first lieutenant was steering the boat. When near the entrance of Gillingham Reach having occasion to jybe the sail, the boom sheet was hauled in quite amidships, when a sudden gust of wind over the low land took the sail, tore the sheet out of the hand of the man who was holding it, threw all the boat's crew to leeward, and heeled the boat over so much that she filled and went down. The surgeon and three of the men, apparently not being able to swim, sunk almost immediately; the first lieutenant and two of the seamen supported themselves for some time by swimming, but the nearest land being to windward, and the lee shore more than a mile distant, and a fresh spring tide running, and neither oar nor spar having floated out of the boat, these two seamen after a quarter of an hour's struggling sunk. Lieut. Dunlop, having fortunately found the back board of the boat floating, supported himself by it, and after being about half an hour in the water was picked up in a very exhausted state, by the steamer plying between Chatham and Sheerness, and brought on board; he is now I am thankful to say recovered. The steamer immediately began to search about in every direction on the spot, in hopes of finding some of the unfortunate sufferers, but in vain, as not a vestige of anything but a seaman's jacket could be seen. The blades of the oars having been under the sailing thwart may account for the oars not having floated.

The above are all the details I am enabled to obtain of this lamentable occurrence. It only remains for me to state that Mr. Corral, the surgeon, was a young man lately promoted, highly recommended by Sir William Burnett, Inspector General of the fleet, that in the short time he has been on board he has made himself much beloved, and that he leaves a young widow, the daughter of Commander Patey, to deplore his untimely end. Of the seamen, three were Petty Officers; the boatswain's mate, Thomas Sparrow, a good sailor and an excellent hard working man; and David Edgar, and William Marshall, Quarter masters, both steady and trustworthy men, all of whom had been seventeen years in the service. The Ordinary seaman Henry Kemp, and Stephen Bond, boy, were also steady and well behaved lads.

The three petty officers have, I regret to say, left widows to lament their loss, and the two former families of young children. It is only a few days since

that these men voluntarily came forward to subscribe a day's pay in aid of their distressed countrymen in the manufacturing districts; they have now left families equally destitute, who will, I trust, meet with the sympathy of the charitable, in order to alleviate, as far as possible the heavy blow which they have to sustain.

I am, Sir, yours, &c.
JOHN WASHINGTON, *Captain.*

SUBSCRIPTIONS in aid of the Widows and Children of the Seamen belonging to Her Majesty's Ship *Shearwater*, who were unfortunately drowned while on duty, by the upsetting of a Boat, in the River Medway, near Gillingham, on Monday the 25th July, 1842.

THOMAS SPARROW, Boatswain's Mate, 12 years in the navy, leaves a widow and two children; DAVID EDGAR, Quarter Master, 17 years in the navy, leaves a widow and three children; WILLIAM MARSHALL, Quarter Master, 12 years at sea, leaves a widow.

The following Subscriptions are thankfully acknowledged:—

	£	s	d
Vice-admi. Sir E. Brace, K.C.B. Commander-in-Chief in the Medway	1	0	0
Miss Brace	1	0	0
Miss Foote	0	5	0
Commander Crouch	0	5	0
Captain Beaufort, RN., Hydrographer	10	0	0
Miss E. Beaufort	0	10	0
(H.M.S. Camperdown.)			
Captain Brace	1	0	0
Commander Tinling	0	10	0
Rev. J. Cooper	0	5	0
Lieut. Payne	0	5	0
" Hollingsworth, RM.	0	4	0
" Braimer, RM.	0	2	6
The Gun-room officers	1	0	0
Mr. McDonald	0	5	0
Mr. Barnes	0	4	0
Rev. J. Barton, Eastchurch	1	0	0
Mrs. Holt	2	0	0
Col. Vavasour, R.E.	0	10	0
Miss Vavasour	1	0	0
A. Monteith, Esq., Winton-h	2	0	0
Mrs. Monteith	2	0	0
Mrs. Vans Agnew	1	0	0

	£	s	d
(H.M.S. Shearwater.)			
Captain Washington	5	0	0
Lieut. Dunlop	5	0	0
" Cudlip	3	0	0
Mr. E. K. Calver	2	0	0
" E. C. Davison	1	0	0
" Woods	0	5	0
" Bourchier	0	5	6
" Murray	0	5	6
" Brooker	0	5	6
" Ellard	0	5	6
" Minhinnick	0	10	6
" Vedder	0	10	6
" Cooper	0	10	6
The Ship's Company, One Day's Pay,			
Mrs. Washington,	10	0	0
A. Washington, Esq.	5	0	0
Miss Washington	1	0	0
Miss M. Washington	1	0	0
Rev. Henry Askew,	5	0	0
Mrs. Marshall	5	0	0
Hon. Mrs. H. C. Marshall	4	0	0
Miss Marshall	1	0	0
Mrs. Pollard	5	0	0
Miss Pollard	5	0	0
The Nautical Magazine	1	0	0

Trustees for the due appropriation of the Funds received:—The Rev. RICHARD BULL, Harwich; Captain WASHINGTON, Lieut. DUNLOP, and Mr. E. C. DAVISON, of Her Majesty's Ship Shearwater.

Contributions will be thankfully received at the Admiral's Office, Sheerness; at the Superintendent's Office, Woolwich Dock Yard, on board H. M. S. Shearwater; and by Mr. R. B. BATE, 21, Poultry.

THE LATE ACCIDENT NEAR CHATHAM.—Since the departure of H.M. surveying steamer Shearwater from Sheerness, which took place suddenly on the same day that the adjourned inquest on the body of Dr. Corroll and four others, who were drowned by the capsizing of the Shearwater's cutter was appointed to be held, another has been picked up—namely, that of T. Sparrow, the boatswain's mate, The remains of Dr. Corroll and the rest of the sufferers have been interred near Sheerness; and were followed to the grave by all the officers belonging to the numerous ships of war at anchor in the harbour.

Promotions and Appointments.

[From the Naval and Military Gazette.]

PROMOTIONS.

Retired Captain under her Majesty's Order in Council of 10th Aug., 1840,—Sir Samuel Brown, Knt., KH.

Captain—Hon. K. Stewart.

Lieutenant—J A. Pritchard.

Surgeon—E. Robertson.

APPOINTMENTS.

Rear-Admiral—Hyde Parker to be Superintendent of Portsmouth dockyard.

Captain and Commodore of the Sec. Class—Hon. H. D. Byng (1814) to *Imaum*.

Captains—J. J. Onslow (1834) to *Daphne*—Hon. M. Stopford (1825) to *Pique*—W. W. Foote (1810) to Greenwich hospital.

Commanders—N. Robilliard (1841) to *Seaflower*—G. A. Frazer (1841) to *Comet*—J. Paget (1837) to *Imaum*—W. N. Taylor (1841) to *Rodney*—Hon. S. T. Carnegie, MP., (1838) to *Thunderbolt*—W. Houston (1842) to *Pilot*, v. Ramsay, invalided—Estcourt to study at Naval College.

Lieutenants—G. Butler (1841) to *Meteor*—C. Jackson to *Griffon*—J. A. Dunbar (1842) to *Albatross*—G. Lavie (1834) to *Isis*—G. C. Fowler (1841), D. H. M'Neill (1842), J. B. Massie (1838), H. C. Toby (1841), G. J. Napier (1842), H. Croft (1841), and A. Hamilton (1842) (all add.) to *Queen*—W. C. Alexander (1842) to *Cleopatra*—G. Blane (1838) to Naval College for study—A. Kortright (1828) to command *Columbia*—B. Young (1841) and W. Horton (1842) add. to *St. Vincent*—Smith, F. A. B. Stewart (1815) and R. C. Mitchell (1829) to *Imaum*—T. D. Stewart (1815), S. J. Brickwell (1841), J. B. Kooystra (1841), and T. J. Smyth to *Madagascar*—H. D. Rogers (1837) to *Wolf*—G. Payne (1841) to *Winchester*—J. F. Slight to *Daphne*—Richard Hill Wharton (1841) to *Royal William* for rank—G. Wolrige (1842) to *Dublin*—J. M'Douglas Smith (1840) to *Resistance*—A. Boyter (1815) to *Royal Sovereign* for service of *Pike* steamer—P. Cracroft to *Victory*, to be flag lieut. to Rear Admi. Parker—R. M'Clure (1837) to command *Romney*, v. Burton allowed to proceed home.

Masters—A. M. P. Mackey (1825) to command *African*, tug-st.—G Biddlecombe (1835) to *Imaum*—A. B. Usborne (1838) to *Comet*—P. B. Roberts (1841) *Daphne*—G. B. Hoffmeister (1828) to *Jupiter*—B. L. Bunard (1841) to *Ferret*—G. J. Hodges (1841) to *Satellite*—J. Coaker to *Cornwallis*.

Mates—F. H. Shortt, C. A. Lodder, and A. C. Hobart to *Excellent*—E. Eurnour, to *Seaflower*—W. T. Lower to *Thunderer*—E. A. Inglefield to *Royal George*—J. Y. Paterson to *Imaum*—J. B. Field to *Daphne*—C. Atkins to *Camperdown*—Chas. Mc. Griger to *Caledonia*—F. Robinson to *Comet*—F. K. Hawkins to *Queen*—F. A. B. Crawfurd and A. D. Gordon to Naval College.

Second Masters—D. G. C. Slaughter, to *Rhadamanthus*—O. Rhind, to *Griffon*—G. Byford to *Sydenham*—E. H. Rowe to *Comet*—J. Way to *Meteor*—Blackford to *Cleopatra*—H. D. Burney to *African*.

Surgeons—J. Lardner to *Jaseur*—G. Burn, MD., to *Imaum*.

Masters'-Assistants—N. D. Welch to *Ocean*—C. Wilkinson to *Albatross*—T. H. Frazer to *Salamander*.

Assistant-Surgeons—J. N. Derriman to *Seaflower*—J. Finlay to *Griffon*—N. B. Alexander (add.) to *Caledonia*—A. Woodcock to *Imaum*—D. Thomas, *b*, (add.) to *Imaum*, for service of the squadron in the West Indies—M. Hamilton to *St. Vincent*—R. L. Jack to *Meteor*—W. Roberts to *Alfred*—A. Barr to *Comet*—G. H. Somerville to *Daphne*—G. T. M. Martin to be acting surgeon of *Electra*, v. Hopley invalided—W. D. Kerr, MD., to *Hornet*, v. M'Donald to *Rover*.

Midshipmen—E. D. Aplin to *St. Vincent*—W. H. Budd to *Iris*—H. V. A. Powlett to *Howe*—G. S. Pullen to *Columbia*—G. J. Colville to *Carysfort*—C. Dickson to *Albatross*.

Volunteers 1st Class—W. H. Neale to *Albatross*—G. J. Macolm to *Inconstant*—M. T. Parke to *Columbia*—H. Holmes to *Howe*—E. Walsh to *Cambridge*—S. T. Jeyes to *Seaflower*—T. B. Legh to *Salamander*—F. A. Campbell to *Resistance*—I. Carey to *Aigle*—F. Bramby to *Cambridge*—F. Morgan to *Electra*—J. R. Alexander to *Siren*—G. Todd to *Vernon*—G. W. P. Edwards and R. Austin to *Daphne*.

Pursers—J. Elliot assistant-storekeeper Victualling Department, Deptford—W. Bailey to *Imaum*—G. Clarke to *Daphne*—J. Westwood to *Salamander*.

Chaplain—Rev. J. Connolly to *William and Mary*.

NAVAL INSTRUCTORS—M. T. S. Rainbach, MA., to *Caledonia*.

CLERKS—R. Kellard (in charge) to *Seaflower*—T. A. Telfer to *Salamander*—J. G. G. Simmonds and T. Mitchell (act.) to *Cleopatra*—G. A. Walsh (asst.) to *Salamander*—F. W. Cole to *Spy*—H. Snow to *Hornet*—J. D. Bowden to *Imaum*—J. Macdonnall to *Comet*.

COAST GUARD.

Appointments—Com. W. C. Brown to Southend—Com. S. Grenfell to Salcombe—Lieuts. S. Griffiths, C. H. Baker, and C. E. Wilmot to command stations—Lieut. T. Heales to Silsey Bill.

Removals—Lieut. H. F. Sewell to Cloghy—Lieut. G. W. W. to Bieuliee River—Mr. H. Hooper to *Lapwing*, r. c. Com. F. Edwin to Newcastle Castle Welland—Lieut. C. Short to Long Island v. Mr. Stevens superannuated—Mr. J. Sims to *Tartar* r. c.—Mr. Coull, acting chief officer at Alum Bay.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ALBAN, (st. v.) Mr. J. King, Aug. 12, arr. at Portsmouth from Gibraltar, 13th sailed for Gravesend with troops, 20th returned to Portsmouth.

ALBATROSS, 16, Com. R. Yorke, July 18, left Portsmouth for Quebec.

BLACK EAGLE, (st. v,) Mr. S. B. Cook, Aug. 9, went to Ostend to bring over the Duke of Saxe Coburg Gotha, 17th at Sheerness with the Lords of the Admiralty.

BRISK, 3, Lieut. Com. G. Sprigg, 11 Aug. arr. at Spithead from South America, 12th sailed for Sheerness to be paid off, 15th arr.

CLEOPATRA, 26, Capt. Wyvill, July 25, left Portsmouth for the Mauritius.

COLUMBIA, (st. v.) Lieut. Kortright, Aug. 17, left Plymouth for North America.

COMET, (st. v.) Aug. 1, commissioned at Woolwich by Mr. A. Usborne for Commander Frazer.

HYDRA, (st. v.) Com. Murray, Aug. 6, arr. at Spithead from West Indies, 7th sailed to the eastward.

IMAUM, commissioned at Portsmouth, Aug. 1 by F. A. B. Stewart for Commodore Hon. H. D. Byng

RESISTANCE, 42, Com. C. Patey, July 30, arr. at Spithead from Canada, Aug. 13, sailed for Quebec.

ROCKET, (st. sur. v.) Com. W. L. Sheringham, with the officers and crew of the Sylvia have been transferred to this vessel, the Sylvia, having been commissioned as a tender to the Seaflower.

ROLLA, 10, Lieut com. C. Hall, Aug. 9, arr. at Spithead, 10th sailed for Chatham, 18th paid off.

SEAFLOWER, 4, July 19, paid off at Portsmouth, 20th recommissioned by Com. Robilliard, 30th sailed for Jersey.

SHEARWATER, (st. v.) Com. Washington, Aug. 6, at Harwich.

SULPHUR, (st. v.) Capt. Belcher, CB., July 19, arr. at Portsmouth from East Indies, 21st sailed for the eastward, Aug. 2, paid off at Woolwich.

TERMAGANT, 10, Lieut. com. H. F. Seagram, July 19, arr. at Portsmouth from Africa, 21st sailed for Chatham.

WELLESLEY, 72, Capt. T. Maitland, July 19, arr. at Plymouth from China, Aug. 4, paid off.

WOLF, 10, Com. C. O. Hayes, Aug. 6, left Plymouth for China with 86,000 dollars.

LAUNCHED.

GOLIAH, 80, Chatham July 25th.
VIRAGO, (st. v.) Chatham July 28th.

COMMISIONED.

DAPHNE. Chatham July 26th.
TERMAGANT, Chatham.
IMAUM, Portsmouth August 1st.

PAID OFF.

SULPHUR, Woolwich, August 2nd.
TERMAGANT, Chatham.
ACTAEON, Plymouth July 22nd.
WELLESLEY, Plymouth August 4th.
SPARROW, Chatham July 16th.
ROLLA, Chatham, August 18th.
HYDRA, Woolwich.

ABROAD.

ANDROMACHE, 26, Capt. R. L. Baynes April 13, arr. at the Mauritius.

ARROW, 10, Lieut. com. W. Robinson, June 12, at Rio from a cruise.

BELVIDERA, 38, Capt. Hon. G. Grey, July 5, left Gibraltar for Barcelona, &c.

BITTERN, 16, Com. B. Carey, June 22, at Bahia from Pernambuco.

CALCUTTA, 84, Capt. Sir S. Roberts, July 25, at Gibraltar, Aug. 2, sailed for England, but anchored again, wind being adverse.

CAMBRIDGE, 78, Capt. E. Barnard, July 4, left Malta for Syria.

CAMELION, 10, Lieut. com. G. M. Hunter Feb. 1, at Amoy.

CHILDERS, 16, Com. F. P. Halstead, May 1, arr. at Singapore from Calcutta.

CYCLOPS, (st. v.) Capt. H. T. Austin, July 15, at Alexandria.

DRIVER, (st. v) Com. S. F. Harmer, May 24, left Cape of Good Hope for China.

ENDYMION, 38, Capt. Hon. T. W. Grey, April 28, at Singapore.

FAIR ROSAMOND, 2, Lieut. com. A. G. Bulman, June 15, sailed from Jamaica on a cruise.

FANTOME, 16, Com. P. G. Haynes, May 16, left Cape Good Hope for Rio.

FAWN, 3, Lieut. com. J. Nourse, June left St. Helena for west coast of Africa.

FERRET, 10, Com. J. Oake, May 3, Sierra Leone.

FORMIDABLE, 84, Capt. Sir C. Sullivan, July 25, at Gibraltar.

GEYSER, (st. v.) Com. Carpenter, July 26, arr. at Malta.

GLEANER, (st. v.) Lieut. com. J. Jeayes July 25, left Bermuda for England.

GROWLER, (st. v.) Com. C. M. Buckle June 13, arr. Rio from a cruise.

HEROINE, 10, Lieut. Stewart, May 5, left Prince Edwards Island, for Sierra Leone.

ILLUSTRIOUS, 72, Capt. J. E. Erskine, June 30, left Jamaica for Bermuda.

IRIS, 44, Capt. Sir J. Marshall, May 26, left Brazils for Cape Good Hope.

JASEUR, 16, Com. W. Willis, July 24, at Gibraltar from Cadiz.

LIZARD, (st. v.) Lieut. com. C. J. Postle, July 28, left Gibraltar for Malta.

MADAGASCAR, 44, Capt. J. Foote, July at Ascension.

MAGICIENNE, 24, Capt. Warien, July 30, at Malta from Tunis.

MINDEN, (hospital ship), May 18, arr. at Cape of Good Hope.

PANTALOON, 10, Lieut. Lapidge, June 5, at Bathurst River, Gambia.

PARTRIDGE, 10, Lieut. com. J. T. Nott. May 26, left Rio, for the River Plate.

PERSIAN, Com. T. Eden, May 10, left Princes Island for River Bonny.

PROMETHEUS, (st. v.), Lieut. com. T. Spark, July 23, at Gibraltar, 30th Malta

ROVER, 18, Com. C. Keele, June 8, left Jamaica for Honduras.

SNAKE, 16, Com. Hon. W. Devereux, June 15, at Malta.

SPARTAN, 26, Capt. Hon. C. G. Elliot July 3, arr. at Halifax from Newfoundland.

SPITFIRE, (st. v.) Lieut. com. H. E. Winthrop, June 19, left Jamaica for Honduras.

THUNDERER, 84, Capt. D. Pring, July 26, at Gibraltar.

TWEED, 20, Com. H. D. C. Douglas, June 21, at Barbados from Antigua.

VERNON, 50, Capt. W. Walpole, July 25, arr. at Malta from Tripoli.

VINDICTIVE, 50, Capt. J. T. Nicolas, Feb. 23, arr. at Hobart Town.

VOLAGE, 26, Capt. Sir W. Dickson, June 21, at Jamaica from Santa Martha, with 300,000 dollars.

WATERWITCH, 10, Lieut. Com. H. J Matson, June 9, at St. Helena from west coast of Africa.

WILBERFORCE, (st. v.) Com. W. Allen Mar. 20, at Cape Coast Castle from Ascension.

WOLVERINE, 16, Com. J. P. Johnson, May 14. arr. at Cape of Good Hope, and sailed for China.

AT MALTA, AUG. 5—*In Port*—Queen, 110, Howe, 120, Impregnable, 104, Rodney, 92, Monarch, 84, Indus, 78, Vernon, 50, L'Aigle, 24, Magicienne, 24, Snake, 16, Devastation and Geyser, war-steamers, Prometheus and Alecto, steam-packets, and the Ceylon, receiving-ship.

Distribution of the rest of the Mediterranean Fleet.—Formidable, 84, Jaseur, 16, and Lizard steam tender, at Gibraltar. Thunderer, 84, at Cadiz, and Belvidera, 38, on the south coast of Spain. Scout, 18, and Medea, war steamer, at Corfu, Vanguard, 80, Cambridge, 78, and Phœnix, at Basika Bay, near the Dardanelles. Stromboli, war st., at Constantinople. Inconstant, 36, Hecate and Vesuvius, war steamers, at Beyrout. Cyclops, at Alexandria. Locust, steam-tender, at Tripoly, in Barbary, and the Savage, 10, at Tunis. The Beacon and Magpie, at Port Naussa, in the island of Poros. The Polyphemus, steam packet, at Marseilles.

The Vernon is said to be destined to relieve the Inconstant at Beyrout, from whence the Hecate is hourly looked for, having been relieved by the Vesuvius. Devastation will relieve the Phœnix at the entrance of the Dardanelles, from whence it is said Vanguard and Cambridge have been recalled. Thunderer is to return to Malta, and L'Aigle to proceed to Corfu, to keep up a row-guard in the channel, in consequence of some piratical acts having been committed thereabouts by small Greek craft. Medea is said to have proceeded from Ancona to Corfu, likewise to keep a look-out for piratical craft. Geyser, from England, having relieved the Phœnix, this latter will leave for England immediately she

arrives from the Levant. Prometheus is ordered to be in readiness to proceed to Marseilles at the close of the month with the next overland mail from India, which will, it is expected, be a very interesting one. Alecto will convey the next intermediate mails for England to Gibraltar. The Iberia, contract-steamer, has at length, completed her extensive repairs, and has now resumed her voyages between Malta and the Ionian Islands and Patras. During the absence of Lieut. Green, R.N., on leave, the Commander-in-chief has selected Lieut. F. H. Stevens. R.N., of the Queen, to take charge of the mails by this steamer.

ROYAL VISIT TO SCOTLAND.—Official notice to that effect has been received by the magistrates and commander of the forces, so also orders to put Holyrood-house in a state of repair, to enable Her Majesty to hold a court there; and these orders are in the course of execution. The princely palace of the Duke of Buccleuch, at Dalkeith, however, will be Her Majesty's ordinary place of residence while in this vicinity; and it is understood her stay in Scotland will not exceed 14 days, including the time occupied in visiting the Earl of Mansfield at Scoon, Lord Willoughby D'Eresby, at Drummond Castle, and the Earl of Breadalban at Taymouth Castle. The present arrangement, we understand, is that Her Majesty, Prince Albert, and suite, will leave London on Monday, the 29th inst., in the Royal George yacht, commanded by Lord Fitzclarance, and land at Granton on Wednesday, the 31st, rest on the Thursday at Dalkeith; hold a Drawing-room in Holyrood-house on Friday the 2d of September; visit the city of Edinburgh on the Saturday following; attend public Worship on Sunday; leave for Scoon on Monday; and after spending some days in the Highlands, return to Edinburgh on the 12th; remain one day, and then sail for the metropolis. When at sea Government steamers and the yachts of noblemen and gentlemen, will attend Her Majesty. It is not probable the anticipated Royal visit will be attended with the pomp and circumstances which distinguished that of George the Fourth, exactly 20 years ago. Queen Victoria, unlike her royal uncle, is averse to ostentatious display, and seeks rather the privacy and quiet of domestic enjoyment; which we are sure, she will be enabled to command as effectually at Dalkeith as in any of her own royal palaces. Devotion to the Sovereign has ever been characteristic of Scotsmen, and there is not a man from Maiden-Kirk to John o'Groat's, let his rank in life be what it may, who will not do all that in him lies to lead her Majesty to repeat her visit; and, now that the means of locomotion is so easy, it is possible the Queen may be induced occasionally to travel to the North.—*Edinburgh Observer.*

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Portsmouth, Aug. 21st, the lady of Lieut. J. Wood, RN., of a daughter.

At Plymouth, the lady of H. F. Osman, Esq. surgeon of H.M.S. Wolf, of a son

Lately, the lady of Lieut. Pritchard, RN., of a daughter.

Marriages.

At St. George's, Hanover-square, on 1st Aug. Capt. Elliot, RN., son of Rear Admiral Elliot, to Hersey Susan, daughter of the late Lieut. Col. Wauchope.

At Streatham, 3d Aug. Com. F. Scott, RN., to Frances Magdalen, daughter of H. Harvey, Esq., Streatham.

At Kingston, 18th Aug. Mr. H. W. Jarman, to Miss Cooper, daughter of Lieut, Cooper, RN.

At Kingston, 28th July, K. Knapp, Esq., master, RN., to Henrietta, daughter of the late Lieut. J. Parker, RN.

At Kingstone, Dorset, 28th July, Mr. G. Biddlecombe, master RN., to Emma Louisa, daughter of the late Mr. T. Kent.

At Widley, 18th July Lieut. Savage, RMA., to Maria Rose, daughter of Danl. Robertson, Esq.

At Harwich, Lieut. Hast, RN., to Mary daughter of J. Warrington, Esq.

Deaths.

At Crooms Hill, Greenwich, W. Tayler, Esq., Admiral of the White; lieut. 1780, com. 1783, capt. 1793, rear-admi. 1811, vice-admi. 1819, full admi. 1820. Served with Capt. Cook, in his voyages, and supposed to be the last survivor.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of July, to the 20th of August, 1842.

Month Day	Week Day	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9.AM	3.PM	Min.	Max	A.M.	P.M	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Th.	29·75	29·82	60	59	52	62	NW	N	2	4	od 2)	o
22	F.	30·00	30·10	57	62	51	63	N	N	4	3	bc	o
23	S.	30·23	30·25	58	69	53	70	N	N	2	2	bc	b
24	Su.	30·18	30·11	58	75	48	76	NW	NW	2	2	b	bm
25	M.	29·95	29·97	65	73	54	74	E	E	1	3	bcf	bcm
26	Tu.	30·03	30·08	60	72	49	73	NE	NE	4	3	b	bc
27	W.	30·20	30·21	57	69	52	70	NE	SW	2	2	or 1) (2	olr 4)
28	Th.	30·10	30·06	61	70	54	71	NW	NW	2	2	otlr (1) (2	bc
29	F.	29·90	29·94	57	62	53	63	N	N	4	3	bcp (2)	bc
30	S.	30·04	30·06	54	63	48	64	N	N	4	4	bc	bc
31	Su.	30·15	30·19	54	66	53	67	N	N	4	4	o	bc
1	M.	30·31	30·32	63	71	52	72	N	NE	3	2	bc	b
2	Tu.	30·22	30·15	64	75	50	76	SE	E	2	3	bc	b
3	W.	30·00	29·96	68	81	57	83	NE	NE	2	4	bc	bc
4	Th.	29·90	29·86	69	80	58	82	NW	W	2	5	bcm	bc
5	F.	29·99	29·99	70	78	63	79	SW	SW	5	5	bc	bc
6	S.	29·96	29·96	69	70	61	74	SW	SW	2	2	op 2)	bcp (3
7	Su.	30·02	30·02	62	74	56	75	SW	SW	4	2	bc	bc
8	M.	30·09	30·11	65	76	55	77	SW	SW	4	2	b	bcm
9	Tu.	30·08	30·05	67	80	61	81	S	SW	2	2	b	b
10	W.	29·81	99·72	76	84	60	85	S	S	3	3	bc	bctlr (4
11	Th.	29·92	30·10	63	69	60	70	SW	SW	4	2	bctlr (1	b
12	F.	30·32	30·35	62	74	54	76	SW	SW	3	3	b	b
13	S.	30·45	30·47	66	74	58	75	S	SW	2	2	o	o
14	Su.	30·47	30·45	69	81	61	83	N	E	1	2	b	b
15	M.	30·28	30·26	66	86	57	87	N	E	1	2	b	b
16	Tu.	30·24	30·25	69	84	58	85	E	E	1	2	b	b
17	W.	30·19	30·15	67	76	62	77	E	E	3	3	b	b
18	Th.	30·00	29·98	71	87	61	89	NE	SE	2	1	b	bcm
19	F.	29·98	30·00	69	68	66	76	S	S	3	2	o	o
20	S.	30·05	30·06	65	71	62	73	SW	SW	4	5	o	op (3

JULY—Mean height of barometer = 30·06 inches; mean temperature = 60·9 degrees; depth of rain fallen = 2·74 inches.

Note—Aug. 18th: The weather was exceedingly hot this day: my thermometer at noon was at 82 deg.; at 3 P.M. 81 deg.; at 4 P.M. 89 deg.; at 5 P.M. 87 deg.; and what was the most extraordinary, the temperature from 9½ P.M. to midnight was at 75 deg.!

TO OUR FRIENDS AND CORRESPONDENTS.

Our original papers have lately drawn so largely on our space that, we have been obliged to reserve the notices of several new works sent to us. We shall, however, shortly return to this part of our duty.

The conclusion of Capt. MARTIN's Lecture, forwarded to us by a sailor's wife, will duly appear, and in its proper place.

We have been obliged to reserve Capt. MILLER's letter for our next, in which number STORMY JACK's letter on the hurricane of Hong-Kong, and the continuation of the Notices of Japan shall appear.

Nautical Collections.

Sir.—By way of apology for some remarks of doubtful utility which I addressed to you some months ago, I mentioned that, we are not ourselves always the best judge of what may be interesting to the navigator, or merchant, of which a proof, and a pleasing one, is given in your Number for July, 1840, wherein I find that in consequence of a note appended to some remarks on the navigation of the Bay of Bengal, a Southseaman has been induced to "beat up" the Coast of Pedir, in search of his "gigantic game;" and had tolerable sport. Many of your correspondents, I observe, adopt the plan of giving you running notes of what comes under notice during their voyages, in a familiar style, very interesting to those who follow in the same track. These will, I trust, at a future time, under the hands of some giant compiler, a Horsburgh or McCulloch, be condensed and arranged, and embodied with the mass of scientific and practical nautical knowledge contained in your pages, into a volume of inestimable value,—a McCulloch's Dictionary Maritime, to place beside the excellent work on Commerce by that author, a work that ought to be in the hands of every commander of a vessel in the foreign trade.

Following the example of your correspondents, I beg to offer the following notes, some of which were taken purposely for the *Nautical Magazine*, and others from memorandums made in bygone times, which, but for your Magazine, in all probability would never have been disturbed, until their last trumpet had sounded previous to being put in the fire. I do not suppose that the public would have lost much by that circumstance, but such as they are, they are offered, like the "widow's mite," in sincerity, to aid the grand structure of knowledge your work is rearing; a work that is perceptibly improving the sons of the ocean, both great and small. I speak confidently of those of my own class, who, I believe, I may say all read the *Nautical Magazine*. An account of the hurricane now given was sent to you about three years ago, but probably miscarried, as you took no notice of it, and that is not your usual mode of treating correspondents. I was unacquainted with Mr. Redfield's theory at the time I encountered this storm, which I regret much, as I might otherwise have noted many particulars which I neglected. Besides, I am confident I could have steered clear of it, and saved my masts. The table was drawn up from my private journal, from the ship's log book. The directions of the wind may not be exact to half a point, nor the times of change to half an hour. The distances run also are by estimation, without measurement, but neither are, I imagine, materially wrong, for there was nothing in the condition of the vessel, so far to distract our attention but that we could observe the features of this short, yet sharp storm. A teak ship, Mr. Editor, well fastened, with through bolts, as recommended by your correspondent "Mercator," keeps one's wits comfortably at command, when put in requisition to right her from her beam ends in a hurricane. I can also assure my brother seamen that, there are other and more summary modes of getting rid of a mainmast in such a situation, than the legitimate one laid down by Hamilton Moore, which makes cutting the lee

rigging a *sine quá non*. I had on this occasion a gallant set of young fellows as my officers,* who were ready to undertake any thing. But I doubt if the hardiest of them would have trusted himself in the yawning gulf to leeward, to grope for the lee rigging, which must have been considerably under water, in a night as dark as pitch.

I mention this without presuming to advance any favorite plan of my own for cutting away masts, but merely as a hint for seamen to make use of their own judgment instead of hampering themselves with specific rules, which are often but imperfectly understood, and oftener from circumstances in their peculiar situation impracticable. It is surprising to what an extent this "doing things ship-shape" is often carried, overlooking the obvious, while endeavouring to find out what is obscure.

The description of the waterspout (a very imperfect one indeed,) was written a few hours after its occurrence, and is given verbatim from my private journal; observing by an extract from Col. Reid's work on storms, given in the *Nautical*, that information is wanted on these wonderful phenomena as they are seen at sea, induces me to send the account of this very beautiful one, which far surpassed any that ever I had seen before. In conclusion of this lengthy epistle, let me offer my best wishes for the continued success of your work.

Yours obediently,

J. H. Miller.

A Waterspout, from notes taken at the time.—May 5th, 1835, in lat. 8° 5′ N., long. 86° 16′ E., (at this time I commanded the "William Wilson," bound from China to Madras,) just before getting hold of the south-west monsoon, which had not yet stretched thus far across the Bay, saw a waterspout of such dimensions, and so close to the vessel, as to satisfy my utmost wishes in viewing this beautiful phenomenon. I have often seen them before, but only at a distance, and under such varied appearances as confounded, or at least perplexed all my knowledge concerning their nature. On the present occasion the weather had been very dark and gloomy, and much heavy rain had fallen during the early part of the day, but it cleared up about 11 o'clock, and by noon there was a fierce sun shining out of a large space of clear sky overhead; the rest and much largest portion of the sky was still occupied by the dense heavy clouds of the morning. I had just observed the sun's altitude, and gone below to mark the chart, when the officer on watch reported "A waterspout close to!" and there it was sure enough, not two cables' lengths from the ship, where but five minutes before no object interrupted the calm sea and bright sunshine. It looked like enchantment. My first care was to "clew all up," which done, I could contemplate with some degree of self-possession, the beautiful object before me, which I did with feelings of admiration, wonder, and

* These gentlemen are scattered over the world, beyond my ken; but they can hardly be beyond the circulation of the *Nautical Magazine*, and you will oblige me much, Mr. Editor, by allowing me the means of conveying my kind remembrance and best wishes for prosperity to Messrs. Alexander McLean, James Aiken, and John Miller.

dread. Looking steadfastly at it, I perceived that it moved slowly in the direction of the ship, stopping, and even receding a little in its curve occasionally: the column was, to appearance, about the size of an Indiaman's mast, say thirty inches in diameter, but probably it might have been much more, as its height would diminish its thickness to the eye. It kept bending or swinging slowly in different directions like a snake, and conveyed an idea of the greatest flexibility; and the whole column inclined about 20° from the perpendicular. I do not think it reached, or was attached to any cloud, but became gradually more transparent and less defined, though not reduced in size, until it was imperceptible at a height of about 500 feet, but of this I am not quite certain. I am also uncertain whether or not the sun shone out in the time of its duration, but I think it did. It reached to within 15 feet of the surface of the sea, where it widened and was lost in white foam.

The appearance of the column was as distinctly marked from the surrounding air as a piece of frosted glass set among transparent ones; its central points were thinner and more transparent than towards the sides, the edges beautifully defined like a knife edge; a confusion of lines ran through its whole length, crossing it and each other diagonally, some inclining more transversely, and others more longitudinally; these lines were thickest and largest, and most distinctly seen about the centre of the column, diminishing towards the sides until they were lost in the frostlike appearance there. The sea all around was as smooth as glass on the surface, although there was a long heaving swell caused by the monsoon breeze blowing a little way to the westward of our position. Immediately under the column the surface of the sea rose unbroken to a height of three feet or more, and this mound was crowned with a violent bubbling like the boiling in a pot, which was thrown up three feet, and over that rose spray or foam, until it was joined by the apparently solid column, and the whole went round from right to left, at a rapid rate: this mound may have been about 20 feet in diameter, and beyond that for a distance of 30 feet nearer the surface seemed agitated by numerous currents, running in all directions, the whole of which were, I think, also curved round, but am not able to say positively. Only one momentary puff of wind was felt from it of no great force, but very cold. I did not note the time of its duration, and it is difficult to form an estimate of it, under the excited feelings, caused by its close proximity to the ship, but, I think, it continued not less than twenty minutes. Several musket-balls were fired at it without effect, and lastly, a 12-pounder, when it gradually disappeared; but I suspect that it had begun to dissolve previously, as no immediate or decisive effect was observed from the shot. The manner of its dissolution was by its first becoming more transparent, the lines were almost obliterated and finally it broke into detached pieces, or certain portions of it disappeared before others, giving it that appearance; its size in diameter, was not, however, diminished, but on the contrary apparently increased. The sea gradually subsided, and in five minutes after its disappearance nothing remained to mark that it had been, save the impression left on the memory of those who had witnessed it.

There was no rain fell during its appearance, and the afternoon was

fine. What then became of the water that it had sucked up? for, I imagine, the lines in it to have been drops of the water ascending spirally; and indeed, that the whole was a column of water, at least, such is the received opinion of the nature of these "wonders of the Lord."

[To the foregoing interesting description of a waterspout by Capt. Miller, we annex the following account of a remarkable whirlwind, which appeared in a recent paper, and which, had it taken place on the calm surface of the ocean, would, doubtless, have produced a waterspout.]

Extraordinary Whirlwind.—The vicinity of Hatfield Broad Oak, Essex, was lately visited by one of these singular and destructive phenomena. Happily its effects were confined to a comparatively limited space, yet the damage done to property in its course is very considerable. It alighted on a farm called Ware Farm, in the occupation of Mr. Speller, Hatfield Broad Oak, and passed immediately across the homestead, producing sad havoc among the outbuildings and ricks. It appears that Mr. Speller was from home at the time (about ten o'clock at night), and his housekeeper and servants were awaiting his return.

The first indication of the approach of the whirlwind was an unusual noise, which produced a great deal of alarm among the inmates, who, hearing the piteous howling of the yard dog, ventured to look out of the door, in order to ascertain the cause; when they saw the thatch and almost entire roof of the cart-house, whirled into the air, and the whole of the shed scattered in all directions. They had no sooner retreated to the dwelling-house, when the thatch from a very large barn was forced against it, and at the same moment the tiles from the roof were nearly all torn off, and many of them thrown to a great distance. It then passed on to the stack-yard, and coming in contact with a recently stacked hayrick, pulled it completely to pieces, and carried a great portion of it nearly half a mile across the fields; and so evenly was it spread, that it had the appearance of having been carefully laid out to dry. The live stock on the farm fortunately escaped, although several trees around the pastures were torn up by their roots, and many of them thrown to the middle of the fields. The standing crops also received but little damage, and from this it is inferred that the power of the whirlwind must have kept from three to four feet from the ground.

It is somewhat extraordinary that the effects of this unaccountable visitation should be confined to one farm, the occupants of neighbouring farms having heard nothing about it till the following day.

The poor dog was found buried in the ruins of the shed, close to which he was chained, but was got out without having sustained any injury.

The column of wind appears to have taken a circuit, as several trees in opposite directions were either torn up, or stripped of their branches. Where it first arose cannot be ascertained, but it passed off in a north-easterly direction from the farm, which fact was indicated by the scattered hay. The noise produced is described as being terrific, and the destruction of property is very considerable. It is a singular fact that, the same spot has several times before suffered severely from storms; on one occasion nearly all the standing corn was destroyed by tempest.

[Our readers will probably remember the remarkable effects of a whirlwind at Nassau, related by the Hon. J. C. Lees, Chief Justice at that place. The roaring noise, the tearing up of trees, the destruction of buildings, and the whimsical upsetting of every alternate house, on each side of a street, as it bounded along in its course down it, is related by that gentleman in p. 695, of our volume for 1839. We must also add the following to our collection of the interesting phenomena.]

Nassau.—A late arrival from Rum Cay affords us a short paragraph, from the circumstance of their having experienced at that island a severe tornado, accompanied with the fall of a waterspout. Fortunately for the few who are resident there, the day proved a damp and disagreeable one, which induced many to remain more closely housed than they otherwise would have been, or, perhaps, they might have had to encounter it whilst walking or riding, and probably have suffered bodily from its effects:—

"On the 1st of this month we were visited by a tornado and waterspout united, the wind getting into it. It first took the shore at Cotton Field Point. It then travelled rapidly through the island until it went off to the sea at the north side. It sucked a pond dry, tore up large trees by the roots, and injured three or four horses. The noise was dreadful, and was accompanied with thunder, lightning and rain."

We may also add the following from that useful work "Blunt's Coasting Pilot," as interesting to seamen, the last sentence of which agrees with the statement, of the corn escaping while the trees were torn up about it, in the former account.

"The term waterspout is undoubtedly a misnomer, as there is no effect produced of which this term is properly descriptive, although the term air-spout would not be greatly inappropriate. The visible column of condensed vapour which often appears in the rarified centre of the vortex, when the latter is not enveloped in cloud, has, probably, given name to this meteor. But the water of the sea is not taken up by this spout of whirlwind, except in a slight degree, and in the form of a fine spray, like other light matter which is swept from the surface. This cloudy steam or column frequently appears and disappears, while the action of the whirlwind continues without any important change. Owing to this fact, observers sometimes believe that they witness the commencement of a waterspout or tornado, when the same has actually been in action for one or more hours, and when the cloudy pipe or pillar happens to disappear, the spout is supposed to have "burst," while, often it has undergone no important change, except, perhaps, a slight decrease in its activity. The active and violent portion of the whirlwind surrounds the spout invisibly, and is probably of much greater diameter at a distance from the surface of the earth than at the base of the spout. Thus, when a spout or whirlwind has passed near a ship, the upper spars have been converted into wreck, while no violence of wind was felt on the deck."

Barometer.—In lat. 15° 36′ N., long. 82° 22′ E., October 12th, 1841, at 6 A.M. the barometer was 30·08; at 8 A.M. it was observed to be at 30·46 and falling rapidly, probably it had been higher. At 10 A.M. it it was at 30·10, and stood about that height, as it had done some days previous; the weather fine, wind generally at north-east. During the morning a squall gathered at south-east, and just reached the ship at

the time when this extraordinary rise of the mercury was observed. The squall was accompanied with thunder and lasted about two hours, after which the wind came round to north-east again. I never observed such a sudden change in the barometer before, but such is the fact, and I record it for the benefit of those who can trace the cause. The instrument is a new one by Troughton and Simms, and appears to be a good one.

Sextant.—Many seamen are very imperfectly acquainted with the manner of using the sextant, both in taking altitudes and distances, and also in finding its errors and adjusting them. It is true we have directions for these as well as for everything else in our "*Complete Navigators*," but with deference, I think, they may be improved. A chapter on that subject in the *Nautical Magazine* would be of great benefit to many, and bring the sextant into much more general use in determining the longitude than at present, as I believe that, in many ships the chronometer is the *first* dependence, and *next* the lunar, which position ought to be reversed, for notwithstanding that Lieut. Raper's able paper on longitude must have put many sadly out of conceit of determining the longitude by lunars, yet they are the safest method to navigate a ship by, inasmuch, as that, under circumstances, you *cannot be far wrong without knowing it*, whereas, by trusting to the chronometers, you *may be far wrong without knowing it*. Besides a particular description of the instrument, its telescope, &c., information is wanted by many on the circumstances to be attended to in taking observations of stars particularly, as regards starlight, moonlight, twilight, and daylight, and different states of the atmosphere. It is not known for instance to every navigator that a very good mer. alt. of Venus can sometimes be got in sunshine by using a good inverting telescope; not being myself qualified to deal with the subject, I stand in the censurable position of finding fault without pointing out the remedy; but should this meet the attention of any of your correspondents, (and you have many such,) who may be acquainted with the matter and give to seamen the benefit of that knowledge, I shall be very happy in having brought it to notice. It would also be a decided improvement if sextant cases were constructed so as to admit of the instrument being placed in them with the nonius at any position on the arch, instead of being obliged to set it at 0°, as it happens not unfrequently that, the observer would wish to refer to the instrument to ascertain if the observed altitude has been correctly read off.

[The hints of our correspondent shall not be lost. We shall endeavour to find some future opportunity for following up his wishes. Perhaps, he may not be aware that we have already in some measure anticipated them in an excellent paper on the sextant by Capt. Bayfield, R.N., surveying the St. Lawrence, which appeared in our First Series, (vol. for 1833, p. 462); but, as this series is not to be had, we shall be justified by its great utility in re-printing it in an early number. With respect to observing planets during daylight, we may refer him to the letter of Capt. Basil Hall in our last volume, (p. 699,) where he will find besides some useful hints, that those observations were made with great success by Capt. W. Goodwyn of the ship Florentia, on a voyage from Sydney

to Manilla; and we have no doubt they are also by other commanders, who have turned their attention to the subject.—Ed.]

Islands and Ports on the eastern side of the Bay of Bengal.—Notwithstanding that the whole coast of the eastern side of the Bay from Martaban to Queda, has been in possession of the British since 1824, it still seems to be but little known to our ships trading between India and Europe. The brig "George and Mary" was wrecked on the Andamans in July or August, 1810, and the crew remained on the reef nearly a month, although they had a long boat which could have taken them to Maulmein or Tavoy, in a few days. They were taken off the reef by a Native brig and brought to Mergui, long boat and all. They did not know that the coast to leeward of their wrecked vessel was inhabited by people more civilized than those on the Andamans, far less that it was under their own flag. The following remarks are intended to show what resources a ship has under her lee, should she be disabled beating down the bay against the monsoon; for I hold that nothing but the necessity of being docked, should induce a ship to go back to Calcutta at that season.

Maulmein is now a large shipping port, and building is carried on to a considerable extent; a ship may therefore supply all her wants with great facility. The general price of Marine stores may be stated at 20 per cent. above the Calcutta prices, but this is more than balanced by the difference of pilotage and port charges, and the absence of that formidable instrument called the "Sircars Bill" well known to all captains trading to Calcutta.

Callagouk is an excellent harbour of refuge, and the Island abounds in beautiful timber. For a vessel that merely requires shelter for a few days to put to rights it is all that could be desired for that purpose. The brig "Pyeen Boren" under my command proved to be leaky on leaving Rangoon for Singapore, and I went into Callagouk and careened and caulked her in perfect security. I anchored in six fathoms, two cables' lengths off, at low water, in a sandy bay, near the north end of the island. Here there is a good stone-built well of excellent water, and some fruit trees. The island is not inhabited, but many Burmese Catoos (coasting vessels) call to fill up water and apparently take a day's recreation; as demurrage, I presume, forms no part of their accounts.

In going in from the southward you may round the small island at discretion; I had 8 fathoms within a quarter of a mile. A ship may run in with perfect safety at night. I walked across the islands in several directions, and everywhere saw beautiful straight trees of hard wood, some of them very large, which the Burmese convert into canoes, and bottoms for their catoos; several of which I found at different parts of the island in progress. The tree is felled, and the canoe made on the spot, for with their primitive means it would be utterly impossible to move such huge trunks. Saw no animals of any description on the island. Refreshments may be got at the villages on the main, and it is hardly necessary to state that the Burmese are a frank and hospitable people; no precautions whatever are necessary on going among them. Rupees are the current money; dollars are almost unknown at these retired places, and are passed at great discount.

Coast.—The whole of this coast has been surveyed by Capt. Ross, the Marine Surveyor-General, and a ship having his charts on board, will find no difficulty, but all others that I have seen are exceedingly erroneous.* From Callagouk to the Moscos, sand banks project out to a considerable distance at several places, and it is prudent to keep about fifteen miles off unless you have Ross's charts. I have in my possession a chart of the Moscos Islands, which is so very erroneous in every respect, that it is difficult to conceive that these islands are meant at all; and yet this deceptive chart is "Drawn from observations taken by the late Capt. Charles Count, Marine Surveyor-General," and published by Horsburgh in 1826, names that few would hesitate to put implicit confidence in. Regular tides prevail along this coast, and will by attention assist the navigator materially.

Tavoy.—Is one of the principal settlements on this coast. A commissioner resides here, with a detachment of troops, &c.; but it is not a place for a ship to call at. The town lies a considerable distance up a narrow and shallow river, which renders communication inconvenient; and during the south-west monsoon the anchorage at the mouth of the river is decidedly dangerous.

Mergui.—Is well described in all Indian Directories. A ship in want of repairs can get anything in the wood and iron department well done there, by Chinamen, of whom there are several who have respectable establishments in the carpentery line. Refreshments are good and abundant. This district is very rich in minerals; iron and tin abound; and the government have opened a coal mine lately, which is in active operation for supplying the war-steamers in China.

Mergui Archipelago.—The islands fronting the sea seem all bold to approach, and free from hidden dangers. In working along I have stood far inside of many of them, and anchored occasionally for tide or current. There are several high rugged rocks interspersed among those to seaward, which are bold to approach. Good oysters and eggs of sea-fowl may be found on many of them, by landing in the fine season. None of the islands fronting the sea are inhabited.

Seyer Islands are uninhabited, but are frequented by Siamese and Burmese from the neighbouring coast and Junkseylon for birds' nests: there appears to be no good anchorage on the east side, and, I should think, there is less chance, if any, on the west side. Water may be procured at several places on the east side, but I can give no particular marks of the spots further than that, in sailing along at a little distance off, an experienced eye can distinguish by certain appearances places that are frequented, and at these there are generally water to be found. There is a dangerous reef of rocks lying about three miles to the eastward of the island, next to the southernmost one of the group. This reef is full half a mile in extent, and only shows two small black rocks a little above water. When I saw it nothing but these two rocks indicated its existence, the water being very smooth, but I should imagine it

* The best charts of this coast are those published by the Admiralty. They combine the surveys of Ross with those of Capt. Laws and his officers, made under the orders of Rear-Admiral Sir Edward Owen, when he had the East India command. In addition to those, they are also improved by important remarks and observations made by our naval officers on that coast.—Ed. N.M.

must break over it at other times. I am surprised to find no mention made of this reef in Horsburgh, as it must be known to many who sail between Bengal and Malacca Strait for ships often pass to the eastward of these islands in both monsoons.

Junkseylon.—From the south-west point of this island the coast to to the distance of thirty miles northward, is high and bold, and has good anchorage on a stiff mud bottom, soundings about 15 fathoms, one mile off, and 30 fathoms three miles off. There are numerous villages on the coast, and the people (Siamese) are remarkably frank and kind to strangers. Water and refreshments are to be had at all the villages. Gunpowder and shot are the best articles for purchasing supplies. These villages are in small communities at little indentations of level ground running into the valleys among the hills fronting the sea. The natives cultivate grain (rice) in abundance, fruits, and rear fowls, ducks, &c., and seem to live very comfortably. The channel between the south-west point of Junkseylon and the two small islands off it is safe, it is about three-quarters of a mile wide; least water found 11 fathoms. A ship from Malacca Strait bound to the northward, after passing Pulo Bouton may keep her wind and pass inside of Pulo Rajah and the Brothers; and through this channel. Keeping near the land afterwards will insure her smooth water, and the wind hangs generally more from the eastward near the land than it does far out. Leaving Junkseylon she ought to keep to the eastward of the Seyers, Perforated, and Middle Islands. If bound to Bengal she will then probably fetch the Preparis without tacking. If bound to Maulmein, or any of the ports on this side of the Bay, it will be found most advantageous to keep among the islands, which are all bold and free of hidden dangers.

Great Nicobar, East side.—From the north-east point the coast runs about S.S.E., twenty miles, and is clear of danger, with convenient anchorage. In the brig Pyeen Boren bound from Malacca Strait to the Nicobar Islands for a cargo of cocoa-nuts for the Rangoon market, I called at this island for the purpose of ascertaining if cocoa-nuts or betel-nuts could be procured, having been told at Acheen that the latter were grown in abundance. I anchored in a pleasant little bay, in 9 fathoms one mile off shore, where there was a tope of cocoa-nut trees. On landing I found a stream of fresh water about fifty yards broad, up which I went (walking along the bank) to a distance of two miles, in hopes of finding a village but did not succeed. Found several canoes and other marks of inhabitants, but none of them made their appearance. Weighed from this and stood alongshore to the northward keeping within three-quarters of a mile of the shore. The coast presents a number of similar patches of sandy beach to that which I anchored at, and at most of them are topes of cocoa-nuts, and at a few places near the north end of the island are huts, off which I stood close in and made signals, but not a living soul appeared. Probably they may have heard of the late tragical event committed at Nancowry on the Whaler Pilot, and the retaliation upon them by the "Cruizer" as they were evidently afraid of something. The north-east point of the island is a high bluff rock, between which and the

Island of Cabra I passed. The channel is four miles wide, and apparently safe; there is a patch of coral about midway between the

bluff point and the island, on which I had several casts, least water 8 fathoms, the bottom plainly seen. Stretched across St. Georges channel, which looks wide and clear, to the South side of the Little Nicobar, which presents a steep wall of black rocks, without a single landing place; ran along the shore to the eastward keeping about half a mile off until I reached the south-east point, off which lies

Mounshall, the channel being about four miles wide tried to pass through, but found it full of rocks all across. Tacked and went outside of Mounshall, and beat up towards the north-east side of the Little Nicobar, which forms a spacious bay about ten miles from point to point. Beat up to a village about the centre of the bay, and anchored in 18 fathoms within two cables' length of the beach. At a cable's length further out there is 32 fathoms. The south-east part of this bay is rocky and dangerous, but towards the centre and north-east point it is clear with very deep water close to. Off the north-east point are some rocks above water, and breakers about a mile out from them, but they may probably be caused by the current which runs strong and requires attention in navigating here. In this bay there are abundance of cocoa-nuts, but the natives would not trade, although evidently dsirous of getting our articles, they came on board at first shyly, but soon made familiar. They speak the Malay language pretty well, but no Hindostan or Portuguese. Here they knew of the affair of the "Pilot" and threw out some indirect questions respecting it, which led me to think that they must be connected with the Nancowry people although they said they were not. They seemed averse to our landing, and absolutely denied having any thing to trade with. Not liking their manners and appearance weighed and stood away for

Teressa.—The channel between this island and Bompoka is about three miles wide. There is a rock lying about half a mile off the point of Teressa, the channel is elsewhere all clear. There is a frightful tossing and tumbling of the water in this channel, caused by the current from which and the heavy swell of the Bay you are instantly relieved when inside of the point. The east side of this island forms one large Bay like the concave side of a quarter moon with very deep water close to the shore. The usual anchorage is at the village of Teressa near the middle of the island, which the natives will point out, as they always come on board before the ship reaches that part. The shore is so steep that at a cable's length off you have 20 fathoms. If it were not for the certainty of the wind blowing off shore it would never do to anchor here, for if a vessel swung inshore she would be in the breakers among coral. This may seem precarious security for the safey of a ship, yet many vessels go there, and no case of loss comes within my knowledge. I would however certainly not risk it, but only during the strength of the south-west monsoon, say from June to September inclusive, here I landed my cargo of cocoa-nuts and betel-nuts.

Currents near the Maldiva Islands.—"The 'James McInroy' was wrecked on these islands."—*Nautical Magazine*, March 1840. In the present state of navigation it is not to be supposed that ships trading to the East Indies are ever very far out of their reckoning, perhaps, an

error of 15′ longitude is rare, when observations are obtained. The Maldiva Islands are also pretty correctly laid down on our own charts, I mean Horsburgh's, so that to pass them in the night few would think of giving them a berth of more than thirty miles. It is much to be regretted that the commander of that vessel did not publish the cause of her loss, which, in my opinion, every one who meets such a misfortune ought to do as a warning to others. In the absence of information upon the cause, I do not hesitate to say that, it is highly probable it arose from the current, which it is my object, in this communication to show runs at a rate near these islands that few are prepared for.

Returning from the Mauritius to India in 1836,—Oct. 6th, at noon, lat. 3° 14′ S., long. 66° 46′ E., steered a course for the 1½ degree channel, the wind light, but firm on the quarter, and the sea tolerably smooth. On the 7th and 8th had no observations. On the 9th while taking the noon altitude saw land, (cocoa-nut trees,) which proved to be the Sundira Atoll, and that we were in the Equatorial Channel, having been set 160 miles to the eastward of our reckoning since the 6th, during this afternoon it was nearly calm, but we soon lost sight of land at the rate we were carried along by the current. On the 10th, had fifty miles current; 11th, forty miles; and 12th, about twenty; then in lat. 1° 45′ N., long. 78° 44′, when it was no more observed.

Take notice of this all whom it may concern.—I have crossed this locality many times, but I confess that I never dreamed of the current being so strong, and had I stumbled upon the islands in the night instead of daylight; the ship certainly might have been lost for any precaution that I had taken, such as are usual on approaching land. So much for an *easterly* current; which leads me also to record a *westerly* current, experienced in the same neighbourhood in 1833.

Nov. 25th, in lat. 00° 20′ S., long. 58° 24′ E., steered to the eastward with a very light westerly air, and sea perfectly smooth, until Dec. 6th, when we had only reached long. 60° 39′, lat. 00° 27′ N.; during this time the current set west thirty and thirty-five miles daily. During this tedious struggle I crossed the equator several times to two degrees on either side, but found the current equally strong, and the wind as light. This current ceased near the Maldiva Islands, and after passing them set to the E.S.E., but not near so strong.

In that part of the ocean lying between the Maldiva and Chagos Archipelago on the east, and the Seychelles and Saya de Malha Bank on the west and south, very strong ripplings are met with; but in many trials I could never ascertain that their course was in the direction of the current. I have never found them setting against it: I have found them myself to set nearly across at right angles in a point or two nearer to the course of the current; but, as just stated, never backwards. I am of opinion that they are caused by the current in some way or other, as at the situation now spoken of, and also in the Bay of Bengal, to the eastward of the Nicobar Islands, where they prevail, currents are also found. The ripplings of the last named place have, I think, decreased in strength within the last twelve or fifteen years. I do not assert that they have, but such is my impression from being often among them. It is for the philosopher and man of science to say if such be probable, or even possible; I only state things as I see them, according

to my own understanding, which I conceive is all that is expected. These are rough materials which "Stormy Jack" and others,—your most valuable contributors, must hew into shape, or throw aside among the rubbish, according to their value.

[An elaborate and expensive survey has been made of these Islands by Commander Robert Moresby, I.N., for the East India Company, and lately published on a magnificent scale; is sold by Messrs. Allen and Co., of Leadenhall Street, accompanied by a set of directions; in which the strong currents found by Captain Miller are pointed out. We extract the following from the "Preliminary Remarks" in this little volume. "Navigators in general are not aware, more particularly those coming from Europe, that the whole group of the Maldiva Islands are inhabited by a civilized race of people, who carry on a considerable trade with the British possessions in India; more particularly Bengal, Ceylon, and the Malabar coast, as also to the Red Sea; and are expert navigators and sailors. Schools for teaching Navigation are on some of the islands. They make and repair Nautical instruments, such as the astrolabe and quadrant." (We were not aware of astrolabes being in use now-a-days; Capt. Moresby should give us some description of this instrument.) "On one occasion I was much surprised by seeing a wooden sextant very neatly made by them; the glasses and telescopes had been fitted from old instruments; they copy our nautical tables, generally using our figures, and translate the rules in our navigation books into their own language. They are an inoffensive, timid people, and there appears far less crime among them than with polished nations; murder is not known among them, nor is theft or drunkenness; being strict Musselmen, they are forbidden the use of spirituous liquors, which could be easily made from the fermented juice of the cocoa-nut tree, which they have in abundance.

"They are governed by a Soultan, whose title and rank are hereditary; under the Soultan are five Viziers or Ministers of State, as also the Head Priest, and Judge, civil and religious; the Hendeggeree, or Custom Master, is also a very great man; and last of all is the Emirel Bahr, or Master-Attendant of the Port; all these reside at Mäle, or King's Island.

"To the different Atolls are appointed one or two chieftains, or as they are styled Atoll Warrees; as also a Catib to each Atoll, the Catib is priest and judge. Every Atoll pays a certain fixed revenue, a portion of their produce, to the Government at Mäle, and none are allowed to trade with foreigners or strangers, except at Mäle.

"The men, in appearance, are of a dark copper colour, rather short, and in person not unlike the natives of Ceylon and the Malabar coast; but their language is totally different; their women are not pretty, and are extremely alarmed at the sight of strangers. These islanders have been more than kind in their hospitality to shipwrecked mariners, which was exemplified in their humane and liberal conduct towards the commander, officers, and crews of two vessels, the Adonis and Vicissitude, who were totally wrecked during the night, one on Colloomandoo Atoll in 1835, and the other on Hewandoo Atoll in 1836; nor would they accept of any payment, though liberally offered it by the Government of India; they accepted of presents from our Government as a mark of friendship, of which I had the honour of being the bearer. During the two years we were employed surveying among these islands, and in constant intercourse with them, they always treated us with kindness and respect, yet shyness and suspicion, supposing our motives for making a minute survey of their islands had other ends than to guide shipping in their navigating to India. However, I think we left them with mutual good feeling and understanding, which, I hope, will not be broken. Further information respecting these curious islands will be found in several papers written by myself and officers, and published by the Bombay Geographical Society."

Natives of the Nicobars.—In a former communication relative to these people I ought to have confined my remarks, as applicable to the northern group of islands, which are the only ones where vessels trade to; viz. Carnicobar, Chowry, Teressa, and Bompoka. Batty Malve has no inhabitants excepting hogs, which have been introduced from the other islands for convenience and sport, when parties go there, which they frequently do in the fine season for a week's holiday, if that term can be applied where labour is unknown, and apparently unnecessary. The Carnicobar is the principal of these islands, and is most frequented by vessels, consequently the natives are more civilized, ("knowing" is perhaps a better term,) than at the other islands. Many of them speak tolerable English and Portuguese; they are a noble race of savages, and live happily in the enjoyment of every necessary of life. How far the growing intercourse with Europeans will benefit them is doubtful, they have already acquired a taste for ardent spirits, which will, doubtless, bring its train of evils among them. The next great evil will be a religious missionary, it matters not of what creed he may be, Christian or Jew, Mahometan or Hindoo, either will do to stir up strife and set them at each other's throats.

The central group, comprising Islanchong, Carmertu, Nancowry, and Katchall, are inhabited by the same race of people, but of a very different moral character. I would not however set them down as the worst of the human race, although they cut off a ship occasionally. I am inclined to think that their virtuous neighbours are the exceptions to their kind. Piracy and murder are the greatest of crimes any where, but the evil passions of a savage are judged unfairly by the scale of morality applicable to civilized society. Regarding the capture of the Pilot, it is most probable that it was a deliberate act to get possession of the vessel. Some Malays who were on the island at the time, subsequently came to Maulmein, and underwent an examination before the Commissioners there on the subject, which went to prove that the crew of the vessel committed various outrages on the island. But this I am inclined to doubt, for unless they did wanton malicious mischief I do not see what they could do wrong. There is nothing worth having but what can be procured for the veriest trifle of European manufacture. An old hat or jacket would purchase as many luxuries as would serve a whole ship's company for a week, and fresh provisions are so easily procured that the captain could not possibly allow his crew to be in the least want of them. These Malays said that their interference with the women was the principal cause, but this I am also inclined to think is not correct, for at that Island (Nancowry) alone the women come on board of ships, and usually remain while the ship stays at the northern islands. They do not admit of any interourse with strangers. It was a most fortunate circumstance that the "Cruizer" happened to be in the neighbourhood, and arrived in so short a time after the deed was done, as it will give them an idea that our men-of-war are always close at hand to punish the perpetrators of such actions. Had that ship, in addition to burning their huts, also cut down the cocoa-nut trees or barked them so as to kill them, the punishment would have been much more effectual, as they must then have left the island for want of food

for some years to come, and had to disperse themselves among the other islands, and their case would have become a moral lesson to all. It may be a subject worthy of enquiry to ascertain the cause of a developement of morals, so much at variance with those of the northern islands. who are evidently the same race of people, differing in no respects in their customs and physical appearance. Reader, there have been Christian Missionaries at Nancowry and the neighbouring Islands of that group for many years, but there have been none on the other Islands. Let each draw from this the inference he pleases.

A Hurricane in the Bay of Bengal.—From an Abstract of the Log-Book of the ship "William Wilson," of Calcutta.

Civil tme Hour.	Course & Distance	Wind.	Remarks.
			Thursday, October 27th, 1836.
6 A.M.	Lat. Long.	N.E.b.E.	Light breeze and passing squalls.
Noon.	12° 39′ 80° 55′	do	Increasing breeze, fine monsoon weather.
6 P.M.		do	Fresh top-gallant breeze, rainy squalls. barom. steady.
			Friday, October 28th.
A.M.		N.E b.E	Single reefed topsails, sharp squalls, and and heavy showers.
6 A.M.	Lat. Long.	do	
Noon.	11° 35′ 82° 24′	N.E.	
10 P.M	E.S.E. 60 miles	N.E.b.N.	Wind increasing, squalls harder, weather dark and threatening.—barom. steady.
			Saturday, October 29th.
2 A.M.	E.S.E. 25 miles.	N.E.b.N.	Blowing hard, heavy squalls, very dark, moon quite obscured.—barom. falling.
6 "	E.b.S. 20 "	N.N.E.	Weather gradually getting worse, double reefd topsls, & reefd courses, bar. falling.
10 "	East 20 "	North	Young hurricane, made the ship snug for a storm.—bar. 29·15.
Noon.	East 15 "	N.b.W.	Hurricane, ship still holding on her course under close reefed main-topsails, reefed foresail and fore trysail.
3 P.M.	East 15 "	N.N.W.	Ditto increasing, ship hove to under main topsail and fore trysail.
6 "	drift S.E. 10	do	Ditto, sails blown away, ship being in ballast could not stand up with her broadsides to it, bore away and scudded.—bar. 28·46.
8 "	S.S.E. 16 "	do	Ditto raging fearfully, could not steer before it, cut away mizen mast; during the last half hour every one complained of cold.—therm. 70°, bar. steady.
8.30 "		Calm	At a little past 8, it suddenly fell calm. quite calm, swell much less than anticipated, sky like a solid mass of lead.

Civil tme Hour.	Course & Distance	Wind.	Remarks.
9 P.M.		S.S.W.	*Saturday, October 29th, 1836, continued.* Hurricane at its height. It came on again with double fury from the S.S.W., ship would not steer before it, broached to and went over on her beam ends, cut away main mast, righted and started off again before it, lost binnacle compass, lamps, barometer, and all and sundry moveables; lights all out, horribly dark. Altho' the sea had been previously very high from the north-westward, it settled down during the short interval of calm in a very unaccountable way; its direction must also have changed almost instantly with the wind, for none of the former swell was felt when the vessel started off to the northward before the first blast of the second part of the storm.
			Sunday, October 30th.
Midnight	Course, dist. & wind unkn, but runng N.E. at 10 miles pr. hr.		Hurricane raging furiously.
2 A.M.			Ditto apparantly abating.
4 "			Ditto decidedly abating.
6 "			Ditto.
7 "		South	Blowing hard, sky like a mass of lead, my poor ship a wreck, having nothing but foremast and bowsprit. Fortunately no lives lost in the disaster.
Noon.		S.S.E.	Still blowing a gale, hard rainy squalls.
6 P.M.		S.S.E.	Wind decreasing but still stormy.
			Monday, October 31st.
	Unknown.	S.E.	Squally unsettled weather throughout, made some progress with jury masts.
			Tuesday, November 1st.
Noon.	Lat. 13° 48′ Long. 84° 14′		The wind veered round by east to north-east; the weather settled into the usual fair monsoon, with a clear sky.

In this storm the ships, Earl Clare, Heroine, Star, and John W. Dare were dismasted; the Earl Clare encountered it far to the eastward of my position, but in nearly the same parallel. It also passed over Madras, doing much damage on shore; several vessels were also near the course of this storm in different parts of the bay, and felt but little of it: among them were the Helen, James McInroy, and Christopher Rawson. An examination of the log-books of these vessels would point out the course of this storm very clearly, and I trust that, the commanders of them will not deem it impertinent to solicit them to publish the same (with permission) in the *Nautical Magazine*. It occurs to me that the focus of this storm was at an eccentric point within its circle, that its semi-diameter was greater on the west than on the east side, and that its force was greatest on the east side. I am led to this belief from the circumstance that, by considering the calm its focus, we got much sooner out of it then into it. And I judge that it blew harder because we could steer the ship very well after getting rid of the mizen mast before we arrived at the focus, but could not alter her after passing it.

The Lighthouses of Nova Scotia and the Bay of Fundy.

St. Paul Island—Two Lighthouses.—The North lighthouse is on a rock separated from the main island by a channel twenty-six feet wide, is one hundred and forty feet high, octagon shape, built of wood, painted white, is a fixed dioptric light, with concentric lamps and four burners.

The South lighthouse is on the extreme south-west point of the island, is one hundred and forty feet high, octagon shape, built of wood, painted white, is a revolving dioptric light, with concentric lamps, and four burners.

Scatarie Lighthouse.—This lighthouse is on the north-east extremity of the island, is ninety feet high, octagon shape, built of wood, painted white, is a plain revolving light, with Argand burners, and Parabolic reflectors.

Low Point.—This lighthouse is on the south side of Sidney Harbour Cape Breton, is eighty-five feet high, octagon shape, built of wood, painted red and white vertically, is a fixed light with Argand burners.

Canso.—This lighthouse is on Cranberry island, is eighty-eight feet high, octagon shape, built of wood, painted red and white horizontally, has two fixed lights vertically, with Argand burners.

Pictou.—This lighthouse is on the east side of the entrance of the harbour of Pictou, is sixty-five feet high, octagon shape, built of wood, painted red and white vertically, is a fixed light with Argand burners.

Sambro.—This lighthouse is at the entrance of Halifax harbour, is one hundred and ninety-seven feet high, octagon shape, built of stone, covered with wood, painted white, has a fixed light with Argand burners, and Parabolic reflectors.

Maughers Beach.—This is a harbour light, on "Sherbroke Tower," on the extreme end of Maughers Beach, on the east side of Halifax harbour, is fifty-eight feet high, circular tower, is a fixed light with Argand burners, and Parabolic reflectors.

Cross Island.—This lighthouse is on the south-east extremity of Cross island off Lunenburgh harbour, is ninety feet high, octagon shape, built of wood, painted red, has two lights, the upper a flash light, the lower a fixed light, with Argand burners.

Liverpool.—This lighthouse is on Coffins island, entrance of Liverpool harbour, is ninety feet high, octagon shape, built of wood, painted red and white horizontally, is a plain revolving light, with Argand burners and reflectors.

Shelbourne.—This lighthouse is on Nietts Island, at the entrance of Shelbourne harbour, octagon shape, built of stone covered with wood, painted black and white vertically, has two fixed lights vertically. The upper light is one hundred and fifty feet above the level of the sea, the lower light is thirty-six feet below it, with Argand burners and reflectors.

Seal Island.—This lighthouse stands on the central and highest part of Seal Island off Cape Sable, one hundred and seventy feet high, octagon shape, built of wood, painted white, is a fixed light with Argand burners and reflectors.

Brier Island.—This lighthouse stands in the Bay of Fundy at the entrance of St. Manjo Bay, is ninety-two feet high, octagon shape, painted white, is a fixed light, with Argand burners.

Yarmouth.—This lighthouse is on the west side of the entrance of Yarmouth harbour, is one hundred and forty-five feet high, octagon shape, built of wood, painted red and white vertically, is a plain revolving light with Argand burners.

Annapolis.—This lighthouse is at the entrance of the Gut of Annapolis, on the right hand in entering the harbour, seventy-six feet high, shape square, built of wood painted red and white vertically, is a fixed light with Argand burners.

Louisbourg.—There is a lighthouse in course of erection this year, on the site of the old French lighthouse on the right hand entrance of the harbour of Louisbourg, and will bear a fixed light.

Gut of Canso.—There is a lighthouse building on the west side of the north entrance of the Big Gut of Canso, will be soon completed, and bear a fixed light.

Hope Island.—Between Liverpool and Shelbourne there is a beacon on this island of wood, thirty feet high, octagon shape, painted white, with a black top.

Devil Island.—Eastern side of the entrance of Halifax harbour, there is a beacon on this island of wood, fifty feet high, painted white.

Wedge island, at the entrance of St. Marys River to the eastward of Halifax, there is a beacon on this island one hundred and forty feet high, of wood, covered at the top and painted white.

S. CUNARD,

Halifax, Nova Scotia, June 10th, 1842. *Commissioner of Lighthouses.*

BAY OF FUNDY LIGHTS.

St. John, June 8th, 1842.

SIR.—In answer to your respected favour of the 28th ult, we beg leave to enclose you two of our almanacks, which at page 50, give the principal part of the information sought.

There are, as you will perceive, only eight stations there recorded, but there is also a small lighthouse on a point of land forming the harbour of St. Andrew in Passamaquoddy Bay.

All our lighthouses are of wood, and with the exception of the one on Partridge Island, have all been established since 1828. The shape in every instance, save at Cape Enragé is octagonal; there it is square, and the keeper's family lodged in it. The diameters of the bases, vary from twenty-five to thirty-five feet, and thence tapering up to the lantern disc, where they are generally about sixteen feet in diameter, thus affording a platform outside of the lantern, whereby the keeper on a small ladder may clean the glass. The lanterns are all of iron, the glass, plate, &c., of large sizes. Argand lamps are in every case used, with reflectors, the wicks as per copy enclosed. (This is 3½ inches in circumference, ED.) The oil consumed (pale seal, except six or seven gallons of porpoise oil for each lamp used in extreme cold weather) is about forty gallons annually for each lamp, and the stations have as follows:—

No. 1—Eight lamps and reflectors, in a circle	8		
2—Eight ditto . in each circle	16		
3—Eight ditto . . in a circle	8		
4—Five ditto in each two-third circle	10	one-third	pointing landward
5—Fifteen ditto, in two circles one above the other and touching	15		
6—Four ditto in a circle	4		
7—Six ditto . in two-third circle	6	one-third	pointing landward
8—Six ditto . . ditto	6	one-third	ditto
St. Andrews light . ditto	4	one-third	ditto
	77		

Eleven winter lamps for heating oil during severe weather equal to half lamps $5\frac{1}{2}=82\frac{1}{2}\times 40$ gallons for each burner, say 3300 gallons.

The Salaries in Halifax currency are No. 1—200*l.* for keeper and assistant, with coals, &c., being a wild and exposed place; 2—110*l.*; 3—125*l.*; 4—100*l.*; 5—100*l.*; 6—100*l.*; 7—100*l.* with fuel; 8—100*l.*; 9—40*l.*

It affords the subscribers much pleasure to state, that the Lights are universally well spoken of, not only by the Masters of Merchant Vessels, but also by Officers of the Royal Navy, and that it is not supposed any additional lighthouses are required on the New Brunswick side of the Bay of Fundy. This Province has kept all lighthouse funds separate from the general accounts, and the revenues have not only paid for the erection of all the establishments, and kept them in operation, but there is a small surplus on hand; though the check in trade which now exists may probably alter the face of the accounts. No grant from the British Government has ever been extended in aid of this important object, nor have the establishments ever been examined by a British Surveyor.

The dense and long continued fogs in this bay with our numerous snow storms in the winter months, make the navigation in many instances a most anxious one, to say nothing of the much required survey of our coasts, and the subscribers (like their neighbours in the United States,) have as yet been unable to procure any properly acting machine for driving a fog bell, and we beg leave most respectfully to state that if any one could send to the respective Lieut.-Governors (for the use of the lighthouse commissioners) of their lower provinces, a model of such a machine as could be managed *by one man*, and capable of ringing *a very large fog bell four or six hours without winding up*, to be placed at each lighthouse station, he would be bestowing a great boon on navigation. Aware that this is an object not contemplated in your letter to us, we nevertheless have concluded to draw your attention to an object so much required.

(Signed) R. W. Crookshank.
J. Woodward.
John Ward, Jun.
L. Donaldson.
Commissioners of Lighthouses.

Cape Sable Seal Island Light.—The first light on approaching the Bay of Fundy is on the south point of Seal Island. This is a plain white light, elevated about eighty feet above high water mark, and may be seen in ap-

proaching the island from any point of the compass. A very dangerous rock, under water, but upon which the sea always breaks, called Blonde Rock, lies about two miles S. S. W. by compass, from the lighthouse. Between this rock and the Island there are some dangers, the ground is rocky throughout, and large vessels, therefore, ought not to attempt passing between them.

Brier Island Light.—In advancing up the bay, the next light is situated on Brier Island, about half a mile N. E. from the N. W. point thereof. A plain white light.

[These two lights are supported half by New Brunswick and half by Nova Scotia.]

Digby Gut Light.—The next light on the coast of Nova Scotia, is placed on the west side of Digby Gut, from Brier Island north-eastward. The coast is very bold and not indented; the light is, therefore, chiefly intended as a guide into Digby Basin.—A white light.

No. 1. *Gannet Rock Light.*—This light is about fifty feet from high water mark to reflectors, and bears from the light on Brier Island N.W. ¼ W. twenty-one miles. It is intended to warn vessels of their approach to a very dangerous range of shoals and ledges, which extend from the Old Proprietor to the Seal Islands off Machias, a distance of about twenty miles.

Bearings from the Gannet Rock Lighthouse :—

To the Old Proprietor, which dries at three-quarter ebb, (very dangerous) E.b.N. ¼ N., seven miles.
" Black Rock, (always above water, twenty-five feet,) off White Head, N.E. ¼ E.
" South-west Head of Grand Manan, N.W. ¼ N.
" Northernmost of the Murr Ledges, (dry at two-thirds ebb,) N.W.b. W. ¼ W.
" Southernmost of ditto, called Saint Mary's Ledge, (always out of water,) S.W.b.W. ¼ W.
" Machias Seal Islands Lights, (distant about thirteen miles,) W.b. N. ¼ N.

[*Note.*—Between the northernmost and southernmost of the Murr Ledges, there is a range of dangerous rocks and shoals, many of them always above water, and which extend westward from the lighthouse about four miles; from this range, farther westerly, about eight miles, lies a dangerous breaker, called the Roaring Bull. This may be avoided by keeping three remarkable headlands near the S.W. end of Grand Manan, open. The red glass having been removed from the lantern, there is now a flash light, *white*, twenty seconds dark and forty light in each minute. The lighthouse is painted in stripes, vertical, black and white.]

No. 2. *Machias Seal Islands Lights.*—There are two fixed *white* lights upon the Machias Seal Islands, elevated about forty-five feet above high water, and bear from each other E.S.E. and W.N.W., distant about 200 feet, by which circumstance of two lighthouses at the same station, they will be immediately distinguished from all other lights upon the coast, (British or American.) Both the buildings are painted white. The following are the bearings from them, viz. :—

To the southernmost Murr Ledge, (St. Marys,) E.S.E. easterly.
" Gannet Rock light, E.b.S. ¼ S. thirteen miles.
" Southern Head of Grand Manan, E.b.N. ¼ N.
" Northern Head of Grand Manan, N.E. ¼ E.
" North-east Rock, distant two miles, N.E.b.N.
" Little River Head, N.b.W.
" Libby Island lighthouse, (American,) N.W.b.W.

Vessels standing in to the Northward, between these Lights and the Gannet Rock, should tack or haul off the moment they bring these lights into one, as

they will then not be more than three-fourths of a mile from the Murr Ledges, if more than five miles to the east of the Lights.

No. 3. *Head Harbour Light.*—Next in order after passing Grand Manan and the plain white light (American,) on West Quoddy Point, is Head Harbour light, about sixty feet from high water mark to reflectors. This is placed on the north-east extremity of Campo Bello, and is a guide to vessels entering the main channel to West Isles, Moose Island, and the inner bay of Passamaquoddy:—it enables vessels also at all times to enter Head Harbour. It is a fixed *white* light. The building is painted white with a red cross on it.

No. 4. *Point Le Preau Lights.*—Upon this projecting head land two lights are placed, one above the other in the same House, and distant twenty-eight feet, about twenty-five feet from high water to lowest reflectors. Both lights can be seen from every point of the compass, where they may be useful, both are fixed and *white*. The lighthouse is painted red and white, in stripes of five feet broad each, horizontally.

No. 5. *Partridge Island Light.*—This Light at the entrance of the River and harbour of St. John, having been established about fifty years, requires no particular notice, further than that it is a fixed *white* light, and that the lighthouse is painted red and white, in vertical stripes, 110 feet from high water mark to lowest reflectors.

No. 6. *Beacon Light.*—Within Partridge Island, and upon a Spit or Bar, which extends about half a mile S.S.E. off Sand Point, and which dries at two-thirds ebb, stands the Beacon Tower. Upon this tower a light is established, which is eminently useful to the Coasting trade of St. John, and to all other vessels having Pilots on board, as it enables them to enter the harbour at all hours of the night. A fixed *white* light, about thirty-five feet from high water mark to reflectors. The house is painted white and black, in stripes, vertically.

No. 7. *Quaco Light.*—A revolving *white* light, about forty feet from high water-mark to reflectors, is placed on a small rock, off Quaco Head, showing twice full and twice dark in a minute. This light can be seen from any quarter where a vessel can approach. The lighthouse is painted white and red, in horizontal stripes.

No. 8. *Cape Enrage Light.*—On the point of that name, in Westmorland, nearly opposite Apple River harbour, (N. S.) The house is about 120 feet above the tide mark, and is painted white. A plain *white* light.

On the Seychelle Islands.—*By Captain F. Moresby, R.N., C.B., while commanding H.M.S. Menai, 1821.*

(Continued from p. 590.)

The number of small islands and rocks which are scattered amidst this group, rise abruptly from the sea, and are formed of the hardest granite. Coral reefs have grown round them and project for some distance. The dangers are generally visible, with the exception of those I have particularized, or the sea breaks over them. The Mammelles are elevated forty feet, those in the neighbourhood of Praslin and La Digue are elevated, and composed of granite, similar to the larger islands. I have anchored in many parts of the Grand Mahé Bank; the soundings are irregular from ten to forty-five fathoms. I have been told by many that in some places there are only three and four fathoms, this I much doubt. The late Capt. Beaver was informed that due west of Silhoutte, on the edge of the bank, there was only three fathoms and a half. I sent the Wizard to cruise west of Silhoutte, who did not discover

this shoal. The Topaz, Mr. Russell has lately informed me, anchore on a patch of coral and sand, bearing S.E.b.E. of Isle Fregate.

The soundings marked on my chart are those I found, and those of Mr. Russell's, by which it will be observed that the Grand Mahé bank extends far to the southward.

The seasons are divided into south-west and north-east monsoons, the former commencing in April, and ending in October, when the north-east monsoon commences, and lasts until the end of March.

During the months of January and December in the neighbourhood of these islands, variable winds and calms prevail, and as far as 10° south to the equator north. In February and March the winds blow from the northward, north-west, and west; at this time the current runs to the eastward, at the rate of two miles an hour, and frequently more. In April the winds incline light from the north-east until May, when the regular south-west monsoon sets in. In June, July, August, and September, the winds are generally fresh; and in August strong. October the south-west monsoon begins to fail, and the usual attendant of the annual change announces the approach of the north-east monsoon in November, which commences variable from the north-west to the north-east with squalls of wind and rain.

The current during the south-west monsoon generally runs to the westward; some days I have been affected by it thirty miles, when the next day scarce any was found.*

Isle Annunciation does not exist. Isle Oiseaux is placed by Lislet Geoffry in 3° 37′ south latitude, 54° 50′ east; this island does not exist.

From the salubrity of the climate, as well as from the absence of destructive hurricanes, the Seychelles must ever be of importance to those nations having possessions, or trading to India. Their position for commercial intercourse with the Coast of Africa as well as Madagascar, (for in both monsoons small vessels have a leading wind to and from Cape Ambre,) give them a facility of communication which neither Bourbon nor Port Louis possess, and should it ever become an object to watch the Mosambique Channel, or look to the Portuguese, or Imaum of Mucat's possessions, Mahé is the place where a squadron would be within a few days' sail, where water and refreshments are easily attainable, and where, during the hurricane months on the coasts of Madagascar, or the unhealthy months on the African side, the finest season prevails.

The great object which the French government had in view, when these islands were conceded to individuals, was to bring to perfection the production of the Moluccas. The cinnamon, the clove, and nutmeg tree had, at an early period, been transplanted to the Mauritius, where under the care of able people, they continued to flourish, until successive hurricanes destroyed their hopes. Disappointed at the Mauritius, and eager to take out of the Dutchman's hands the lucrative monopoly which they possessed, the French administration turned their thoughts to the Seychelles, whose parallel of latitude being nearly the same as the Moluccas, and whose serenity of climate gave them every hope. Con-

* This is the same current spoken of by Capt. Miller.

sequently, in the first years of Mahé's being colonized, the nutmeg, the cinnamon, and clove tree were introduced with the greatest secrecy: a garden was established in the most retired spot, that vessels which touched on their voyage from the coast of Africa with slaves, for refreshment should not discover their growing treasure. The plants flourished beyond expectation, and Mahé was looked upon as an island that would alone supply France with the spices of the East.

The war that was declared in 1778, between France and England, caused the Count de Souillac, then governor of the Isle of France, to issue an order which shews with what jealous fear he dreaded Mahé falling into the hands of the English, whilst her valley possessed the harvest of so much trouble and care.

Unable to retain a sufficient force to protect Mahé, he preferred trusting to the insignificance with which the English looked upon the Seychelles, and withdrew the small force that was usually kept there, leaving a guardian and some blacks to watch the spice trees, with strict injunctions to have every tree surrounded with dry wood, and in the event of the English taking possession of the island, to destroy the whole. Shortly after this circumstance a large ship made her appearance. The guardian did not hesitate. In a few hours the whole were consumed, not in sight of an enemy, but of a French ship from Madagascar with slaves, to take in wood and water.

The seed of the cinnamon has, however, been carried by birds over most parts of the island, from which trees have sprung.

From Isle Praslin and Curieuse it was, that the cocoa de mer, or sea cocoa-nut, floated to the Maldives, from whence it was conveyed to India, and sold at a high price, supposing it possessed great medicinal qualities. But since its native place has been known, what sold for more than gold, is now scarcely worth carrying. There are, however, still some used in the East, where they sell at one dollar each.

Isles African.—Two in number, low and of small extent. These islands, according to Horsburgh, were visited by Capt. Adams, of His Majesty's ship Sybelle, in 1801, who assigned to the Southern Island, the latitude of 4° 55′ S., long. 54° 9′ 30″ E.; Lieut. Hay, of the Menai, in 1821, observed on the North Island, to which he assigned the latitude 4° 50′ 30″ S., long. 53° 16′ 30″ E., per sun and moon, and moon and star; but presuming Isle Remires position to be correctly ascertained, the South African is in long. 53° 27′ 30″. A coral bank extends from the southward end of Isle African, having from five to nine fathoms; variation 8° 00′ W. The islands are not inhabited, nor yet conceded to individuals; but sometimes resorted to for the purpose of catching and salting fish. During the south-east monsoon there is anchorage on the western side.

Amirante Isles, of which, there are nine, are situated on an extensive bank. They have lately been conceded to individuals by the government of Mauritius, for the purpose of planting cocoa-nuts, cultivating cotton, and collecting tortoise-shell. The southern island is Isle de Nœuf, in lat. 6° 13′ 15″ S., long. 52° 12′ 15″ E. E.N.E. of this island, seven miles, is Isle Marie Louise. I passed in the Menai, between these islands, having soundings in 12, 15, and 17 fathoms. A bank projects to the westward of Marie Louise, upon which there is quarter less

four fathoms, two miles from the shore. Having passed these islands, I had, on a north-east course for three miles, regular soundings in seventeen fathoms.

Isle Bodeuse.—Is situated on the western extremity of the Amirante bank, and is in lat. 6° 11′ 00″ S., long. 52° 55′ E. Isles de Nœuf, Marie Louise, and Bodeuse are very small; sand crowned with woods and environed (except a few small openings) by coral reefs. Seals of a large size resort to them. There is anchorage in some places amidst these islands; but it is advisable to use a chain cable. In from twelve to fifteen fathoms, the white sandy bottom may be distinguished from the coral patches.

Isle L'Etoile.—Bears per compass N. ¼ E., easterly from Marie Louise, and is in lat. 5° 57′ S. N.N.W. of L'Etoile is a bank over which the sea breaks.

Isle Poivre.—Bears per compass N.b.E. ¼ E. from Marie Louise, and is in lat. 5° 44′ S., long. 53° 20′ E.; the reefs extend round the island a considerable distance. N.b.W. of Isle Poivre is a bank, and coral reefs on which the sea breaks.

Isles des Roches.—Lies east of Isle Poivre about twenty-two miles; is in lat. 5° 41′ S., long. 53° 42′ E., has a bank of considerable extent on its north-eastern side, also a coral bank with breakers N.N.E. of it. North-west of Isle des Roches is

Isle St. Joseph.—Mr. Russell places this island in lat. 5° 26′ S., long. 53° 29′ E. My bearings from Isle des Roches place it in lat. 5° 29′ S., long. 53° 29′ E. W.N.W. of St. Joseph is

Isle des Ros.—Five or six miles distant. It has a dangerous bank of great extent N.N.W. of it, when the island bore S.b.E. twelve miles. Lieut. Hay found four fathoms and a half, rocky bottom; he then steered north-west, three miles, and was off the bank. Sand banks and coral reefs extend far west of St. Joseph, so as to make the channel between that island and Des Ros narrow and dangerous.

Isle Remire.—Isle Remire, or Eagle Island, is in lat. 5° 8′ S., long. 53° 22′ 30″ E., variation 7° 30′ W. To the northward of this island is an extensive reef, having a passage between it and Remire; but it is dangerous for a large ship to attempt it.

General Remarks.—The Amirantes scarcely differ from each other, being from one mile and a half to two miles long. Situated on coral banks, the debris of which, and shells, have formed their first soil, their elevation does not exceed twenty feet, but they are crowned with the mapor wood, and various shrubs of a spongy nature, that attain the height of twenty-five or thirty feet. Cocoa-nut trees will soon be abundant, which are cultivated by slaves from Mahé. Water, generally speaking, may be procured by sinking twelve or fourteen feet. Fish and turtle in abundance.

These islands should be avoided by large ships, whose duties do not call them in their neighbourhood. The frequency of calms during several months, with the velocity and uncertain run of the currents, added to the want of good anchorage, makes it advisable not to approach them unless necessity obliges. The seasons partake of the same changes as at the Seychelles, but the currents are more variable.

Isle Platte.—Is situated in lat. 5° 48′ 30″ S., long. 55° 27′ E. I

made this island on the 30th of March, 1822, having left Mahé the preceding day, passing three miles to the eastward. There is no bottom with 100 fathoms, but off its south-west end a bank extends four or five leagues, sand and coral, having from five to twelve fathoms. From the north end of the island W.N.W. A reef extends four or five miles; also a mile E.S.E. of the north point. Vessels anchor off an opening in the reefs on the south-west side; it is a mile in length, and in all respects is, what is denominated a coral island. After leaving Isle Platte, on the 1st of April, I made

Coetivy.—The north end in lat. 7° 6′ S., long. 56° 16′ 30″ E., lies S.W.b.S. and N.W.b.N., seven miles and a half long. Off the north and north-west points, in the south-east monsoons, there is good anchorage on a bank of sand extending half a mile from the shore, in from seven to seventeen fathoms. Water may be procured close to this anchorage; and we found turtle in abundance. The reef extends far to the southward. Variation 9° 2′ west.

Alphonse.—The north point in lat. 6° 59′ 30″ S., long. by chron. 52° 41′ E., by sun and moon 52° 45′ 30″ E. I rounded this point a quarter of mile from the reef which extends half a mile from the point. The extreme southern point is fast rising into an island of greater extent than Alphonse.

March 15th, 1822, we were in latitude at noon 7° 14′ 30″ S., this isle, bearing true east of us, and the reef still further south, so that between 6° 59′ 30″ S., and 7° 20′ S., dangerous reefs nearly unite North Alphonse and South Alphonse. There is a passage, but it is very intricate and dangerous; the currents are strong and uncertain. I remained off Alphonse turning turtle two days, and was obliged to carry sail to keep under the lee of the island, the currents setting strong to the eastward. Variation 7° 55′ W.

Jean de Nova Groupe.—Jean de Nova, north point, in lat. 10° 6′ 30″ S., long. per sun and moon 50° 40′ 30″ E.; south point in lat. 10° 24′ S. This island I sent Lieut. Hay to visit in May 1821, in the Eliza, Colonial Schooner; he refitted in a small harbour on the south-west side of the North Isle. Vessels drawing ten feet water can enter it; there is good anchorage also off this harbour in ten fathoms, sand and shells. Jean de Nova consists of several small islands, generally surrounded with coral reefs.

The foregoing is Lieut. Hay's report; but as this island was again seen by Lieut. Hay on the 12th of March, 1822, then commanding the Wizard, in company with the Menai, whose signal I had made to look out for it, I am enabled to give its exact position, taking its bearings from Isle St. Pierre, where, on the 13th of March, the following day, I had excellent observations; viz. in long. 50° 54′ E.; and as such I have indicated it in my chart. Water may be procured at Jean de Nova by digging pits; there is also a fishing establishment. Variation 8° 52′ west.

The Twelve Isles.—These I have searched for in vain, neither do I believe they exist, from every information I can collect, nothing more than breakers have been seen; and those who have navigated in these sea know that mistakes must arise from the meeting of currents, causing an appearance like breakers. Many have assured me they have seen

the Twelve Isles; but, on referring to their logs, it has always proved to be

St. Lawrence.—Which lies W.N.W. of Jean de Nova, eight or nine leagues, I have not seen, but I state its position from the run of two vessels, leaving Jean de Nova in the morning, and arriving at St. Lawrence in the evening; making St. Lawrence in 9° 37′ S., long. 50° 20′ E.

St. Pierre.—Is in lat. 9° 20′ S., long. 50° 54′ E., by chron., sun and moon 51° 15′ E., variation 8° 52′ W., being a low island about one mile and a quarter long; is peculiar from being cavernous, through which the sea is thrown a great height, and appears, on first making the island, like whales blowing near it. It has a different formation from its neighbouring islands, having a thin bed of soil resting on rock which is neither granite nor lime stone. The anchorage for small vessels is close to the reef, the bank not extending a cable's length.

Isle Providence.—Bears E.N.E. per compass from St. Pierre, eighteen miles, and is in latitude north point 9° 10′ S., long. by chron. 51° 9′ E., by sun and moon 50° 57′ 30″ E., is about two miles in length. An extensive coral reef, stretches six or seven leagues to the southward. Water is procured by digging deep in the sand. The anchorage is on the inside, half a mile from the shore, uneven ground, sand and coral; the rise and fall of tide eight feet; high water full and change 3h. 30m. P.M.

General Remarks.—In the neighbourhood of these islands the currents set generally to the westward, their velocity being accelerated by the winds. Strong ripplings frequently occur when we experienced these; a change of current has sometimes taken place. I have seen the surface of the ocean, in light winds appear for a considerable space to be much agitated, and I at first thought it was occasioned by uneven ground, and overfalls, but I could not procure soundings; and by a boat steadied with a pitch kettle to 140 fathoms of line, could only observe a slight surface current; a pendant three fathoms below, drew the contrary way, but not strong, or sufficiently so to cause the violent and partial agitation of the ocean. Should a stranger to these circumstances, observe them in passing on his voyage, it is more than probable he would report some undefined dangers.

Horsburgh in his second edition, vol. 1, p. 163, supposes St. Pierre to be placed to the north-west of St. Lawrence, and the nearest island on the eastern side of the channel, when steering from Cape Ambre. This cannot be. St. Lawrence is the most westerly of this group, being only sixty-five miles to the eastward of the meridian of Cape Ambre. If another island exists it must still be St. Lawrence, and the one I have indicated as St. Lawrence—the Twelve Isles.

The winds are affected by the changes in the monsoons. In January and February they are light from S.S.E. to N.E., sometimes hauling round to the south-west in squalls with rain. During the beginning of March 1821 and 1822, we had similar winds, the current easterly, averaging twenty miles a day. From the latter end of March in the parallel of 9° 50′ S., as far as 56° 30′ E., we had slight southerly currents until the 29th, when the wind came from E.N.E. In lat. 11° 30′ S., long. 57° 00′ E., strong breezes with heavy falls of rain, thunder

and lightning. Strong westerly currents now affected the ship, the same winds and bad weather continued until our arrival at the Mauritius, April 4th.

During May and June the winds are light, or moderate, from S.S.E. to S.E., they gradually haul to the eastward; and freshen in July and August, when they blow, during the day, a treeble-reef topsail breeze. At night they moderate, which continues with little change until the end of September, when again they become variable, with squalls and intervening calms.

The foregoing are the winds we experienced in 1821 and 1822, eastward of Jean de Nova, as far as the Cargados bank, from 8° to 17° S. Nearer the Mauritius the winds continue fresh from east in October and November; in December blowing from E.N.E. for several days. Jean de Nova and Providence have been granted to individuals, who have established fisheries, and planted cocoa-nut trees; they make a considerable profit by the sale of tortoise-shell. These islands, like the Amirantes, Coetivy, and Alphonse, are the resorts of millions of birds, of which the frigate birds, the fou, a beautiful small white gull, a variety of various coloured gannet, and the tropic bird are the principal. In St. Pierre and Providence a species of small blue pigeon are in great abundance, and so seldom disturbed, that they do not fly at man's approach, but are knocked down with sticks; we found them excessively fat, and good eating. These birds build and roost on the mapor tree and other shrubs, which cover the surface of the islands, and whose decayed leaves, with the assistance of their inhabitants, have spread a loose, but rich covering. These islands may bear a few years cultivation, but beyond the cocoa-nut tree little will remain for further promise. A species of lobster, commonly called the sea poy, and the large crab, are both in abundance, and good eating.

It is a consolation to know that, those who may have the chance to be shipwrecked on these islands, will find water tolerably good by digging, and the means of existence sufficient to support life, until chance or their own resource may relieve them.

(To be continued.)

TYPHOON AT HONG-KONG, CHINA, 21*st of July*, 1841.

THE accounts in the *Nautical Magazine*, (vols. for 1841 and 1842,) agree that the storm commenced about 6 o'clock in the morning, with wind from the N.N.W., and ended at 3 P.M., with the wind E.S.E., veering to S.E.b.E. Here we have as perfect a coincidence of observation as it is possible to obtain; and which, as far as the local course of a circular storm can be decided from the veering of the wind, we may trust as decisive, that the progressive course of this typhoon was, *southerly* of west; in the first place south-west.

The very intelligent narrator, "J. B. C.," has given the *crisis*, or greatest height of the storm, at 11h. 42m. A.M., with the wind from the east-southerly, at the time. If we test the course of the meteor from

this datum, it would appear to have been moving nearly west at the period; but facts show that prior to the meridian, it had been moving to the south-west, curving to the northward; and if its further route could be traced, it would probably be found going away to the W.N.W. or north-westward, agreeable to the route assigned to the Raleigh's typhoon by Mr. Redfield.

Unless this deviation was purely local, the meteor would seem to have come from the north-eastward, and not from south-eastward. As the storm barely reached Whampoa, about fifty-four miles to the northward of the parallel of Hong-Kong, the diameter of the circle could not have much exceeded 120 miles; and as it was only nine hours making its transit, its average rate was a little greater than thirteen miles an hour.

Although the collateral evidence is not perfect, we may take a glance at it. Giving the diameter of the circle of operations a spread of two degrees of latitude; allowing the northern verge to reach Whampoa or Canton, the southern would be found to sweep the parallel of 21° 7′ N., or about sixty miles southward of the islands in the mouth of the Canton river. But I will allow 100 miles to have been the true distance, on account of expansion, and the space occupied by the consequential wind. If, therefore, the inference of the position of the ship Good Success,* is an approximation to the truth, she must have been at the southern margin, or as sailors term it, in the "tail" of the hurricane. But how did she get into the south-east limb! If the meteor was expanding at the time, that would account for her being there, even without any effort on her part. Had she met the storm, of course, she would have experienced the wind from the north-westward, in the first instance. She may have run into the storm; but, the difficulty in this investigation is, to account for the wind veering to the south-eastward. Now a progressive course *due south*, would only give these changes, and we have the evidence of the two prior careful accounts to convince us that, the meteor at the time, was moving between the points south-west and west! Puzzling as this point (which as a theme is most useful to the seaman,) may seem to be, it is, I believe, susceptible of being accounted for.

1. That as the western limb of the meteor curved to the northward, the eastern limb would take a corresponding curve to the southward, which would, as it were, bring the ship up to the changes of wind from south-west to south. But then, we can admit but a change of route at most, to *four* points anteriorily, which would only account for *four* shifts of the wind; whereas, we find the ship actually experienced no less than *eight* points of changes!

Unless, therefore, we are prepared to admit that the *swing* of the posterior limb was considerably greater than that of the anterior, we must, in part, give up this mode of accounting for the phenomenon. But there is a probability of the posterior limb being more acted upon, in a change of route, than the anterior one; indeed, it is even doubtful whether the former does not alone act in the movement.

2. We are not to believe, at least I conclude so, that the ship, the

* Her inferred place is 100 south of the Great Ladrone.

Good Success, although hove to for eighteen hours, was all that time in the hurricane, unless she was drifted bodily by tide or current, to the northward or north-westward; for, it will be seen that, the transit over Hong-Kong, took place in half the time.

There must have been some operating cause to have detained her so long within the circle, otherwise, as she dropped into the south-east margin, and hove to, it would have receded from her in a short time, and left her free.

We may, I think, with some degree of confidence, link the curving of the meteor with her movement; but that motion does not appear sufficient to wholly account for the *eight* changes of wind, or, for its coming at all from the south-east. But the *curl* will do so, to me satisfactorily, in the absence of other proof. It will be seen that, the ship's position was exactly in the part of the left-hand semi-circle, wherein the *curl*, when it operates, acts to produce the changes of wind from west, or south-west, to south, and south-east; and although I do not dispute the correctness of Mr. Redfield's assumption that in West India hurricanes, when the meteor recedes, the wind rushes in, often from the south-eastward; yet, I am firmly of opinion, drawn from observations on minor whirlwinds that, the cause of this south-east wind proceeds frequently from the operation of the *curl*. Any person may satisfactorily satisfy himself by close inspection of the small whirlwinds which are of frequent occurrence in warm weather. Neither the *curl*, nor the *crisis* point giving the local course, are speculative; they are drawn from facts; and the latter was first suggested by an incidental remark of Mr. Redfield in his paper on the Raleigh's typhoon; if he be correct, and there can be no doubt of that, the result must be received as an established point of the theory.

I do not pretend to account for the circumstance of this meteor moving against the drift of the general atmospheric current; here called, the south-west monsoon.

As an opinion, from general facts, my belief is that, these storms are perfectly independent of the atmospheric current, with reference to their lines of path.

August, 1842. STORMY JACK.

REMARKS ON HEAVING DOWN A SEVENTY-TWO GUN SHIP; *shewing the strain to be resisted, and in what manner the established allowance of Stores may be rendered available.—By Com. R. Harris, R.N.*

(Continued from p. 604.)

THE Harbour of Chusan is completely land locked, and sheltered from every wind. The northern side is formed by the Great Chusan, which trending to the southward forms also its eastern shore; from southerly winds it is protected immediately by Trumball and Macclesfield Islands, and more remotely by Deer Island; and on the west and south-west by Tea Island. The anchorage varies in depth from three fathoms and a half to seven fathoms, soft mud. A strong and irregular flood tide

sweeps to the westward through the harbour, and fills it at full and change about 11 A.M. The ebb tide is more moderate but still too strong to allow the Melville to be hove down during the springs.

Great Chusan, though intersected by canals in all directions, for the purposes of irrigation, cannot boast of any good water; the Chinese are so sensible of this that they never drink it unboiled. A pot of bad tea is always kept ready, and they would not offer, even to an enemy, a cup of water in its primitive state.

The watering place for the ships is at some distance to the westward of the anchorage, and much delay was necessarily occasioned to the Melville by the constant absence of her boats on this important service, and the water, when procured, was full of sediment, having been pumped out of a paddy-field. The provisions were so full of vermin that they were scarcely eatable, and a desire to gain the confidence of the islanders prevented us from exacting supplies that they were unwilling, or afraid to furnish. Either the air or the water (perhaps both) together with a climate that only nominally belongs to the temperate zone, soon showed their deleterious effects upon foreign constitutions, and before we had been here a month, it may almost be said that army and navy, without exception, were involved in one general diarrhœa; and if such a description would not be here misplaced, I might stop to show why we had good reason to suppose that the Chinese themselves are not wholly exempt from this complaint. Our sick list at this period averaged about a sixth of the ship's company, and there were many more who suffered without complaining; in addition to the fatiguing duty by day, under a scorching sun, a pumping party (of forty men) was at work every night,—the officers and seamen were distributed in four different ships, and some of the former were so badly accommodated, that a soft plank was preferable to a bed which entailed the probability of suffocation. Myriads of musquittos added to the general discomfort, and rendered sleeping under cover almost impossible.

Under these unfavourable circumstances, the Melville pursued the laborious work herein described, by getting provisions into one ship, guns into a second, while a third and fouth were employed as storehouses for sails, rope, and various other stores, and the magazines of the whole fleet of transports were in requisition for the stowage of her powder. And it must here be remarked that not a little consideration was needed to keep those stores at hand, that it was even possible we might require.

The spars and tanks were hauled up on Trumball Island, the ballast was partly landed on a paved slip, the remainder was put put on board the Rattlesnake. The rudder was also hauled up on shore. It is wonderful under these disadvantages that so little was lost, for the rats afloat, and the no less cunning Chinese on shore, had a fine field opened for them. The latter I believe contented themselves with a kedge anchor stock and a few copper hoops; but the former were far less merciful. They devoured some hundred weight of sperm candles, besides biscuit in bags x (in number) and tea y (in lbs.) The Melville was moored head and stern with four anchors when the Blenheim arrived, the alterations that were afterwards made will be shewn elsewhere; but it may

be well to mention that no ship present but the Blenheim had a capstan of sufficient power to heave her down; and also that the Rattlesnake was selected because the distance between her knight heads and after hatchway, corresponded to that between the Melville's masts, and because her hawse holes led in upon the upper deck and facilitated the lashing of the lower fore purchase block.

The "heaving down" a ship of the line with her own resources is not at all to be compared to the same operation on a smaller vessel. The necessity for having every thing on a scale to resist the immense strain of 80 tons at the end of such a lever; the number of holes that must be stopped; the impossibility of keeping the lower-deck ports perfectly tight, and the double difficulty of raising the water to the required height, besides the unhandy size of the spars, rope, and anchors must all be considered; for combined, they render it one of the most arduous and critical manœuvres that we are ever called upon to execute.

Heaving down H.M.S. Melville.—The Melville was prepared nearly in the manner before mentioned, with these exceptions.

The hammock nettings were taken off; the top-sail yards were not used for outriggers, as rough spars were at hand: there were no chain shrouds on the main-mast; a belly shore was used instead of a fish; anchors of 28 cwt. were used for tripping; four main deck ports were left out, in midships, and a bulkhead was built before and abaft them, which was intended to prevent the water from flowing fore and aft, which would of course increase the number of leaks.

The reasons which led to some alterations, will appear in the proceedings of each day as we go on.

The different methods of mooring that were tried will be briefly described in a future page.

The Blenheim being securely moored in the line of the tide as shewn, (fig. 4,) the Rattlesnake, 26 guns, was lashed to her lower deck ports, in such a position that her after hatchway was opposite to the Blenheim's after capstan. In the Rattlesnake's after hatchway, the main purchase was secured as follows:—

Pit for the Lower Block.—Two stout spars of hard wood were placed fore and aft, across the hatchway, under the beams of the lower deck; the combings were shored by five diagonal shores from the shelf piece on each side. The lower deck over these toggles was covered with ballast, and the heels of these shores being first covered with ballast, were themselves shored from the main deck beams. This arrangement is worthy of notice, as the strain was thus rendered lateral, and it may be confidently asserted, that not the slightest injury was done to the Rattlesnake, owing to the care and skill that was used in this particular. The space between decks round the hatchway was then filled with ballast: on the main deck, over the after hatchway, were laid two other toggles, and several tons of ballast were also placed on that deck. The strap of the block was warped in two parts of equal length, one eye of each strap went round the block, the other eyes passed under the lower toggles crossed each other (without riding), and lashed together above the upper toggles. The space between the parts of the strap was then filled with ballast, and all was made as solid as possible. The block

rested upon the two iron tillers placed on the quarter-deck across the hatchway.

The lower blocks for the fore purchase were lashed over the bowsprit, and through the hawse holes of the Rattlesnake, and several tons of ballast were placed forward in her.

The Pumps.—The Melville's pumps were placed in the hatchways, in the hope that it might not be necessary to scuttle the decks, as every one present was of opinion that the keel would be out at a less angle of inclination than was subsequently found requisite.

The Purchase Falls.—The standing part of the falls went round the mast-head. The running part of the main-fall led through the Rattlesnake's and Blenheim's ports, to the latter's capstan; the running part of the fore fall from the block on the bowsprit through the Blenheim's ports to her fore capstan.

The Melville's draught was,—Forward 17ft. 1in.; aft 17ft. 2in.

At this time there were fifteen tons of ballast in the gunner's store-room, with a view of trimming the ship by the head, and ten tons and a half in the chain lockers. The latter was accidental; it was covered by the chain when the other ballast was removed, and thus escaped observation.

The lower block was built by our own carpenters, of elm; the upper one was the Wellesley's purchase block, as neither the Blenheim nor the Melville had one on board. Nine pumps were also made by the carpenters.

August, 23rd.—At slack water commenced to heave down. In $1\frac{3}{4}$ hour the ship was down to 65°, but the pumps would not draw, as the hatchways would not allow them sufficient slope. We were nevertheless able to judge of the extent of the damage, which will be mentioned hereafter. Reversed the falls, and eased up; there were frequent surges in easing up (which took fourteen minutes). The shoe was not used at the capstan to-day. The bulkhead on the main deck was not high enough, the water flowed over it and ran down the main deck air holes.

August, 27th.—The pumps having been shifted to the required angle by cutting scuttles in the lower deck and orlops, and all the main deck air holes being stopped, and the ports caulked in, we commenced heaving. In 1h. 40m. the ship was down to 69°. At this moment the fore purchase fall which had been formerly used as jeers, stranded in two places; the rise of the Rattlesnake shewed that it had borne more than its proportion of strain. Stoppered and racked the fall. Hove upon the main purchase till the strain was off the fore; marled the strands down; reversed and eased up. Attention to the rise of the Ratlesnake, afforded in future an easy method of judging when either fall was unfairly hove upon. The ship made little water to-day, and had it not been for the accident, it is probable that she might have been kept down some hours. In easing up, there were frequent surges of the main purchase which tried the upper block strap severely and shook the mast to the step.

August 31st.—The mizen-mast was taken out to lighten her abaft; fifteen tons of ballast from the store-room, and every portable weight was removed. The belly shore of the main-mast was done away with, and the mast was fished with the mizen-top-mast and a hand mast.

The four midship main deck ports were again left out; the pin of the upper purchase block was found to be bent; it was thought better to allow it to remain so than to change it, which would have led to much delay; another coil of 3-inch rope was added to the strap of the main purchase block.

September 2nd.—After the changes before mentioned the draught of water was, forward 16ft. 6in.—aft. 17ft. 5in.

At daylight hauled off by the tripping anchors, but the ship was not quite parallel to the pits and one of the anchors came home when we commenced heaving and allowed her to close the Rattlesnake. Eased up, and tripped the ship off again. Hove taut; the ship closed again; eased up for the day; the tripping anchors were not heavy enough.

3rd.—Fleeted the tripping anchors and backed each of them with a kedge and a length of stream chain.

4th.—Hove down to 74° in 4h. 22m. The heave was exceedingly heavy. During the last few degrees, we were sometimes 10m. gaining one degree. At this time, I observed five Lascars to each part of the swifters at the capstans, besides nine men to each bar; there were not less than 370 men exerting their full power at this moment! It was afterwards found that the Blenheim's capstan was defective. The pins of both purchase blocks were bent, for want of a crown between the strop and the block. The masts stood exceedingly well, the foremast did not touch the partners. The ship made a great deal of water when down, which was probably owing to the hammock nettings not having been caulked under for some years. In two hours we were obliged to ease up with 5ft. 4in. water in the hold. The chain and hand pumps were four hours reducing this to one foot. The whole ship's company excluding sick would make but four spells; and the men could only keep up the number of revolutions (23 in each minute) necessary for full effect 3½ minutes. This labour so long continued, was extremely distressing to the ship's company.

5th.—The tripping cables were not fleeted; the ship kept her distance very well; the heave was very heavy. 300 Lascars were employed to assist the Blenheim's men, making three spells; they were all fagged. In 3h. 3m. the ship was down to 73°. Four of the preventive purchases carried away, probably owing to the distance between the lower blocks exceeding (in some slight degree) that of the upper ones, which caused the masts to spread apart, as the ship came down. In 3h. 16m. we eased up with four feet water in the hold.

7th.—Hove down to 30° and carried away the pin of one of the leading blocks. Racked and shifted the block. This pin had been bent on a former occasion and half slued, it had no flaw in it, and was capable of bearing twenty-two tons. In 3h. 24m. she was down to 74°. There was an irregular swell owing to a S.E. wind and flood tide. When she had been down three-quarters of an hour, four shrouds of the main rigging and two outrigger shrouds carried away. Eased up with three feet water in the hold. The carpenters were fortunately, however, able to finish their work on that side.

The ship made less water on this day than she had made on any former occasion when the main deck ports were out.

Heaving down on the starboard side.—September 17*th*.—The Rattlesnake and Melville having been winded, and the former relashed; the shores, bolts and outriggers were shifted, and the main outrigger shrouds replaced by three lengths of a merchant ship's stream chain equal to 11-inch rope, and two lenghts of our stream chain equal to 13-inch, were set up through the lower deck ports and kept clear of the channels by short outriggers; the side and ports were caulked as before, the pumps, platforms, &c. shifted, and all the former arrangements reversed, excepting the cables which were taken in at "the lee" stern port and hawse hole; the four midship main deck ports were left out, and the bulkheads were shifted to the other side. The rigging was set up, shores wedged, and falls rove; the main purchase fall then led to the Blenheim's fore capstan, which had rather more power than the after one: sixteen tons of water in casks were lashed fore and aft on the lee side of the upper deck.

At day-light, commenced heaving, in 1h. 56m. the ship was down to 75°. When the main deck ports were immersed the foremost bulkhead that confined the water there, broke down, and allowed it to rush forward; from this time the water gained upon the pumps, and in one hour and a half it was over the skids, and we were obliged to ease up with 4 feet 10 inches in the hold. The difference in heaving down to-day was very remarkable, both as to time, and diminution of strain upon the falls.

20*th*.—The foremost bulkhead on the main deck, having been made good and the rigging set up afresh, the four main deck ports were left out, and the Melville was hove down to 75° in 1h. 37m. No alteration having been made in the weights, the same facility was found as on the 17th, and the rise of the Rattlesnake was exactly the same, the pumps were well worked to-day and we were able to keep her down four hours and three-quarters, which enabled the carpenters to complete the repair; she was then eased up for the last time, with four feet water in the hold.

Remarks.—It will appear from these observations, that whenever the four midship main deck ports were out, the water found too ready admittance, the only day that she did not make much water was on the 27th August, when the ports were all caulked in. One can hardly imagine that 268 tons could get into the hold in ninety-six minutes which was the case on the 17th September, although nine hand pumps and five engines were at work during the whole of that time; it took 210 minutes to free her with the chain pumps, two hand pumps and five engines, and this is nearly at the rate of one and a quarter tons in a minute.

The following table was formed by observing very minutely, the the Rattlesnake's draught of water before, and after heaving; and also by observing what alteration was made in her draught by removing ballast from her.

TABLE I.—*Weights required to heave down H.M.S. Melville.*

Date.	Incl. °	Time after 15°	Rattle-snake rose.	Weight raised by practice	Weight raised by 'Edye.'	Remarks.
Heaving down on the Larboard side.						
1840.	°	H. M.	Inches.	Tons.	Tons.	
Aug. 27.	69	1 25	$10\frac{7}{8}$	84·27	81	All main deck ports caulked in, 15 tons of ballast in the gunner's storeroom, $10\frac{1}{4}$ tons in chain lockers, cables in on the *upper* side.
Sept. 4.	73	4 12	$10\frac{3}{4}$	83·31	80	Mizen-mast and ballast in gunner's storeroom removed. Four main deck ports left out. A spar equal to mizen-topmast added to main-mast.
" 5.	73	2 47	$9\frac{1}{2}$	73·6	70·75	No alteration.
" 7.	73	3 8	12	93	89·5	No alteration; a ripple on the water, which rendered it difficult to observe the draught.
1st Mean	72	2 53	$10\frac{13}{16}$	83·54	80·31	One degree in 3m. 2s.
Starboard side.						
Sept. 17.	$72\frac{1}{5}$	1 31	$8\frac{3}{4}$	67·81	65·15	16 tons of water on lee side of upper deck. Five chain shrouds equal $1\frac{3}{4}$ tons on the mast. Cables in on the *lower* side.
" 20.	$73\frac{1}{2}$	1 27	$8\frac{3}{4}$	67·81	65·15	No alteration.
2d Mean	73	1 29	$8\frac{3}{4}$	67·81	65·15	One degree in 1m. 24s.
1st Mean	72	2 53	$10\frac{13}{16}$	83·54	80·31	One degree in 3m. 2s.
Diff.	—1	+1 24	$+2\frac{1}{4}$	+15·78	+15·16	Difference of time in one degree + 1m. 28s. + greater on the larboard side.

In the foregoing table it will be remarked that the difference between heaving down on the larboard and starboard side, was $15\frac{1}{2}$ tons, to account for which we have 16 tons of water on the upper deck and $1\frac{3}{4}$ tons of chain on the main-mast, which would only make a difference of 2·05 tons at the mast head; the chain cables being on the lower side, when the strain was least, must account for the other 13 tons. Perhaps, however, it may be in some measure owing to the larboard side of the ship being four inches thicker than the starboard, which may have increased the stability. The reader must not place more confidence in these observations, than they deserve, for although no pains were spared to render them as accurate as possible, they were liable to an error that was unavoidable, owing to the Rattlesnake, having been winded and relashed subsequently to the first that were taken; an approximation

is therefore all that can be expected. The 10½ tons of ballast that were left in the chain lockers would have made about 2·52 tons difference at the mast-head. It is evident that the centre of gravity was sufficiently below the meta centre, to ensure the safety of the ship; relieving tackles were therefore unnecessary.

By calculation the centre of gravity appears to have been about 2ft. 2in. above the orlop deck, and 3ft. 6in. below the meta centre, when the larboard side was down; alterations were afterwards made in the weights, (as mentioned), and when the starboard side was down, the centre of gravity was 3·16 inches higher. In the annexed diagram is shewn the line of flotation at different degrees of inclination; perpendiculars drawn from the centre of each immersed portion to the respective lines of flotation and produced to cut the vertical, will shew the meta centre for that inclination; a perpendicular from this line to the centre of gravity will shew the proportion of strain on the purchase which increases when these lines are longer, and diminishes as they are shorter, till at length they vanish; the meta centre passes through the centre of gravity, and the ship is no longer safe, because the two impulses which induced her to resist "inclination" have ceased; it is evident, however, that in a ship of the Melville's class this could never happen.

TABLE II.—Shews the parts of the Melville that where immersed at different periods of inclination, and a mean of the time required for each five degrees, by which to judge of the strain.

Degree of Inclination.	Average Time in 5°	Part of the Ship immersed and Remarks.
15°	H. M.	Slack of the falls just through.
16		Copper covered, one sheet taken off.
20	10 13	Ship coming to.
25	11 20	Ditto.
26		Lower whale.
28		Lower sill. of mid. L. D. port.
29		Rings of mid. port.
30	9 48	Tripping cables slackened.
33		Scuttle of mid. port.
35	10 12	Ship commenced to go off.
37		Hinges of mid. L. D. port.
39		After L. D. port sill. in.
40	9 42	Holes for port pendants, mid.
45	10 15	Main whale.
47		Lower sill of mid. M. D. port.
48		Main channels fore part.
50	9 14	
53		Waist hammock netting.
55	9 51	
59		First plank of gangway covered.
60	10 19	
63		Quarter-deck hammock netting, fore part.
65	13 46	
69		Third plank from the skids.
70	14 50	
73½	10 56	1¾ planks from the skids.
74		1½ ditto, keel two feet out.

The time of heaving down appears very long, but it must be remembered that the outer man at the capstan must walk 6½ miles; to perform which with the greatest effect, he should move at the rate of 2½ miles an hour and heave 27¼ lbs, but to incline the ship 5° he must walk nearly ¼ mile in 10 minutes or 1½ an hour, and must heave above 40lbs., which is more power than he is supposed to exert at that speed.

*Explanation of the Diagrams.**—The first position shews how the ships were moored before the Melville was ready for heaving down, and and is only introduced as a key to the others.

When nearly ready she gave the Blenheim her larbourd bow and stern cables, which brought the ships to the 2nd position. When thus placed, the Blenheim brought her starboard quarter anchor home; it was then, (owing to the strong tides) thought better to allow the ships to swing; for which purpose the Blenheim took her stern cables forward, and moored with the two swivels to the bows; having laid out two kedges abeam, the Melville breasted off and attempted to heave down, but the ships closed instantly; the Blenheim then laid out a stream on her larboard beam, and the ships having breasted off from each other, the Melville's purchases were again hove upon, but the ships closed and the plan was given up, which is shewn in the 3rd fig. If this plan had succeeded, the ship might have been hove down during the spring tides, which in the latter case would have been impossible.

In the 4th position the Blenheim has taken in the Melville's inshore cables; and the latter is riding by two of the Rattlesnake's bowers, and the Blenheim's stream; the Rattlesnake's other bower and her own stream were laid out abeam for tripping anchors, these were subsequently backed by two kedges. The messenger and stream cable were used as bow and stern fasts. Quarter and bow springs were tried and found unnecessary.

Report of the condition of H.M.S. Melville, Chusan, Sept. 22nd, 1840.

"The injury to the Melville is wholly in the after part of the ship, the after piece of the main keel is much injured, about sixteen feet of it being entirely carried away, leaving the tenons of the stern post exposed and the bolts twisted, the remainder nearly as far as the securities of the first scarph (from aft) being more or less shaken and strained; 24 feet of the false keel from aft entirely gone or cut away, 33 feet of an additional lower false keel, put on a few years ago in England, entirely gone. The lower part of the stern post below the rudder brace much shaken, and the "hooding ends" on the starboard side shaken about 6 feet upwards from the lower part of the post.

"The garboard strake on the starboard side injured, both seams of it about 26 feet from aft forward loosened, and the lower edge much rubbed; part of the garboard strakes on the larboard side torn away with the keel, and otherwise loosened in the wake of the principal injury. For the security of the above, the garboard strakes have been set home, bolted and caulked, and on the larboard side the injured part has been replaced with fir wood well secured and caulked. For secu-

* The Diagrams will be given in our next number.

rity underneath, a piece of fir board 6½ inches thick has been bolted to the lower part of the deadwood as far as the keel is wanting, and secured with keel staples, and two clamps on the stern post bolted through and clenched; the remaining parts of the main keel which are injured, have been stripped, and the broken parts cut away, trimmed, and caulked. The whole has been well covered, and in some places with felt and lead, and every where sheathed with tarred canvas and securely coppered; the fastenings used are entirely of copper procured from the bolts extracted from the broken part of the keel. The rudder remains to be repaired, and is unshipped for the purpose; the sole of it is entirely gone, and the lower part, below the lowest pintle, and nearest to the stern post is much shattered, and broken away from the bolts which secure the pintle brace.

"The pintles are generally quite secure, but the lowest is very slightly bent."

(Signed) "R. Roberts, *Carpenter*."

The rudder was subsequently cut flush with the lower part of the stern post, trimmed and coppered.

From the above remarks, it will appear evident that if the Melville had struck a few feet farther forward she must have gone down instantly in deep water. The solid filling of the deadwood alone prevented this catastrophe.

After heaving down seven times, the Melville was righted without the slighest appearance of a strain in any part of her, and the expense of heaving down and repairing, must have been very small. When at sea, the only difference remarked in her steerage, was that she required more port helm than starboard, which was in consequence of the keel inclining a litle to that side from the scarph, aft; and owing to the rudder having been reduced, she of course required more helm to produce the same effect.

A few more remarks will conclude this subject. The station of the Author permits him neither to praise nor to condemn. Were he at liberty to do either, it would seem unnecessary to avail himself of that privilege, as in laying before his readers the whole statement of facts, he feels assured that they will silently award their tribute of respect, for the skill and judgment, that planned, and the zeal, care, and energy, which executed so important and responsible a manœuvre without a single accident. Nor will this feeling be lessened when they learn, that the Melville remained several months in the China seas after her repair; passed four times over the shallow waters of "Lankeet," (in little more than her own draught,) bore a prominent part in the action of the Bocca Tigris, and finally made a voyage of sixteen thousand miles, during which she experienced a heavy gale off Madagascar, and arrived in England, making less than one inch of water an hour.

(To be concluded in our next.)

Notices of Japan.—No. VIII.

(Continued from p. 556)

The final signal of departure from Yedo is given by the leave-taking visits of the secretaries of the govenors of Yedo and Nagasaki, in the names of their respective masters, on the morning of the day appointed for the commencement of the second half of the expedition. But not so ends all intercourse with Yedo friends, or Yedo population. Amidst the necessary bustle of the travellers' preparations for departure, with all the incumbrances that have been described, their apartments are, during these last hours, thronged with acquaintance, as is the street before the door with expectant spectators, waiting, with curiosity yet more eager than upon their arrival, for the last glimpse of the only strangers Yedo ever beholds. The commotion within and without the house is represented as beyond the power of words to express. "We were obliged," says Fischer, "upon coming into the street, about four o'clock, to close our norimono against the great concourse of people, who, notwithstanding the harsh means employed by the guard escorting us to keep them off, jostled each other to get a sight of the Hollanders. We alighted near the palace of the prince of Satzuma, in compliment to that respectable old man, who presented himself, with his whole family at the windows. About half-past six, we reached the Sinagawa suburb, where our Yedo friends were waiting us, to spend a last evening together, and say farewell. The next morning, setting forward on our journey we met, at Omuri, a few miles from Sinagawa, the two sons of the prince of Negats, who had come thither to obtain an underhand interview with us, for which they had, perhaps, found no opportunity at Yedo. The eldest answered our compliment very friendly, saying, in Dutch, 'Seen for the first time'; which in their own language, is the expression usually employed by Japanese at their introduction to any one. This young prince had obtained the Dutch name of Maurits, and seemed, like his father, to think much of our nation and customs. They had with them a number of attendants, who had often visited us at Yedo, and now took leave of us."

Upon the journey back, the same road is taken as on the journey to Yedo; the division of stages, and the halting-places, are likewise the same, with the single exception, that where the travellers dined as they went, they now sleep; and where they then slept, they now dine; and they undergo the same search by the guards at Fakone and Araye. In the pleasure of the two journies there is, indeed, a material difference, inasmuch as all traces of winter have now vanished, and they contemplate the fair landscape in its summer beauty, which grows more and more luxuriant as they proceed southward to Nagasaki. But one really essential variation from their former course there is, that makes their return worth notice, and this occurs in their sojourns at Miyako and Ohosaka, where they now enjoy as much liberty as a foreigner can hope for in Japan.

At Miyako, the Dutch deputation is now received in person by the grand judge and the governors of the town, to whom they give the

presents left in deposit for them as they went, receiving in return silk dresses and silver. They are not honored with an audience of the mikado, nor have they any presents for him, the son of heaven being in all likelihood a personage too holy to be lawfully known to, or even thought of, by Christian foreigners; and they are of course not admitted within the precincts of his court, the daïri. Nevertheless, this singularly circumstanced autocrat by right divine, and his almost equally singular court, being fixed in this town, they cannot be passed over. The following particulars concerning them are gathered from different writers, ancient as well as modern; but it may be premised, that the mikado is by some writers called the daïri, which, being the name of his court, can hardly be other than a mistake; but it should seem as if the Japanese termed him indifferently mikado or daïri sama, this last appellation meaning "lord of the daïri," and that the Europeans have merely dropped the title sama or lord.

This nominal supreme sovereign does, indeed, claim to reign by right divine, both as being descended from the gods in a direct line, and as being in a manner still identified with them, the spirit of the sun goddess, the deity who rules the universe, gods and men included, Amaterasu oho gami, being embodied in every reigning mikado. Such a claim to despotic power was indisputable, and indisputed, as it still is; but some centuries ago, a military chief, rendering his own situation hereditary, possessed himself of the actual authority, under the title of siogoun, as vicegerent or deputy of the mikado, to whom he left the nominal supreme sovereignty, and all his state, pomp, and dignity, a nominal ministry included.

In fact, it appears that the autocrat's dignity is now made the plea for depriving him of his power. Worldly affairs are represented to be so wholly undeserving the attention of the successor of the gods, that his bestowing a thought upon them would degrade him, even if it were not actual profanation. Accordingly, no business is submitted to him, no act of soveriegnty is performed by him, that has not a religious character. He deifies or canonizes great men after death, the siogoun taking the trouble of pointing out the dead who are worthy of an apotheosis. He confers the offices of his court, a real spiritual hierarchy, and, from their nominal dignity and sanctity, objects of ambition to the princes of the empire, the siogoun's ministers, and the siogoun himself. He determines the days on which certain moveable religious festivals are to be celebrated, the colors appropriate to evil spirits, and the like. And one other governing act, if act it may be called, he daily performs, which should prove him to be, in virtue of his partial identification with the sun goddess, quite as much the patron divinity as the sovereign of Japan. He every day passes a certain number of hours upon his throne immovable, lest by turning his head he should bring down ruin upon that part of the empire to or from which he should look; by this immovability maintaining the whole realm's stability and tranquility. When he has sat the requisite number of hours, he resigns his place to his crown, which continues upon the throne as his substitute during the remainder of the day and night.

The honors paid to the mikado are as extraordinary as his situation and pretensions, and all are indicative of, or relative to his half-divine

nature; if half-divine be an expression strong enough to express a degree of divinity so exalted, that all the kami or gods are held annually to wait upon the mikado, and spend a month at his court. During that month, the name of which implies "without gods," no one frequents the temples, believing them deserted. To dignify and to guard from violation the high sanctity of the mikado's person, is the grand object of all the honors in question. That his sacred foot may not touch the ground, he never moves but when borne upon men's shoulders. That unhallowed eyes may not pollute him with a glance, he never quits the precincts of his palace. According to most reports, neither his hair, beard, or nails are ever cut, that his sacred person may not be mutilated, although the erudite Klaproth avers, that such mutilation as may be deemed essential to his comfort, for instance, cutting his nails and trimming his beard, are performed during his sleep, and called "stealing his nails and hair." It has been asserted, that the sun was deemed unworthy to shine upon him; but this is denied by later writers, and seems indeed very inconsistent with the intimate union existing between the sun goddess and himself.

What is more certain and consistent is, that everything about him must be incessantly new. No article of his dress is ever worn a second time; the plates and dishes in which his repasts are served, the cups or bowls out of which he drinks, must be new at every meal, as must the culinary utensils in which the meal is prepared. But none inherit his leavings. Whatever article of any kind has been hallowed by the mikado's use, even such as cooking what he is to eat, is thereby so sanctified, that no human touch must be afterwards suffered to profane them. To wear his cast off clothes, to eat off his plates, cook in his saucepan, &c., or even to feed upon the broken victuals from his table, would call down the vengeance of heaven upon the sacrilegious offender. To prevent all risk of the kind, everything that has once been in any way employed in the service of the mikado is immediately torn, broken, or otherwise destroyed; his clothes, which are of a colour no other person may wear, are burnt; and hence arises the only drawback upon all this state. The mikado is supported by the siogoun, and the allowances from Yedo not being as ample as might be wished, the heavy expense of renewing daily, almost hourly, whatever appertains to the son of heaven, is alleviated by supplying his wardrobe, table, kitchen, &c., with articles of the very cheapest, and therefore, coarsest description.

A mikado frequently abdicates in favour of a son or daughter; there are many instances of a daughter being thus preferred to a son, both whilst the sovereignty thus transferred was real and absolute, and since it has been a mere shadow. When a change of reign thus occurs, it is plainly, and simply, and explicitly made known to the whole empire; but if the emperor retains his station to the close of his life, the announcement is not so straightforward an affair. The death of the mikado is carefully concealed, until the succession of his heir, male or female, is secured; and then the new mikado is proclaimed, with the additional intelligence that his predecessor has vanished. Indeed, in what other terms could the decease of so divine a personage be mentioned?

To guard against the possible failure of an heir in the direct line of these successors and representatives of the gods, the mikado has twelve lawful wives, the only individual in Japan indulged with polygamy; although fidelity to his one wife is not held to be the duty of a husband. These twelve empresses the mikado usually selects from among the ladies of his court, and they are distinguished from other Japanese women by the form of their dress. Their robes are said to be so preposterously long and large, and the silk of which they are composed to be rendered so stiff and heavy, by inwrought gold and silver flowers, as nearly to incapacitate them from moving; while Klaproth, taking no notice of their splendour, states that they, like the mikado, never put a robe on a second time; and adds, that when visiting the mikado, their hair hangs loose, though at other time properly dressed. The two statements of the magnificence, and the constant renovation of the robes of the empresses, are manifestly inconsistent with what has been said of the coarseness of the mikado's own dress upon this very account; and probably the truth is, that the internal economy of this completely secluded court is, of all other subjects, the one upon which foreigners are most likely to be led into error. All that can be done is to collect and compare the different reports; and, to conclude the article of dress, it may be added, that the robes of the daïri, male and female, are almost as inconveniently large and long as those of the mikado's consorts, and in this respect they are generally imitated by the priesthood.

After all that has been said of the superstitions and absurdities still prevalent with respect to the mikado, is the reader prepared for the information that his daïri is the spot in Japan where literature is most diligently and enthusiastically cultivated? More science there may possibly be in the college at Yedo, although the daïri is said to constitute a college or academy for the cultivation of theology and other sciences. But, at any rate, the poets, historians, and philosophic moralists most universally admired by their countrymen, are to be found amongst the male and female members of the daïri, of whose lives literature is both the business and the pleasure.

To guard against the intermingling of any ambitious views with these laudable pursuits, is the business of the grand judge; and the watch he is required to keep over the movements of the daïri is facilitated by the position of his residence opposite to the palace-gate. His office is, however, by no means a pleasant or easy one. The slightest negligence would incur the siogoun's anger, and any over-officiousness might provoke the resentment of the mikado, to whom he is professedly only the humble representative of a dutiful vicegerent. In either case, he could have no choice but to rip up his abdomen, after the established fashion of Japanese suicide.

The daïri does not occupy an extent of territory comparable with the siogoun's palace; nor can Miyako compete in size with Yedo. The whole population is estimated at little more than half a million:* but if inferior in magnitude, we are assured that the town is the most beautiful, in itself and in its surrounding fruitful soil and lovely scenery, as also the most healthy, in Japan. Miyako is in fact, es-

* Six hundred thousand souls, exclusive of the dairi, however; the members of which are probably too lofty to be numbered in any census.

teemed the paradise of Japan, and one of its claims to this praise rests upon the acknowledged superior beauty of its women.

The Dutch spend some days here, which are chiefly occupied in purchases, the best of every manufacture being sent hither. Various celebrated temples are exhibited to them; and in the gardens of one of these, tents are pitched, under which to give them a banquet. The numbers who throng to this entertainment, to gaze at the foreigners, are spoken of by their Dutch guests as exceeding any crowd in which they have ever found themselves, in Japan or elsewhere: the object of the givers of the entertainment being apparently much more to gratify the inhabitants with a sight of the strangers from a distant land, than to amuse the Dutch deputation. The two are, however, far from being incompatible.

From Miyako, boats convey the travellers, in a day and a night, down the river to Ohosaka, where they make a much longer stay, and enjoy a greater variety of amusements. They are now permitted to view the town, which is said to be well worth exploring. Its dimensions are not given, but may be conjectured from two facts stated, namely, that it contains upwards of a hundred bridges over the river and the several canals or branches led off from the main stream, and that the citizens boast of being able to raise an army of eighty thousand men from their own population alone. Not only is it inhabited by the most considerable and the wealthiest merchants of the empire, as being the great mart of commerce, whither the foreign goods brought by the few permitted Dutch and Chinese vessels are sent from Nagasaki; it is also a manufacturing town, and the manufactories visited by the deputation are spoken of favourably. Ohosaka is fortified in the Japanese unskilful guise, and is further protected by a castle on one side of the town, the commander of which is of higher rank than the governor, but without authority over, or connexion with him.

The presents are now formerly delivered to the governor, in a regular audience, after which the doners are magnificently, as well as hospitably feasted by him. Other parties of pleasure follow. The governor's race-course is visited, but no mention is made of the races; and president Doeff commemorates, as that which seemingly most impressed him, one especial entertainment at a tea-house, where, he says, such hearty joy reigned, that he still, at this distance of time, recollects it with delight.

But an amusement more calculated to gratify the reader is the theatre, which should seem to be superior, at Ohosaka at least, to any other visited by the Dutch; for persons, who never allude to plays at Nagasaki, dwell upon those they have seen at the former town, on their return from Yedo.

The Ohosaka theatre is described as very large; containing, besides the pit, three tiers of seats, elegantly ornamented like the boxes of European theatres. The decorations, scenery, and dresses, are said to handsome, and in good taste; but this eulogy must be received with some little modification, inasmuch as it appears that "it is occasionally difficult for a stranger to comprehend the decorations, on account of the extraordinary manner of placing the lines in the paintings." A perplexity resulting, probably, from the total absence, in Japanese

painting, of perspective, upon which the effect of scenery wholly depends.

Unfortunately, not only have we no translation of any Japanese play, but no writer has hitherto given such an analysis of any piece, as might afford the means of forming an opinion respecting the state of the dramatic art in Japan. A few general notions are all that can be gathered. The Japanese plays appear to be mostly founded on national history or tradition, representing the feats, exploits, and loves of ancient Japanese heroes and gods; a few, however, turn upon imaginary love-adventures, and others may be called didactic, being designed to illustrate and enforce some moral precept. The general tendency of these pieces is said to be excellent; although they are, as indeed they must necessarily be, so characteristic of the people, as to render the praise somewhat startling to minds more delicately organized than those of the Japanese. "They are often," says Fischer, "very instructive and useful. In their heroic dramas, the thirst for revenge shines pre-eminent as a national characteristic, but always in union with a lofty courage. I saw a theatrical representation of one of their punishments by torture, which was astoundingly cruel."

(To be continued.)

The Variation of the Compass.

(Continued from p. 473.)

Royal Observatory, Greenwich, August 30, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Declination for June 1842—23° 14′ 5″.

(During the month of June 1842, the Dipping Needle was out of repair.)

G. B. Airy, *Astronomer-Royal.*

Her Majesty's Visit to Scotland.

"The Dee, the Doon, the Tweed, the Tay,
And Forth—streams famed in Scottish lay—
With Clyde, soft gliding on its way,
Shall welcome thee, Victoria!"

Her Majesty's visit to her Scottish dominions has taken place since our last, affording that high gratification and pleasure to her subjects, which always accompanies the presence of the Queen, and her consort, Prince Albert. For those who were not present we have preserved the following account of the voyage from the best descriptions we have seen of it.

Many and severe were the disappointments experienced by the sight-seeing portion of her Majesty's loving subjects, by whom it was generally anticipated that the Royal departure from Woolwich would have furnished a pageant as brave as had ever floated on the Thames. The number of steamers in attendance was to be immense; the multitudes they were to be crowded with

innumerable. The weather, however, the villanous weather, probably frightened hundreds who would have gone gladly forth had the sun shone out invitingly. The morning broke grey and hazy, with flashes of distant lightning, then the clouds gathered, and about five o'clock a most tremendous thundershower fell, and every thing looked wofully black and dismal. A partial clearing up was followed by a melancholy relapse, and for several hours the rain continued to fall with less or greater violence, and the day's prospects looked anything but promising.

If the weather had its effect in thinning the numbers who witnessed the Royal embarkation, the hour at which it took place tended still more to the same end. The greatest uncertainty prevailed as to the time when her Majesty might be expected at Woolwich, and half-a-dozen different rumours confidently stated half-a-dozen different times. Steamers had been advertised as starting, some as early as six, some as late as nine, but the great majority of the boats which obtained freights at all, held on at the different wharfs in hope of obtaining some distinct information relative to the time of starting from Woolwich, until they were greatly too late to see anything of the ceremony whatever. People seemed to think that there was no chance of the Royal party embarking so early as had been announced. There was generally, they argued, a vast deal of delay and procrastination in such cases, and they consoled themselves with the hope that they might remain until breakfast time or so, and see in the meantime whether the sky was or was not likely to clear. A few however, judging from the state of the tide, were anxious to be off as early as possible, and the Matrimony steamer (one of the above-bridge fleet), either with more judgment or better information than most of her competitors, started from Hungerford stairs about five, and from Blackwall shortly before seven. It was then raining heavily, and everybody on board looked as dismal as the weather. When about half way between Blackwall and Woolwich the thunder of artillery announced that her Majesty was actually proceeding on board the Royal George, and, by the time the Matrimony had got off Woolwich, the noble yacht, with St. George's ensign at the peak, and the royal standard floating at the main top-gallant-mast-head, was proceeding majestically down the river in tow of the Monkey steam-tug. The scene from the water was sufficiently animating to make the spectator in some sort forget that he was beholding it through fog and rain. Curling from the shore white wreaths of smoke from the artillery were rising in graceful whirls among the rigging and gay flags of the shipping, now concealing and now showing the files of the artillery drawn up along the shore; and the houses, wharfs, and every spot commanding the river, densely crowded with admiring thousands. The bells rung a merry peal, the multitude shouted and cheered with hearty goodwill. The cannon in the Dockyard thundered away, replied to by the battery in the Artillery-ground; and so the Royal George, with her precious freight, moved slowly but gracefully along, her taut and symmetrical rigging towering high above the masts and spars of the flotilla of Government steamers by which she was surrounded.

The squadron had not proceeded far down the river, when the Monkey, the towing vessel, being found of insufficient power, the royal yacht was taken in tow by the Black Eagle and Shearwater, who walked away with her at a rate of something like seven knots. The weather now began to clear. A stripe of blue sky to windward cheered every heart, the dark clouds gradually broke up and rolled heavily away, and with them all trace of the morning's gloominess from those who had been exposed to its influence. With the first gleam of fair weather, and indeed before the rain had finally ceased, her Majesty and Prince Albert made their appearance on deck. By this time several steamers, endeavouring to make up for lost time, were coming careering down the river as fast as steam could drive them, and one by one overtaking and joining the royal fleet; the instant, therefore, her Majesty was recognised, she was hailed by reiterated bursts of cheering, which she acknowledged with her usual grace

and dignity. Her Majesty appeared to take considerable interest in the working of the vessel, and in the shipping by which she was surrounded. Lord Adolphus Fitzclarence pointed out to her and her royal consort the various objects of interest, both on board the royal yacht and around; and we remarked that her Majesty watched for some time, and seemed pleased with, that graceful, when well performed operation, heaving the lead.

As the squadron passed majestically down the river, the vessels working about generally lay to, and lowered either their colours or sails in compliment, while ever and anon some small battery ashore sent forth its salute, amid the cheering of those gathered round it. And so the fleet moved on, the weather every moment improving, and the scene becoming every moment more animated. A royal salute of 21 guns was fired from Ingress Park, the seat of James Harmer, Esq., and her Majesty, as well as the party on board, seemed highly pleased with the compliment. At Gravesend, the spectacle was really imposing. The river was crowded with vessels of all rigs, and of many nations. Bunting of every shape and hue fluttered amid the sails and rigging. St. George's cross and the tri-colour blending in amity together; the light forms of cutters and yachts shot hither and thither among the heavier merchant vessels, impelled by a breeze just sufficient to keep the sails asleep, and to blow the flags well out from the rigging. And so the royal squadron passed through the motley fleet, with the bells of Gravesend ringing, the people of Gravesend cheering, and the classic old fort opposite, the redoubtable Tilbury, blazing away as it might have done in the stirring days of Drake and the Armada.

From Gravesend to the Nore the distance was gone quickly over. The steamers set on with a will, and the Royal George was towed merrily through the waters. The breeze came down fresh, rippling the waters, the craft around careered gaily to its influence; Sheerness, with its fortresses and shipping, opened upon the view, and then might we see a-head the huge bulk of the Camperdown guardship, a "leviathan afloat," with the lighter forms of the Pique frigate, and the Daphne sloop of war, ready to do fitting honours to the royal party as they passed. The squadron approached, and the beautiful ceremony of manning the yards took place on board the three anchored ships-of-war. Their appearance was strikingly beautiful. The gracefully moulded hulls, bright burnished copper, the frowning guns, surmounted by the white hammock-cloths, and then aloft, the apparently tangled web of rigging gradually decreasing in complexity with the height, mast above mast, and spar above spar, tapering away to the slender pole of the royal-mast, surmounted by the long waving pendant, and yards and rigging crowned with nimble top-men.

A signal was now run up to the mizen top-gallant-mast of the Royal George, and straight the long ranges of the batteries of the saluting ships poured forth their stunning welcome. Gun after gun followed in rapid succession from the guard ship, the frigate, and the sloop-of-war. The sound of their hands could be heard now and then for a moment amid the thunder of the artillery, and then amid the white volumes of smoke which rolled heavily over the water, the steamers which had attended the royal squadron so far gave three hearty and prolonged cheers, and wheeled round, as the Royal George, with her attendant ships, stood off to sea. The weather was then fine, the breeze light, the sea smooth, and likely to continue so. The royal yacht was soon hull down in the horizon; and, as the old bills of lading had it, "So may God send the good ship safe to her destined port."

Leith Roads, Sep. 1, 1842.

God be praised! Her Majesty arrived safely in Leith Roads at half-past one o'clock this morning, and, at nine, landed safely at Granton Pier, warmly greeted by thousands of her loyal Scottish subjects.

The royal passage has been as favorable as could possibly have been expected,

not an accident or delay of any sort or kind, not a rope-yarn strained, nor even a carriage scratched. The newspapers will already have told you of the embarkation at Woolwich, on as unpromising a morning as I ever witnessed; but the rain held up at the moment that her Majesty approached, and not five minutes elapsed between alighting from her carriage and being underway in the royal yacht, precisely at five minutes before seven.

On entering Long Reach, and finding the river tolerably clear of shipping, Lord Adolphus Fitzclarence ordered the Shearwater, Captain Washington, to take the yacht in tow, and the Black Eagle to tow ahead of her; and in this manner we proceeded, the three ships in line, without once slackening the hawsers, till we dropped anchor in Leith Roads in sixty-six hours and a half from Woolwich.

As we advanced down the river, the day became beautifully fine, numberless vessels followed, all dressed with flags. At Gravesend, colours of every nation were displayed by the shipping, the bells rang a merry peal, the people loudly cheered, and the guns of Tilbury Fort welcomed "Ocean's Queen" with a royal salute, recalling the stirring times of Raleigh, of Drake, and of Elizabeth.

On entering sea reach the signal was made to the Pique and Daphne, to way and join the royal squadron, but the light easterly wind would not enable them to do so. Shortly before noon the squadron reached the Nore and were received with a royal salute from the Camperdown 110 guns, bearing the flag of Vice Admiral Sir Edward Brace, and the Pique and Daphne, the ships dressed with flags and the yards manned presented a striking and beautiful appearance.

During the whole of this time her Majesty and Prince Albert were on deck, and appeared to enjoy the scene extremely, noticing the various object of interest as they were pointed out by Lord Adolphus Fitzclarence, and bowing repeatedly to the cheers of the private steamers which one after another ranged alongside the yacht, and after taking leave with three deafening huzzas now wheeled round, and retraced their way towards London.

The Royal George, you are aware, is a beautiful vessel; but, perhaps, she was never seen to greater advantage (except when under sail) than surrounded by the steam flotilla which accompanied her; her light and beautiful form which reposed on the water like a swan, her yards admirably square, every rope as taut as a harp-string, and her lofty and graceful spars towering far above all, with the Royal Standard, "the Meteor Flag of England" floating majestically from her main-top-gallant-masthead, completed a model of symmetry and grace.

The squadron now bore away down Swin, the two steamers as before mentioned towing the yacht, followed by the Rhadamanthus, Lightning, Fearless, and Monkey, placed in order of sailing on each quarter of the yacht, and accompanied by the Vestal, Trinity yacht, which latter excited general admiration by the seamanlike manner in which she took up her position, and kept it throughout the whole of the voyage.

Passing the remarkable Maplin Lighthouse, built upon iron screw piles, apparently in the middle of the sea, and receiving a royal salute from Walton on the Naze, the squadron arrived off the entrance of Harwich harbour (the safest on the eastern coast of England, and where, in case of bad weather, we must have sought refuge) at five o'clock. Here it was met by the Orion and River Queen, Ipswich steamers; the former having on board the Mayor and town authorities of Ipswich, ranged up alongside, playing the National Anthem, and greeting her Majesty with loud huzzas. A little beyond, we passed through a line of Revenue cruisers, under the command of Captain Jerningham and Lieutenant Smith, R. N., who manned their rigging and gracefully lowered their gaff-topsails and flags to the royal standard, while hundreds of white pocket handkerchiefs which loyally fluttered in the breeze, and the thrilling cheers of an equal number of "manly hearts" proved their devoted

attachment to their lovely Queen. Foremost among them we distinguished a group of youthful children, who, having imbibed loyalty with their mother's milk, stretched out their little arms towards their beloved Sovereign, and lisped a blessing on her royal head.

Onwards swept the royal yacht, Bawdsey, Orford, Aldborough, were rapidly passed in succession, and the last rays of the setting sun fell upon the consecrated yet crumbling towers of Dunwich, and illumined all that now remains of the thirteen churches of the former capital of the kingdom of East Anglia.

At midnight we rounded the extreme eastern point of England, guided by the brilliant light of Lowestoffe, and passing round the back of Yarmouth Sands, steered through Hasborough Gat, while the first beams of light fell upon the lofty cliffs of Cromer, indistinctly seen through the morning mist.

At nine we passed the Dudgeon Light Vessel, about thirty miles from Cromer, at noon were off the Humber, and at five we had a glorious view of the projecting promontory of Flamborough Head, which boldly resists the waves of the German Ocean, and affords the valuable shelter of Burlington Bay to the numerous shipping which trade along the eastern coast of Great Britain.

The sea, during the whole of this time, was calm as a mirror, and her Majesty and the Prince were early on deck enjoying the morning air. Shortly after breakfast a telegraphic message announced that "her Majesty and the Prince were perfectly well," a message which, I need not tell you, was received by the whole squadron with three hearty cheers. A signal was then made by command of her Majesty, to enquire after the health of the ladies, the Duchess of Norfolk and Miss Paget, who were on board the Black Eagle, the answer was "with duty to her Majesty, quite well." A similar question was made to the Lords in Waiting, &c., who were on board the Rhadamanthus, the answer to which caused great merriment throughout the squadron, "All well, and the Lord Steward eating monstrously."

By means of Watson's signals the Royal yacht communicated with the station at Flamborough Head, and I believe received news of the health of the Royal Infants. I have not mentioned that out of every port along the coast, boats and sailing vessels and steamers came out to pay homage to their Queen, but perhaps the most remarkable were the Aldborough yawls, which rowed out a long distance off the land, and cheered manfully as we passed them close alongside about nine o'clock, and off the Humber a simple fisherman, with a venerable bald head held up a fine fish with both his hands as the only homage he had to offer to his Queen; this act was kindly acknowledged by Prince Albert.

Onwards steered the gallant fleet as the shades of evening closed on the white and conspicuous buildings of Scarborough. As the squadron passed along the land, her Majesty from time to time referred to the beautiful charts of the coast, which have been recently published by the Hydographic Office, at the Admiralty, and a copy of which were mounted and folded in a convenient form expressly for this occasion.

During the night the wind freshened from the northward and rather delayed our progress. Still we passed along all the coast of Yorkshire and of Durham, and at eight o'clock on the morning of the last day of August we stood in to the land at the entrance of the Tyne, and had a distinct view of Tynemouth Cliff and Castle. Hence we continued alongshore about five miles off the coast, passing Blyth, Newbiggin, and Cresswell, backed by the heights of Simonside, Bradham, and Shaftham, and the more distant range of the great Cheviots, rising nearly 3000 feet above the sea.

At two we passed close to Coquet Island, and had an excellent view of the far-famed castle of Warkworth. At three a royal salute from Howick greeted her Majesty as she passed, and the Percy banner gracefully floating from the lofty tower of Alnwick Castle, evidenced at once the loyalty of its owners to their Sovereign, and their devoted attachment to their former royal charge.

Dunstanborough Castle next showed itself, and shortly after the whole squadron swept at the rate of ten miles an hour through the narrow passage between the Farn Islands and the Main, having on the left the stately structure of Bamborough Castle, renowned for its charitable institution for shipwrecked seamen; on the right, the three Farn Island lighthouses, and the Longstone, the scene of Grace Darling's gallant exploit; while, before us, on "St Cuthbert's Holy Isle," rose the ruins of the Castle and Cathedral of Lindisfarne—

"A solemn, huge, and dark-red pile,
Placed on the margin of the isle;
The castle with its battled walls,
The ancient monastery's halls."

This was, perhaps, one of the most interesting points of the whole voyage. The proximity of the shore on either hand, the rapid speed of the vessels as they swept past, hurried along by a strong ebb tide, the mingled roar of the cannon of Bamborough Castle, and the loyal cheers of the island fishermen who surrounded the squadron in their boats, gave an animation to the scene that is difficult to describe; while the classic associations connected with Warkworth, and Lindisfarne, and the Tweed, the remembrance that the antique and venerable ruins of the abbey and cathedral church of Lindisfarne were once that "holy place" where Episcopacy and Christianity were first permanently established in Northumbria, were well calculated to make a lasting impression on the mind so susceptible of deep emotions as that of our youthful Queen. Nor could it be entirely effaced from some of our recollections, that only five days later in the season on this very spot had occurred the fearful wreck of the Forfarshire steamer, when eight-and-thirty persons perished, and caused us to offer up silently, yet fervently, a prayer that no harm might happen to the precious freight entrusted to our charge.

Onwards sped the royal bark, and passing Berwick on the Tweed, her Majesty for the first time had a view of her Scottish dominions of "Caledonia, stern and wild" perhaps at first sight, but containing within her mountain fastnesses, and along the borders of her lakes, a moral, brave, and educated people, as devotedly attached to their Sovereign and their country as any on the face of the earth, and gratified beyond expression at the opportunity now afforded them of testifying their loyalty to her Majesty in person.

A light westerly breeze now enabled the yacht to set her headsails. We rapidly approached St. Abb's Head, and shortly after sunset got sight of the remarkable mountains of the Bass Rock and the North Berwick Law, and entered the Firth of Forth. Here the royal squadron was met by the Monarch and Trident, two of those splendid steamers of the General Steam Navigation Company, crowded with passengers, who immediately on recognising her Majesty, commenced singing the National Hymn, which, from the numerous voices softened by coming over the water, had a beautiful effect.

The breeze freshened from the north-west; but the flood-tide enabled the squadron to make good headway. When off Dunbar, besides the illumination of that town, and a royal salute from the castle, the magnificent sight burst upon us, of beacon-fires lighted on all the conspicuous Scottish hills, and was imposing in the extreme. The night was quite dark, but clear. Astern, were all the lights of the several steamers, bending like a crescent around the royal yacht in the centre; while, on the coasts around, in East-Lothian, in Mid-Lothian, in Linlithgow, in Fife, and Clackmannan, bonfires blazed on all the remarkable heights—all announcing the cordial welcome that awaited her Majesty for Scotland and her Scottish subjects; while, in Edinburgh, the summit of Arthur's Seat seemed a blaze of fire, shedding a flood of light over the surrounding heights and valley below, and giving an aspect of wild grandeur to all its romantic scenery.

It has fallen to my lot to witness beautiful illuminations in various parts of the world. I have seen the cities of Rio de Janeiro, of Lima, and of Santiago,

lighted up in all their splendour; the city and all the shores of the Bay of Naples, and even the dome of St Peter's at Rome, but I never remember anything that has made so deep an impression as our passage up the Firth of Forth on this occasion. The beautiful expanse of water, the brilliant lights around, the rapid speed of the vessel, throwing off the phosphoric waves on either bow as we passed along; the recollection of the precious freight entrusted to our charge, and the feeling that, through the merciful Providence of God, we had been enabled to bring our voyage to a happy end, all combined to render the scene one of thrilling interest far beyond my powers of expression.

Precisely at half-past one o'clock we dropped anchor close to the island of Inchkeith.

Landing of Her Majesty at Granton.

By the time the military arrangements were completed, and the preparations for her Majesty's reception on the pier, the royal yacht, commanded by Lord Adolphus Fitzclarence, came alongside the pier, it then being about half-past eight o'clock, when the Duke of Buccleuch and Sir Robert Peel instantly proceeded on board, to congratulate her Majesty and the Prince on their safe arrival.

The pier was far from crowded, for many who were in the possession of the Duke of Buccleuch's cards of admission—issued by Mr. Gibson, the noble duke's agent, and that gentleman's colleague, Mr. Horne, to whom our thanks are due for the facilities afforded by them to our reporter—were not present.

Lieut.-General Sir Niel Douglas, K.C.H., Commander of the Forces of North Britain, with Lord Robert Kerr, and a brilliant staff, in full uniform, arrived just before the royal debarkation.

Captain Bain, R.N., the pier master, and Mr. John Hawkins, the resident engineer, were present. To the latter gentleman devolved the sole management of suitably preparing the gangway.

It was announced shortly before nine o'clock that everything was in readiness for her Majesty to land; and at five minutes to nine her Majesty stepped ashore, accompanied by Prince Albert, the Duke of Buccleuch leading the way, and Sir R. Peel, followed by the Earl of Liverpool, Lord Steward; the Duchess of Norfolk, Lady in Waiting; the Earl of Morton, Lord in Waiting; Hon. Miss Matilda Paget, Maid of Honour in Waiting; Major-General Wemyss, Equerry in Waiting on the Queen; Mr. Geo. Edward Anson, Treasurer; and Colonel Bouverie, Equerry to his Royal Highness Prince Albert; and Sir James Clerk, Physician in Ordinary to her Majesty, then came ashore.

Instantly on the Queen stepping ashore a preconcerted signal was given, and the field battery fired a salute from the meadows in the neighbourhood, and the seamen on board the royal yacht, and several of the government steamers forming the royal squadron, manned the yards of their respective vessels, and greeted her Majesty's safe landing by three distinct and well-timed cheers, congratulatory of the happy arrival of her Majesty in this distant part of her imperial dominions. The hearty cheers of the brave tars were responded to by an enthusiastic burst of applause from those assembled on the pier, and the vast concourse congregated on every disposable place that could possibly command a view, reiterated the warm and fervent cheering.

The guard of honour of the 53d Regiment, before mentioned, as being stationed near the landing-place, saluted her Majesty with the customary honours, and the band of the Dragoon Guards received the Queen by playing the National Anthem.

The gangway and place of landing were covered with crimson cloth, and a tastefully-constructed covering was borne by six men over the heads of her Majesty and Prince Albert, from the verge of the pier to the royal carriage in waiting to convey her Majesty to Dalkeith Palace.

Her Majesty and his Royal Highness Prince Albert, directly on quitting the

royal yacht, entered their carriage, an open one, and immediately proceeded along the pier to the Edinburgh-road, amidst the loud cheers of the people.

It would be impossible to describe the fervent and devoted zeal manifested by the multitudes that crowded both sides of the carriage-road, one continuous round of applause saluting the royal ear, as the cortege progressed at a slow pace.

The Return Voyage.

Her Majesty had embarked at Woolwich, on the morning of Monday, the 29th of August, and punctual to her own appointed time, the Queen embarked at Granton on her return voyage, on Thursday, the 15th of September. The slow progress, however, necessarily made by towing, seems to have induced Her Majesty to make the voyage home in the Trident steam-boat, one of the noble vessels of the General Steam Navigation Company, and allowed to be the fastest vessel known. The voyage was performed with that celerity and dispatch which was anticipated, and the Queen was received at Woolwich dock-yard by her officers at a quarter before ten on the morning of Saturday, having evidently benefited by her visit.

The following are further particulars relating to this voyage. Her Majesty escorted by the dragoons, reached Granton pier, and rapidly drove down to the point of embarkation. She was received with deafening cheers, every scrap of bunting was run to the mast-head of every vessel in the harbour, the royal standard flying at the main-mast of the Trident; the yards were manned with seamen in their holiday attire, all combining a scene, which for animation and excitement has rarely been equalled. The royal procession was preceded a few yards by his Grace the Duke of Buccleugh, who, dashing down the pier, sprung from his horse; threw the reins to a servant, and, hat in hand, stood to receive her Majesty on her embarkation, as he had received her at her landing. Sir Neil Douglas was also on the platform. The archers and military saluted her with military honours, the band played "God save the Queen," and the yards of the steamer's foremast manned with the seamen. Her Majesty alighted from her carriage and walked down the platform, leaning on the Duke of Buccleuch; Prince Albert gave his arm to the Duchess, who accompanied them in the carriage, and then proceeded through the line of archers amidst the cheers and waving of handkerchiefs to the vessel.

At exactly half past-nine o'clock her Majesty ascended the poop, followed by Prince Albert, amidst renewed cheering, the band playing the national anthem. The Duke and Duchess of Buccleuch, the Earl of Morton, Viscount and Lady Emlyn, Lord Adolphus Fitzclarence, the Earl and Countess of Cawdor, Lord and Lady John Scott, Sir Philip Durham, and others then came on shore. As the vessel was getting underway her Majesty stood for some time on the quarter-deck, no one being immediately around her, and surveyed the scene with a most lively expression of countenance. Every one was delighted, and the whole spectacle was animating and imposing in the extreme. The Prince then joined her Majesty, calling her attention to the seaward prospect; and the admiral (Sir Edward Brace, who had joined the royal squadron a few days before,) and his officers having taken their respective stations, the vessel got underway, and the royal pair coming close to the starboard-quarter, with singular earnestness acknowledged the parting greetings of the thousands on the pier and in steamers and other vessels around, who lingered in their places watching the progress of the noble vessel as it advanced down the Firth.

The Trident in passing the sloops-of-war and the royal yacht, was received by them with a royal salute. The Trident, as she moved down the Firth, took the lead of all other vessels. Nothing could surpass the animating scene that was displayed. Crafts of every kind floating around, and flags and streamers waving in the breeze. The spectacle will long be remembered by the thousands who were present, and who united, as with one heart and voice, in wishing her Majesty a safe and happy voyage.

In a further page we have given some account of the Trident, and we congratulate the Directors of the General Steam Navigation Company, not only on the high honor which belongs to them, of Her Majesty having performed her return voyage in one of their vessels; but also that, the voyage under the skilful pilotage of Capt. Bullock, R.N., was terminated with safety and dispatch.

Chinese Intelligence.

Failure of Attack on Ningpo by the Chinese, and Destruction of Tse-kee by the English Forces.—*Extract of a letter from an officer in China.*

Ningpo was attacked in the night, in the beginning of this month, by a large body of Chinese, who silently scaled the walls, and even forced one of the gates and got well into the city. They were, however, repulsed at all points, and a most tremendous slaughter ensued, as many as 120 having been afterwards found dead at one of the gates. Fire rafts were also sent down the river on the ships, and a gun opened fire on the Modeste, all of which, of course, proved useless. At the same time Chinghae was attacked by land and sea in the same manner, of course, with the same result; and, we have every reason to believe that Chusan would have been attacked at the same time, had not the troops, who were collecting for the purpose at Taeshan, (a small island north of this,) been disturbed by a surveying party under Capt. Collinson. The general was with us at the time, and immediately went over to Ningpo, and on the 10th the admiral in the Phlegethon, with 200 marines, two barges and a gig of the Cornwallis, went to Taeshan; the admiral and marines having first marched in two divisions through Chusan to Singkong and Sae-Hong. He was accompanied by Capt. Richards, and —— had the good fortune to command our boats on the occasion.

Taeshan was scoured, but no troops found, and the Phlegethon and Nemesis returned with the party to Tinghae, where it was found that another attack was expected at Ningpo, so we started up instantly, and having gone some miles higher up the river, met the general returning from a reconnoitring trip, and all returned to Ningpo together. The shops were shut, the town deserted, and people all day employed moving their goods in boats across the river, and up the numberless canals by which the whole country is intersected.

On the 11th we started up the north-east branch of the river; the expedition consisting of the 18th, 26th, and 49th regiments; 200 marines, a party of artillery and Madras sappers, and about 140 seamen from the Blonde, Modeste, Columbine, and Sesostris, including the party of about 40 from the Cornwallis. We went up in the Phlegethon, Nemesis, and Queen steamers. The admiral and general being in the former vessel.

At about seven miles below the town of Tse-kee, we landed, (the artillery having come by land, were taken across the river,) and moved on Tse-kee with a camp in full view behind it, our force being about 1,300 strong. The advanced guard was received from the walls of the town by a discharge from a number of 18-pounder cannonades, which caused an immediate escalade of the town by one division, whilst another filed on beneath the walls. At about 4 P.M. we were immediately under the camp of the enemy, which was formed on the summit of two high and steep hills, with a road through a beautiful ravine between them. The general with the 18th and 26th regts. immediately ascended the hill on the enemy's left, and the marines and blue jackets who had emerged from the town, proceeded under the walls across some paddy-fields to board the right hand hill; but had to cross a tremendous fire of jingalls, matchlocks, and arrows, with rockets fast to them, accompanied by the most tremendous yells and cheers from the Chinese. Many fell, either killed or wounded, and when

they arrived at the end of the line the hill was boarded in very gallant style by the advanced company of marines under Lieut. Elliot of the Cornwallis, headed by the Admiral, with Captains Bourchier and Richards, and his staff. They were covered by a small party with 3-pounder Congreve rockets, under Lieut. Fitzjames; and Colonel Knowles who was covering the other party with 12-pounder rockets, expressed himself much pleased with the practice.

The heights were taken; several personal conflicts took place, in which some of the Chinese actually threw stones; they were all driven down the hill to the plain, where, to our astonishment, and I am sure theirs also, they were met by a fire of shells and rockets, and parties were landed who cut them off, as they were flying, so that many threw themselves into the river. It appears that the two steamers had gone some way up the river, and found a creek or canal, up which they went to near the town of Tse-kee.

We had our quarters for the night in the camp, and a few in the town; and the next day the camp was burnt, together with the chief mandarin's house in the town, and a joss-house full of rockets, guns, matchlocks, and other warlike implements. The granaries were thrown open to the populace and burnt. We then marched on a camp about five or seven miles off, on the summit of some very high and steep hills, or rather mountains. They presented a formidable appearance, having been fortified with a stockade, and trees cut down in the road leading up to the centre of the pass. We expected hot work, and certainly the climbing was hot work, but they had all fled, carrying the jingalls with them. We found on the turn of the hill, in a bamboo grove, an enormous magazine, in which were arms, paddles for fire rafts, flour, bread, &c., which we burnt; and then returned to Tse-kee. Next day the main body returned to Ningpo, and the Phlegethon with a small party under Capt. Richards went up to Yuyaa; but we found all quiet there. Whilst we were absent in the hills, the steamers had been attacked by gun-boats which they of course destroyed, together with a number of magazines and stores of arms, and also a vast preparation of fire rafts.

The admiral and the marines returned here yesterday, the 20th, and we found Tsinghae had been garrisoned in our absence by eighty men from Cornwallis.

All agree that our late little campaign has been the smartest piece of business done in China, with the exception of Sir F. Senhouse's affair at Canton. In a fortnight we commence operations, I believe, on Hang-chow-foo.

Lieut. Charles Starmer, of Blonde, commanded the seamen, and Lieut. James Fitzjames, of Cornwallis, commanded the rocket brigade.

Dispatches from Rear-Admiral Parker.

Modeste, at Ningpo, March 19, 1842.

Sir.—My letter of the 11th instant will apprise their lordships of the complete discomfiture of the Chinese, on shore and afloat, in their attacks on our positions at Chinghae and Ningpo, on the 10th instant.

Retrogade movements in various directions were the immediate result; and, feeling it of importance not to lose a moment in following up the advantage of these severe repulses, Sir Hugh Gough and myself determined to make a rapid movement on their encampment at Tse-kee, in the hope of bringing them to action before they retired on Pickwan, about forty miles higher up the river, at which point we had reason to believe they were concentrating their army.

In anticipation of this advance, Capt. Richards, with three boats, and the whole of the marines attached to the Cornwallis, accompanied me in the Nemesis and Phlegethon to Ningpo, where we arrived (after our examination of the island of Taisan,) on the afternoon of the 13th; and being joined by the small-arm men and marines of the squadron within the river, the whole, amounting to 410 men, were placed under the command of Capt. Bourchier, of

the Blonde, assisted by Capt. Richards, of my flag-ship, and the several officers specified in the subjoined list.

At eight A.M. on the 15th, his Excellency, Sir H. Gough, and about 850 troops, in addition to the naval brigade, were embarked from Ningpo in the Nemesis, Phlegethon, and Queen steam-vessels, making altogether a force of about 1,360 men, with which we proceeded up the river, and before we reached the point of debarkation at a village four miles from Tse-kee, we had the satisfaction of seeing a large force of the Chinese still in their encampments on the hill north of the city.

The combined forces were all landed, and in full march for Tse-kee by two o'clock, the Phlegethon having been previously dispatched up the river, with the armed barges of the Cornwallis and Blonde, to intercept and harass the retreat of the Chinese by water as much as possible.

As our reconnoissance of Tse-kee in December had made us familiar with the route, and no obstacles were offered to our advance, we reached the suburbs on the south side of it at half-past three, and, on the troops ascending a small hill, two guns and a few straggling shots from jingalls and matchlocks were opened on us from the ramparts, and also from a body of matchlock-men on the height opposite us; but on the advance of a detachment of the 18th regt., and the discharge of a few rounds from two small small field-pieces, by the Madras Artillery, they disappeared, and about four o'clock the city walls were escaladed by the seamen and marines, and a party of sappers, without resistance.

Advancing along the ramparts, this division rejoined the main body with the General, through the east gate, and proceeded outside the walls to the north-east angle of the city, from which point we had an excellent view of the Chinese forces opposed to us, consisting of five or six thousand men, strongly posted, in fortified encampments, on the two high hills of "Segaon," in front and on our left. The assault of the latter was assigned to the naval brigade, and that more immediately in front to the 49th regiment.

As it was the general's wish that they should be attacked as nearly as possible at the same time, and the naval brigade being the most advanced in the line, it was necessary, while the 49th moved forward, to make a lodgment under some houses on our left, situated at a short distance from the foot of the hill which our men were to assail; and in passing to this point, across paddy-fields, they were unavoidably exposed to a galling fire from both the positions of the Chinese. On reaching it some musketry was opened on them by part of the royal marines, and several three-pounder rockets were discharged with excellent precision by Lieut. Fitzjames and Mr. Charles K. Jackson, mate of the Cornwallis, while the men were re-forming.

The 49th regiment were soon observed approaching the hill on our right, when orders for the assault were immediately given, and the leading company of marines, under Lieutenants Elliot and Hambly, of that corps, promptly and gallantly pushed forward, with a small band of seamen, about five o'clock.

As they emerged from the buildings the fire of the Chinese was very severe. Captains Bourchier and Richards, with admirable spirit, sprung to the head of their men, and, having rapidly crossed a small intervening paddy-field, led them up the hill, which was disputed from its base to the crest, and several instances of personal conflict occurred. The ascent was steep and difficult, but steadily and gallantly preserved in under an unceasing fire, until the summit was attained, and our opponents flying in every direction.

Commander Watson of the Modeste, who had been stationed in the rear of the storming party, succeeded by great efforts in reaching a forward position with some of his men, before the hill was carried; and the main body of seamen and marines, as they advanced in support, perceiving its fate, pressed round the sides, and inflicted a severe loss on the fugitive soldiers; the pursuit being continued until sunset, when our advanced party was halted on a bridge, about two miles beyond the city.

During these operations the hills on our right were simultaneously carried in

admirable style by our gallant general and his brave troops. The route of the Chinese at every point was thus complete; and I must not omit to notice the good service of the Phlegethon, and the little party landed from her in a branch of the river on the flank of the fugitives, as reported in Lieut. M'Cleverty's enclosed private letter; and she was closely followed to this judicious position by the Nemesis, after the troops were disembarked.

From the best accounts we have been able to collect, the Chinese cannot have lost less than from eight hundred to one thousand men slain, independently of great numbers carried off wounded; among the former were several mandarins, supposed to have held important positions in the army. Many prisoners also fell into our hands, and some interesting papers relative to the present position of their affairs, and from accounts previously received, and the amount of Sycee silver afterwards found on the bodies of the dead, there is no doubt that a considerable sum had been paid to them as an encouragement to resist her Majesty's forces; and that the troops we encountered were composed of the elite of their army.

It is with pain I have to transmit a list of three killed and fifteen wounded in the naval brigade, and amongst the latter many are severely hurt. I am not in possession of the casualties which have been sustained by the troops, but I hope none were killed, though several, I fear, were severely wounded.

It is impossible for me to extol too highly the animating example set by Captains Bourchier and Richards, Commander Watson, and every officer and man who was fortunate enough to be in advance in the assault of the encamped hill; their names are especially transmitted for their lordship's information; and my best and cordial thanks are also justly due to the gallantry and exertions displayed by Capt. Uniacke, and all the officers and men of the royal marines, and to every individual of her Majesty's squadron, and the Indian navy attached to the naval brigades, whose conduct was as exemplary for steadiness in their quarters as in the field. I have no less pleasure in noticing the gallantry of Capt. Whittingham, aide-de-camp to Sir Hugh Gough, who having brought a message from his excellency at the moment of the assault, very handsomely ascended the hill and remained with our people until it was carried; as did Lieut. Barrow, of the Madras Artillery, Commissary of Ordnance, who, having mingled with them as a volunteer, was conspicuous for his intrepidity, and broke his sword in cutting down a Chinese soldier who opposed him. Mr. Hodgson, mate of the Cornwall, was also wounded in parrying the thrust of a spear when bravely advancing amongst the foremost on the hill.

Our people were quartered during the night in the captured camps, and north part of the city, where a considerable quantity of arms, and a large store of rice was on the following morning discovered and destroyed; and as a very strong fortified encampment was known to be formed on some mountains about six or seven miles to the north-west of Tse-kee, comprising the pass of the main road to Yuyaa, and Pickwan, every exertion was made by Sir H. Gough and myself to get our wounded embarked, and attack it as expeditiously as possible.

At 1 P.M., on the 16th, the whole of the combined forces marched on it for that purpose, but on ascending the lofty heights it was found entirely evacuated; nothing, therefore, remained but to destroy the works, arms, and large quantities of provisions, which the Chinese had not time to remove; and when this was effectually accomplished we returned to Tse-kee, and on the morning of the 17th re-embarked the whole of our forces, and arrived at Ningpo at 4 P.M.

We flatter ourselves that the success which has attended this movement will have a very beneficial effect in our future operations; and their lordships may be assured that no opportunity will be lost by the general and myself in prosecuting with our best energies any measure which is likely to advance the object of her Majesty's government, and bring our contest with the Chinese to a speedy and satisfactory termination.

I have the honor, &c.

(Signed) W. PARKER, *Rear-Admiral.*

A RETURN of killed and wounded belonging to her Majesty's ships and vessels in action with the enemy on shore, at Tse-kee, on the 15th of March, 1842.

Cornwallis.—Killed, 1 sergeant, royal marines. Wounded, First-lieutenant G. Elliot, royal marines, slightly; First-lieutenant A. J. B. Hambly, royal marines, severely; Mr. G. H. Hodgson, mate, slightly; Mr. C. K. Jackson, mate, slightly; 1 seaman dangerously, and 6 privates, royal marines, severely.

Blonde.—Killed, 1 seaman, 1 private, royal marines. Wounded, 1 private, royal marines, severely.

Hyacinth.—Killed, none. Wounded, 1 private, royal marines, severely.

Modeste.—Killed, none. Wounded, 1 private, royal marines, severely.

Columbine.—Killed, none. Wounded, 1 private, royal marines, severely.

Total—Killed, 3. Wounded, 15.

NAMES of the Officers who were with the advanced party in the assault of the encamped hill of Segoan, near Tse-kee, on the 15th of March, 1842.

Captain T. Bourchier, Blonde; Captain P. Richards, Cornwallis; Commander R. B. Watson, Modeste; Lieutenant C. E. Tennant, (flag-lieutenant,) First-lieutenant G. Elliot, R.M., First-lieutenant A. J. B. Hambly, R.M., Mr. G. H. Hodgson, mate, Mr. H. D. P. Cunningham, secretary's clerk, and Mr. William Bowden, volunteer 1st class, all of Cornwallis.

Lieutenant J. Fitzjames and Mr. C. K. Jackson, mate of the Cornwallis, were ordered to cover the advance with rockets, and afterwards mounted the hill on the right, before the enemy had quitted that part of it.

(Signed) W. PARKER, *Rear-Admiral.*

Cornwallis, at Chusan, April 25, 1842.

SIR.—I request you will inform the Lords Commisioners of the Admiralty that an abortive attempt was made by the Chinese to set fire to her Majesty's ships and transports in the harbour of Tinghae, and the adjoining anchorage, at Chusan, on the night of the 14th inst.

About 10 P.M. I received information from Captain Dennis, the military magistrate of Tinghae, which he had just obtained from his scouts, that fire-rafts, formed of large boats, prepared with powder and other combustible materials, well assorted for the purpose, were supposed to be on their way from Singkong, a small harbour about three leagues to the north-west of this position.

An hour had scarcely elapsed, when several fire-rafts were discovered in flames, on the opposite or eastern side of the harbour, and dritting towards the shipping, while others approached between the islands of Macclesfield and Trumball, on the south side, where the Nemesis steam-vessel had been for some days undergoing repair; others attempted to enter the anchorage occupied by the ships of war to the northward of Sea Island, and some even to the southward of that island, in which latter direction the Jupiter was moored.

The boats of the ships of war named in the margin, and of the transports in the harbour, were all on the alert, and by the active exertions of the officers and men of all ranks, the whole of the fire-boats, amounting to between fifty and sixty, which were for the most part chained together in small numbers of from three to five, were grappled with and towed clear of the ships without difficulty or doing the slightest injury.

While this was passing, Lieutenant Wise, of the Cornwallis, proceeded with a small division of boats in search of the fire-boats expected on the west side from Singkong, and succeeded in discovering them to the number of thirty, anchored off a beach outside Bell Island, waiting for the turn of tide to advance on the ships of war; these were also completely destroyed, and on the following morning the Nemesis and Phlegethon were dispatched to scour the adjacent

islands, and by the activity of Lieut. Hall thirteen more boats, with combustible materials, were destroyed, making a total of not less than a hundred.

Lieutenant M'Cleverty's exertions were equally praiseworthy, but nothing suspicious was met with in the direction he was sent.

I have had great reason to be pleased with the vigilance and zeal of the officers and men of all ranks in her Majesty's ships and Company's steamers, as well as the agents, masters, and crews of the transports on this occasion, and I have much pleasure in bringing their meritorious conduct under the notice of the Lords Commisioners of the Admiralty and Indian Government.

I have the honour, &c.

W. PARKER, *Rear-Admiral.*

To the Secretary of the Admiralty.

THE ISABELLA.—The Convict Ship Isabella, arrived at Hobart Town on the 19th May, having happily escaped being carried by the convicts during her passage. It appears that a party of about forty, of whom about three fourths had once been Soldiers, had formed a conspiracy to get possession of the ship. Their plan was to secure the Sergeant of the guard, and Sentinel of the main hatchway, as soon as the cooks were allowed to go on deck in the morning, and having gained the deck it was their intention to arm themselves with the belaying pins, which were in considerable numbers, very massive, and easy to be displaced, and in such hands would have proved formidable weapons. They were then to have got possession of the Cabin and carried the poop deck. Providentially some well disposed among the convicts reported the conspiracy in time to arrest its progress. The ringleaders were secured for the remainder of the voyage, and on their arrival at Hobart Town were treated accordingly.

RULES AND REGULATIONS RESPECTING THE EXAMINATION, APPOINTMENTS, RANK, PAY, AND ALLOWANCES, ALLOTMENT, UNIFORM, AND SUPERANNUATION of ENGINEERS IN HER MAJESTY'S SERVICE.

EXAMINATION.—No person will be deemed eligible for an appointment as Engineer, or for promotion to the Second or First Class, until he shall have passed an examination on the points stated below, or on such other points as the Lords Commissioners of the Admiralty may from time to time think proper to require, before the Captain Superintendent of Her Majesty's Dock Yard at Woolwich, and the Chief Engineer and Inspector of Machinery, or before such other Officers as their Lordships may appoint for that purpose.

Before presenting himself for examination, the candidate must prepare specimens of working sketches, and of his proficiency in accounts.

First Class Engineers.—No person will be considered qualified to hold the warrant of a First Class Engineer who is not able to keep accounts, and to make notes in the log of every particular of the working of Engines and Boilers.

He must be thoroughly acquainted with the principles on which the machine works in all its parts, capable of working the Engines and Boilers, and of setting right any defects which may arise in them, and of adjusting the length of the various rods and motions, slide valves, eccentrics, &c.

He must also be able to make rough sketches, with the requisite dimensions fit to work from, of every part of an engine, and be willing to take charge of, and teach, the Engineers' Boys.

Second Class Engineers.—Must not be inferior in education to those of the First Class, and but little inferior to them in mechanical acquirements, and must also be willing to take charge of, and teach the Engineers' Boys.

Third Class Engineers.—Must be equal in education to the Second and First Class Engineers, and acquainted with the principles of Marine Engines and Boilers, and with the names and uses of all their parts. They must also be able to make rough sketches as before described.

Those who have not served in Her Majesty's Navy as Engineers' Boys, must be examined by the Surgeon of the establishment, as to their being of sound bodily constitution, and they must produce well authenticated certificates from the Engineers in whose factories they have worked, of their being skilful workmen, of good disposition, and of good conduct in every particular, especially as regards sobriety.

Appointment.—Engineers are appointed by Warrant from the Lords Commissioners of the Admiralty, or by Commanders-in-Chief on Foreign Stations, in vacancies occasioned by death, in the same manner as other Warrant Officers of the Navy are appointed.

No person will be considered eligible for a Second Class Engineer without having served at sea as an Engineer, nor for the First Class Engineer without having served as Chief engineer of a sea-going Steam Vessel; in either case, the candidate must produce satisfactory testimonials of his efficiency and good conduct while thus serving at sea.

An Engineer after having served three years in the Third Class will be permitted, if he can produce good certificates from the Commanders under whom he may have served, to present himself for examination for the Second Class, when a suitable opportunity shall offer; and, in like manner after having served three years in the the Second Class, he will be permitted to present himself for examination for the First Class. If, however, on examination it shall appear to the examining officers that the qualifications of a candidate are such that a shorter period than three years may be sufficient to enable him to acquire the experience necessary for performing the duties of a higher class, a note thereof, with the reasons, will be made upon the passing certificate, which will render him eligible for examination and promotion in less than three years, if his subsequent conduct should appear to merit it.

Rank.—Engineers are distributed into three classes;—they rank next below Carpenters, and with each other according their standing on the official list.

Pay and Allowances.—To Engineers when serving on board one of Her Majesty's Steam Vessels in commission; or in any of Her Majesty's Dock Yards, whenever their services may be required there; or in repairing their own or any other vessel in the Home Dock Yards, Holyhead, the River Thames, Portsmouth or Plymouth Harbour; or when the vessel to which they belong is paid off, and they are still retained on board:—

1st Class, £12. per lunar month. *2nd Class*, £8. per lunar month. *3rd Class*, £5. 6s. per lunar month.

When borne on the Books of the Guard Ships of the Ordinary, and not actually employed in the charge or repair of Steam Machinery—*1st Class* £7. 17s. per month, *2nd Class*, £4. 18s. per month; *3rd Class*, £3. 8s. per month.

The First Class Engineer of ships in commission is to have the instruction of two Engineers' Boys, and to receive the allowance of 6*d.* per day for each.

When there are three Engineers' Boys the Second Class Engineer is to instruct the junior boy of the three, and to receive the allowance of 6*d.* per day.

When there are four Engineers' Boys, the *senior* Second Class Engineer is to instruct the third boy. The *junior* Second Class Engineer the fourth boy, and each is respectively to receive the allowance of 6*d.* per day for the instruction of the boy placed under him.

This allowance is to be granted only on the production of a Certificate from the Commanding Officers under whose orders the Engineers may be actually serving, that the boys have been duly instructed in conformity with the established regulations, and such Certificate is never to be granted, unless the Superintendent of the Dock Yard, or the Officer in command of the Vessel be thoroughly satisfied from personal observation, that the intentions of these Regulations have been strictly carried into effect.

Engineers when serving on board one of Her Majesty's Steam Vessels within the tropics, while the steam is up, are to receive one half the amount of the pay of the respective classes in addition: for which they may draw every six months whether they allot or not.

When Engineers do not draw for their tropical pay, a certificate is to be granted to them, similar to that on the back of the bill, for the adjustment of their claims to the said pay on their arrival in England.

Engineers of vessels in commission when employed in repairing defects of other vessels than those in which they are serving, except in the Home Dock Yards, Holyhead, the River Thames, Portsmouth or Plymouth Harbour, to be allowed extra pay as Warrant Officers in addition, according to the scale established by Her Majesty's Regulations, namely, two shillings a day.

Allotments and Monthly Allowance.—The following are the Scales of Allotments and Monthly Allowance for Engineers while actively employed, and while employed in Guard Ships.

ALLOTMENT.

While actively employed.	£	s.	d.	While in Guard Ships.	£	s.	d.
1st Engineer, pr calendar month	6	10	0	1st Engineer, pr calendar month	4	5	0
2nd Do. "	4	6	0	2nd Do. "	2	13	0
3rd Do. "	2	17	0	3rd Do. "	1	16	0

MONTHLY ALLOWANCE.

1st Engineer, pr calendar month	3	10	0	1st Engineer, pr calendar month	2	10	0
2nd Do. "	2	5	0	2nd Do. "	1	10	0
3rd Do. "	1	11	0	3rd Do. "	1	0	0

UNIFORM OF FIRST ENGINEERS.

Coat.—Blue cloth, double-breasted; buttons having a steam engine with a crown above embossed on them, to be placed four and four, and a larger button of the same kind upon the collar.

Waistcoat.—With buttons similar to those on the coat.

Trousers.—Plain blue cloth.

Cap.—With a narrow gold lace band.

SUPERANNUATIONS AND PENSIONS.

The following rules shall be observed in regard to the Superannuations and Pensions of the Engineers of Her Majesty's fleet.

1st. That when Engineers shall be found, upon survey unfit for further service, they shall be allowed three pounds a year for each year they shall have served as Warrant Officers in ships in commission; and £1 a year for each year they shall have served as Warrant Officers in ships in ordinary, or as Supernumeraries in the Guard ships.

2nd. That in cases in which the services of Engineers shall appear to the Lords Commissioners of the Admiralty to be more than ordinarily meritorious, a further sum may be allowed to the said Warrant Officers in addition to the Pension allowed by Art. 1, varying from £1. to £15. a year, reference being had to the character of the officer, and the cause which may have rendered him unfit for service.

3rd. (First) That Engineers who may lose two limbs in action; (Second) or who may receive wounds or injuries in action equal to the loss of two limbs; (Third) or who may receive injuries or hurts in the service, though not in action, equal to the loss of two limbs, shall be allowed pensions (as the Lords Commissioners of the Admiralty may deem proper,) not exceeding in the first case, £50. a year, nor in the second case, exceeding £45. a year, nor in the third case, exceeding £35. a year.

4th. (First) That Engineers who may lose one limb in action; (Second) or who may receive wounds or injuries in action equal to the loss of a limb; (Third) or who may receive injuries or hurts in the service, though not in action, equal to the loss of a limb, shall be allowed pensions, (as the Lords Commissioners of the Admiralty may deem proper,) not exceeding in the first case, £25 a year, nor in the second case, exceeding £20 a year, nor in the third case, exceeding £15 a year.

The pensions for wounds and hurts to be granted after a careful survey held on the officer at this office, when practicable, and to be in addition to any other pension the officer may be entitled to.

5th. No Engineer to be allowed to reckon as service towards superannuation any period of time during which he shall not have maintained a good character in the ship in which he has served.

REGULATIONS AS TO THE INSTRUCTION AND QUALIFICATION OF ENGINEERS' BOYS.

Fourth Class.—Boys on entering the service as Fourth Class Apprentices must

not be less than 14, nor more than 17, years of age; they must be of moral character, and sound bodily constitution, and able to write and work a question in the Rule of Three.

Third Class.—At the expiration of their third year of service, provided their conduct has been good during that period, boys will be considered eligible for removal to the Third Class, if, on examination, they appear to have made themselves acquainted with the names and uses of every part of the engine, guages, barometers, &c.

Second Class.—If boys on the fourth year from their entrance into the service, be acquainted, through the instruction of the engineer under whom they may be placed, with the whole principle of the engine and boilers, with the use of all the various tools, and with the mode of effecting repairs, as far as they are performed on board; if they be able to take off and replace any of the working parts; pack the slide valves, piston, piston rods, and stuffing boxes; if they understand the action and the condensation of steam, the return of the water into the boilers, the construction of all the pumps, and of the feeding and blowing-off apparatus, safety valves, &c., and can chalk out roughly the outlines of the engines and wheels, and have become generally useful, they will be considered fit for removal to the Second Class, provided their conduct has been good.

Boys of the Second Class having attained the fifth and last year of their service, will be transferred to Her Majesty's Dock Yard at Woolwich, where they will receive instructions on various subjects connected with the construction and management of engines and boilers.

First Class.—At the expiration of the fifth year, if, on a strict examination, the boys be found qualified for the appointment of Third Class Engineers, and their conduct has been in all respects satisfactory, they will be removed to the list of the First Class, and be considered candidate for promotion, and will take precedence according to conduct and abilities.

Pay of Engineers' Boys, per lunar month.—First Class, £1 14*s.*, Second Class, £1 6*s.*, Third Class, £1 3*s.*, Fourth Class, 14*s.* 6*d.*

Monthly Allowance.—During the first twelve monts servitude from the time of their first entry on board the ship, 2*s.*; after twelve months servitude, at home, 3*s.*, abroad, 4*s.*

By command of their Lordships,
SIDNEY HERBERT.

NAUTICAL NOTICES.

GANDARIA ROCKS, *Atlantic.*—In our July number, p. 494, we gave the position of a reef reported by Capt. Gandaria of the Spanish brig Dolores Ugarte, but which was considered by the Spanish Hydrographer, Senor Navarete, to be uncertain. We have received the following further accounts of it from the same source, which appear to place it as no longer doubtful.

From the Gaceta de Madrid, of 1st of August, 1842.

In the Gazette of the 28th of May last, notice was given from this office of a new vigia, named the Gandaria Rocks, being placed on the chart, and to which was assigned an uncertain position for want of more certain information. Having since received more exact accounts, this office in compliance with its promise proceeds to inform seamen that, the said may be considered as existing in the position assigned to it, the observations for latitude being excellent, and also those for longitude with the chronometer. Consequently it has been inserted in our charts without the notice "doubtful" which had previously accompanied it.

With reference to this danger, it may be also added that, in the archives of this office is a statement of Capt. Don J. P. Garcia, dated Coruna, in the year 1790, in which among the notices he had obtained he gives the position of certain dangers, and among them one which he places in lat. 25° 20′ N., and long. 31° 22′ 27″ W. of Cadiz, which may be the same rock as that discovered

by Gandaria as the small difference of situation might very well arise from the instruments used in that day. As the above document contains no authority, nor states whether the position of it is obtained from estimation or observation, nor any reference by which its existence might be removed from doubt, it was not inserted in the charts with the view of not increasing the vigias on them. Now it becomes the duty of this office to publish everything which may tend to shew its undoubted position.

The same circumspection as to suppressing or increasing the dangers in the charts, at the same time determines this office not to suppress the Islet of Martin Vas, (the largest of the three being here supposed,) as notwithstanding the assurances of Captain Gandaria, there do not appear sufficient reasons for doing so.—*Madrid, July 27th*, 1842.

Buoys in Cardigan Bay.—This Corporation having deemed it advisable that the positions of the undermentioned dangers in Cardigan Bay should be marked, notice is hereby given, that buoys, as hereinafter described, have been placed therein accordingly, viz. :—

On the West End of Sarn Badrig, or the Causeway.

A beacon buoy coloured black, and marked "Causeway." This buoy lies in five fathoms at low water spring tides, with the following marks and compass bearings, viz. :—

The highest part of Mynydd Rhyw Mountain, open to the westward of Pencilan Head, N.b.W. ½ W.

Harlech Castle, on with the saddle of two distant hills, E.b.N. ½ N.

Bardsey lighthouse, N.W. ½ W.

Sarn y Buch buoy, S.b.E. ¾ E.

On the West End of Sarn y Buch.

A buoy, coloured red, and marked "Buch," lying in 4½ fathoms at low water spring tides, with

Aberdovey Point, S.E.b.S.

Pen Buch low Point, E. ½ S.

The centre of the town of Barmouth, N.E.b.E. ¾ E.

On the West Extremity of the Shoals, called the Patches.

A buoy chequered black and white, and marked "Patches," in 4½ fathoms, low water spring tides, with

The bluff point south of Barmouth, between the second and third joints of high land at the back of Barmouth, N.E. ½ E.

Aberystwith church just open to the northward of a high house in front of it, S.E. ¾ E.

The centre of the town of Aberdovey, E.b.N. ¾ N.

Sarn y Buch buoy, N.E. ¾ N.

Trinity-House, London, Aug. 18. By Order, J. Herbert, *Secretary.*

Ridge Sand *off Aldbro'*.—The Ridge Sand off Aldbro,' having grown out to the south-eastward, on which part there are now only 13 feet at low water; notice is hereby given, that an additional buoy has been laid on the south-east edge, abreast of that shoal, with the following marks and compass bearings, viz: Orford Church and Castle in a line, bearing W.b.N.; The Easternmost Mill at Aldbro,' on with a mill in the country, north; The lower buoy on the Ridge E.N.E. Distant about ¾ of a mile.—By order, J. Herbert, *Sec.*—Sept. 12.

Hydrographic-Office, Admiralty, Sept. 5, 1842.

Russian Lights in the White Sea.—Gishginsk Light.—A lighthouse has been established on the northern extreme of Gishginsk Island, in the entrance of the Bay of Onega, in lat. 65° 12′ 17″ N., and long. 36° 51′ 30″ E. It will shew a fixed light 148 feet above the sea, and visible from all parts of the horizon, distant seventeen miles.

MORSHOVSK LIGHT.—A lighthouse has been established on the north-west extreme of Morshovsk Island, in the entrance of the bay of Mezen, in lat. 66° 45′ 40″ N., and long. 42° 29′ E. It will shew a fixed light 162 feet above the sea, visible at the distance of eighteen miles from N.N.W. ¼ W. (westward) to south-west.

ORLOVSK LIGHT.—A lighthouse has been established at Cape Orlov, on the coast of Lapland, in lat. 67° 11′ 30″ N., and long. 41° 22′ 15″ E. It will shew a fixed light 232 feet above the sea, and visible from N.b.W. ¼ W. (round by east,) to south, at the distance of twenty miles.

The above lighthouses will be lighted on the 13th of this month.

Hydrographic-Office, Admiralty, Sept. 7, 1842.

IMPROVEMENT OF CRONBURGH LIGHT.—During the necessary arrangement of the light of Cronburgh Castle in the course of this month, the old light in the tower will be removed, and a temporary fixed light in the outer gallery will appear at the same elevation.

Hydrographic-Office, Admiralty, Sept. 17, 1842.

LIGHT OF SANTIAGO DE CUBA.—A revolving light has been established about a quarter of a mile to the eastward of the entrance of the harbour of Santiago de Cuba. The light is elevated 244 feet above the sea, and may be seen at the distance of about twenty miles.

JAMAICA, PORT ROYAL ENTRANCE.—*Beacon Buoy.*—A white buoy with a black vane and staff, has this day been placed on the 17-feet shoal in the entrance of the South Channel, approaching Port Royal from the southward with these marks and bearings. South Key on with S.E. Key bearing E.b.N., Southern part of St. George's Cliffs, W.N.W., Wreck Point W.b.S. ½ S., and the Portuguese Buoy, N.E.b.N., about a mile distant.—H. D. BYNG, Commodore.—*Jamaica, June* 17, 1842.

SUNKEN ROCK OR WRECK.—*Off Hedic Island Coast of France.*—The Pearl, Lovering, from Nantes for Falmouth, was assisted into Scilly, and run on the beach at St. Marys, being very leaky, having struck on a sunken rock or wreck, about fifty miles from Paimbœuf, Hedic Island bearing N.E. ½ E., distant three miles.

The foregoing notice appeared in the *Shipping Gazette* of the 1st August, and we transfer it to our pages with the view of preserving it. We have referred to the charts of M. Beaupre but do not find any thing like it. We may observe first that Island Hedic is about forty not fifty miles from Paimbœuf; next, that there are dangers to the southward of Hedic about one third the distance stated, and next that the probability is that from the extreme care and attention to minutiæ with which M. Beaupre's charts have been published, as well as surveyed, such a danger would have been known; still, however the existence of it is possible.

PEARL BANK, *China Sea.*—The following is a further extract from the report of the Pearl. The bank appears to be a continuation of that on which the West London reefs, the Bombay Castle, and others are situated.

On April 4th, in sailing down the China Sea, I was looking over the ship's side, and saw the bottom quite plain; hove the main-yard to the mast, and sounded in nine fathoms, coral bottom; filled again, stood to the S.E. with a look-out at the mast-head; kept the lead going in 9½ and 10 fathoms for 3½ to 4 miles, when we lost soundings. This bank is not mentioned by Horsburgh, nor laid down in my chart, which is as late as 1840. I make the bank to be in lat. 7° 36′ N., long. 111° 28′ E. by two good chronometers, and lunar taking the day before. Although we had no less water than nine fathoms, there may be less in some parts, and it requires a good look-out in this part of the China Sea.—W. BURROWS.

Burrows Island, *New Caledonia*.—Extract from the Report of the Pearl, Burrows, from Macao 22nd March last. On my passage up from Sydney, towards Manila, in the ship Pearl, at 8 A.M. on the 24th of Sept. I discovered an island not laid down in the charts, nor mentioned in the Book of Directions (Horsburgh's). It lies in lat. 21° 59′ S., long. by good chronometers, 168° 30′ E. It is a fine-looking island, well wooded, with cocoa-nut trees close to the beach. At noon we were within three miles of the east point, which is in the middle of the island; off the point a reef projects about a mile to seaward; it stretches in a N.b.E. direction 20 to 25 miles. Conceiving this island to be a new discovery, I named it Burrows Island.

Two days after, we made the island Erromanga, which proved the chronometers to be correct. After we got to the northward of the N.E. point, we saw land stretching a great distance to the N.W., and the extreme part to the N.W. appeared to be detached from the first island, but night coming on we could not ascertain.

[Captain Burrows appears to have fallen in with the S.E. tail of the Loyalty Islands, off New Caledonia, and of which very little appears to be known. Britannia, the eastern part of which is in 168° E. is entirely unknown about its southern shore, with which island, Burrows Island may possibly be connected; but it may also be a new discovery.]

Beacon on the Wolf Rock at Ancona. The following is an extract of a letter from H. M. Consul, dated Ancona, August 19, 1842.

I beg leave to state that a beacon has been erected on a rock near the entrance of this harbour, called the Volpe, and generally known to seamen as the Wolf Rock. The beacon consists of a cannon let into the rock, with its mouth upwards, in which an iron staff is inserted, and surmounted by a flat square piece of iron, altogether 20 feet high. As English vessels have frequently run against this rock, I beg to add the following particulars:—The Volpe is situated within the vicinity of the St. Clemente rock, which lies between the northern part of Point Ancona and the Lighthouse. Within less than a cable's length of the above rock (Volpe) there are nine fathoms water, but a rapid and strong current is continually running on this coast, from north to south.

Amsterdam.—Aug. 28: The Director General of Marine has given notice that both the buoys which were placed at the entrance of the Greveling Channel, the one painted white, and marked No. 16, and the other black, No. 18, as also the buoy No. 17, which used to be placed on the bank of Bommenede, at the entrance of Brouwershaven, on account of low water, have been removed; the two first mentioned to the new channel and the following bearings: the white buoy, No. 16, at the depth of water of 32 palms (10½ feet) at low water, the mill on the east point of the harbour dike bearing by compass W.S.W., the steeple of Goedereede N.N.E., and the steeple of Dreischer S. The black buoy, No. 18, at the depth of 44 palms (14½ feet) at low water, and the mark Renesse free of the Ossenhoek; Renesse bearing W.b.N., Sonnenmeire S.S.W., and Stellendam E.N.E. The white buoy, No. 17, at 25 palms (8 feet) at low water, the Mill of Brouwershaven on the point of Long Noe, the Church of Brouwershaven bearing by compass South, the steeple of Dreischer South, and the steeple of Goerdereede N.N.E.

Amsterdam.—Sept. 5th. The Director-General of the Marine has given notice, under date Aug. 29, that the Born Reef, having from time to time extended farther and farther to the N.E. entrance (Zeegat) of Ameland, has become so narrow that its navigation is considered dangerous; the red buoy marking the entrance has in consequence been removed.

Table LXIV.

For reducing Hanoverian feet to English feet, and English feet to Hanoverian feet.

1 Calenberg foot = 0·961408689 English foot.
1 English foot = 1·040140381 Calenberg foot

Calenberg or English feet.	English feet, and Dec. parts.	Calenberg feet, and Dec. parts.	Calenberg or English feet.	English feet, and Dec. parts.	Calenberg feet, and Dec. parts.	Calenberg or English feet.	English feet, and Dec. parts.	Calenberg feet, and Dec. parts.
1	0·961	1·040	40	38·456	41·606	79	75·951	82·171
2	1·923	2·080	41	39·418	42·646	80	76·913	83·211
3	2·884	3·120	42	40·379	43·686	81	77·874	84·251
4	3·846	4·161	43	41·340	44·726	82	78·835	85·291
5	4·807	5·201	44	42·302	45·766	83	79·797	86·332
6	5·768	6·241	45	43·263	46·806	84	80·758	87·372
7	6·730	7·281	46	44·225	47·846	85	81·720	88·412
8	7·691	8·321	47	45·186	48·887	86	82·681	89·452
9	8·653	9·361	48	46·148	49·927	87	83·643	90·492
10	9·614	10·401	49	47·109	50·967	88	84·604	91·532
11	10·575	11·441	50	48·070	52·007	89	85·565	92·572
12	11·537	12·481	51	49·032	53·067	90	86·527	93·613
13	12·498	13·521	52	49·993	54·087	91	87·488	94·653
14	13·460	14 562	53	50·955	55·127	92	88·449	95·693
15	14·421	15·602	54	51·916	56·168	93	89·411	96·733
16	15·383	16·642	55	52·878	57·208	94	90·372	97·773
17	16·344	17·682	56	53·839	58·248	95	91·334	98·813
18	17·305	18·722	57	54·800	59·288	96	92·295	99·853
19	18·267	19·763	58	55·762	60·328	97	93·257	100·894
20	19·228	20·803	59	56·723	61·368	98	94·218	101·934
21	20 190	21·843	60	57·684	62·408	99	95·179	102·974
22	21·151	22·883	61	58·646	63·449	100	96·141	104·014
23	22·112	23·923	62	59·607	64·489	150	144·211	156·021
24	23·074	24·963	63	60·569	65·529	200	192·282	208·028
25	24·035	26·003	64	61·530	66·569	250	240·352	260·035
26	24·997	27·043	65	62·492	67·609	300	288·423	312·042
27	25·958	28·084	66	63·453	68·649	350	336·493	364·049
28	26·919	29·124	67	64·414	69·689	400	384·563	416·056
29	27·881	30·164	68	65·376	70·730	450	432·634	468·063
30	28·842	31·204	69	66·337	71·770	500	480·704	520·070
31	29·804	32·244	70	67·299	72·810	550	528·775	572·077
32	30·765	33·284	71	68·260	73·850	600	576·845	624·084
33	31·726	34·325	72	69·221	74·890	650	624·916	676·091
34	32·688	35·365	73	70·183	75·930	700	672·986	728·098
35	33·649	36·405	74	71·144	76·970	750	721·057	780·105
36	34·611	37·445	75	72·106	78·010	800	769·127	832·112
37	35·572	38·485	76	73·067	79·050	850	817·197	884·119
38	36·534	39·525	77	74·028	80·091	900	865·268	936·126
39	37·495	40 565	78	74·990	81·131	1000	961·409	1040·140

General Steam Navigation Company's vessel Trident.

The Trident Steam-vessel in which her Majesty returned from Scotland, was launched early in September of last year, from the yard of Messrs. Wigram and Green, builders of "the Princess Royal," and the finest of our East and West India sailing vessels. She was constructed under the immediate direction of T. Brocklebank, Esq., and is said, by many naval architects, to be superior to any vessel yet launched from the Royal yards. Some idea of her strength may be formed from the fact, that although but of 1,000 tons, she has more timber in her than the British Queen. This noble vessel was inspected, whilst on the stocks, by nearly all the great naval architects in the country; who have pronounced her to be the strongest built ship that ever floated. In length from head to stern, she measures 195 feet, her breadth of beam between the paddle-boxes being 31 feet: her engines, were built at the Company's works, at Deptford, and her speed is equal to that of any vessel of similar tonnage. The coal boxes which surround the engine-room, hold 200 tons of fuel; and she has stowage for 670 tons of goods.

Floating on the water, either with or without her cargo, the Trident is a surpassingly handsome model; carrying, in hull and rigging, all the strength of the Government war steamers, devoid of their characteristic heaviness of appearance. The quarter deck is large, and from its height the passengers have a clear look out ahead of the ship. The main deck, from the engines not breaking through the decks, as is generally the case, is large and commodious, and forms an excellent promenade well sheltered by the forecastle and quarter deck from the wind. Cabins adjacent to the larboard paddle box are appropriated to the first and second mates, that they may always be handy to the deck. Near these is the cook's kitchen capable of providing for 300 persons; and large fire pumps are fixed in different parts of the vessel which are examined daily; whilst several life preservers are on deck in case of accident. The engine room in which there are three galleries, one above the other, running over the works is lit by means of reflectors, and regular berths are fitted adjoining the machinery for the engineers and stokers.

It is well known that railway companies endeavour to render their second class passengers as uncomfortable as possible, for the purpose of driving them into the first class; but in the boats of this company equal attention is paid to all. The ladies fore cabin is light and commodious. The whole of the fittings are of oak, highly polished;—and the berths, twenty in number, are provided with excellent bedding and hung with crimson draperies, and yellow fringe. Lights are kept constantly burning during the night, and Mrs. King the stewardess is in constant attendance. A separate dining table is provided for those ladies who may not wish to take their meals in the gentlemen's fore cabin. This latter cabin is very large, and contains between twenty and thirty berths, fitted up in the same style as the ladies. This part of the vessel contains also the captain's sleeping apartment, and a large pantry, for the fore cabin steward.

On each side the staircase leading to the quarter-deck are the state cabins, about twelve feet in length; the sides are of satin wood, highly polished, the ceiling of a light sea-green colour, with gold mouldings, and the floor covered with rich Brussels carpeting; the two berths, which are of Spanish mahogany, are hung with crimson damask draperies with yellow satin fringe, the wash-stand and dressing tables are also of Spanish mahogany with marble tops. Each cabin has a large handsome sofa covered with satin hair cloth. The windows of these rooms are large, and the principal one overlooks the deck. Families wishing to be strictly secluded can be furnished in these cabins with a private table. A long noble corridor, entirely of Spanish mahogany, French polished, leads from the deck to seven additional state cabins furnished similarly to those already described. On the right side is a small ante room of

English polished oak, from which there is a descent by a circular staircase with a brass hand-rail, to the chief cabin sleeping department, containing forty-two berths and fitted up nearly in the same style as the state apartments.

The ladies' state cabin is also approached by the corridor and runs across the deck as near the centre of the vessel as may be, so that the least possible motion is felt by its occupants. A bold gold cornice runs along the top of the whole length of the room, from which are suspended draperies of the richest crimson damask satin, heavily trimmed with yellow satin fringe and tassels. Three looking-glasses are placed between the draperies, reaching from the ceiling to the ground; and the centre is occupied with magnificent occasional, and card tables, sofas, lounges, &c., the floor being covered with Brussels carpet. Two windows in the ceiling diffuse a plentitude of light over the whole. There are in this apartment twenty-five berths superbly fitted.

The grand saloon is truly magnificent, the ceiling is of a light salmon colour; and between each of the beams is an emblematic painting of the arms of the company surrounded by gold mouldings. The carpet is Brussels of the Victoria pattern, so named from being the design and colours manufactured expressly for the Corporation of London on the occasion of Her Majesty's dining in the Guildhall. The sides are panelled in mahogany of the richest variety of grains. The sofas, which are covered with figured satin hair cloth, run along the sides, and are divided into eight very large handsome scroll elbows that rise from the ground. Eight occasional tables on elaborately carved pillars, are placed parallel with the sofas; and when joined are capable of dining 150 persons; over each table is suspended a handsome solar lamp, and on each side of the doors looking-glasses. About thirty chairs are arranged around of a very novel design, the cushions and backs being stuffed and covered with sea-green Morocco leather; on the back of which are inlayed the name of the Company.

The circular mast-case, which is made of the richest satin and rosewood ground, and inlaid after the manner of beautiful mosaic or marqueterie, divided into four compartments, the centre containing the arms of the company with the national emblems of the rose, shamrock, and thistle; the remaining panels being filled with bouquets of flowers, &c., the grouping and arranging not only requiring the nicest workmanship and skill, but embracing a thousand pieces of various coloured wood, employed to produce an effect nearly equal to painting. The whole was designed and made expressly for the company by Messrs. B. Taylor and Sons, upholsterers, Great Dover-street, Boro', and is the entire production of British artizans. The rudder case is of mahogany, with panels of plate looking-glass, and behind there is a bookcase with a library of well-selected books.

The Goodwin Lighthouse.

The Goodwin Lighthouse.—In our number for February last (p. 129,) we noticed a very laudable intention of a Mr. Bush, (civil engineer) to attempt the erection of a lighthouse on the Goodwin Sands, and our notice was accompanied by a chart, shewing its intended position and a proposed harbour of refuge which was to be constructed afterwards. The difficulty of such an undertaking can be well understood by those who are acquainted with this formidable quicksand, and the full amount of that difficulty, it will appear, has been experienced by the enterprising engineer. We have watched the progress of the work with much interest and have collected the following reports, which will inform our readers of it as well as any account of our own.

"*Successful attempt to place the 'Light of All Nations,' on the Goodwin Sands, Deal, July* 28.—Yesterday, at half-past 10 o'clock, PM., the Monkey steam-tug succeeded in getting Mr. Bush's caisson afloat. She went off from the beach in

fine style, maintaining a vertical position during her transit, although she made a good deal of water. The pumps were kept going nearly the whole of the way out. About 5 o'clock, PM., being at the appointed place, the tug cast off the towing rope, and the caisson soon settled down, though a little out of the perpendicular. She at present declines from south to north about 2 feet in 24. yet it is believed that, in the operation of sinking the foundation, Mr. Bush will be able to rectify this. One of the large boats from the dockyard accompanied the caisson to the sand, having on board plates for commencing the necessary, work immediately. Lieut. Batt, R.N., in a cutter attached to the caisson, which acted as a rudder and kept her steady, also accompanied Mr. Bush, and when settled on her place of final destination, fired a salute from a blunderbuss he had taken with him for that purpose."

We shall not quarrel with the name which, Mr. Bush with much bad taste has chosen for his building; a Goodwin Lighthouse being, in our opinion, *if established*, sufficient to perpetuate his name in his own nation for future ages; and that would be enough for any moderate man. Besides, the Sandhead lights are already like others, "Lights for all Nations," and have been ever since they were established.

The next account which appeared was the following; the place at which the caisson rests being at the point marked A in the chart, on the line between the light-vessels of the North and South Sandheads.

SIR.—I am happy to inform you and the public, that at present the caisson is sunk below the sands 16 feet at low watermark, and that the whole portion is now 42 feet high, being 9 feet above high water, and that, in the course of next week I hope to add 10 feet more, with every prospect of speedily finding a foundation suitable for the base of such an undertaking.

There has rarely been any project, however important and beneficial, but the projectors have met with opposition; and unfortunately, in my case there has been no exception, for, notwithsanding the favorable progress of the work, (and when it is considered that the caisson weighs 150 tons, and is 30 feet in diameter, it has been equal to my most sanguine expectation,) there have been persons in the vicinity of Deal and Walmer diligently engaged in promulgating the most absurd and unfounded rumours, but the best refutation of their malicious misrepresentations is the advance made to the completion of the object.

I have, &c.,

Caisson, Goodwin Sands, Aug. 16. W. BUSH, *Civil Engineer.*

From the close of the foregoing letter it will be seen that Mr. Bush, has had more opposition to contend with than that from quicksands and waves. No doubt certain persons at Deal foresaw from the first that if Mr. Bush succeeded and a harbour was eventually formed as he had projected, their service as wreckers would be no longer required.

"Othello's occupation's gone"

would be their case, and the sooner the better, say we, in such a trade. Hence their opposition, which we understand has proceeded so far as to become matter of indictment at law. Still this cannot but be regretted, for we are quite sure every right thinking person will agree with us in opinion, that an undertaking having for its object the prevention of shipwreck, and its attendant horrors, cannot be too much encouraged.

The next account is the following;—

SIR.—As there is a numerous class of persons, particularly those engaged in nautical and commercial affairs, anxiously watching the progress of my undertaking, I hope you will not deem me too intrusive in asking the favour from time to time of acquainting the public, through the medium of your widely-circulated paper, of the advances made and the precise state in which the caisson may be placed, especially as one or two London journals have circulated the most unfounded reports.

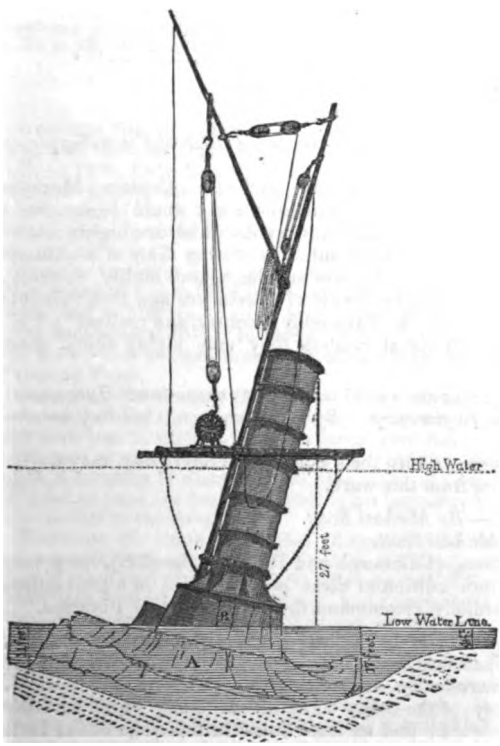
Since my return from the Admiralty, I have, in conjunction with Lieutenant Batt, R.N., minutely surveyed the caisson, and find, that after the late stiff breezes it has adjusted itself to a more upright position; that there are 18 feet of water around it at low water, but at 20 feet distance there are only 5 feet. A basin has therefore been formed by the strong tides, which proves most satisfactorily that I am but a short distance from the chalk; this is also confirmed by the caisson not having sunk for the last three weeks more than five inches.

Men acquainted with the Goodwin Sands, and who know the few hours which a ship survives when upon them, can well appreciate the efforts already made; and should there be any sceptical upon the point, I shall be most happy to convince them, and will afford every facility to enable them to judge for themselves.

If the weather proves favourable, I have no doubt of succeeding in getting on two more cylindrical plates to-morrow.

I remain, Sir,

Caisson, Goodwin Sands, Sept. 2. W. Bush, *Civil Engineer.*



In the first part of September the weather was particularly unfavorable to the operations. The annexed wood cut represents the appearance of the caisson on the morning of the 21st of August previously, shewing the mode by whichthe consecutiveiron cylinders were placed over each other to form the building for the light-house; and shewing also the settlement which had gradually taken place, as well as its inclined position, owing to the sand beneath it giving way over the foundaton which is supposed to be of chalk. This inclination Mr. Bush appears to have no doubt of overcoming, and by his last report, dated the 12th, which we annex, together with a drawing of the position of the caisson after the gale of the 6th, it will be seen that he had succeeded in regaining it from this unfavourable condition, and that it is nearly upright.

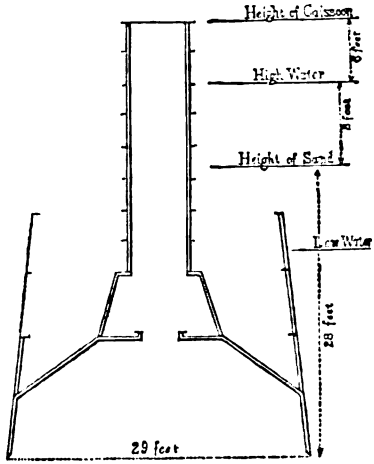
Sir.—Accompanied by Lieut. Batt, R.N., in Her Majesty's cutter Sealark, which was kindly ordered to be at my service by Capt Westbrook, I made a minute survey of the caisson after the gale, and notwithstanding the foreboding of many persons, including several of great experience, that the gale was such that the caisson never could survive it, I have the pleasure of reporting that it

had not the slightest effect upon it, and that it remains quite perpendicular after having been subjected for many hours to the violence of the storm. This being the case, I have no doubt of ultimate success of this great national undertaking.

W. Bush, *C.E.*

P.S. A small stage washed off, which is not of any importance whatever; and the spar and derrick. The part shewn by the dotted line was also broken away.—*Sept.* 12.

Such was the condition of this interesting and important undertaking by the last accounts, and we sincerely hope that it may eventually succeed, and its projector as well as executor mayr eap the reward he so richly deserves.



New Books.

Perceval Keene; a Novel in Three vols.—*By the Author of Peter Simple.*—Colburn.

One of the happiest efforts of its talented author. Captain Marryat has adopted for his hero one who in Scholastic story would figure as a pickle of the very first order, his mischievous pranks which are highly entertaining, maturing with increasing years, into the daring feats of manhood. But from boyhood to manhood his adventures are throughout highly exciting, and though perilous in the extreme, by the aid of Providence and that valuable commodity called common sense, he invariably escapes and realizes all his wishes. We promise even our naval readers they may highly enjoy these volumes.

A Treatise on the Application of Marine Surveying *and Hydrometry to the Practice of Civil Engineering.—By D. Stevenson, Civil Engineer.*—Longman, London.

Our naval readers who desire to turn their attention to Surveying, may derive some excellent practical hints from this work.

The Cruise of the Midge.—*By Michael Scott.*

Tom Cringle's Log.—*By Michael Scott.*

Messrs. Blackwood and Sons, (Edinburgh and Pall Mall, London), have very judiciously brought out a new edition of these popular tales in a convenient and portable form. We cordially recommend them for our naval libraries.

The Structure and Distribution of Coral Reefs.—*By Charles Darwin, M.A., &c.*—Smith and Elder, Cornhill.

Mr. Darwin, our readers are aware, accompanied Captain Fitz Roy in H.M. S. Beagle, during her survey of the coasts of South America, which we have noticed in the course of our work; and we learn from the title page of the little volume before us that it is "the first part of the Geology" of that voyage.

As might be expected, he has put together a vast mass of interesting information, condensed from his own researches and those of other authors, on the subject of Coralline formation, those curious atolls and barrier reefs which have formed so often, objects of wonder and astonishment to seamen, both of these, and former days. And falling so completely under their every day observation, such information cannot be otherwise than particularly interesting to them.

In fact we look on this little work as particularly adapted for seamen, and we promise them they will find in it a mass of entertaining knowledge which on their distant voyages they will be very glad to possess. It is a work which might be added with advantage to all naval libraries.

Portsmouth, Sept. 18; Arrived yesterday His Imperial Austrian Majesty's frigate Bellona, of 52 guns, commanded by H.R.H. the Archduke Frederick, from Austria, on a visit to our beloved Queen. Immediately on bringing up at Spithead, she saluted, which was returned from the garrison battery and guard ships. This morning salutes were exchanged between the Russian ship Abo and Bellona. About two o'clock to-day his Royal Highness and suite embarked in the ship's barge, and steered for our harbour, and as they passed in were saluted from the platform, and guard ships with the yards manned; the Marine band adding its attraction from the new pier. His Royal Highness landed at the Queen's Stairs, where a guard of honor, and all the principal officers in the navy were in attendance to receive him. H. R. Highness having paid his respects to the admiral, rowed back to the new pier, where was stationed a guard of royal marines, and was welcomed by the commander-in-chief of the garrison and other principal officers of the station. A great concourse of gentry were also assembled who accompanied H. R. Highness, to the residence of Sir H. Pakenham.

His Royal Highness has requested, through the medium of Sir A. Van Den Burgh, Austrian vice-consul, to publish the fact, that the frigate Bellona has not been on the rocks at Gibraltar as currently reported in many journals.

Biographical Memoirs.

Admiral Sir H. Digby, kcb.—(See Obituary.)—He was the eldest son of the Hon. and Rev. W. Digby, Dean of Durham, uncle of the Earl of Digby. He married, in 1806, Lady Jane Elizabeth Coke, eldest daughter of the late Earl of Leicester. He entered the navy in 1784, and at the capture of Minorca in 1798 was commander of the Leviathan, and in the succeeding year, when in the command of the Alcmene, assisted at the capture of the galleons. It was computed that during the general war the deceased took, sunk, or destroyed 48 sail of merchantmen and numerous vessels of war. At Trafalgar he commanded the Africa, and for his services received a medal and the thanks of both houses of parliament. He was made lieutenant in 1790, commander 1795, captain 1796, rear-admiral 1819, vice-admiral 1830, and admiral 1841. In March 1838, he was nominated Knight Commander of the Bath; and in consideration of his services, had an honorary reward from the Patriotic Fund.

Admiral Sir Robert Ricketts.—(See Obituary.)—He was born in 1772, and entered the navy at a very early period, serving through the whole of the French war, and assisting, in 1815, at the reduction of Fort Boyer. He was created baronet in 1826, and attained the rank of vice-admiral of the Blue in 1841. He married, in 1802, a daughter of Richard Gumbleton, Esq., of Glencairn Castle, in the county of Waterford; and has been succeeded in his baronetcy by his son Corwallis, who is a commander in the navy.

Captain W. Edge, rn.—(See Obituary.)—He was made lieutenant in 1776, commander 1793, captain 1795. Commanded the Alert brig, and covered the retreat from Toulon, in 1793, and brought off every man of Sir Sidney Smith's party. The Alert was destroyed on this occasion, and Commander Edge was appointed to the Vulcan, fire-ship; returning to England he was appointed captain of the Prince George, of 98 guns, and commanded her in Lord Bridport's action off L'Orient on the 23rd June, 1795. In 1809 he was placed in Greenwich Hospital, and declined his flag on the promotion, June 4th, 1814. He left the Prince George after the above action and served in the Sea Fencible Corps. It gives us the highest satisfaction to state, that the regret felt at losing so truly kind a person must be considerably alleviated when we state that, at the age of 92, he sank into the grave a character that will for years be remembered with regard, respect, and veneration.

Promotions and Appointments.

[From the Naval and Military Gazette.]

Whitehall, Aug. 22.—The Queen has been pleased to grant unto Sir Wake Walker, k.c.b., Captain in the Royal Navy, and an Admiral in the Turkish Navy, her

Royal Licence and permission that he may accept and wear the Cross of the Order of the Redeemer of Greece, which his Majesty the King of Greece was pleased to confer upon him, in testimony of his Majesty's approbation of his services before the enemy at Modon and Patras, in the year 1828; and also that he may accept and wear the Insignia of the Order of the Iron Crown of Austria, of the second class; of the Order of St. Anne of Russia, of the second class; and of the Order of the Red Eagle of Prussia, of the second class; which their Majesties the Emperor of Austria, the Emperor of Russia, and the King of Prussia, have been severally pleased to confer upon that officer, in testimony of their Majesties' approbation of his services during the late war in Syria, and that he may enjoy all the rights and privileges thereunto annexed. And also to command that her Majesty's said concession and especial mark of her Royal favour be registered, together with the relative documents, in Her Majesty's College of Arms.

Appointments.

COMMANDER—F. Wood, (1838), to *Royal George.*

LIEUTENANTS—Hon. C. St. Clair, (1837), to *Royal George*—W. Southey, (1814), and S. H. Rickets, (1842), to *Salamander.*

MATES—F. I. Diggins, (1836), to *Salamander*—R. Coote, (1840), to *Royal George*—C. J. P. Glinn, (1836), to *Lightning*—A. F. Kynaston, (1837,) to *Shearwater.*

MIDSHIPMAN—H. V. Poulett to *Salamander.*

PROMOTIONS.

COMMANDERS—J. C. Gill, Lord W. Compton, H. Dunlop.

LIEUTENANTS—G. Marriott, E. E. Turner.

APPOINTMENTS.

CAPTAIN—T. M. C. Symonds, (1841), to study at Naval College.

COMMANDERS—W. L. Sheringham, (1841), to *Rocket*—Hon. S. T. Carnegie, (1838), to *Orestes.*

LIEUTENANTS—R. Ward, (1840), to *Highland Chief* transport, to be agent for transports—J. Wood (1841), and W. V. Read (1823) to *Rocket*—W. Thorp, (1838), F. H. Stanfell, (1840), G. J. Napier (1842) to *Orestes*—E. E. Turnour to *Sylvia*—M'Neill, (1842), supernumerary to *Queen*

MASTERS—J. S. Taylor, (1834), to *Rocket*—G. H. K. Bower, (1842), to *Orestes.*

MATES—J. M. Jackson and H. J. Ketch to *Daphne*—W. H. Payne to *Camperdown*—G. T. C. Smith and T. M. Balfour to *Orestes*—A. G. West, J. Gwynne to *Excellent*—C. Pechell to *Pique.*

SECOND-MASTERS—W. Roberts, to *Lightning*—B. Simpson & T. Clements to *Dee*—W. S. T. Stokes to *Pique*—W. Niblett to *Shearwater.*

SURGEONS—A. Stewart to *Orestes*—J. Moody to *Daphne*—A. S. Allen to *Howe.*

MASTERS'-ASSISTANT—T. S. Anderson to *Imaum.*

ASSISTANT-SURGEONS—J. Jackson to *Thunderer*—C. N. Wilkinson to *Queen*—W. W. Haynes to Bermuda Hospital—W. Henderson (b) to *African*—C. Coffey (ad) to *Caledonia.*

MIDSHIPMEN—H. A. Budd to *Griffon*—W. Wardelow and E. Nicholson to *Excellent*—C. J. T. Glinn to *Lightning*—H. A Ford to *Pique*—W. Swinburne to *Calcutta.*

VOLUNTEERS 1st Class—W. Graham to *Talbot*—B. C. Pym to *Rocket*—H. Sykes to *Vernon*—G. Morell to *Calcutta*—T. Weston and E. Belcombe to *Orestes*—T. R. Alexander to *Thunderer*—A. P. Helby to *Magicienne.*

PURSERS—Brady to *Orestes*—Norcock (act.) to *Devastation*—J. Grant to *Vernon*—J. Palmer to *Indus*—G. P. Martin to *Pique.*

NAVAL INSTRUCTOR—E. B. Barnes, BA. to *Camperdown.*

CLERKS—C. W. Sharpe to *Fantome*—B. Scott, (in charge) to *Rocket*—J. Punchard to *Daphne*—G. H. Wheeler to *Orestes.*

COAST GUARD.

Appointment—Lieut. J. A. Butler to command at Clackton Wash.

Removals—Lieut. A. Kennedy to Port Redford—Lieut. R. L. Stephens to Rickham—Lieut. E. Knapman to Porthillic—Lieut. E. Hennah to Kilmore—Lieut. J. P. Brouncker to Saltfleet—Mr. P. Johnston Fryer to Arran Island—Mr. Charles Eddington to Barna.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

CALCUTTA, 84, Capt. S. Roberta, CB., Aug. 21, arr. at Plymouth, 27th sailed for Quebec to bring home troops.

GLEANER, (st. v.) Lieut. Com. Jeayes, Sept. 2, arr. at Portsmouth, 5th sailed for the eastward to be paid off.

JASEUR, 16, Com. Willis, Sept. 3, arr. at Portsmouth from Gibraltar.

PIQUE, 36, Capt. Forbes, September sailed for Quebec.

RACER, 16, Com. Harvey, Sept. 3, arr. at Portsmouth from West Indies.

ROCKET, (st. v.) Aug. 23, commissioned at Portsmouth by Com. Sheringham.

SAPPHO, 16, Com. Parry, Aug. 22d, arr. at Portsmouth from Quebec, Sept. 2, paid off.

SHEARWATER, (st. v.) Capt. Washington, Harwich refitting.

PORTSMOUTH.—Imaum at Spithead. Abo (Russian), at the Motherbank. *In harbour*—St. Vincent, Victory, Excellent, Orestes, Sylvia, Bellona (Austrian).

PLYMOUTH—*In Harbour*—Caledonia, San Josef, Kite, Confiance, Comet.

ABROAD.

AGINCOURT, 72, Capt. W. H. Bruce, July 5, left Rio for China.

ALBATROSS, 16, Com. R. York, Aug. 2, at Madeira.

ALBERT, (st. v.) July 2, at Ascension.

ARROW, 10, Lieut. Com. W. Robinson, June 21, at Rio, from a cruise.

BELLEISLE, 72, Capt. J. Kingcome, April 13, arr. at Singapore, and proceeded to China.

BELVIDERA, 38, Capt. Hon. G. Grey, Aug. 25th, at Gibraltar.

CLEOPATRA, 26, Capt. Wyvill, Aug. 3, at Madeira.

CURLEW, 10, Lieut. Com. T. C. Ross, June 21, at Rio from a cruise.

DRIVER, (st. v.) Com. Harmer, June 7th, arr. at the Mauritius.

FANTOME, 16, Com. E. Butterfield, July 22, left Rio on a cruise.

FLAMER, (st. v.) Lieut. Com. W. Robson, July 20, arr. at Barbados.

FLY, Capt. H. P. Blackwood, June 20, at the Cape.

FORMIDABLE, Capt. Sir C. Sulivan, Aug. 25, at Gibraltar.

MALABAR, 74, Capt. Sir G. Sartorius, June 19, arr. at Tenerife.

MINDEN, (hosp. s.) May 26, sailed for Singapore.

NORTH STAR, Capt. Sir T. E. Home, Bart., May 16, left Singapore for China.

PHILOMEL, 10, Com. J. Sullivan, July 31, touched at Tenerife, and proceeded to the Brazils.

PILOT, 16, Capt. G. Ramsay, June 31, arr. at Havana from Belize, Aug. 3, sailed for Vera Cruz.

RAPID, 10, Lieut. Earle, July 2, at Ascension.

RINGDOVE, Com. Sir W. Daniell, 21st July, arr. at Jamaica.

ROVER, Com. Keele, Aug. 3, Sacrificios.

SATELLITE, Com. Gambier, August, arr. at Madeira.

SCYLLA, 16, Com. R. Sharpe, July 24, arr. at Barbados.

SIREN, 16, Com. W. Smith, May 4, arr. at Calcutta.

SPARTAN, 26, Hon. Capt. Elliott, July 31, left Halifax for Newfoundland.

TALBOT, 26, Capt. Sir T. Thompson, Bart., July 26, arr. at Madeira.

THUNDER, (st. v.) Com. E. Barnet, Aug. 3, at Bermuda.

THUNDERER, 84, Capt. Pring, Aug. 25, at Gibraltar.

VICTOR, Com. W. Dawson, (a) July 1, left Havana for Gulf of Mexico.

VIPER, 6, Lieut. J. Curtis, June 21, at Rio from a cruise.

VOLAGE, 26, Capt. Sir W. Dickson, July 29, at Halifax.

VOLCANO, (st. v.) Lieut. C. Smith, July 20, arr. at Madeira, and proceeded to Bermuda.

WATERWITCH, 10, Lieut. Com. H. J. Matson, June 25, left St. Helena for Ascension, July 2 arrived.

WOLVERINE, 16, Com. Johnson, 14th May arr. at Cape, and sailed for China.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Toronto, the lady of Capt. Drew, RN., of a son.

At Paignton, the lady of Lieut. Clayton, RN., Coast Guard, of a son.

At Falmouth, August 10, the lady of H. Dicken, Esq., RN., of a daughter.

At Dunolly, Aug. 11, the lady of Capt. M'Dougall, RN., of a daughter.

Marriages.

At the Isle of Wight, the 8th of Sept. Hon. F. G. Hood, Capt. and Lieut.-Col. Grenadier Regt. of Guards, to Elizabeth Jane, daughter of Vice-Adml. Sir G. E. Hamond, Bart., KCB.

At Clifton, Aug. 26, S. E. Hurst, Esq. of Beeston, Notts., to Louisa, daughter of Capt. Claxton, RN.

At Swindon, Mr. Read, to Harriet Caroline, daughter of Lieut. S. Yeats, RN.

Deaths.

Lately at Minterne Hall, Dorsetshire, Adml. Sir H. Digby, KCB. aged 73 years.

At Cheltenham, Aug. 18, Vice-Adml. Sir R. T. Ricketts, Bart. DCL. aged 70.

At Greenwich Hospital, Capt. Edge, RN., captain of that establishment 33 yrs.

At Deptford, Lieut. J. P. Davey, and Mr. Mattacott, Master, R.N. At Greenwich, Lieut. M. Wills, R.N., (1811), and Mr. A. Warner, surgeon, R.N.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of August, to the 20th of September, 1842.

Month Day	Week Day	Barometer, In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 AM.	3 PM.	9.AM	3.PM	Min.	Max	A.M.	P.M	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Su.	30·05	30·02	68	74	58	76	S	SW	2	2	bc	bc
22	M.	30·00	30·02	66	81	55	83	E	E	1	1	b	bm
23	Tu.	29·96	29·96	70	78	60	80	SW	SW	2	4	b	bc
24	W.	29·90	29·88	62	74	53	79	NE	NE	1	2	bc	bc
25	Th.	29·76	29·74	62	70	56	72	NE	NE	2	2	or 1)	bcp (3)
26	F.	29·88	29·90	64	77	58	76	E	E	1	1	bc	b
27	S.	30·00	30·00	62	74	60	75	N	NE	3	3	o	bc
28	Su.	30·02	30·04	61	71	59	73	NE	NE	2	2	or 1)(2	bc
29	M.	30·02	30·02	64	74	58	75	NE	NE	2	2	bctp1)	bc
30	Tu.	30·05	30·06	63	70	57	71	SW	SW	2	2	bc	bc
31	W.	30·16	30·20	54	63	48	64	NW	NW	4	5	b	bcm
1	Th.	30·04	29·94	55	63	51	65	S	S	4	2	or 1)(2)	od (3)
2	F.	30·14	30·18	67	76	62	77	W	NW	1	2	o	bcm
3	S.	30·25	30·25	62	70	59	71	W	SW	1	2	of	bc
4	Su.	30·23	30·25	60	65	54	68	NW	N	2	2	bc	bc
5	M.	30·25	30·20	60	70	53	71	SW	S	1	3	bcf	bc
6	Tu.	30·00	29·98	60	70	50	72	SW	W	2	4	bc	bc
7	W.	29·92	29·82	57	69	48	70	N	E	2	4	b	bctlr (4
8	Th.	29·46	29·44	58	56	55	59	SW	SW	7	9	qb	qor (3)
9	F.	29·56	29·52	61	65	52	66	SW	SW	6	4	qor(1)(2)	od (3)
10	S.	29·45	29·52	58	58	53	61	SW	NW	6	6	qbcp(2)	qbcp (3)
11	Su.	29·70	29·70	57	62	49	63	NW	NW	4	3	bc	o
12	M.	29·80	29·84	58	62	54	64	NW	N	2	4	bc	bc
13	Tu.	30·10	30·15	55	63	49	64	N	N	3	3	b	bc
14	W.	30·20	30·22	63	71	54	72	NE	NE	2	2	bcp 1) 2)	bc
15	Th.	30·19	30·17	63	69	55	71	E	E	2	2	bc	b
16	F.	30·12	30·08	60	67	50	68	E	SE	1	1	of	bc
17	S.	29·85	29·82	62	70	52	72	S	S	3	5	bc	qo
18	Su.	29·78	29·74	53	57	51	59	NE	NE	2	2	or 1) (2)	or (4)
19	M.	29·62	29·62	54	57	50	64	S	S	1	2	bc	bcp 3)
20	Tu.	29·55	29·54	53	54	44	58	SW	SW	3	3	bcp 2)	bcp (3)

August—Mean height of barometer = 30·071 inches; mean temperature = 67·6 degrees; depth of rain fallen = 1·85 inches.

Errata.—In the Magazine for August, page 584, for mean height of the Barometer for June "30·65" *read* 30·065. In the Magazine for September, page 656. in the note on August 18th. for the thermometer at 3 P.M. "81" *read* 87 degrees,

TO OUR FRIENDS AND CORRESPONDENTS.

We have received Mr. Dent's important communication on chronometers, but too late for our present number. It shall appear in our next.

The Experiments at Chatham in our next.

Our best thanks for the account of the Devil Rock.—This also in our next.

Mr. McDougal's letter received.

We have received from Messrs. Robinson, Rowe, McDouall, and Barn, the sum of 2s. 6d. each, towards the fund for the Shearwater's boat's crew.

THE COASTS OF YUCATAN AND HONDURAS.—*By Lieut. T. Smith, commanding H.M.S. Lark,* 1839-40.

CAPE CATOUCH is so hidden by mangrove trees and islands, continually changing in appearance, that it seems probable it was never seen from a ship; the island Contoy being generally mistaken for it. On the rising ground, however, at the back of the most prominent point, is a large stone building, something like a church, which (although in ruins) has stood, and, probably, will stand for ages as a conspicuous land mark for this celebrated Cape, in lat. by stars N. and S. 21° 30′ 45″ N., and long. 86° 56′ 30″ W. This was a well-known rendezvous for piratical vessels; one was anchored here in July 1831, and started immediately on our approach, having previously robbed the fishermen on the small cays of fish and turtle; indeed, they made complaints of frequent visits from the pirates. Contoy is also named Loggerhead Cay, having several rounding hillocks from 60 to 80 feet; the north point is formed of low black rocks lying east ten miles from the stone building.

Mugeres or Women Island—lies S.S.E twelve miles from the south end of Contoy, having on it another stone turret still more conspicuous, from there being no trees near it. Our observations placing it in lat. 21° 12′ 20″ N., long. 86° 40′ 30″ W., variation 6° 10′ easterly in 1831. There is good shelter in the harbour between this and Kakun, with the turret E.S.E. three miles and a half, avoiding by eye Beckett Rock in mid-channel and the sand bores on the west side. On the two extremes of Kakun are fishing parties with wells of good water. The masters are evidently of Spanish origin; the men are of a copper colour, rather like Canadian micmacs, but more diminutive; having what is common to all American Indians, coarse black hair, which never turns grey.

The coast to the southward of Kakun takes a gradual sweep as far as Killbride Cliffs, consisting generally of coarse white sand, with the tops of trees from 40 to 60 feet high. We saw several parties alongshore carrying nets, &c., and they appeared to be living in temporary huts for the fishing season only. A reef skirts the whole, but in no part is it a full mile off the main. Large kinds of canoes, called bungalos, are constantly passing inside the reef to Belize, where they find a ready market for their shell and turtle. Stone buildings also extend the whole distance. It seems probable they were originally intended for watch towers, and are extraordinary works from the durability of the materials of which they are built, having a great resemblance to the old buildings at Havana.

*Arrowsmith Bank**—lies E.S.E., 22 miles from Mugeres. We have never been lucky enough to strike it since the solitary cast in the Blossom in 1831, owing to the very uncertain current which varies here from three to five knots, which we have always found strongest in the summer months. This is a dangerous neighbourhood, and should be particularly avoided with any appearance of bad weather. During the

* The account of this bank will be found in our volume for 1838, p. 366, discovered and reported to us by the master of the Rosalind.—ED.

hurricane months I would prefer anchoring under Cozumel in small vessels with any indications of a norther. The interior of this large island is quite occupied by ponds, and clumps of mangrove trees from 70 to 80 feet high. Its shores are composed of coarse sandy coves between low rocky points, with a reef on the east and south sides half to three-quarters of a mile off. The bank off the north side has very gradual soundings of fine sand with convenient anchorage in fine weather. Inside the five fathoms line are numerous rocky heads. Near the north-west point is a pond of fresh water. Vessels in want of it should anchor near the edge in six or seven fathoms. Here is also abundance of firewood. In the summer months or breeding season the common carrier pigeons swarm on this island, feeding with their young on the green berries of the thatch palm trees. Small turtle are also plentiful, easily caught and pegged, in a fast pulling boat. Large king fish and barracouta, &c., abound; and both lines and seines can be used with success. Indeed, there are few places where a few hours can be spent to greater advantage in picking up a little fresh stock, or to take a run on shore. The only inhabitants were two poor creatures wandering about without any apparent employment, something between Negroes and Musquito men; the colour of their skin was like boiled liver.

One stone building we found three miles to the southward of the north-east point, and similar to those on the main. The south point of this island is N.b.E. 186 miles from Goff Cay, a route recommended to homeward bound vessels from Honduras.

Killbride Cliffs—lie W.b.S. ½ S. twenty-five miles from the south point of Cozumel, and are very remarkable, as the only spot of that description on the coast. We did not land, but estimated their height at 80 feet. On the top was a conspicuous stone building, the last or southern one we observed. The coast to the southward has the same monotonous sandy appearance as far as Ambergris Cay, where commence the innumerable mass of cays which skirt and hide the main of British Yucatan. Most of these are drowned cays, the mangroves growing in many feet water. Others are composed of coral sand and pummice stone, having thick belts of cocoa-nut trees around them, which appear to thrive with the salt water washing their roots.

Bacalar Sound.—The most intricate part of Bacalar Sound is that remarkable mud flat, named the Bulk Head, from its steep or rather perpendicular sides. The deepest channel is to the eastward of Musquito Cay, where there is five feet very soft mud. The channel at the north end of Ambergris Cay is cut by the fishermen, and has nearly two feet; but so intricate that it can be found only by those very well acquainted with it. The deepest water above the Bulk Head is staked off, having from 6 to 12 feet, shoaling gradually on approaching the shore, with many rocky heads. We found several fishermen on the cays here from Bacalar, who were broiling, or rather barbecuing* some fine bone fish. In this state they will keep a week without any preservative. Jew fish were also seen,

* Query, from "barbe et queue," head and tail; "barbacue," signifying the process of boiling whole.

but ours was a salt junk cruize. The east side of Bacalar Sound is full of mangrove creeks, and has with the greater portion of the main the same unvarying tiresome appearance as the outside. To the northward of Rio Honda, some rich red loam banks with luxuriant foliage break this a little, but all the coast is unhabited. This was formerly considered as the north end of Ambergris Cay; I, therefore, traced up a deep creek in the dory, until we found the water quite fresh; but saw nothing to suppose it did not communicate with the waters of Ascension Bay.

The river St. Joseph having a deep hole off it, with five fathoms on the bar across the mouth, may be known by some low rushy cays, having only two feet in the deepest part. The river runs through Bacalar Lake, and trends to the westward thirty leagues further; but is now like most of the other rivers pretty well cleared of mahogany. Good shelter for boats may be found inside the Island Samalco. Rio Honda, as its name implies, is very deep, and is said to run thirty leagues up the country, forming the northern boundary of British Yutacan. The bar has five feet, but there are many rocky heads which will prevent its approach by night, or when the water is thick. A short distance up on the north bank a corporal and three soldiers are stationed from Bacalar, with English arms, to protect the logs floated down the river, (the latitude of their huts is 18° 29′ N.) About seven miles up it is said to divide, one arm branching off to the northward into the lake of Bacalar.

Belize River.—In May 1839, I measured the meridian distance to Prospect Plains, under favourable circumstances. From this it appears by the winding of the river that the first or lower falls are 26 nautic miles above the bridge. The banks gradually increase in height to the falls, where they are thirty feet, and even here frequently overflowed after heavy rains. The soil is extremely rich with partially cleared plantations, which would raise immense quantities of corn, fruit, vegetables, and stock, if there was a demand for it. The arrow-root grown here is very superior.

Large ships cannot get to the town from the intricacy of Grennel channel without the aid of steamers, and the anchorage at Goff Cay being extremely inconvenient for obtaining supplies, &c., we have to consider the best route coming in as that to the southward of the Zapodilla Cays, the worst part being in, and approaching Placentia Narrows. After passing the Seal Cays, hauling up to windward of Laughing Bird Cay, the advantages of this route are 1st.—More room, indeed enough for large ships to work in. 2nd.—Always clear water, and therefore, every danger seen. 3rd.—No current which is strong to the south, along the main averaging one knot and a half and two knots from June to December. The greater depth of water is certainly an objection, but the stream will generally answer, should there be occasion to anchor as the pale mud is very adhesive. The cays are sufficiently detached to prevent mistakes, and serve as useful land marks, for before losing sight of the Snake or Seal Cays, Laughing Bird and the outside range plainly appear. Arriving off the Zapodilla Range after seven o'clock in the morning, the sun will be high enough to take the south channel or Tom Owens Cut. The deep blue water in them is

very conspicuous from the mast-head, and can be taken by eye on referring to an enlarged plan. At night strike the bank to the southward of 16° 00′ N. and make the East Snake, if the weather is moderate y clear, bearing N.N.W. ½ W., and endeavour to be approaching Laughing Bird Cay by daylight, and pass in through Victoria Channel by Quamino Cay; from this to Belize any size ship may navigate by the lead in the night, with the new chart, and without a pilot.

Should wood or water be required, South Standing creek is recommended in preference to the North, from the numerous washerwomen at the latter place, and the number appears to be increasing every year.

Between Cay Glory and Tobacco Cay is an unbroken mass of coral rocks, many of the heads appearing high out of water; there is not a passage for the smallest boats the whole distance. Tobacco Cay cannot well be mistaken, having a high fig tree (70 feet) near the north-east extreme; it is on the north side of the channel which gradually decreases to twelve feet due west of the cay. Should, therefore, vessels get on this shore with northerly winds, and their constant attendant southerly currents, Victoria channel is preferable. The north entrance is formed by that prominent spit, named Gladden Cay Reef, outside this from a height of 12 feet the cays can be plainly seen. Bring Spider Cay (the highest and southernmost of the group) to bear W.b. N. ½ N., and run in for it until Button Wood Cay is nearly on with Gladden Cays, when the left extreme of Tarpum Cay touching the right extreme of Rendezvous Cay will be a tolerable guide to the Funk Cays. Here the channel is more intricate, but still all is plainly seen from the mast-head. When abreast of Tarpum a good passage is open to windward of Channel Cay by Stuart Range, or the nearer one by Quamino Cay, should the wind be too far to the northward to lay through, or not sufficient time to clear it before the sun is too low; for it must always be remembered in navigating by eye that the sun should be at least 20° high, and a clear sky or totally overcast, is better than passing clouds, which are apt to baffle. By far the best entrance, however, is that by the Queen Cays, having smoother water, and not less than 20 feet. These were formerly named the Seal Cays, now altered to prevent confusion, having others a few miles to the southward. They are low and sandy with a few shrubs of bay cedar; and from their prominent position are of great assistance. In taking this channel bring the Little Water Cay between the southern two, bearing W.b.S. until the Queen Cays are in one; the Deep Blue Cut shows itself, which it always does very distinctly. When through haul up for Button Wood Cay, about N.N.W. ½ W., and get into the leading mark before described. The shortest track is that by Hatchet Cay, but this is intricate in the vicinity of the cay.

These cays appear to have undergone little change this last century, judging from an old chart I met with here, published about that time; nor have any formed since. The hurricanes in 1813 and 1831, stripped many of their leaves, which they recovered the next season. A hurricane in 1827 drove all the ships on shore at Belize. These three are all that are remembered by the oldest inhabitants.

Although fever prevails here in the summer months, the climate is

preferable to Jamaica, and it is peculiarly favorable to consumptive patients. The outlying cays are much resorted to at this season by the principal people of the town; marooning parties are very common by all classes; and there is no doubt plenty of air. Exercise and bathing every day is the great secret of preserving health, even in the West Indies. The fever broke out in the Blossom while lying here in 1830, when nearly all on board, and those that came from the tender and boats, were attacked in less than twenty-four hours, proving, if further proof were required, the cause of the disease was confined to the ship, and that the patients landed in the town would not have engendered it there; we, however, were the sufferers, being immediately ordered off to English Cay.

In the season of the breezes (which is the first six months of the year,) the weather is very fine, and it blows all night from E.N.E. to E.S.E., and although a week's rain, without seeing the sun in the fall, is not at all uncommon, yet in the greater part bright mornings prevail, with tremendous thunder showers in the afternoon and evening. The neighbourhood of Rio Grande is quite celebrated for the terrific thunder storms almost every night, usually accompanied with heavy squalls off the land, giving timely warning by a mass of awfully black clouds.

From Point Icacos to Rio Grande is a continued harbour inside the cays, it will be seen that any class ships may get to excellent anchorage inside Moa Cay without a pilot. It is far more roomy and less intricate than Port Honduras, and the remarkable range named the Seven Hills and Rio Grande Hill prevents it ever being mistaken; besides it can be seen from the Seal Cays. The numerous heads in this space are useful for anchoring on, which we have been in the habit of doing every night, while employed here. Most have a crust of coral stems, here called Pipe Shanks, so that we have not broke or lost an anchor the whole time. Some have a slight covering of mud and sand; but the deep water has invariably soft olive coloured mud.

Between Queen and Owen Cays is another convenient channel, named Ranguana Cut, having not less than 19 feet. Keep Laughing Bird Cay open to the northward of Ranguana Cay until the channel is made out between nearly dry reefs; the heads inside are avoided by eye, and the channel before described taken, or that by Musquito Cay. This, although it appears intricate will be often useful. A good leading mark is the right extreme of Musquito Cay touching the left extreme of Laughing Bird Cay.

Small vessels use any of the cuts they can fetch to the southward of Ranguana. The village of Omoa has certainly decreased in population since 1830, and most of its pleasant little villas are now in ruins, and deserted; the fate that awaits most of these petty states. Some remarkable ochre cliffs near Cavello Bay, will assist strangers in making out the land, when the hills are shrouded. Chimlico Peak is seldom hidden, and the prominent Sal Rocks are such conspicuous objects as to be readily recognized. Fifteen miles to the eastward is the Bold Bluff, named by the Spaniards, the Triumph of the Cross, to celebrate some victory over the unfortunate natives. It is now as much a wilderness as ever, and without a vestige of the colony founded by De Oli in 1521

remaining. To punish this man, Cortez made the extraordinary march from Mexico; a wonderful undertaking when the nature of the country is considered.

The Island Utilla is about seven miles long, and two and a half broad in the widest part; with the exception of the mound near the east end, it is quite occupied by mangrove swamps. The harbours here are superior to any on the main between Cape Gracias and Omoa. The east harbour is very secure, but having a narrow entrance, vessels must be warped in with the wind from N.N.W. to E.S.E.; it is also very convenient for procuring wood and water. We were informed the well on the north side of the harbour is never dry. It may readily be found by some poles in the mud, where there is a lane cut through the mangroves bushes to it, and a path across the island. A party of fishermen from Truxillo were salting and drying barracouta, grouper, market fish, &c., much in the same way as cod are preserved at Newfoundland.

The only constant resident is an American on Suck Suck Cay, who has flourishing plantain walks, and most of the vegetables of the country, with a good stock of fowls; he keeps dogs for hunting the wild hog, which is so numerous that he killed three one morning, weighing from 150 to 200 lbs. each, (in September,) in excellent condition from feeding on the seed of the wild cabbage.

The dogs are a mixed breed, and from their number, never less than six, keep the hog at bay in a thicket, when the Yankee, who is an experienced hunter, soon dispatches him with his machett. Young dogs are frequently much injured by the boars tusks, until experience teaches them it is better to bark than bite. They often steal away and make sad havoc with the young, killing and eating until they can scarcely move. The native name is Warre, and they are considered very superior in flavour to the domestic hogs, although supposed to be of the same breed, being found here by the Spaniards on their first landing. The curing house is built over the dry part of the reef forming the east harbour. The meat is salted and dried in the same way as fish and beef, and sold by the yard. We found it a common practice here, and at Rattan, to have sleeping huts out on the most prominent reefs, as the musquitos and sand flies prevent the most weary from getting any rest on the shore.

The Island Bonacca seems to have undergone little change since its first discovery. Its magnificent forest still pleases the eye of the mariner, as it did 300 years since, and the scenery altogether is seldom surpassed, even in tropical regions. The higher lands having cohun and pine ridges, with spots of white granite here and there visible between the trees, with bold cliffs of red and yellow ochre; making the extremes a varied and pleasing landscape from seaward.

Its harbours are excellent, with channels in so many directions as to be accessible for the largest ships with any wind; this is a great advantage over the harbours in Rattan, which cannot be entered in northers, when they are most required.

The cays on the dry reef, forming the eastern branch, are now all covered with cocoa-nut and other trees from 40 to 80 feet high; the best plan is for a stranger to count them, beginning to the eastward, as

marked in the chart, observing that Nos. 6 and 9 are small, and No 10, or, Half Moon Cay, the largest of all. The one cut, or channel between Nos. 1 and 2, is so much exposed to the heavy swell generally found here in the season of the breezes that it should not be attempted by strangers; the second between Nos. 9 and 10 may with a vessel well under command; the best of all is that to the westward of the Small Cocoa Cay, No. 12, where the water is smooth; a good windward mark for running in is the white sand bore under a clump of peaked trees on the highest ridge bearing N.b.W., the bearing of the sand bore alone will be sufficient should the trees decay or be hidden by clouds.

Pond Cay Channel will be useful with a north wind. It can be taken by eye; and affords good anchorage, with the well defined West Bluff bearing W. ½ N., and the South-west Cay N.E., in five or six fathoms. This is far preferable to remaining under way during the night in bad weather. The only inhabitants now are two men on Sheen Cay, who ran away from men-of-war some years since. We took one as pilot to show where the Swift sloop-of-war struck, who soon ran us on one as bad, which I have named Lark Ridge. This extensive bank can be plainly seen in fine weather, and breaks in bad. All the shoals inside the reefs must be avoided by eye, in the usual way by a person at the mast-head.

There is only one tolerable harbour on the north side of Michael Rock Channel. To enter bring the highest peak to bear S.E. ½ S. This peak is 1,200 feet high, although somewhat difficult to make out on the south side, it never can on the north, even when close under the land. The winds in the morning are from E.S.E. to S.E.; the sea breezes draw round about noon to E.N.E and N.E., strong fiery gales are frequent, seldom shifting more than a point or two for some days; and if it lulls at all it is about daylight.

This is, probably, one of the most healthy spots in the West Indies, and certainly has many advantages over Rattan; not the least is the abundant supply of excellent water, which is here found in every valley. A stranger may find the spring inside Sheen Cay, by bringing the dry sand bore between Dunbar and Peak Rocks; the small stream in the east harbour will be found more convenient in the breezes having smoother water, and soft mud instead of rocks and stones. The Hawks Bill turtle are very plentiful, and there are generally parties of Caribs here from the main, taking them in the summer months.

Manati are still found in the north-east bight. Several kind of golding and curlew, and the piebald pigeon very plentiful on the South-west Cay, and wild hog on the mountains. Fish may be taken at pleasure, either towing or with the seine.

The tides are much influenced by the wind, but we find it on a calm day to flow at full and change days at IX., rise 1½ foot. From an excellent meridian distance in July 1840, we find the Red Ochre Cliffs at the west end 8m. 53·80s. east of Fort George Belize.

On Towing Ships.

Sir.—Every body knows that steam vessels are extremely useful for towing ships under a variety of circumstances, but it is not generally known that sailing vessels may greatly assist each other by towage. When large fleets proceed together, their progress must be regulated by the rate of the slowest vessel, unless a *fast sailer* be directed to take her in tow.

In cases of ships losing their spars or sails, or of being rendered unmanageable, they might be towed out of danger by sailing vessels; or, when hostile fleets encounter each other, and numbers of huge ships are dismasted, and lie like logs on the water, it is then that the great utility of frigates become apparent. They take possession of a vanquished enemy, or tow disabled ships out of danger. At the sanguinary contest of Trafalgar, where *sixty sail* of the line were present, there remained in possession of the victorious English (including the prizes,) about forty-five ships of the line, in a dismasted or crippled state; now, this great fleet had only *four frigates* in attendance! The Royal Sovereign being dismasted in the battle, the Euryulus lay within hail, and made Admiral Collingwood's signals to the fleet; and when the battle terminated Lord Collingwood shifted his flag to the frigate, and *towed his dismasted three-decker* out to seaward.* In the gales that succeeded the 21st of October, the dismasted and disabled prizes drifted to leeward and were wrecked or destroyed; four sail of the line, out of nineteen that had struck their colours, were the only ships that arrived at Gibraltar! but had our frigates been *more numerous* a greater number of the enemy's ships would have been carried into Gibraltar, by a proper application of their towing qualities.

An enquiry into the towing qualities of sailing vessels involves several considerations in connection with the resistance of fluids, and the proper application of mechanical forces. Without going far into these investigations, I will endeavour to show that efficient assistance in most cases may be rendered by one ship to another in a disabled state. The following table containing one hundred and sixty-nine different conditions shews where thirteen different classes of vessels in the Royal Navy may render mutual assistance by towage, and the figures in the respective columns shew the rate at which one ship would tow another, supposing the towing vessel capable of going at the rate of ten knots without encumbrance. In these calculations, the areas of the midship sections, and the areas of sails of the different classes of ships have been involved, and the results are dependent on the following principles.

1. That the resistance varies as the square of the ship's velocity.
2. That the resistance the ship encounters is equal to the propelling power.
3. That the velocity is nearly as the square root of the propelling power.
4. That when ships do not vary much in their general forms the resistance they encounter with equal velocities, will be *nearly* as the area of their midship sections, *all other things being considered equal.*

* See official dispatch.

Now, when a ship is going through the water at an uniform rate, the total amount of resistance she meets with in passing through the air and water, is always equal to the power that propels her in the direction of her course; that is, the resistance being equal to the power that balances or overcomes it, we may safely substitute the one for the other. The resistance is proportional to the square of the velocity, and, therefore the velocity being given, *its square* may be substituted for its equivalent, namely, the propelling power or area of sail. Hence it follows from the principles alluded to, if we wish to *double* a ship's rate of sailing, we must quadruple her canvas, and if we wish to increase her rate of sailing from two knots to six knots, we must set *nine times* the quantity of sail.

When a ship is under a press of sail, and takes a similar vessel in tow, a portion of the propelling power of the sails of the ship towing is transferred by the tow rope to the ship astern; the reduced velocity and resistance of the two ships are together equal to what the resistance of the towing ship would encounter, if the tow rope were cut, and the rate of sailing increased; or, if the quantity of canvas set upon the ship ahead was equally divided between the two similar vessels, then their rate of sailing would be equal. *Cæteris paribus*, when one ship takes another in tow we obtain the same result as if we set a portion of sail on her; and in cases of dismasted ships the propelling power of the canvas we might spare her (if she had masts and yards fast) is transferred by means of a tow rope.

The resistance encountered in passing through a fluid, being as the velocity squared, (1), and the resistance being equal to the propelling power, (2), let us substitute the one for the other in order to find how fast a ship will go when her area of sail is reduced by a half. Let the initial velocity be ten miles per hour, then $10^2 = 100 =$ the resistance, or propelling power, or area of sail; now, if we reduce this to 50, we may find how much the velocity will be reduced, because (3) the square root of the area of sail will give the velocity, $\sqrt{100} - \sqrt{50} = 3$ nearly, and consequently the velocity of a ship under the above conditions would be reduced from ten knots to seven knots. The quantity of sail then that would propel *one ship* at the rate of ten knots through the water, would, if properly set, on two similar ships propel them at the rate of seven knots, because $\sqrt{\frac{10^2}{2}} = 7$, and if the same quantity of canvas was divided into four equal portions, and set upon four similar vessels, they would proceed under similar circumstances at the rate of five knots, because $\sqrt{\frac{10^2}{4}} = 5$.

The area of the midship section of a ship like the Caledonia is double that of a frigate of 46 guns, and the load water area of midship section of a 28-gun frigate, like the Talbot, is double that of a 10-gun brig of 235 tons, consequently the 46-gun frigate would tow the Caledonia with the same facility as the 10-gun brig would tow the 28-gun frigate. A cutter of 160 tons will tow a first-rate three knots in a fresh breeze

with the wind abeam; and dockyard lighters often *do tow* large vessels at that rate. The Goodwill (a small lighter,) towed the Gibraltar, (a heavy deep 80-gun ship,) at the rate of three knots, with the wind abeam, and as the breeze increased, the Admiralty Board, who were present at Pembroke, expressed their surprise, that so small a vessel should tow so huge a hulk, and give her sufficient velocity to shoot up 150 fathoms in the wind's eye, after the tow rope was cast off.

The table will shew the rates of towage in knots when the initial velocity of the towing ship may amount to ten knots; but when the initial velocity is less than ten knots, the figures in the tables will be decimal fractions of the initial velocity, whatever that may be. It appears by the table that a large frigate like the Lancaster, if going ten knots would tow the Caledonia six knots. Now, instead of going ten knots let her go seven then 10 : 6 : : 7 : 4·2. Then such a frigate going seven knots would tow the hull of a first-rate 4·2 knots. In order to find how fast one class of vessel may tow another, the upper column contains the towing ships, and the side column the ships to be towed, and where these columns meet, the figures denote the rate in knots.

Example.—If a 46-gun ship go eight knots with the wind abeam, how fast could she tow a 28-gun ship? Immediately under the 46-gun ship, and opposite the 28-gun ship in the side column will be found 7·9; now $\frac{7\cdot9 \times 8}{10} = 6\frac{1}{3}$ knots nearly; that is to say, the large frigate, if capable of going ten knots would tow the small one 7·9 knots, but when only capable of going 8 knots alone, she would tow the small one at the rate of $6\frac{1}{3}$ knots.

We have stated that the table has been computed from the elements of different ships in the royal navy; it may also be applied to merchant ships, because their size or sailing qualities may be compared, and a fair estimate of their performance approximated. By a careful perusal of the table, we obtain some useful hints. We find, for example, that a very small sailing vessel may be of essential service to a large one; that a small cutter may tow a three-decker at one-third her own rate of sailing, and that the three-decker may tow the cutter at a sacrifice of only $\frac{1}{14}$th of her initial velocity. It seems that similar vessels may render mutual assistance by towing at a diminution of the initial velocity of $\frac{3}{10}$ths, that is of three miles in ten miles. The intelligent, practical and theoretical man, will conclude that mutual assistance rendered by sailors will contribute to their comfort, professional character, and pecuniary advantage, and he will not fail to understand that little, if any, advantage is gained by pressing a vessel with an excess of canvas when alone; but when one ship takes another in tow, the more canvas that is set on the towing ship the better, provided she stands up under it.

The following Table shews the rate at which one class of vessels will tow another when dismasted, computed on the supposition that the towing vessel has sail set to propel her at the rate of ten knots per hour. The figures express knots and tenth parts of knots.

Ships towed.	Rates.	Guns.	Caledonia, 2700 tons.	Canopus, 2280 tons.	Revenge, 1954 tons.	Agincourt, 1740 tons.	Barham, Rasel 1740.	Lancaster, 1476 tons.	Hebe, 1073 tons.	Semiramis, 940 tons.	Talbot, 500 tons.	Pylades, 430 tons.	Raleigh, 384 tons.	Espoir, 235 tons.	Diligence, 160 tons.
a	1st	120	7·0	6·9	6·5	6·4	6·1	6·0	5·7	5·6	4·9	4·2	4·1	3·3	3.2
b	2nd	84	7·1	7·0	6·7	6·6	6·2	6·1	5·9	5·8	4·9	4·2	4·1	3·4	3·2
c	3rd	76	7·4	7·3	7·0	6·9	6·6	6·5	6·3	6·2	5·2	4·7	4·6	3·8	3·6
d	3rd	72	7·5	7·4	7·1	7·0	6·7	6·6	6·4	6·3	5·3	4·8	4·7	4·0	3·6
e	4th	50	7·9	7.7	7·4	7 3	7·0	6·8	6·6	6·5	5·4	5·0	5·0	4·1	4·0
f	4th	52	8·0	7·8	7·5	7·4	7·3	7·0	6·8	6·6	5·8	5·3	5·2	4·4	4·2
g	5th	46	8·1	8·0	7·7	7·6	7·4	7·3	7·0	6·8	6·0	5·3	5·2	4·6	4·3
h	5th	42	8·1	8·1	7·8	7·7	7·5	7·4	6·9	7·0	6·1	5·4	5·3	4·7	4·4
i	6th	28	8·7	8·6	8·5	8·3	8·3	8·1	7·9	7·8	7·0	6·4	6·3	5·5	5·4
k	slo'p	18	9·0	8·8	8·7	8·6	8·5	8·3	8·1	8·0	7·5	7·0	7·0	6·3	6·0
l	brig	16	9·0	8·9	8·8	8·7	8·6	8·5	8·3	8·2	7·5	7·1	7·0	6·4	6·1
m	brig	10	9·2	9·0	8·9	8·8	8·7	8·6	8·4	8·3	8·1	7·6	7·5	7·0	6·7
n	cuttr	4	9·3	9·1	9·0	8·9	8·9	8·8	8·2	8·7	8·3	7·7	7·6	7·2	7·0

a Caledonia, *b* Canopus, *c* Revenge, *d* Agincourt, *e* Barham, *f* Lancaster, *g* Hebe, *h* Semiramis, *i* Talbot, *k* Pylades, *l* Raleigh, *m* Espoir, *n* Diligence.

WILLIAM WALKER,
Plymouth, Oct. 1, 1842. *Queen's Harbour-Master.*

ON THE SEYCHELLE ISLANDS.—*By Capt. F. Moresby, R.N., C.B., while commanding H.M.S. Menai,* 1821.

(Concluded from p. 682.)

MARQUIS OF HUNTLEY BANK.—This bank is another proof how close ships may pass to the low sandy islands, without discovering them, taking the position of the two ships, which sounded on this bank from Horsburgh's valuable book in the supplement to the second edition, p. 24, and which is precisely the same as described to me by the masters of small vessels which go to Jean de Nova and Cosmoledo Group for fish. The Marquis of Huntley and Duke of York, Indiamen, sounded in 9° 57′ S., long. 50° 20′ E., the last soundings in 9° 53′ S. At noon of the same day they were in 9° 44′ S., and long. 50° 18′ 45″ E., being by the position I have assigned St. Lawrence

S. 12° W. of it, three leagues distant, and probably continuing their north-east course. At 9.A.M. March 12th, 1822, in H.M.S. Menai, we were in lat. 9° 59′ S., long. 51° 30′ E. At noon having steered N.E. ½ N. 9 miles, we were in lat. 9° 53′ S., long. 50° 35′ E. At this period numerous gannets, and those species of birds that do not go out of the sight of land, were round the ship. I was anxiously looking for the Twelve Isles or St. Lawrence, but as the current was setting one mile per hour E.N.E., and the wind hanging light from N.W.b.W., I could not make westing. At sunset the birds took wing to the westward, and convinced me, that an island lay at no great distance. The deep-sea lead was constantly kept going without finding bottom. At midnight the 12th, we were by meridian altitude of Mars brought forward from 10 P.M. 9° 27′ S., long. 50° 50′ E., when we tacked to the south-west; but finding it impossible to get sufficiently to the westward to make St. Lawrence, I tacked to make St. Pierre, which we discovered at 6 A.M. the 13th. Thus, I suspect the Marquis of Huntley Bank, is a continuation of the bank extending from St. Lawrence, the reefs are frequently seen before the islands are discovered, but as there are sixteen miles difference of latitude between the last soundings of the Huntley, and the latitude of St. Lawrence, I have indicated the Huntley soundings, still as the Huntley Bank, until I, or others, may have an opportunity of making further and more correct observations.

Agalega.—I landed on the extreme north-west point the 29th of August, 1822, whose latitude I found to be 10° 21′ 30″ S., long. 56° 32′ E. I had not time to examine its south-east point, but I take it to extend far more to the eastward than its breadth would admit, as stated by Horsburgh, p. 136, second edition, from Capt. Briggs; that is, it extends in a north-west and south-east direction; the easternmost reefs being at least in longitude 56° 42′ E., I give its position from a nine days' run to the Mauritius, when the chronometers were verified. Small vessels convey a considerable quantity of cocoa-nut oil and cotton from this island to the Mauritius. A schooner was at anchor, when I visited it under the lee of the north-west point in eight fathoms water, two cables' length from the shore. Variation 9° 40′ W. Agalega is low, but the trees may be seen five leagues off.

*Sable Island.**—This island I sent a schooner to reconnoitre in September, 1821, a wreck having been seen upon it; being still doubtful of its true positions on leaving Port Louis the 3rd of March, 1822, I steered for and made it in sixty hours. At noon on the 6th we were one mile distant from it, bearing south-west; its latitude is 15° 51′ 45″ S., long. 54° 33′ 45″ E. per chron., per sun and moon 54° 38′ E. The island is very low and sterile, with a reef extending from the south point, and is about three-quarters of a mile in length; the north point appears to be a steep sand bank, up which the sea rolled a considerable distance. The wreck of a vessel of apparently of 140 tons lay half embedded in sand, and from the position and appearance, I should think she must have been several years in this situation. There is also a small hut and flag-staff on its eastern end. The people who erected these were taken off by H.M. sloop Harpy. We kept the deep-sea lead

* I. Tromelin of Capt. Owen.

constantly going, both on approaching it on the south-east and leaving it on the north-west, without gaining bottom.

Cosmoledo Group.—These Islands hitherto (May 1822,) I have not visited, but I have sedulously searched for information from those who repair to them for the purpose of fishing. The eldest Rodoul has furnished me with a correct plan of Aldabra, and the bearing and distance from Aldabra, of Assumption, Cosmoledo, and Astove. Natal Island must still appear doubtful; from many of whom I have enquired respecting this island, the only information I could gain is, that they have seen birds in passing the position assigned to it.

Rodoul procured many observations at various periods while at Aldabra in his vessel from Mahé to procure land-tortoise and fish. He plac s his anchorage off the east end in 9° 25′ S., long. 44° 7′ E. of Paris, or 46° 27′ E. of Greenwich, by a chronometer from Mahé; but as he then took Mahé fifteen miles too far east, it will be 46° 12′ E.; the south point Rodoul made in lat. 9° 35′ S.; variation 13° 25′ W. Rodoul is a good observer, and verified his chronometer by lunar observations in 1814; since that period Capt. Laing of the Lord Castlereagh in December 1815, according to Horsburgh, has correctly ascertained the position of the north-west extremity of Aldabra, placing it in 9° 23′ S., long. 45° 46′ E.

As the Aldabra Isles are of considerable extent east and west, the longitude of Rodoul whilst at anchor off the eastern point must be correct; assuming thence the north-west point of the Aldabra Isles to be according to Capt. Laing in lat. 9° 23′ S., long. 45° 46′ E., and the south end in lat. 9° 35′ S., long. 46° 12′ E., I place the Isles of Assumption, Cosmoledo, and Astove from their relative bearings as follows:—Assumption bears S.b.E. true, nineteen miles distant, from the north-east end of Aldabra, and is in lat. 9° 43′ S., long. 46° 15′ 30″ E. Cosmoledo Isles are nearly due east of Assumption, fifty-three miles, from several ships run; they consist of many islets and sand banks encircled with reefs having a circumference of thirty miles. The southern dangers I take to be in lat. 9° 50′ S., the north in 9° 40′ S., and the centre in long. 47° 08′ E. Of the extent north and south, east and west, from not having been there I cannot be certain.

Astove lies S.E.b.S. of the south part of Cosmoledo Islands twenty-six miles, and is in lat. 10° 13′ S., long. 47° 31′ E. The Isle of Aldabra according to Rodoul's plan is between ten and eleven leagues in extent from east to west, and five leagues from north to south. The southern island runs nearly the whole extent in the shape of a horse-shoe, convexing to the south and enclosing with the three islands described by Captain Laing to the north, a shallow lagoon interspersed with small islets and sand banks. Between middle island and western island the passage has six and seven fathoms water; so has the passage between the west island and the long southern island; but the tides ebb and flow with great rapidity through them, and it is with difficulty, and by chain cables that small vessels are anchored.

Aldabra is annually visited in the favorable monsoons for the land-tortoise, which are to be found most plentifully. They grow to a large size, are taken to Mahé or the Mauritius, and sold from one to three Spanish dollars each. Cosmoledo is seldom visited from its want of

anchorage. Natal I have indicated in my chart from its supposed position from Aldabra, but its existence is very doubtful lat. 8° 31′ S., long. 46° 23′ E.

Isles Glorioso.—West Island in lat. 11° 34′ 41″ S., long. per chron. 47° 37′ E., lunar 47° 33′ E.; East Island 11° 52′ 20″, long. chron. 47° 44′ E., lunar 47° 40′ E. The positions of the islands were correctly ascertained by the means of many sets of the sun and moon agreeing with a chronometer, within four miles, whose rate I verified two days after from the meridian of Johanna.

The islands are composed of sand banks, the debris of coral, shells, and madrepore, which extends from the reefs that encircle them to high water mark. They are about 15 feet above the level of the sea, crowned with brushwood, and the mapon tree, about 20 feet high. The reef, which continues from the easternmost, and of East Island, it is probable is more extensive than I have placed it; but from the mast-head I could not observe the sea break further than I have noticed in the accompanying plan. The coral reef which extends from island to island is in some places three miles broad, the sea breaks on the outer reef with great violence. Sand banks, small islands and lagoons fill the space between the outer reefs. There did not appear any opening, neither could we gain soundings with 100 fathoms of line, one mile from the reefs.

West Island on which the boat landed is about one mile and a half in length and about one broad; a cable's length from the reef eighteen fathoms, coral rock and uneven ground. A basin is formed by a curve of the sand bank in which is seven fathoms water, rocky uneven bottom. It is probable a small vessel might lay here in safety, this is at the east end of West Island. Turtle and birds in abundance, fresh water I suppose may be procured by digging, but this we did not try.

East Island is about one mile long, and similar in every respect to West Island. The tide appeared to rise 10 feet, and it was low water at 3 P.M., July 21st, 1821. The winds are light, varying from south-west to south-east, with a considerable swell. From this circumstance, and the want of an anchorage, these islands should only be approached with a commanding breeze. The currents are strong and uncertain. The twenty-four hours preceding the time we were abreast of the islands we had been set N. 53° W. 49′. The dangers I think extend at least fifteen miles E.b.N. and W.b.S. by compass. Thrown on the bank of West Island was part of a lower mast or bowsprit broken at both ends, and from its size as described to me, must have belonged either to a line-of-battle-ship, or first class Indiaman. A few cocoa-nuts had also been thrown up, and two or three small trees were growing.

Cargados.—The Islands situated on this bank are accurately described according to Horsburgh, by Lieut. Henderson, and a correct survey has been made of them by M. Roussin in 1806, when there in the Semittanté, French frigate. The unhappy loss of the Cabalva has subsequently caused them to be visited by H.M.S. Magicienne and other vessels of war. Lieut. Hay of the Menai, I sent there in April 1821, who anchored off the South Isles in lat. 16° 47′ S. He found the figure-head of the Cabalva, placed as a memorial over the Captain's grave, and the small islands on which part of the crew were saved,

were strewed with the various merchandize with which she was charged.

Although a space of three years had elapsed, many of the articles were in a state little to be expected. A green baize cloth had received no other damage than being slightly discoloured, and was immediately appropriated to its former use. Blue clothes were lying in all directions, rolled by the water into hard masses, intermixed with sand and shells; the appearance had more that, of a recent calamity than one so long lamented.

St. Pierre,* or the Northernmost Island, is in 16° 11′ S. Between St. Pierre and a small sandy island, N.N.E. of the North Isle anchorage, there is a good passage hauling round between a coral patch which generally breaks two or three miles W.N.W. of North Anchorage Isle. The southern reef in 16° 55′ S. From the eastern edge of the reef to the westernmost dangers is about eleven miles; and the meridian assigned to Isle Norde, 59° 39′ E., will pass through the centre of the group. M. Roussin places the anchorage of North Isle in 59° 35′ E.; but this is of no material difference. Variation 9° 30′ W. High water at full and change, at 2h. 30m. P.M. The survey copied from a manuscript of M. Roussin will give every particular.

Cargados and Nazareth Bank.—As far as I have been able to ascertain the extreme north end is about 13° 40′ S., extreme eastern part in long. 61° 15′ E. on the parallel of 14° 30′ S., and its western limit runs on the same meridian as the northern reefs, inclining to the eastward towards the centre of the bank, and verging more westward towards the northern part.

This bank is generally passed over by many vessels from the Seychelles and India, bound to the Mauritius; there are no dangers, the least water I ever heard of being found upon it was seventeen fathoms.

Nazareth bank is separated by deep water from the Cargados bank, but the extent of the deep sea I have not been able to ascertain. It must however be narrow, the colour of the water indicates when a ship is between the banks; between this bank and the Sayha de Malha the currents set to the westward with great rapidity. I have passed it on the meridian of 57° 30′ E. to 59° 10′ E. several times, and at all seasons of the year, experiencing a westerly current of from twenty-five to fifty miles in the twenty-four hours, when on the succeeding and preceding days after passing the parallel of deep water between the banks, we had the usual westerly current of from ten to twenty miles in the twenty-four hours.

Having given the situation of all those places in the Ethiopian Archipelago that are known to exist, either from my own observations, or from such authority as appeared not to admit of doubt, and which authority I have mentioned, I shall speak of the dangers, which from time to time have been reported, commencing with those lately described in the *Mauritius Gazette*, between the Cargados, and Sayha de Malha banks; the following is a copy as it appeared in the Gazette.

"Dear Roger.—About five years ago I obtained from Capt. Bullar, at the Isle of France, a note of three patches said to exist between the

* Albatross I. of Capt. Owen.

head of the Sayha de Malha, and tail of Cargados Bank. On my way from the Isle of France to Calcutta last May, the wind being favorable, I was desirous of passing between the banks, and kept well to the east. On the morning of June 1st, at 7 A.M., steering E.N.E., discovered breakers on the lee bow, and in a few minutes after it became squally and very thick. I, therefore, bore up, and passed to leeward of them, saw the breakers at intervals of the squalls passing, and as well as I could distinguish, conceive it to be a patch about a cable's length in extent, the water breaking over something just awash. By our account this patch lies in 12° 22′ S., long. 60° 40′ east of Greenwich; the situation of the three patches, as given to me by Capt. Bullar, is as follows:—First, 11° 50′ S., long. 60° 45′ E.; Second, 11° 57′ S., long. 58° 46′ E.; Third, 12° 22′ S., long. 59° 10′ east of Paris. The latter no doubt was the one we saw; it is, therefore, reasonable to suppose the others exist also. We steered from the noon of that day N.N.E. about 100 miles, and sounded on the Sayha de Malha bank fifty-seven fathoms sand first cast, and then hauled more to the eastward; least water twenty-seven fathoms. I am anxious to give you this account, as it is only from the Isle of France that ships come to India by that route.

(Signed) "WORTHINGTON."

"*Calcutta, 29th July*, 1821."

These dangers so clearly indicated, I take to be imaginary. When the sun has a low altitude, and the ripplings or meetings of the currents in dark squally weather are on the same bearings, it causes a refraction, which gives an appearance of sand banks and breakers. The letter of Mr. Worthington having caused considerable anxiety, as to the safety of two vessels that had been expected at the Mauritius, and whose course was likely to lead to the reported dangers, I directed Lieut. Hay commanding the Colonial brig Wizard to search in the parallel of the three reefs, but more particularly to ascertain the position of the one reported by Mr. Worthington, and also to examine the north-west extremity of the Sayha de Malha bank. This was in June 1822, and subsequent to the period when I had closed and forwarded the foregoing remarks.

[Lieut. Hay made his examination accordingly, and gave a statement of soundings which he had obtained, confirming the opinion of Captain Moresby.]

Sayha de Malha Bank.—In which I shall include those called Galatea Rocks and St. Michael Banks. It being now ascertained that on the north-west extremity of the Sayha de Malha Bank numbers of coral patches exist, between which there are no soundings, I am inclined to believe that off the north-west extremity of the Sayha de Malha Bank, it is precisely under water, what those coral islands which are scarcely elevated above water now appear. At no distant time it is probable islands will rise similar to Cargados. Sand banks, the debris of coral, shells, and madrepore will form in the lagoons, which are encircled by reefs. There is in one place, as I have marked, only three fathoms and a half, and the next cast thirty or forty fathoms. This is the case with all the reefs. I have seen islands as it were forming the sand bank, assuming in twenty-four hours a different shape, sometimes two feet above the level of high water at others awash.

A log of wood or large branch of coral broken by the violence of the ocean, and thrown on the sand gives these banks their first stability, from this moment they gradually become the deposit of the ocean.

First, the resort of turtle, next of birds, who bring the seeds of trees, and the first cocoa-nut that lodges, is the germ from which in ten or fifteen years the island will be covered. I directed an officer whom I sent from the Seychelles in a Colonial schooner, to ascertain the north and south limits. The weather proving bad, with a heavy breaking swell, he did not think it safe to heave to hourly to sound. He struck ground first in the parallel of 8° 50′ S., long. 60° 10′ E., thirty-eight fathoms sand, broken coral and shells. Shortly after steering S.S.W. he had ten and eleven fathoms, then no bottom with forty-five fathoms; the sea appeared to break to the north-west. Thus he passed the Galebea rocks, and lost soundings off the western limits. Since that period I have enquired of every person whose veracity I could trust, and amongst those who are not to be doubted are the Rodouls. On the north-west extremity they found three and a half fathoms. The day was fine, and they sounded in five, five and a half, and seven fathoms. This has been corroborated to me by more than one. As I have before mentioned, Lieut. Hay, in the Wizard, has since the foregoing remarks were forwarded, sounded the Sayha de Malha Bank, particularly on the north-west extremity. The soundings he found with those I have before mentioned, and others given in Horsburgh's Directory, as marked in my chart, will I think, place the Sayha de Malha and the coral patches off the north-west extremity with great precision.

A Monsieur Mondor reports that he anchored on the Sayha de Malha bank in three and a half fathoms, close to a small sandy island covered with birds. This is another instance of the power of fancy. It was near dark, and he left his anchorage before daylight, at the break of which he could not discover the island. Probably it was one of those fields of spawn so frequently met with in these seas, having the appearance of sand banks scarcely covered with water, over which myriads of birds are on the wing. The sea breaks in several places, during violent weather. It therefore behoves large ships to navigate with the utmost caution, and choose a route clear of lurking dangers if it is in their power.

The edges of the Malha bank to the eastward and northward are steep, as are all the coral reefs in this Archipelago.

Success and Adelaide Banks.—It will be seen by the soundings we found that these banks are the same, and I am of opinion that they are a continuation of the Great Mahé bank. I had not an opportunity of sounding between the parallel of 5° 10′, and 5° 40′ S. But on the meridian of 56° 35′ east, between these latitudes, I think, the banks unite. There being no suspected dangers, I would not delay other views, which were more important.

Fortune Bank.—Lies due east of Coetivy fourteen leagues. The least water that has been found by the small vessels amongst the islands is nine fathoms; they describe it as having the same extent north and south, as Coetivy and the southern sand banks, and from three to four leagues broad. Between the bank and Coetivy, there are no soundings 100 fathoms.

Roquepiz.—From various accounts, for I have not seen the island, I place the centre in lat. 6° 24′ S., long. 60° 2′ E. It has been frequently seen by the traders from the Seychelles; is a low sandy island encircled with reefs.

George Island.—Whether this is the same as Roquepiz, must yet remain doubtful, but that one individual, at least, was certain it did exist, for having procured a grant of this island, which he asserted he had seen on his voyage to Bourbon, he embarked in a small vessel with some slaves to form an establishment there. Since his departure he has not been seen; nor has a remnant of his vessel, or the island been found. Not very long since, the son of this man, commanding a French Government schooner, had permission granted him to go in search of his father and the island; but he returned disappointed.

Rose Gally Rocks and Swift Bank.—I had no opportunity of examining. I therefore, place the former still doubtful, and the latter according to Horsburgh.

A dangerous rock is said to exist in lat. 5° 20′ S., long. 58° 05′ E. I think Mr. Rodoul told me he had seen it. On my return from Zanzibar, in 1822, I searched for it in vain.

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.

Port Royal and its Associations.

(Continued from p. 632.)

I HAVE already ventured to express an opinion with reference to the only sure remedy which appeared to me to offer for fully preventing the deficiency complained of.

The subject is one which has engaged my thoughts for many years, and I have examined it upon all points of bearing, and arrived always at the same conclusion, namely,—the royal navy must have a source, in the first instance, exclusively for itself, whence the stream of supply shall continue to flow unchecked. The prospect in prospective which I take, should schools of the sort I recommend be established is, in a degree confirmed by the operation of the small public establishment at Portsmouth. It is affirmed that the lads, about 200 in number, introduced *directly* into the Queen's sea-service, have conducted themselves most creditably, and that many are now petty officers. Of National Marine Schools, I entertain the most sanguine belief of the result proving in every respect equal to expectation; even to that which every person desires to see accomplished,—the deathblow of impressment.

As an auxiliary aid, the number of apprentices, including the gentlemen cadets in the Eastern and Australian traders, may be increased in proportion to the tonnage of the vessel. The number at present is too small; only one for a ship of 200 tons; and for the largest vessel no more than five. I conceive that two apprentices for every 100 tons, would not be more than the exigency of the service requires; and no vessel under 100 tons should carry less than two.

The number of seamen, too, should be increased, for it is notorious that, many, if not most, of the English merchant ships are "short-handed," the owners policy being (equally notorious) to sail his vessel

with the least possible expense; such is the effect springing from Insurance Offices.

It appears to me as of some importance in gaining a complete knowledge of our nautical state, that a general office in London is necessary for the registering of what may properly be called the *statistics* of the Royal and Commercial marine. If registries be kept of the entry, desertion, and death of all seafaring persons, they probably are shelved in the local custom-houses all round the shores of the island. No doubt the documents are available to the home-minister; but a statement should be annually laid before Parliament, without being called for. Happily for the interests of this great maritime state, there is a natural inclination in its youth, to follow the sea-service as a profession.

The deplorable losses which are yearly announced, and the many narratives which issue from the press, and are repeated over and over again, as if congenial with the national feeling; describing in terms sufficiently forcible to harrow up the emotions of susceptible hearts, and lead the mind of the young to prefer the safety which a shore life offers over that of one passed amidst the turbulence of the ocean, fail to divert their thoughts from following the bent of original wishes. No obstacles, no dangers, seem for a moment to disturb this ardent desire; the thoughts of peril serve but to stimulate their resolution; and to the sorrowing parents alone are left the anguish of parting, and the fears which those perils cannot fail of engendering. Those who have sons roving on the ocean, who, if possible are more intensely dear to them from their tender years, may, perhaps, read the following simple effusion with some degree of interest, as portraying in words, feelings in unison with their own, in a mother's lament and consolation.

Farewell, farewell, alas! 'tis hard to part,
Dear boy so long from thee;
Yet Hope with her bright eye shall sooth the heart,
Whilst thou art far from me.
But still as fleeting Time his pinions flap,
And wand'ring steps retrace
Our former haunt, by stream, thro' mead and gap,
I see an altered place!
Ah! who can tell *why* change like magic spell
Shall seize upon the sight,
When all around, of hill, and wood, and dell,
Still glows in beauties light?
Oh! 'tis tedious *absence* gives the smart,
And pales the roses hue—
That saddens ev'ry joy, and wrings the heart,
And sombres all the view!
Yet still, when all most fair shall seem less so,
Because thou'rt far away;
My grief shall hush, my heart with hope shall glow,
When for thy weal *I pray*.*
For He who rules the wind, and stills the wave—
The lightning's flash disarm,
In mercy boundless—hath power to save,
And shield my boy from harm.
Yes, these holy thoughts to man are given,
To lift the soul on high,
When from the heart all peace seems driven,
And pain and sorrow lie.

* "Therefore, I pray unto you. What thing soever ye desire, when ye pray, believe that ye receive *them*, and ye shall have *them*."—St. Mark, ch. xi., v. 24.

If I may appear to have wandered a little on one side from the strict path of my subject, I am sure that the patriotism of the reader will suggest the reason. I am too deeply concerned in the welfare of the country, and the noble profession I am attached to, to suffer any consciousness of a want of talent to deter me from offering the suggestions of my experience for the improvement of that profession. I now fall back on the "Associations."

It has been correctly observed that, variation of occupation and pursuit for the purpose of keeping all the parts of the system in harmonious exercise, and imparting a wholesome tone, is one of the most important principles concerned in the preservation of health. I am sure no person will doubt the truth of this, as there is not a man in existence who has not benefited by its observance. It should never be lost sight of in a man-of-war, where the recurrence of the duties are of that monotonous character, which, when endured for long periods without change, or, relaxation, have a tendency to depress the spirits, and predispose to sickness. Those who have experienced the prolixity and di piriting sameness of a five or six months blockade, without possessing the calm resignation of a Collingwood, will at once subscribe to the correctness of the above remark.

The occasional relaxation from rigid duty, and a judicious and timely slackening of the reins of discipline, will not only have a direct effect in the preservation of the health of the body, but will be conducive of a cheerfulness of the mind that astonishingly lightens duty.

"That load becomes light which is cheerfully borne."

In a cruising ship, which has a particular space assigned to her, where, like the mountain eagle soaring around some solitary peak, in continued circles, she backs and fills; now sauntering along her watery path, then turning, watchfully the while, and slowly retracing her course, anxious for some lucky accident that shall throw within the range of her long silent weapons, an enemy worthy of her strength,—expectation is always on the stretch; but the good fortune which upon such occasions is always devoutly sighed for, is frequently, not realized; and as day after day passes without such hopes and wishes being gratified, disappointment throws her shadow over the mind, to lighten which, even the presence of a storm becomes desirable. We see here clearly the craving after change; it is inherent in the nature of man,—and the sailor is not exempt from its influence. Our olden poets, Beaumont and Fletcher, seem to have been fully acquainted with the feeling of our tars, judging from the following spirited lines:—

"Lay her before the wind, up with your canvas,
And let her work; the wind begins to whistle;
Clap all her streamers on, and let her dance,
As if she were the minion of the ocean.
Let her bestride the billows, till they roar,
And curl their wanton heads.
The day grows fair and clear, and the wind courts us.
Oh! for a lusty sail now, to give chase to;
A stubborn bark, that would but bear up to us,
And change a broadside bravely!"

The plan of keeping the seamen constantly employed at all times

and in all weathers, by some of the masters in the Merchant service (particularly those of America) is one of the fertile sources of those disgraceful scenes which so often occur in trading vessels. The avowed object of "keeping the devil out of their heads" is founded in error, or which is worse, in a tyrannic disposition; but with that we have at present nothing to do; and shall only remark that there are many exceptions in that service to this absurd and slavish practice; and wherever these are found, we may also expect to find the commanders men of superior manners and acquirements.

During the war there was scarcely any relaxation, from the usual routine of duties, allowed the men, if we except dancing. In some of the large ships, a play was sometimes performed for their amusement, but there was something more required to soften the rigour of confinement, an occasional run on a sandy beach.

How often have I seen men gazing wishfully upon the beautiful scenery spread before their eyes, and longing for a lark upon the inviting strand. Under the circumstances in which they were placed at that period, it was felt that this indulgence could not be granted; but I am of opinion that in certain places, and by a judicious management, it might have been allowed; for sailors like the Arabs of the desert will seldom break their word when under a compact. I remember a case in point; whilst H.M.S.——was at at anchor in the harbour of Cape François, in St. Domingo, whilst Christophe held his office of terror, the captain ordered "word to be passed" that seventy or eighty of the crew would be permitted to go on shore, to the French theatre, to see a play acted, upon the understanding that, they would conduct themselves with propriety, and return to the boats when directed. The arrangement with respect to the selection was left to the men; and the required number accordingly went on shore with a party of the officers, all in high glee, for it was a relief they had been seldom accustomed to. It was an era in the hard lot of the seaman long to be remembered by him, one of those gleams of the sunshine of life that lights up the sinking heart amidst the gloom of a turbulent career. Who is there possessing one spark of benevolence but would rejoice at the momentary happiness thus diffused among a band of these devoted men? Yet, how coolly, nay, how apparently hard-heartedly was the rigorous confinement to ship-board, for a series of years, veiwed by the generality of officers, who, themselves, were under no such soul-sinking restraint. But this seeming callous effect was not real. Constant familiarity with spectacles repugnant to our better feelings, may blunt sensibility, but to all except the most obdurate, compassion will have its sway, although mitigation may not be exercised.

Whilst in the Theatre, and nearly at the conclusion of the farce, the Comic Doctor, a great commotion took place in the city, from one of our officers * endeavouring to save the unfortunate French families

* I think his Majesty the King of the French, if he were made acquainted with the devoted exertions of this humane officer, (now a very old Commander,) and some others still alive, to save the unhappy French of both sexes from the murderous blacks, would mark his approbation of their conduct, in an honorary way, with the same liberality he has done on other occasions.

which still remained in the place. Consternation seized upon the unhappy players, who were all of the French nation, and had had their lives hitherto spared them, for the purpose of administering to the pastime of their sable tyrants. What a reversion in the order of things! But a few years before the inhuman demons who now ruled over them as masters, were their slaves! They, at the first report, poor souls, dressed in all the finery of their histrionic attire, fled with the vain hope of secreting themselves from the unsparing vengeance of the infuriated blacks—but, not one of them escaped—they were massacred! The last drama of life had passed with them, they were numbered with the dead.

The Captain, who was present, ordered the men to form in two lines, and to proceed down to the boats. The multitude in the streets was so dense that it was difficult to make way through it. On the landing place a very stormy altercation took place between Christophe and our captain; after which we embarked.

The night was dark, and the men could not have had a better opportunity to desert had they been so inclined, but there was only one man missing, and it was subsequently ascertained that he was killed in the fray which took place. Some days after this, many French families were murdered.

Upon another occasion when a Corvette of war got on shore outside of Lucea harbour, in Jamaica, our boats were sent to her assistance. Some of her guns had been thrown overboard; these were weighed and put into the long-boats belonging to the West India ships. One of our quarter-masters, with two or three men, was in charge of one of the boats; a gale came on, and she was blown off to sea. Several days passed without any tidings of the boat, and as the men in her had been impressed, it was thought that they had availed themselves of so favorable an opportunity to desert. How hasty we are in our conclusions when circumstances seem to lean towards the opinions we draw, in matters of every day occurrence, yet how often we are obliged eventually, upon many occasions, to acknowledge that the most acute judgment is liable to be deceived. In the above case, an injustice was done to the fine seaman who had charge of the boat, and to the younger men that were with him; for, although they could not possibly have had a more favorable chance offered them for escape from a most severe ship, yet they felt as they, themselves, expressed it, that they were bound in honour to return to their ship, which under existing circumstances was to them a prison. It may be possible that one or two anti-nautical sages may exclaim—"What! a Jack possess honour?" At last a letter was received from the quarter-master, Arthur Kelvin (a Mank's-man), stating that he had put into Green Island bay, and that as soon as the weather permitted, he would work up to Lucea. In a few days he returned.

I think I know enough of the character of seamen to be satisfied that when confidence is placed in them, all who are thoroughly bred, will never abuse it. I speak of seamen, not sailors; and, I therefore believe that, if more shore indulgence had been allowed the crews during the war, and a promise of reward held out to them, when hostilities should cease, much of the dislike to the public service which was caused by

rigid restraint, and severe punishments, for trifles, would have been prevented, and also desertion in a great measure.

Can it be believed, the superior officers, who in all respects have been placed by the will of Providence in more favorable circumstances, and who with less of the severities enjoy many of the comforts of this brief life, that in the plenitude of their prosperity, they should look down upon those of their fellow-men, who, by the mere adventitious circumstance of birth become subservient to their authority, as automatons unpossessed of sensibility or feeling? I hope and trust that there are few who think so; but we have heard of something very like this creed held by officers. Indeed, the extraordinary distance which which it is thought necessary should be observed between the different grades, but, especially, between the captain and those below him in rank, for the furtherance of subordination, appears to be often carried to such a length by the austere and haughty disciplinarian, (in some, as much from vanity and self-importance, as from the imbibed and implied necessity,) as to turn all hearts, however naturally warm, to icy coldness! Good Heavens! can it be possible that a body of educated men, gentlemen, should require such stringent laws to keep them in reasonable subjection, for the benefit of the service of their adoption? The truth is, that there is no absolute necessity for carrying the principle to the length which it is too often carried; and, I may observe that, the length to which it may be carried seems to be solely left to the discretion of the captain; so that, in fact, when overstrained, the medium is thrown upon the law, and the moral "transgressor" escapes by virtue of his office as executor of the law. In some ships I have sailed in, the chief never showed his superiority of power but on duty, and even then not austerely; and I am sure I never knew an instance of any of the subordinates taking advantage of such unbending; indeed, I am quite convinced that the officer of any grade who can, by his personal conduct, gain the regard of those inferior to him in rank, will be more likely to be seconded, under any circumstances, than he who acts a contrary part, and becomes odious. A captain may, it is true, keep his ship in fine order by a system which will inspire all under him with a sort of fear, and even terror, not, however, of his person, but of his power; yet, is he to be envied, nay, is he to be admired? I have read somewhere an anecdote of a General Officer, who, when a passenger in a man-of-war, was asked by her captain, if he did not admire the perfect state of discipline the ship was in. "Yes," answered the gallant soldier, "I admire the discipline, but I would not command a regiment under such terms, for its fulfilment, for the world. I have not seen a *smile* upon the countenance of a single man of the crew since I have been on board!"

There is, however, a considerable variation among so large a class of officers, in the manner in which a chief bears, or, deports himself, towards the individuals serving under him; and, this difference principally arises from temperament, constitutional disposition, intellect, &c. It is obvious that the possession of refined, or coarse feelings will greatly influence conduct; yet it is extraordinary that, according to the record of experience, the extremes have been found to lie principally with those who by birth have sprung from the higher and lower orders.

From which it would seem that, neither the law nor the custom, which regulates the personal respect and difference to be paid to those in authority, are chargeable with the commission of the practical displays so often proceeding from the grade alluded to. The necessity for strict subordination does not imply austerity.

It cannot be believed that, those whose wisdom framed the code of laws for the regulation of internal discipline on ship-board, however much they may have been impressed with the necessity for stringently defining the rules for insuring a strict and wholesome discipline, and a becoming subordination, could have carried their ideas of this necessity so far, as to contemplate the banishment of all reasonable feeling of benevolence, courtesy, and forbearance from the breast of a commanding officer.

It is impossible to look back on former service, without remembering the hilarity and delight always displayed by the men, when employed pleasantly and profitably in drawing a seine on a fine sandy beach. Even in the more laborious pursuits of wooding and watering amidst the wild and romantic scenery of the West India islands, the seaman shows by his cheerful countenance and jocose merriment, how much influence the relief from confinement, even for a brief interval, has upon his spirits. Who would desire it to be otherwise? Few perhaps. But, the force of adverse circumstances, and the strict adherence of corrupt systems are sad drawbacks on the excercise of benevolence in those disposed to it. Nevertheless, opportunities, with the sincere, may be found if sought for. But the attainment of high power, not only on the weak, or vain, but upon the strong mind, too often obliterates the germ of those high principles of compassion and kindness belonging to the educated man.

Is it incompatible with the high station attained by any individual that his heart should display in their bright integrity benevolence and other kindly feelings? Or, is it that the higher he rises in rank, the more these God-like attributes of his nature should be estranged from him? If so, lucky he, who retains his happy mediocrity, wherein at least he may still nourish and exercise those sentiments with which he has been endued by a beneficent Creator for universal as for individual good. To my mind, a man devoid of benevolence is like a beautiful flower without fragrance!

I have seen the whole of the marines, with the lieutenant, sent on shore to an extensive sandy beach to exercise; the satisfaction which this afforded was, sufficiently apparent on the smiling countenances of the "jollies," on their return to the ship. Unhappily on such occasions the seamen were obliged to content themselves as mere lookers on, the sight of *terra-firma* alone was all they were to expect. But, *now*, and it is a real, warm, heart-felt pleasure to think so, that a better system prevails, and Jack is no longer mistrusted, we have a hope that divisions of a ship's company are permitted, whenever fit opportunity offers, to have a run upon the beach, exercise their limbs, laugh aloud, and amuse themselves according to their fancies. The salutary effects that would arise from such indulgence, I am sure require not to be insisted upon, they must be obvious upon the least reflection.

The plan of having a sailor's schoolmaster, and a seamen's library on board our ships, is a most admirable one. What blessings would such

have proved during the war. We entertain no distrust of the expected results proving otherwise than contemplated, and much more than an equivalent for the expense. I heartily congratulate the service on this enlightened policy; feeling assured that the officers will indirectly benefit by the adoption, from the improved state of moral feeling that it is presumable must follow the improvement of the minds of our seamen.

As a means too of carrying out the plan to the extent to which it is susceptible, preventing relapse into former reprehensible conduct, and to relieve the men from the gripe of the "land-shark", as much as possible, I would respectfully suggest the expediency, as an act of humanity as of sound policy, of lending to local authorities in our larger sea-ports, some of the old worn-out line-of-battle ships to be fitted out as "Sailors Homes." I think it hardly possible to suppose that subscriptions would not flow in for the purpose of fitting such vessels as receptacles for a class of men to whom the community at large, but the merchants especially, stand so much indebted.

(To be continued.)

WHERE IS THE BONETTA ROCK?

When her Majesty's Ships experience narrow escapes from sunken dangers which are unknown, our first duty is to hold out the warning to all, and there is the satisfaction attending our doing so, arising from a confidence that the *reported* positions of those dangers *are not far* from the truth. We wish that we could say as much for all others, but the recollection of the Lorton Rock, unblushingly reported in the very middle of the Providence north-east channel, sadly interferes with that confidence in too many other instances. There are those who boast of the "glorious uncertainty of the law," but what is that compared with "the glorious uncertainty of the position of a sunken rock! Who is he that has the temerity to say he can lay bare the depths of the ocean and pronounce that there is no such thing as a sunken rock here or there, now lying concealed in its ample depths? The very idea is preposterous, the thing impossible. Again, if he resorts to reckoning, what a maze of errors and difficulties he has to encounter! Erroneous bearings, erroneous estimated, aye, and measured distances when the log is concerned; erroneous observations, omissions of information, and commissions of errors meet him on every hand; all for what? to keep concealed what may be, or may not be already hidden, and to perpetuate the glorious uncertainty of the existence of a sunken danger. We have often said it is easier to assert that a rock exists, than to prove that it does not. We may resort to reasoning, to the *argumentum ad infinitum*, and demonstrate to common sense, that this or that cannot be; but after all where is the proof; the *cause* of a supposed danger remains, the same effects follow, and the danger is not only supposed but believed.

These remarks have been suggested by the oft reported danger called the Bonetta rock, now again reported in another position by the Phœnix steamer, as given in our number for September last; and having printed the log of the Phœnix, we shall now, laying aside all prejudice, proceed

to show, if we can, where the Phœnix was by her own account when she struck! a difficult task forsooth, but one exclusively our own; and in doing which, we shall endeavour to assign the importance due to each of her statements, as it falls under our consideration. Those of our readers who feel sufficient interest in the discussion, will, perhaps, have Capt. Vidal's chart of the Cape Verd Islands before them.

The first notice we have of the rock from the Phœnix is the Consul's letter which appears in p. 644 of our September number, who states, the rock is in lat. 16° 19′, and long. 22° 26′, about twenty-two or twenty-three miles from the land, with more than eleven feet water over it, as the Phœnix drew eleven feet forward and twelve and a half feet aft, and under such authority this goes forth to the world as genuine. This position would certainly place the rock about the distance mentioned from the land of Bonavista. But we will now refer to the log of the Phœnix in the adjacent page, leaving the place of the Charlotte rock alluded to in the Consul's letter, to be told by her late Captain.

On the 25th at noon, the Phœnix was in lat. 16° 54′, and by her log we suppose (for we are not informed whether the chronometer had any thing to do with it,) was in long. 22° 36′. It is customary in most reckonings to give the bearings and distance of land at noon with the position of the ship, and in this case such a corroboration was most desirable, but it does not appear. We must, therefore, suppose that the Island of Sal was not seen, although it should have been, and recorded also, as such information is denied to us; and yet we shall find that it was seen afterwards even at a greater distance than the Phœnix was now from it.

According to her log the Phœnix steers S. ½ E. and at 6 o'clock we find the bearing of Sal noted in the log as "N.W. ½ N. eight or nine leagues." Now, up to 6 o'clock she had run twenty-eight miles, and allowing the point and a quarter variation stated, she will have made a true course S.b.E. ¾ E. which would place her in lat. 16° 27′, and long. 22° 27′, from whence Sal is to bear N.W. ½ N. distant eight or nine leagues. But from this position the Island of Sal will bear from between N.W.b.W. ½ W. and N.W. ½ N., distant on the latter bearing about thirty-eight miles, and on the former about thirty miles.

What are we to infer then, but that the vessel could not have made the course and distance stated by log, and we must, therefore, take the bearing and distance of the whole island, and place her accordingly at about twenty-five miles from it. A most unsatisfactory mode of proceeding we must say. From hence she continues her S. ½ E. course till 8h., and hauls up half a point at 8h. Then at half-past 8h. we are told that "Bonavista bore W.b.S. ½ S., twenty-five miles." We must say, it would have been far more satisfactory in each of these cases of bearings, to have had the bearings of the extremes of the island given, instead of this off-hand and unsatisfactory information. But as it is, let any one lay down Sal, bearing N.W. ½ N., twenty-five miles, and then Bonavista bearing W.b.S. ½ S., twenty-five miles, and see what course and distance lies between them. It will be very different from that in the log of the Phœnix. It is perfectly impossible, if the bearing and distance of Sal be correct, that those of Bonavista can be; and

how are we to get out of this dilemma. Had we in either case the bearings of the extremes of the island, which should have been given, then indeed, the information would have been worth having, as being somewhat decisive. And there is a curious fact here, which must not be passed over without attention. The bearing and distance of Sal is given at 6h., when the Phœnix is actually further from it, than she is from Bonavista. When the east point of Sal is twenty-six miles N.W. ½ N. from her at 6h. (if it really were so,) as the log states, the north-east point of Bonavista is only 18 miles, and yet nothing is said of Bonavista at this time. It is kept out of the way till half-past eight, and then allowed to bear W.b.S. ½ S., but twenty-five miles off! Now, what confidence we would ask can be put in such statements as these. Rock hunting afloat, we know from experience is bad enough, and unsatisfactory to the full; but of a truth rock hunting on shore is far more so.

However, to return to our dilemma, and our real object of showing where this rock is. We will give full credit to the bearing and distance of Sal at 6h., as there was good daylight for it, notwithstanding it places the Phœnix nearer to Bonavista, and that this is well-known to be a far more conspicuous island than Sal; and we will take the course and distance given by the log from six to half-past eight, as S.b.E. ¾ E., six miles, and S.S.E. ¼ E., one mile. Now, this places the Phœnix with the extremes of Bonavista from W.b.N. ½ N. to W.S.W., a very tangible statement, making her fifteen miles off the north-east point of the island, (not twenty-five miles,) the middle of it being on the bearing of about W.b.S. ½ S. But this leads us to another consideration. We have been obliged to conclude that the course and distance given by log up to six in the evening is incorrect, as we were bound to believe that the bearing and distance of visible land in daylight was correct. Now, from the position of the Phœnix by log at 6h. P.M. to that of Sal from her bearing and distance at 6h. is (true) W.b.S. ½ S. eight miles, which the vessel must have been set by force of current, drift, bad steerage, wrong compass, faulty line and glass, or such concurring causes; and when all the circumstances of the case are considered, there is no occasion for doubting the mischief which either of these causes might produce. Indeed, we have an admission in the log of a current setting the Phœnix S. 85° W., eleven miles, to noon of the day she struck, but how this was determined we are not informed. But any seaman would say that the Phœnix, a steamer, under sail, drawing eleven feet water, going at a moderate rate through the water, with the wind on her quarter, must be subject to drift in the direction of the wind; and whatever current there might be she would be very much under its influence, more especially as her speed became reduced to 2·4 knots. Again, bad steerage may have thrown her to leeward of the course; and an error in her compass, which we well know prevails fearfully in some steamers, may also have assisted to do so. Therefore, considering all these causes, there is no matter of surprize the Phœnix should have been eight miles to the westward of her course, even in six hours. But this drift, or current, or wrong compass, or whatever it may have been, was still at work; and allowing it

to have operated in the same proportion on the vessel's last position would place her at 8h. 30m., about thirteen miles from the island.

Two hours longer the Phœnix goes on, on her S.b.E. course. By the way, there is an alteration of course still to the eastward, just before she struck. What can be the reason of this? If the rock on which she struck was twenty-three miles off Bonavista, the water smooth, and the rock had eleven feet over it, what was there to induce this altering her course? Before noon she was steering S.W.b.S., at noon the course is altered to S. ½ E., and the cables bent with the intention, we presume, of going to Port Praya; at 8h. the course was altered to S.b.E., and at 10h. to S.E.b.E., just before striking we suppose. What we would ask was the reason for all this uneasiness, when the land was far more than twenty-two miles distant, and there could be no appearance of danger, for the water was smooth, and the weather fine; no notice of it till the vessel strikes? We should like all this to be accounted for, besides the contradictions between the log, and even the bearings themselves, which we have already pointed out. Assuredly it could be accounted for, being best known to those on board the Phœnix. But our business lies with what is before us, therefore to proceed:—For two hours longer onward goes the Phœnix at the rate of 2·4 knots per hour; or, on considering the log closely, she may make about four miles at the end of which she strikes, and fortunately reaches England in safety after injuring herself too much to proceed on her voyage. Now, applying the same drift as we did before, in the proportion of two hours, and carrying on the course by log from 8h., we find the Phœnix not more than nine miles from the Hartwell Reef on the north-east coast of Bonavista. But after all who can say that this is the position of the rock on which she struck. The whole chain of reasoning depends on the assumed, or presumed, *i.e.* estimated distance of the first bearing of Sal; and it is well known that most estimated distances of seamen fall outside, or, beyond the real distances. We would not look for the rock nine miles from the Hartwell reef, nor yet about twenty miles from Bonavista with it bearing W. ½ S., on such authority as the log of the Phœnix gives. Where then is the Bonetta Rock?

As we have already said, circumstances which are hidden from us on shore, are no doubt known to those on board the Phœnix; and as Pope says

> "We can only reason from what we know."

But we may safely pronounce it to be quite possible that, the Phœnix may have been set on the Hartwell reef by a current; that even the bearings she has given may be all laid down, assuming that she had a trifling error in her longitude, and that under the influence of a westerly current (the Cape Verds are notorious for currents,) she may have been drifted on the outer edge of the reef which extends four miles from the land. This may have been the case, and if not, where does the Phœnix place the rock? This, after what we have shewn, is a difficult question to answer. The log contradicts itself, the bearings contradict themselves, and how can these be depended on. We are at a loss, indeed, to answer even this question. But, supposing that our reasoning is cor-

rect, then it would be in about lat. 16° 12′, and long. 22° 33′, nine miles from the Hartwell Reef. Well, we must suppose it to be there, at present, as we would not be prejudiced against that position in particular. But, if we do, we are in another dilemma. On referring to Capt. Vidal's Chart of Soundings, in our vol. for 1839, p. 809, we unfortunately find that he has laid down 99 fathoms, and 112 fathoms, with no bottom just in that place; and we are all at sea again! Verifying what we said on setting out, that it is as difficult to find a rock on shore as at sea. Suppose we take the Consul's position, reported to him, we conclude, by the Phœnix; we are again in 100 fathoms without bottom. Well we must be content to leave it in either of these places, and let the question be settled by Capt. Vidal, while we follow the Phœnix to Port Praya.

Reverting once more to the log, we find, that by half-past 11 P.M., the Phœnix was under full steam, steering S. ½ W., making a deal of water, with the pumps continually at work; and the log gives a variety of courses and distances down to the noon of the following day. Now, if any one will take the trouble to lay these courses and distances down, the first thing that would strike him is their complicated nature. One would suppose, that, as the Phœnix knew she was twenty-three miles off the island of Bonavista, she would have had her head directed at once to her port, and that she would have made a straight course of it, instead of making such a circuitous circumbendibus, as Jack calls it, to get into safety. Any one would suppose that such would have been the course of a sinking ship or one "making a great deal of water with the pumps continually at work" as the Phœnix had. But she takes it more deliberately, and instead of running over 103 miles which is the nearest distance from the rock to Port Praya she runs 123! At 9h. 30m. the log says "saw the island of Mayo bearing south-west," what might have been the distance we are not told, and at noon it bears N.E.b.N. We will venture to say that by the courses and distances given in the log the body of the Island of Mayo could never have been brought to bear south-west without an error in the compass, and also that if it bore N.E.b.N. at noon, the Phœnix was to the westward of the longitude she deduces from that bearing as well as the account. We have taken the trouble to calculate the position by the log from the noon of the preceding day, and with merely the allowance for variation, place her in lat. 15° 3′, and long. 23° 2′, not 23° 15′. What faith is to be placed in the chronometer, or, whether there is an accidental mistake of a degree in writing 22° 13′ 30″ as the longitude by it, we do not pretend to know.

We have already remarked on the variety of courses steered after leaving the rock, and we should like this to be accounted for, but more especially why the Phœnix first runs twenty-one miles S. ½ W. instead of putting her head three points more to the westward. It is quite true that, had she done so when four or five miles only from the island, she would have run on shore. But, there could have been no fear of that at the time, as she was, by her own account, twenty-three miles from it; and, yet, she keeps three points from her course all the time, with the pumps continually at work; and of course in danger of foundering! Was she obliged to steer this course to keep off the land? If she had

the option of steering the other, why did she not do so? It looks very much as if she had not, and was really nearer the land than her presumed distance of twenty or twenty-three miles on the bearing of W. ¼ S.

We shall now leave this perplexing subject, little satisfied with our investigation, and our readers may form their own conclusions. For our own part we find ourselves just as far from the real position of it as ever, and so we shall be likely to remain, while we can get no better accounts of it than such as are furnished by the log of the Phœnix. It may, or may not be, from nine to twenty, or, twenty-two miles from Bonavista, or it may not be so far! But in taking our leave of it, we must not omit to present our readers with the remnant of the log up to the arrival of the Phœnix at Port Praya, in which, we cannot see that happy agreement alluded to; and along with it, to place on record a few queries which it has suggested. Not that we anticipate they will be answered, although they certainly should be; but that the glaring anomalies which that log presents, may be pointed out to those who would give full credence to the position of the Bonetta Rock, as deduced from it.

H.	K.	F.	Courses.	Winds.	Remarks, Saturday, June 25th, 1842.
1 2 3 4					The course and distance run from the time ship came off the rocks, and the bearing of St. Mayo, and longitude by the mean of the chronometers agreeing together so near, leaves no doubt of the existence of a rock or rocks near the ———* given by the Madeline.
H.	K.	F.	Courses	Winds.	Remarks, Sunday, June 26th, 1842.
1 2 3 4 5 6	7 7 7 6	4 4 4	†		Light winds and clear weather with smooth water, at 2 P.M., took in all. East point of St. Jago bore N.b. W., distant about five or six miles. At 4h. 30m. came to anchor in Port Praya roads, in seven fathoms, veered out to seventy-five fathoms.

Queries.

1. Why is the bearing and distance of Sal given, when the Phœnix by that bearing and distance is nearer by seven miles to Bonavista?

2. Why were not the bearings of the extremes of the island in sight given in all cases?

3. Why was the course altered half a point at 8h. P.M., and also *three points* at 10h. P.M., half an hour before striking the rock?

* Word illegible. † Course not given.

4. At 10h. 30m. when the Phœnix struck, was the bearing and distance of Bonavista given among the Remarks in the log, obtained by seeing the island?

5. The log says, the rock is twenty miles, and the Consul's letter, twenty-two or twenty-three from Bonavista; which is the correct distance?

6. As the bearings and distance of the land given in the log do not agree with each other, nor with the course and distance steered between them, which are to be considered as correct?

7. Why was a S. ½ W. course steered for twenty-one miles on leaving the rock?

8. When the Phœnix got off the rock, why did she not steer a direct course for Port Praya, instead of the crooked courses which the log shows, after running out of her course S. ½ W. twenty-one miles, when the Phœnix, considering herself from twenty to twenty-three miles off the island, might have steered direct for it?

9. Was the Phœnix being bound to Port Praya, the reason of the anchors being got over the bows, and the cables bent on the day she struck?

10. What is the reason why all the vessels that have struck the Bonetta rock put their heads to the eastward, or, from the island of Bonavista?

13, *Havering Street, Commercial Road, Sept.* 16, 1842.

Mr. Editor.—As the existence of the Bonetta or Madeline Rock can no longer be called in question, all doubts respecting it ought to be removed as soon as possible, from the minds of navigators, passing near its position. Sufficient proof is given in the Phœnix log that it cannot be any part of the Hartwell Reef, on which she struck, as by the bearings of the centre of Bonavista, and the course and distance run between the bearings at 8h. 30m. P.M., and at 10h. 30m. P.M. when on the rock, the point of bearing would be distant by computation 24 miles, 877 dec., from the position of the Phœnix at both bearings.

The point of bearing I presume must have been Mount Ochello in latitude 16° 9′ N., and in long. 22° 48′ 30″ W., which, allowing 16° westerly variation, will place the rock in lat. 16° 18′ 8″ N., and in long. 22° 24′ 26″ W. By the means of the latitude by observation carried on from noon of the 24th, to the time the vessel struck, and back from noon of the 25th, the latitude of the rock is 16° 17′ 32″ N. I am, therefore, of opinion that it is on this rock that the Charlotte was lost, and that if the bearings of Madeira had been given correctly in your Magazine for 1841, p. 679, the errors of her chronometer might have been ascertained, and its position placed beyond doubt.

I have the honor, &c.

To the Editor, &c. John McDougall.

Since concluding our attempt to answer the question we set out with, a correspondent, whose letter we have inserted above, has come to solve all our difficulties; he has indeed cut the Gordian knot, and made up his own mind on the subject. With due acknowledgment on our part for the interest he has taken in it, we may now smile at our own lengthened investigation; at the scrupulous care with which we have analyzed the contents of the log, and after all, arrived at no better idea of the position of the Bonetta rock than we had on starting. But whatever influence our correspondent's opinion may have on the minds

of our readers, we can find no reason for agreeing with him, more especially when he would have us believe that the Charlotte struck on the same rock as the Phœnix, twenty or twenty-three miles (*query* which,) distant from the island. The Charlotte we are told, after striking went down half an hour after midnight; the boats laid by till daylight and then Bonavista bore north-west by compass. It is just possible the boats might have drifted three or four miles, while lying-to; and we are to believe, that, from one and the same position where the Madeline, the Charlotte and the Phœnix struck, the island of Bonavista bore W. ½ S, twenty or twenty-three miles per Phœnix, north-west twenty-five to thirty miles per Charlotte,* (we are to believe that these are one and the same,) and what per Madeline? Let Capt. Wilkes answer, who commanded the recent Surveying Expedition from the United States, after searching in the various reported positions for the Bonetta rock. He says, "I steered on the course of its reported bearing E.b.N. from Bonavista, until nearly up with the *Hartwell reef*, lying in sight of Bonavista, which has, without doubt, been taken for, and reported as, the shoal called *Bonetta*.

"Our enquiries at St. Jago assured me that the *Madeline* (the vessel last wrecked), was cast away on the Hartwell Reef, which has been reported as the Bonetta shoal.

"I am well satisfied that the positions assigned to the above three shoals, on the chart (the Bom Felix an old Bonetta, the Bonetta, and the Madeline,) and their vicinity *are free from all dangers*. I am also of opinion that the particular and indefatigable search made by Capt. Bartholomew, of H.M.S. Leven, and the opportunities afforded me of covering with the squadron of five vessels, so large a space at the same time, ought to be sufficient evidence that no such dangers exist as they are laid down in those positions, and should cause them to be obliterated from the charts."—*Naut. Mag.*, vol. for 1839, p. 760.

So says Capt. Wilkes, but our correspondent would have us believe all these positions are one and the same. Now this, really our experience will not admit; it is in fact past our belief, and when we have such authorities before us, as the Leven's search, (the chart of which is published in our journal;) again the search of the five American vessels spread over a large space, and added to these the opinion of its leader, that all these shoals are nothing more than the Hartwell reef, with all due respect for our correspondent's opinion, we altogether differ from him, and are moreover, further of opinion, that it would be no very difficult matter to answer even the queries we have proposed.

On the Errors of Chronometers, and a New Construction of the Compensation Balance.—*By Mr. E. J. Dent.*

To Seamen in general, it will be, doubtless, interesting to notice such various statements of *reported improvements* in chronometers, as are, from time to time, set forth by their inventors. Such notice also is

* See p. 47, of this volume, in January Number, and p. 681 of last.

desirable for the purpose of registering these ingenious contrivances, as well as to throw a clear light on the nature of the difficulties usually encountered in this important branch of the mechanical arts. By such notices, seamen obtain a more distinct knowledge of the subject, and at the same time receive a more perfect idea of human ingenuity, while striving to attain mechanical perfection; although it must be confessed that the result of the skill, labour, and expense which have been bestowed within the last fifty years on the improvement of chronometers, affords us but little room for congratulation, and must convince every one acquainted with the historical details of the subject, that the road to perfection in the art of chronometer-making is, as in most other arts, a wearisome one, more frequently leading to profitless trouble, than contributing either to the interest of the contriver, or, to the benefit of the public. We have, nevertheless, by such investigations, obtained the knowledge of a curious fact, which has lately excited the attention and ingenuity of various persons engaged in the manufacture of chronometers.

The fact alluded to is this, if chronometers (as generally constructed,) be regulated to mean time at *mean* temperature, the chronometer will *lose* at the extremes of heat and cold; or, if adjusted to keep mean time at the extremes, they will have a tendency to gain at the intermediate temperatures.

This circumstance, although in all probability known to others at the time, was first pointed out by myself in No. 14 of this Magazine,* in the year 1833, but I am not aware that the slightest hint has ever yet been given as to the *true cause* of it. In order to explain this, we must consider that no chronometer can keep a uniform rate, unless the tension, or moving force of the balance-spring bear an invariable ratio to the resistance of inertia. Now, in chronometers, as usually constructed, this ratio cannot, from the nature of the construction of the balance, be maintained at different temperatures, since the tension of the balance-spring, when influenced by a change of temperature, varies according to a law different from that observed in the simultaneous variation of the inertia. We cannot, indeed, assign with any great precision the law which connects the tension of the balance-spring with the temperature. That the force of tension varies very nearly as the temperature within ordinary limits, may be seen from the following experiments, made with a chronometer having a glass disc for the balance, and a balance-spring of hardened and tempered steel.

Thermometer.	Hourly Rate.	No. of vibrations in one hour.
	s	
32°	+ 5·74	3605·74
66	— 1·80	3598·20
100	—10·30	3589·70

Now since the force of tension of the balance-spring, (the inertia and

* Our readers will find it at p. 224, vol. for 1833.

friction remaining the same,) varies as the square of the number of vibrations made in the same period, we have the following results from the above, taking the force of tension at 32° to be unity.

Thermometer.	Tension of Balance-spring.
32°	1·0000
66	0·9958
100	0·9911

Thus the experimental tension at the mean temperature of 66° Fahrenheit is 0·9958, and the tension computed upon the supposition that it varies as the temperature, is 0·9956, differing only by the quantity ·0002th part of the whole force, corresponding to about 2° of the thermometer, which considering the difficulty experienced, in maintaining an equality of temperature in the individual experiments, is not a greater difference than might be reasonably expected, though in all probability the tension varies nearly as the temperature within ordinary limits. But with regard to the variation in the inertia, we know that the effect produced with the compensating-weights by their approach and recession from the centre of the balance, varies as the square of the central distance; and, therefore, it is not to be wondered at, that the required ratio between the tension and inertia should occur only at two temperatures; nor that when chronometers are regulated for mean temperatures only, they should lose at the extreme ones; since in the case of an *increase* of temperature, the approach of the weights to the centre is not sufficiently great to effect the compensation, and upon a *diminution* of temperature their recession from the centre is too great to compensate for the increased rigidity of the balance-spring. It is true that this law of variation in the inertia applies only to *each particle* of the balance in reference to its distance from the centre of motion, and not to a mass, unless referred to the centre of gyration; and as the whole inertia of the balance is made up of the inertia of the fixed arms, as well as the moveable compensating weights and rim, it is plain that any attempt to exhibit by computation the variation of the whole inertia due to a change of temperature, would involve not only a consideration of the figure of the balance, but also a knowledge of the law of variation in the central distance (as depending upon temperature) of the weights and rim, of which we are at present more in ignorance than of the law that exists between the temperature and the tension of the balance-spring. Upon the whole we see that the inertia of the balance is a more complicated function of the temperature than the tension of the balance-spring is, and involves a higher power of it.

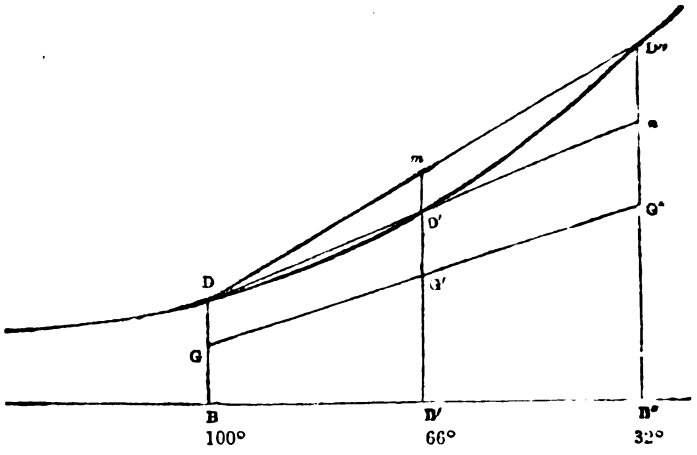
Another circumstance which tends to aggravate the error arising from the defect of compensation for the diminished tension of the balance-spring at high temperatures, and the excess of compensation for the increased tension at low ones, is, the unfolding or straightening of the circular rim of the balance at reduced temperatures, and the contrary

action at high ones; by which action of the rim, the compensating weights are made to describe portions of a spiral curve, whereby the variations in the central distance, due to a given change of temperature, are greater at the low, than at the high temperatures, which is the reverse of what is required in order to effect the compensation. And although such deviations from the required *law of approach* of the compensating weights may be rendered less apparent by increasing the weights, yet in this case, other errors are introduced (which it will be needless here to allude to) that render this mode of proceeding inadmissible without much limitation. In the construction of the balance I shall here describe, it is not pretended indeed that the *law of approach is mathematically* what it ought to be, in order that the proper ratio may be obtained at all temperatures between the tension of the balance-spring and the inertia of the balance, yet it may be safely affirmed, that in this construction, the variations in the central distance of the weights increase at the higher and diminish at the lower temperatures, which is exactly *the reverse* of what has hitherto generally taken place in chronometers, and, therefore, will doubtless afford a much nearer approximation to the truth than before.

Moreover, the correction for the error alluded to, will be a *continuous correction*, which is an object of no little importance, and which is not effected in the contrivances lately put forth to remedy the defect by means of *supplementary weights*, which weights are brought into contact with the balance rim at a mean temperature. In these contrivances *by contact*, although chronometers may be adjusted to equal rates at one of the extremes, and also at a mean temperature, yet between these limits, they are obviously subject to an error of the same nature as before, though of one half the amount only, and in the other half of the range of temperature, when the supplementary weights are brought into contact with the rim of the balance the law of approach is the reverse of what it ought to be. Moreover, the friction at the point of contact is highly objectionable in this mode of correction, and will not only destroy all confidence in the performance of such chronometers at mean temperatures, (the very temperatures at which their services are most required,) but it is, besides, a gross violation of the law of continuity, upon the maintenance of which the correct performance of chronometers must depend.

In order that what I have stated with respect to chronometers of the usual construction may be the more apparent, we will for the sake of illustration, suppose the tension of the balance-spring to be in proportion to the temperature. Then in the accompanying figure let B B′ B″ be a scale of equal parts, and represent the scale of a thermometer. At the extreme temperatures B and B″, suppose a chronometer to be regulated to mean time; then since at these temperatures, the tension of the balance-spring must have the same ratio to the inertia of the balance, take B D and B″ D″ at right angles to B B″ in proportion to the inertia at these temperatures; and also the parts B G and B″ G″ in proportion to the corresponding tensions of the balance-spring. Join D D″ and G G″. Since the tension is proportional to the temperature, the locus of G will be the *straight line* G G″, and from the relation which exists between the inertia and the temperature, the locus of D will be a

curve line as D D′ D″. Let B′ D′ be another ordinate to the curve, at an intermediate temperature, which produced, meets D D″ in the point *m*, and cuts G G″ in G′. Now, in order that the chronometer may go mean time at the mean temperature, as in the extreme temperatures, the tensions of the balance-spring, which are here represented



by the lines B G, B′ G′, and B″ G″, should be in proportion to the ordinates B D, B′ D′, and B″ D″, which cannot be the case unless B′ D′ is equal to B′ *m*, or unless the point D coincide with the point *m*, or the curve D D′ D″ coincide with the straight line D in D″—which is impossible. The quantity *m* D′ or difference between the inertia of the balance and *what it ought to be*, for the chronometer to go mean time is the greatest at the intermediate temperatures which is found to be the case, and as they are to gain at these temperatures it is clear that B′ D′ is less than B′ *m*, or the curve is convex towards the axis B B″.——If the chronometer instead of being adjusted to the extreme temperatures, be adjusted to the mean and one of the extreme temperatures (as the highest for instance,) join D D′ and produce it until it meets D″ B″ in the point *n*; then since D″ B″ is greater than *n* B″ by the difference D″ *n*; the inertia will be greater *than it ought to be* to an increased amount, corresponding to a diminished gaining, or an increased losing rate of the chronometer, which is also found to be the case. I shall now proceed to shew the mode of construction of the balance which I have adopted in order to obviate the error, and I have accomplished this, not by supplementary weights, but by effecting a more perfect conformity with the proper law of approach in the compensating weights themselves; and the correction being thereby both continuous and simultaneous.

Before entering on a description of my improvements, I will explain, from the following diagram, the defects in the construction of the ordinary compensation-balance, and shew its inadequacy to accomplish the required correction for the varying tension of the balance-spring.

Fig. 1.

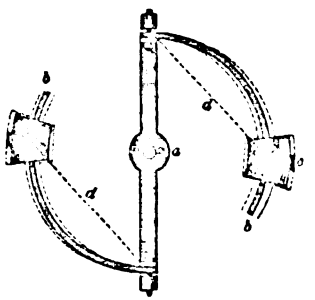


Fig. 1.—is the ordinary compensation-balance; *a*, the balance; *b*, two segments of compensating laminæ of brass and steel, brass being on the outside of the segments, and steel on the inside; *c*, compensating weights.

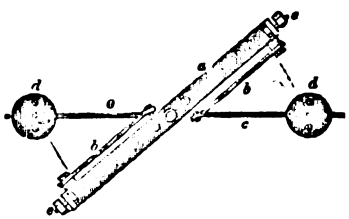
On an increase of temperature, the moveable extremities of the segments approach the centre of motion, as represented by the dotted curved lines, and the reverse effect takes place on a decrease of temperature. Now, that the inertia may correspond with the tension, the compensation-weights, *c*, upon an increase of temperature, should approach the centre of the balance with an *accelerated motion*, and, upon a diminution of temperature, should recede from it with a *retarded* one. On examination of this ordinary balance, it is evident that its action is in direct opposition to the above requisition. And before further investigating the subject, it is important to know that when metals of unequal expansion, such as brass and steel, are united, (as in the compensation-balance,) the extremities of the laminæ move in a spiral curve on being influenced by change of temperature. I will now proceed to the explanation:—If we connect, by means of the dotted straight line *d*, the centre of gravity of the compensation-weight, with the junction of the laminæ, at the arm of the compensation-balance, and suppose a change of temperature from heat to cold to take place, the result will be, that the brass being on the outside of the segment contracts more by the increase of cold than the steel on the inside; hence the distance between the centre of gravity of the compensation-weights, and the junction of the laminæ at the arm is increased; in other words, the length of the chord of the arc, or dotted line, by the unfolding or straightening of the segment is augmented. Under such circumstances the radius of motion, and the increment of distance are increased, whilst from an increase of temperature the converse takes place, which is the very *reverse* of what should occur. For, by an increase of cold, the chord of the arc *d* should be *shortened*, and *lengthened* by an increase of heat; a result which my present invention is designed to effect by applying to the ordinary compensation, which may be termed primary compensation, the addition of a secondary *continuous* compensation, which will move the compensation-weights over a space more calculated to accommodate the force of the inertia to the varying tension of the balance-spring.

In the drawings annexed, are representations of different modifications of my invention, given as exemplifications of the principles upon which my improvements are effected.

Fig. 2.—Represents the plan of a compensation-balance, in which the two compensation-weights are each carried by a primary and a *continuous* secondary compensation-piece, which pieces are shown straight, in order to facilitate the clear understanding of the principles of my invention,

although, in practice, I frequently use a curved figure for the pieces, or make the primary and *continuous* secondary compensations in one curved piece.

Fig. 2.



a, is a simple balance-bar made of brass, or other non-magnetic metal or metallic compound; *b*, two primary compensation-pieces of brass and steel, or other suitable metals, which pieces are firmly fixed on the balance-bar *a*, nearly at the extremities, and run parallel with it towards the centre; *c*, two *continuous* secondary compensation-pieces attached to the free ends of the primary pieces *b*, and proceeding in a direction from the centre; the brass of these pieces is, in both cases, at the inside of the angle, and the steel at the outside; *d*, the compensation-weights; *e*, the timeing-weights.

The pieces *b* I term the primary compensation, because their action is to vary the inertia by bringing the compensation-weights *d* nearer to the centre of motion for an increase of temperature, and the reverse for a decrease; and it is to be distinctly understood, that this may be fairly considered as the only adjustment which the ordinary chronometer possesses, to correct the errors of the balance-spring. I have before remarked, that the compensation-weights, in the usual construction, do not go sufficiently in towards the centre of motion, on an increase of temperature; while they come out too far on a decrease. I will now explain how the correction of this fault is to be accomplished by my invention.

The secondary compensation-pieces *c* move the compensation-weights *d* on a change of temperature, in a direction nearly concentric with the centre of motion, and thus produce but little variation as regards the times of vibration. These pieces I denominate the secondary compensation-pieces, and their position is such, that the variation in the central distance of the compensation-weights, due to a given change of temperature, is a maximum; that is,—the variation which causes the secondary compensation only.

For example; on an increase of temperature, the weight *d* is moved further from the junction of the primary compensation-piece *b* with the bar; and as the length of the dotted line *f*, drawn from the centre of gravity of the compensation-weight *d*, to the junction with the bar,—— as the length of this line, I say, is augmented by increase of temperature, the compensation-weight *d* makes a quicker and nearer approach to the centre of motion than in the old compensation balance; whereas, on a decrease, the contrary takes place.

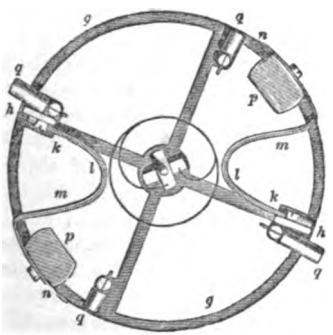
Fig. 3.—Shows the plan of a balance, in which the primary and *continuous* secondary compensation is obtained by means of one curved piece on each side of the balance.

g, the balance, made of brass or other non-magnetic metal.

h, two blocks or studs raised above the face of the balance, to form the supports of the compensation.

k l m, two laminæ, each curved in such a manner as to combine the joint effect produced by the primary and secondary compen-

Fig. 3.



sation-pieces, shown at *b* and *c* of Fig. 2, the part from *k* to *l* (Fig. 3.) corresponding to the primary compensation-piece, and that from *l* to *m* corresponding to the secondary compensation-piece of Fig. 2.

n, two prolongations from the ends of the compensation-pieces, of steel only.

p, two compensation-weights, screwed to the prolongations *n*.

q, four timeing-weights.

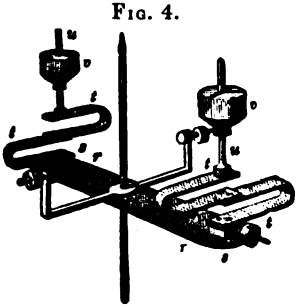
Having thus fully explained the principle of my primary and secondary compensation, I would remark that my invention embraces every modification of this principle, by which the compensation shall diminish the distance of the compensation-weights from the junction of the laminæ with the arm upon a decrease of temperature, and produce the converse upon an increase; which is the reverse of what has generally been done in the ordinary construction of the balance.

In order to adjust this balance, as regards the secondary compensation, if the chronometer gains at the extremes of temperature, compared with the mean, the secondary compensation-piece must be shortened, and the time restored by adding to the nuts at the ends of the bar; if the chronometer loses at the extremes of temperature, the reverse operations must be resorted to. The ordinary adjustments for temperature are made by sliding the weights *p* along the prolongations *n*.

In Figures 2 and 3 the compensation-weights are represented as moving in the plane of the balance; but I produce a similar effect by causing the compensation-weights to move in a plane passing through the axis of motion: the mode of accomplishing which I now proceed to explain.

Fig. 4.—Represents a balance formed according to this mode.

Fig. 4.



r, a compensation diameter bar, fixed on the balance axis; it is composed of brass and steel, the latter being nearest the compensation weights. This bar carrying a weight upon an upright rigid support is the only compensating power hitherto employed in chronometers.

s, two blocks attached on the ends of the bar, to receive the secondary compensation pieces.

t, two secondary compensation-pieces, each constituted of two pair of laminæ bent into the form of staples, and riveted together with the bows lying in opposite directions, one end of the laminæ being fixed upon the block *s*, the brass being in the insides of the staples, and the steel on the outsides.

u, two pillars fixed on the end of the upper pieces of these laminæ, to carry the weights. These pillars are furnished with screws, on which the weights turn for adjusting their heights.

v, the two adjustable weights.

By this arrangement the weight always moves in a line nearly parallel to the axis of the balance.

On increase of temperature, the distance between each staple is increased in height, and by this means the compensation-weight is raised from the balance bar; under these circumstances, the augmentation thus effected by my secondary compensation enables the primary compensation to carry the weight over a greater space and with accelerated velocity, towards the centre of motion; the reverse effect of course taking place on a decrease of temperature. This variation of velocity to and from the centre of motion, could not possibly be brought about if the weights were placed on the before-mentioned rigid immoveable supports, at the extremities of the balance-bar, as is usually done in the ordinary balance of this construction.

It may be remarked, that the bows of the secondary compensation pieces may stand across the length of the bar *r*, obliquely, or at any angle, without varying the perpendicularity of the motion of the weights.

Fig. 5.

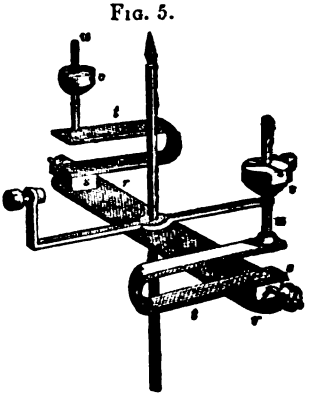


Fig. 5.—Is a perspective view of a balance of the same kind as Fig. 4, but in this case, the *continuous* secondary compensation-pieces, each made in the form of one staple only, stand across the primary compensation-bar at right angles; which is an essential condition of this construction, because a single staple compensation will not raise the weight perpendicularly from the end of the bar; therefore, the bow of the staple should be placed in a position which will raise the weight, without producing more variation in the time than is unavoidable.

In order to adjust the secondary compensation of the balances shown in Figures 3 and 4, if in excess, the staples must be shortened or thickened; and the reverse must be done if in defect: the primary compensation is adjusted, by varying the height of the weight *v*, on the screw *u*, according to the usual practice.

Discovery on Sable Island.—The Halifax papers of last week published the following singular discovery:—"The following facts have been made known to us by a gentleman of this city, who has had his information from the best authority—viz., Capt. Darby, sen., Governor (as he is called) of Sable Island. For the last 25 or 30 years there has been a large mound or pyramid of sand, about 100 feet high, on the island, and not very far from the residence of Captain Darby. The winds for some years have been gradually diminishing its height, and after a severe blow some weeks since it was completely blown away, and, singular to say, a number of small houses, built of the timbers and planks of a vessel, were quite visible. On examination they were found to contain a number of articles of furniture and stores, put up in boxes, which were marked '43d Regiment;' the boxes or cases were perfectly rotten, and would not admit of their being removed. A brass dog-collar was, however, discovered by Capt. Darby, with the name of 'Major Elliott, 43d Regiment,' on it, and which Capt. Darby brought to the city, and presented to Major Tryon, who belongs to the 43d Reg."—*Halifax Herald.* Capt. Darby has endorsed this announcement.

Addressing the editor of the *Halifax Herald*, on Wednesday, he says, "The houses are appearing at the base of the hill, about 2 miles long, and 60 or 70 feet high, lying parallel with the south coast of the island, the eastern end of which hill is about 55 feet high, covered with grass and other vegetation, about 35 feet below the surface, and 23 above the level of the sea; these houses appear as the sands wear away with the action of the winds. There appeared at times numerous bullets of lead, a great number of military shoes, parts of bales of blankets and cloths, brass points of sword scabbards, bees'-wax, a small glass, convex on both sides, a copper halfpenny of George II., dated 1749, some military brass buckles, a great number of brass paper-pins, a very small dog's brass collar, with 'Major Elliott, 43rd Regiment,' engraved on it, numerous bones, some whole and some broken, with the scalp of hair and head-dress of a young female, a piece of gold band. There are three buildings, which seem to have been constructed of the fragments of some ship; they are situate about ten feet apart, in a triangular form, and are ten to twelve feet square."—*Times, Sept.* 17, 1842. (See our volume for 1838, p. 444, for some account of this island.—Ed.)

Protection from Lightning.—*The late Experiments at Chatham on the Lightning Conductors of W. Snow Harris, Esq., F.R.S.*

In a work like ours devoted to nautical affairs, and to her Majesty's navy more especially, it would ill become us to neglect any opportunity of giving full consideration to the means of avoiding the damage which so frequently occurs to shipping from lightning. Our pages have, therefore, been always open to communications on this very important subject, important not only intrinsically, in consequence of the great actual losses sustained by our military, and mercantile navies through lightning; but even more important extrinsically, because with such a source of danger existing, and unguarded against, the interests of the country may be in jeopardy through the accidental occurrence of a thunder storm, when the best services of a ship are required on an important and pressing occasion. And that this is no exaggerated view of the importance of the question, the long list of ships-of-war which have suffered, and the consequent expense to the country arising therefrom, in our volume for 1838, amply testifies.

It certainly is extraordinary that it should be any longer necessary to urge either the extent of the danger from a discharge of atmospheric electricity, or the advantages of the protection afforded by a permanent conductor. But, however extraordinary, it is nevertheless true that this necessity still exists. Scarcely a thunder storm passes over the metropolis without damaging some one or other of its numerous beautiful steeples, merely because churchwardens will not be at the trouble of asking in what manner such a misfortune may be averted. If this be true, and that it is true the scaffolding round St. Martin's church, and that just removed from Brixton steeple will prove, in cases where there is no difficulty attendant on fixing any sort of continuous conductor, we may well conceive that ship after ship will go to sea and be destroyed, not only under the influence of the same carelessness or thoughtlessness, but because of the extra trouble of providing a remedy.

The numerous papers which we have occasionally published from the pen of Mr. Snow Harris, on the nature and operation of lightning rods, have gone far to place the question before our readers in a clear and practically sound point of view; while at the same time they contain very valuable information relative to the amount of damage sustained by our navy. In giving such frequent publicity to his method of defending shipping* from lightning, by fixing continuous conductors in the masts, and equalizing the electrical action through the hull, we have been led solely by a desire to encourage every thing which had sound practical science in its favour. A proposal to carry lightning through a ship's hull by means of continuous and fixed conductors, we can readily imagine, may to many persons appear at first a startling proposition. But it is not by preconceived opinions and commonplace prejudices that the value of the practical application of any scientific principle of this kind, should be tested. Before we can reason upon the action of lightning, it is evident we ought to be well informed as to the laws of the agency with which we have to contend, and we ought to know the practical operation of these laws on any measure which may be proposed as being capable of rendering this agency harmless, before we can be entitled to dispute its value. How many important truths have been elicited in cultivating the wide field of science, which have been as opposite as possible to popular opinion. We may instance the fact, that Davy walked unharmed amidst the explosive gasses of a coal mine with a lighted lamp in his hand; his sole safeguard from total destruction being a mere film of metallic gauze; and thus triumphantly established the principles upon which he had founded his experiment, and gave future protection to the miner in his, until then, fearfully hazardous occupation. Even Davy's safety-lamp met with much opposition, but its utility is now, with but few exceptions, universally recognized.

Having so frequently considered the claims of Mr. Harris's conductors upon purely scientific grounds, we have been anxiously alive to their operation on the great scale of nature. Many of H.M. ships have been fitted with these conductors since the year 1830, and the plan is still being carried out in the navy. It may not be uninteresting, and cannot be unimportant to bring under consideration the cases which have as yet been detailed of the operation of these conductors in protecting ships in thunder storms.

There is certainly an interesting coincidence in the reports given by different officers, at different times, of the circumstances observed, when heavy discharges of lightning fell on the masts. They all agree in the fact of lightning having struck the ship without any damage ensuing, and also in the discharge being attended by a whizzing noise, and by a luminous stream along the conductor. We may observe that, although all the ships fitted on Mr. Snow Harris's plan have been at sea in various climates, and all exposed to severe lightning, and in

* We may refer the reader to our First Series, volume for 1834, for several papers on this subject, and especially to p. 483, for Mr. Harris's plan of fitting his conductors to a ship. And as this series was out of print, we repeated this drawing with additional descriptions in our volume for 1837, p. 742.

some cases struck by heavy discharges, yet in no instance has any damage occurred, nor has lightning fallen upon these ships in any more violent degree, or more frequently than on other ships not fitted with such conductors. The often repeated assertions, therefore,—that these conductors are liable to do damage by attracting lightning to the ship, which would not otherwise have come there, and,—that they may attract more lightning than they can conduct, completely fall to the ground. It may here be worth while to observe that the idea of a conductor attracting more lightning than it can conduct, is an absurdity in Electrical Science; because any attraction it may be supposed to possess, depends altogether on its conducting power; so that, upon the hypothesis of attraction, it is a contradiction in terms to say that more lightning may be attracted than can be conducted. Beccaria has shown that no more lightning ever falls upon a conductor than it can transmit up to its point of fusion; and on the question of fusion we may remark that Mr. Harris has assumed a size for his conductors beyond all measure above any danger, even of sensible, much less of transmissible, heat. The hypothesis of the attracting effect of lightning conductors may, however, be fairly questioned, since from the examination of the evidence on this point by the Naval Committee, it appears that, "Conductors possess no inherent property of attracting or inviting a discharge from a cloud at a distance. If there be a projecting object like a mast, within a moderate distance of the point from which the discharge takes place, the electricity will descend by it whether fitted with a conductor or not, as affording a line of less resistance than it would meet with from the non-conducting property of the air. The radius within which it has been considered that a conductor will determine or conduct the electricity is double its own length, provided the discharge takes place within that space; but it has no power to cause discharge; on the contrary, at all times its tendency is to draw off the electricity from the atmosphere, and thereby diminish the liability to an explosion."—*Report of the Committee upon Mr. Snow Harris's, and other Lightning Conductors, p.* 4.

The following are instances in which we have direct evidence of the utility of these conductors in carrying off heavy discharges of lightning which had fallen upon ships, and which must in all human probability but for them, have been attended with frightful damage.

H.M.S. Dryad, was exposed to a tornado on the coast of Africa, about the close of the year 1830. Commander Turner, who was on deck, states, that both the fore-mast and mizen-mast were struck, that the thunder was very loud and instantaneously succeeded by the lightning, that the ship appeared to be completety enveloped in flames, and that when the masts were struck, the mate of the forecastle, the boatswain, and several men on the forecastle all heard a hissing sound. *Report, p.* 29.

H.M.S. Beagle during her expedition in 1831-36 on a survey of the southern shores of America was twice struck by lightning. The instance of her being struck at Monte Video in the Rio de Plata is a very remarkable one. Lieut. Sullivan who was on duty on deck at the time, describes the ship as appearing to be wrapped in a blaze of fire, with a simultaneous crash of thunder; that the main-mast for an

instant appeared to be a mass of fire; that the vessel shook under the crash, and that the people below heard a vibratory sound in the conductors like rushing water. Capt. Fitzroy has given a most interesting account of the same event, which may be found in page 48 of the Report we have already quoted from, indeed Capt. Fitzroy's letter has already appeared in the pages of the *Nautical Magazine*.

H.M.S. Druid, is stated, by Commander Norcott, to have been in awful lightning at Rio Janeiro, which was conducted, without any damage, down the fore and main-masts of the ship, although its course along the conductors was distinctly visible.

H.M.S. Asia lying at anchor in the Tagus in the year 1831, during a heavy gale from the south-west, with thunder, lightning, and rain, was struck at her main-mast by a flash of lightning, which passed off perfectly harmlessly by means of the conductors.

H.M.S. Actæon lately returned from South America, has been frequently exposed to severe electrical storms. The officer who had charge of the watch* on one of these occasions has expressed his decided opinion that the conductors saved the masts. This officer states, that, on the 23rd of June, 1841, off the coast of central America, in the middle watch there were heavy squalls with rain, thunder, and lightning, the night being very dark; that while he was standing on the quarter-deck a most tremendous clap of thunder burst over head, accompanied by a flash of lightning, the sharpest he had ever seen, so vivid that he did not recover the deprivation of sight which it occasioned for some minutes; that it fell, to all appearance, immediately upon the conductor, and there was no damage whatever done by it.

The same ship in the following August was in heavy squalls with thunder and lightning, and Mr. May, the carpenter, states that, he was standing with his back against the pump winches near the main-mast, when there came a burst of thunder over the mast head as if the ship's broadside had been fired. He says, it was an awful crash and accompanied by a terrific whizzing noise; the ship fairly shook under it, so that the cutlasses round the main-mast rattled violently in the stand. A momentary vivid flash of light appeared to strike the conductor, the effect of which, in discharging the lightning was beautiful. The night was awfully dark and the ship lurching fearfully in a heavy sea. He did not think a ship could come out of such a storm of lightning in safety; but no damage was done, nor any inconvenience experienced. He examined the conductors, as carpenter of the ship, after the squall, and found them quite perfect.

Lastly, about the time when St. Martin's spire suffered, H.M.S. Talbot was struck off Sheerness. The squall was very violent and the lightning extremely sharp. Capt. Sir Thomas Thomson observed the lightning on the conductor at the time the cloud burst over the main-mast-head.

These cases have so much in common with each other relative to the known operation of Electrical action, and being reports made by officers at different times and apart from each other in different parts of the world, are so satisfactory, and at the same time, so well authenticated,

* Mr. Bonham.

that no doubt can remain as to the decided protecting effect of these conductors, and they render utterly nugatory all assertions to the contrary. There is a letter from a Mr. Martyn Roberts which is printed in the Report to which we have so often referred, in which he advances an opinion that, "If a ship is unfortunately struck by lightning when she is provided with Mr. Harris's conductor, what will be the consequence? Why, the electric fluid will pass by the conductor into the hull of the ship, there create a lateral explosion, and perhaps, in one moment, hurry into eternity every soul on board the ill-fated ship."—It is to be remembered, that this opinion is advanced in a letter proposing another plan for protecting ships from lightning, and that the letter winds up with the offer, on the part of the writer, (Mr. M. Roberts,) "to devote his time and energies to the superintendence of the making and erecting his conductors in H.M. ships." At least, therefore, this is not a disinterested opinion. Mr. Martyn Roberts's proposal was the use of a metallic rope, which has been since rather largely tried. It has been proved to be liable to damage, in fact, has in some instances been worn through by chaffing; and it is certainly not unattended with danger to any unfortunate top-man who may get entangled in its coils, or in a mere bight of the rope,* which becomes slackened by lowering the topmasts or top-gallant masts. Most certainly there can be no conductor equal to a permanently fixed conductor, provided that conductor can be made to act, whether the top-masts and top-gallant-masts are on end, or are lowered; and, after the instances we have cited there can be no more doubt of this, than there is of the fact that in defiance of all prognostications and assertions to the contrary, the lightning has repeatedly passed down Harris's conductors into the hull of the ship, and out of it again into the water, without doing the slightest damage in its passage.

We come now to the consideration of the experiments performed at Chatham on the 17th of August last, before the Earl of Haddington, the first Lord of the Admiralty, Admiral the Right Hon. Sir George Cockburn, Rear Admiral Sir George Seymour, the Right Hon. H. T. L. Corry, and the Hon. Sidney Herbert, besides a numerous party, consisting of the heads of the public departments, their subordinates, and many naval and military officers. The experiments were conducted by Mr. Harris in the upper story of one of the lofty storehouses in the Dockyard. The Daphne corvette of 18 guns, her mass being fitted with conductors on Mr Harris's principle was moored in the middle of the Medway, and a boat with a loaded 9-pounder gun in it was anchored about midway between the ship and the shore. At the top of the spindle of the vane at the mast-head of the Daphne there was a cup filled with gunpowder; a similar cup of gunpowder was placed over, and connected with, the touch-hole of the gun in the boat. In the storehouse Mr. Harris had a powerful electrical apparatus. From this apparatus a copper wire was led from the positive side of the battery to an exploding point in the cup of gunpowder at the mast-head; and another wire from the negative side to another exploding point in the cup of gunpowder over the touch-hole of the gun, which was

* We understand that this has been very properly laid aside. It is a matter of wonder that so unseamanlike, as well as unscientific, an affair was ever adopted.

at the same time connected with the *sea* by a short length of wire leading from the touch-hole of the gun over the side of the boat, into the water. There was no connexion whatever between the ship and the boat, other than the water on which they both floated.

Having clearly explained this arrangement, Mr. Harris gave a short, but very interesting discourse upon the nature of electrical action, and the laws of electrical discharges. Previously to this, however, he called their Lordships' attention to the fatal consequences of lightning to our shipping. He had taken 100 cases of damage by lightning out of the official documents—the log-books of the navy; and it appeared that in these 100 cases, 93 lower masts of line-of-battle ships or frigates had been destroyed, and from 40 to 50,000*l.* worth of spars rendered worthless. One ship in six was set on fire; in one-half the cases, some of the crew had been either killed or wounded; there had been 60 or 70 people killed, and above 160 wounded or hurt. Two whole fleets had been damaged on critical occasions, and one ship in ten of the above number had been disabled at times when the loss of their services was greatly felt; one frigate was blown up, and the crew, with few exceptions destroyed.

This introduction, admirably adapted to arrest the attention of his auditors, and to prove the importance of his subject, being concluded, Mr. Harris next explained the existence of an invisible agency associated in some way with the particles of common matter, of which the globe and all upon it is composed. This agency, which is termed electricity, is in a state of neutrality under ordinary circumstances. But when it is caused to assume other conditions of distribution than those under which it is inactive or neutral, it becomes immediately sensible, under the form of what is termed common electricity, as may be shewn by an electrical machine, or as is exemplified by atmospheric electricity in the case of a storm of thunder and lightning. In all cases in which the inactive or neutral state of electricity has been disturbed, there is an attempt, or rather a tendency, to resume the neutral state. Some bodies conduct, others obstruct the passage of electricity, therefore some bodies prevent, others assist this tendency. This was illustrated by various experiments on different substances made with the machine upon the table, showing that some substances (non-conductors) stopped the sparks, while others (conductors) freely permitted the discharge. In connexion with the subject of the protection of ships, it was explained that a ship's masts being of wood, which is to a certain extent a conductor of electricity, were already themselves conductors, although but imperfect ones; and that the object in view was merely to make that which already exists as a conductor, but is so imperfect as to be a source of danger, so perfect as to ensure safety. Keeping in view the tendency of electricity after any disturbance to return to its neutral state, the principle of all electrical discharges, which are the returns to this neutral state, may be thus explained. There are two opposed planes with an intermediate non-conducting, and, consequently, a resisting medium; one plane has electricity in excess, the other is deficient of electricity. These planes are the terminating portions of an electrical disturbance. The superabundance, or, the excess, breaks through the intermediate resisting medium, and, by this discharge, as

it is called, restores the electricity to its state of equable distribution, and consequently to its state of neutrality.

By various operations of nature, such as changes of temperature, the formation of rain, or, its decomposition into vapour, an electrical disturbance is caused. In these cases the opposed planes are the surface of the earth, or, sea on the one side, and the vapoury masses of cloud on the other. These are the two terminating charged planes, the resisting medium between them is the atmosphere; the electrical discharge which takes place in order to restore the electricity to its state of neutrality is the flash of lightning which breaks through this atmosphere wherever it opposes the least resistance. When a ship is placed on the inferior plane, that is on the surface of the sea, she forms a portion of that plane, and if the discharge takes place on the portion which she constitutes, she is said to be struck by lightning. It is evidently probable that the discharge may take place through her, because it will take place as we have seen through that portion of atmosphere which opposes the least resistance to it. If the clouds or the superior plane be low, the masts which are, as we have said, even when unprotected better conductors than the atmosphere, will offer this line of least resistance, but as they are themselves very imperfect conductors and offer no continuous line of least resistance through the ship to the sea, the passage of the electric fluid by their aid is uncontrolled; and wherever there is a want of continuity, or wherever there may occur a line offering yet less resistance to the passage of the fluid, or a portion offering a greater resistance to it, there will be an explosion caused by the electric fluid breaking through the opposing medium. In fact all the danger occurs at those points where the fluid meets with obstruction; where there is no obstruction, there is no danger.

Hence the danger of unprotected masts, and the advantages of masts with continuous and sufficient conductors for the electric fluid. By Mr. Harris's method of giving the masts of ships such conductors and uniting these with the metallic bodies in the hull which are connected with the sea, a discharge of atmospheric electricity would be robbed of all its explosive power at the mast-head, and the opposed forces would be rapidly neutralized through a line of comparatively no resistance; thus avoiding all intermediate explosion between the mast-head and the sea. In fact the lightning on reaching the head of a mast so protected, is no longer a terrific agent, active for destruction, but is reduced to a harmless and insensible current, of momentary duration, running down the conductor into the sea, as water would run down a pipe placed so as to conduct it.

Mr. Harris now explained the artificial arrangement of a Leyden jar, by which all the results of lightning may be imitated. In the case of the Leyden jar, the metallic coating on the interior of the jar, became the overcharged plane, while the metallic coating on the exterior of the jar became the plane which was deficient in electricity; that is, there was, when the jar was charged by means of the electrical machine on the table, an electrical disturbance between these two planes, and the effort of the electric fluid was to arrive at its state of equal distribution on neutrality, by breaking through the intermediate resisting medium, which it was evident was, in this case, the glass of which the jar was

formed. Any conducting substance, however, which connected the one plane with the other, as for instance, a metallic wire which with one end touched the interior metallic surface, and with the other touched the exterior metallic surface, would, by offering a free passage to the fluid, immediately restore the equilibrium. It signified little or nothing whether this wire was merely sufficiently long to effect the object of connecting the planes, or extended to a length of many fathoms. This they would see when the experiment with the Daphne was performed, in which that ship would, by means of the wire from the interior of the jar to her masthead,—of the conductor down the mast and through the hull,—of the sea between the hull and the boat,—of the wire from the water to the touch-hole of the gun in the boat, and of the wire from the gun to the exterior surface of the jar, become included in the circuit taken by the electricity in its passage to restore the equilibrium between the internal and external metallic coatings of the jar.

At this period of the discourse some experiments illustrative of the definite action and laws of electrical discharges were performed. It had been generally supposed that metals were attractive of lightning, in virtue of some inherent affinity for the electrical agency. Mr. Harris combatted this supposition, and showed that the laws of electrical discharges were reducible to mere resistance or distance. That in fact, the discharge through an imperfect circuit or conductor, as an unprotected ship, merely picked out such pieces of metal as happened to lie in a line or lines of least resistance to its course. This was illustrated by passing an electric shock over small masses of gold distributed fortuitously on paper, some of these were burnt up, others remained untouched.*

We have already described the arrangement for illustrating the action of the conductors of the Daphne. The object was to show that immediately an electrical discharge reached the masthead it passed down to, and was dispersed in the water by means of the continuous line of conductors. This was proved thus; the electric battery in the storehouse was discharged, the discharge passed along the copper wire from the metallic plate on the interior of the jar to the masthead; its presence there was rendered apparent by the ignition of the gunpowder in the cup; it passed thence down the conductor on the mast into the hull of the ship, and along the conductors on the hull into the sea. That it had arrived in the sea was proved by the ignition of the powder over the touch-hole of the 9-pounder gun in the boat, and the consequent discharge of the gun; because the only means by which this gunpowder could be ignited was the passage of the electricity up the short copper wire which connected the touch-hole of the gun with the sea. So that not only must the electric fluid have arrived in the sea, but it must have passed through it to this short copper wire in the boat. It is almost needless to add that so rapid is the passage of the electric fluid that the report of the discharge of the battery, the ignition of the powder at the masthead,—of that over the touch-hole of the gun, and the report of the gun itself appeared simultaneous, notwith-

* This experiment with an engraving, shewing the effect of the discharge appears in our volume for 1840, p. 225.

standing that the distance traversed by the electricity was enormous. Thus showing clearly and satisfactorily that the instant the explosion arrived at the vane-spindle, that same instant did the conductors clear it of the ship, and transmit it to the water.

Several experiments with gold leaf were then made, to prove that the principle held good in the case when the topmasts and top-gallant-masts were struck. These were very conclusive, as the masts were represented in various positions, and in every case, and under all circumstances the electrical current followed the continuous line without at all diverging to those portions of the conductors, which by the striking of the masts were placed in a position out of that line.*

Wire rope conductors were then considered, and the several objections to them very fairly and conclusively stated. The danger of a man being killed in the bight of such a rope, while striking the top or top-gallant mast during a thunder squall, was most clearly proved by a very neat experiment. Such a case was represented by gold-leaf on paper, and when an electric shock was passed over the paper, the gold was burnt up in the direction of the man, but remained untouched round the bight of the rope.

The last experiment which was performed was with a view to prove at once the complete protection afforded by the continuous conductor, and the apparent impossibility of the least action taking place on metallic bodies out of it, thus practically refuting the supposition of any lateral discharge taking place. Sir George Cockburn, who paid most marked attention to Mr. Harris's remarks, and experiments; stated that he had been led to understand that sparks might pass from a lightning conductor while discharging a shock of lightning. Mr. Harris replied that there was no instance of the kind on record, where an efficient conductor had been applied; that the question of lateral discharges arose out of a misapprehension of the nature of electrical action, by persons not well acquainted with it; that the question had been considered by Biot, by English, French, and American electricians, and it could be clearly shown that the effect in common electricity, called a lateral discharge, was merely the result of a little residual or free electricity, expanded over a discharging circuit. It was not applicable to electrical discharges, such as lightning, affecting conductors placed directly between, or connecting the terminating planes of a great electrical action, such as here described, and which was the great system of a thunder storm. This, he said, would be illustrated by the ensuing experiment.

A model of a mast about ten feet in length was made in parts, and an *interrupted* line of metal placed in the heart of it. Percussion powder, which it is well known will inflame with the least spark of electricity, was placed between these interruptions. On the outer surface of the mast a *continuous* conductor was fixed, and the extremities of this continuous conductor were connected at each end of the model of the mast, with the extremities of the interior and interrupted line of metal. In order to make the experiment more complete, bands of metallic leaf were made here and there to surround the mast as hoops, together with

* See volume for 1834, p. 479.

other metallic bodies which could enter into the mast itself, and touch the internal line of metal. An intense shock of electricity was allowed to fall upon the upper extremity of the mast, where *both* lines of metal were in conjunction, with a view of discovering (since the electric matter had thus it may be said the choice of two lines,) whether it would pass upon the metal within, or whether it would be dispersed between the two lines and part pass down each, or whether it would only pass down the exterior line, and whether, in passing down that line, it could cause a lateral discharge to enter the mast, or in any way affect the interior. This was a severe test when we consider the highly inflammable nature of percussion powder, and it appeared completely to meet every objection which has ever been urged against Mr. Harris's conductors. It succeeded perfectly. As long as the continuous external conductor remained perfect the discharges of electricity, were innoxious; when however the exterior conductor was removed, and a similar charge was thrown over the model, the mast was blown to pieces by the ignition of the percussion powder, evidently proving that if the previous discharges had in any way, or under any form pervaded the interior, this effect would have resulted in the very first instance.

We cannot conclude this lengthened notice without pointing out the advantage of a system of protection which would, if universally adopted, place the navy of England beyond a possibility, even, of damage from lightning. We might again advert to the enormous list of destruction of property and melancholy loss of life to which Mr. Harris called the attention of the Lords of the Admiralty. We might also remind our readers that this is not by any means the whole of the melancholy side of the picture. There is little doubt that could the annual losses which crowd Lloyds' books be annalyzed, lightning would be found to have played a fearful part in causing them. But it would be impossible to ascertain the loss in its whole extent, for many a gallant bark has been thus destroyed, and neither log nor man been left to tell the tale. It is beyond all demonstration true that a protection which is permanently fixed throughout its whole extent, admitting not only of every possible motion of the sliding masts, but also of any part of the mast being removed either by accident or design, without one instant interfering with its protecting power, a protection, in fact, which forms as it were an integral portion of the ship, which is always in operation, is independent of all chance, neglect, or carelessness, which is so arranged that a discharge of lightning falling on the vessel, could not enter into any circuit of which it did not form a part, and which cannot under any circumstances, nor under any contingencies, be a cause of danger, must be as perfect in its arrangements as any invention can well be.

This we believe may be said of Mr. Snow Harris's conductors, and we sincerely hope that they will be universally adopted, not only in our military, but in our mercantile navy.

A similar series of experiments to these have just been made at Portsmouth, on H.M.S. Orestes, fitted with Mr. Snow Harris's conductors. The Orestes was moored off the dockyard, abreast of the Semaphore tower, in which Mr. Harris had his electrical apparatus; and a

barge carrying a gun was moored midway between the dockyard and ship.

We understand that in repeating the experiment of passing the electric fluid through the Orestes, an accidental circumstance fully proved Mr. Harris's theory, that metals, of themselves, are not attractive, and that lightning will take the most direct continuous way to arrive at its course. The wire which led from the Semaphore to the cup containing the gunpowder at the mast-head of the ship was not properly placed, the bight touching the mast a few inches below the cup. The discharge, therefore, instead of continuing along the wire to the cup, was conveyed to the conductor at the spot where the bight touched the mast, and carried through the ship, and thence by the sea to the boat, where it fired the gun, leaving the gunpowder at the mast-head unexploded.

After Mr. Harris had concluded his experiments, Admiral Sir E. Codrington said, that after what he had witnessed, he thought it but right publicly to observe, that he felt perfectly convinced of the efficacy of the conductors upon Mr. Harris's plan, which, after the conclusive and satisfactory tests they had that day undergone, would no doubt be generally used throughout the navy. All the other officers present were equally gratified, and expressed their approbation of the plan.

Many persons are of opinion that fatal effects from thunder storms are more frequent now than they were formerly. I should myself be of that opinion if I trusted merely to the records of memory, but I find that, for more than half a century, the same opinion has been held; while at the same time observations made at different periods certainly negative this conclusion. Although it would be attended with much labour to collate all the accounts of accidents of this description, we may gather from the tone of the writers of former days what was the general impression on this subject. The *Philosophical Transactions of the Royal Society*, as well as many of the scientific periodicals published at the close of the last, and the beginning, of the present century, contain numerous interesting accounts of the effects of lightning; and a writer in the year 1811 states that he has made calculations of the average amount of damage by lightning in England, which he finds amounts to about £50,000 in money, and from 20 to 30 human lives, as the annual sacrafice by this destructive agent.

But it is extraordinary that, notwithstanding this acknowledged loss and destruction, scarcely anything is done to mitigate its effects. Science is certainly able to mitigate these destructive effects, if it were put in requisition for this purpose. The vast number of churches which have been damaged by lightning within the last three or four years—of which the last instance is St. Martin's Church, the damage to which is estimated at £3,000—suggests the necessity for adopting some mode of protecting this description of buildings, for it is certainly most extraordinary that buildings, which from their height and general form are more liable than any others to suffer from lightning, should so very seldom have any means of protection.

With the exception of St. Paul's Cathedral, I believe very few churches in England, either in the metropolis or elsewhere, are furnished with lightning conductors, while many, or indeed most of them, are so constructed as almost to invite the electric fluid without the means of afterwards allowing its escape, except by the destruction of some part of the building. It is singular how nearly identical are the records of all the accidents of this kind which have hitherto occurred. In 1674, St. Bride's Church, Fleet-street, was struck by lightning; the electric fluid entered at the top of the spire by the gilded vane,

from which it descended as far as any metallic conductors extended, and then burst through the resisting medium of the stonework, shattering the steeple and throwing down several stones, one of which weighing 70lbs., was carried a distance of 50 yards, and fell through the roof of a neighbouring house.

With slight variations this would describe most of the accidents to churches from lightning; the force of the discharge of course depending upon circumstances. Nearly all writers on this subject are agreed, that if churches and other similar lofty buildings were provided with proper conductors, not only would they be protected from the lightning, but they would in most cases. also defend the neighbourhood from its effects, by silently and imperceptibly drawing off the electricity from the clouds, and thus preventing the violence of the thunder storm. In fact, this mode of preventing thunder storms has been often proposed for adoption on a large scale: and it is somewhere narrated (though I cannot now recollect the precise authority) that a village in France, which from some local cause had been repeatedly devastated during a series of years by storms of lightning and hail, was afterwards completely protected by the erection of a number of elevated conductors. It is true, that it has never yet been clearly ascertained the greatest extent of surface, which a lightning conductor will protect, and, therefore, the precise degree of protection to the neighbourhood may be questioned, except within a certain limited distance—the protecting power of a conductor having been ascertained to be at least sufficient for an area represented by a circle whose radius is twice the length of the conductor.

The best practical instructions for the erection of lightning conductors is the report made to the French Government by M. Gay-Lussac, on behalf of the Academy of Sciences at Paris, published in the *Annales de Chimie*, and also in the 24th volume of the *Annals of Philosophy* for 1824; but, as these volumes are not often in the hands of practical men, it would be most desirable if the Royal Society would publish, in some form applicable to the intended purpose, instructions on this subject, combining the improvements which science has suggested since the period of M. Gay-Lussac's report. It is by no means improbable that many parishes might be induced to erect conductors on their churches, but the subject is so little understood that no one ventures to propose it; and unless these conductors are properly erected they are more likely to do harm than good.

The old cathedral of St. Paul's was twice struck with lightning, and both times seriously damaged. In 1444, the lightning destroyed the tower of the church, and in 1561 it set the church on fire and nearly burned it to the ground.

In 1769 the Dean and Chapter applied to the Royal Society for their advice as to the best means of securing the present cathedral from the effects of lightning, and a short description of the mode adopted in this immense edifice may be interesting.

The ball and cross are supported by seven iron rods; these rods are then connected with other rods, (used merely as conductors,) which unite them with several large bars, descending obliquely to the stone work of the lantern. A ring made of iron, one inch square, connects all these bars, and four iron bars, one inch square, connect this ring with the lead covering of the great cupola, a distance of 48 feet; and from thence the communication is continued by means of the pipes which discharge the water on to the floor of the stone gallery. From these pipes large strips of lead connect them with the pipes which discharge the water on to the roof of the building. This roof is entirely covered with lead, and from thence the communication is continued to the ground by means of the lead water pipes, which pass into the earth, thus completing the entire communication from the cross to the ground, partly through iron, and partly through lead. On the clock tower a bar of iron, one inch and a quarter square, connects the pine apple at the top with the iron staircase, and from thence with the lead on the roof of the church. The other tower has a bar of iron of the same size extending 88 feet from the pine apple to the roof of the

church. By these means the metal used in the building is rendered available for the purpose of the conductors, the metal employed merely for the conductors, being exceedingly small in quantity.

The general neglect of the use of lightning conductors, probably, arises from the belief of their insufficiency, and ignorance of their proper construction But it can be satisfactorily shown, that wherever they have failed to afford protection it has arisen from either defective construction or subsequent derangement.—*Times.*

East-street, Sept. 6th. H. C.

[We understand that Mr. Harris is preparing Instructions for fitting Conductors to Public Buildings.]

A Memoir of Captain Huddart.—*By William Cotton, F.R.S., &c.*

This Memoir is intended by the author chiefly to supply some additional facts which are omitted in the account which was published by his son soon after the decease of this distinguished man, whose "great powers of mind, indefatigable industry, and high principles, raised him to a most honourable position among men of science."

Joseph Huddart was born at Allonby, in Cumberland, the 11th January, 1740. His father was a shoemaker and farmer, and had also a small interest in a herring-fishery. Young Huddart was placed under the tuition of Mr. Wilson, the clergyman of the village, and from his son, who had been at Glasgow, he acquired some knowledge of mathematics and astronomy. He early displayed much ingenuity in the construction of models of vessels and of machinery; and while herding his father's cattle, he was occupied in mathematical reading, drawing, and calculations. His determination to adopt a sea-faring life was opposed by his friends; and it was not until he was called upon to take his share of the duties on board the herring-fishing boats, that his father was reconciled to his becoming a sailor. At this period, during the hours of rest after his labours, he was engaged in making nautical observations, and laid the foundation for the chart of St. George's Channel, which was published by his friend, Mr. Laurie, from his survey, and is still the best chart of that locality.

On the death of his father, in 1762, he took the command of a sloop which was employed in carrying salt herrings to Ireland. He then constructed a brig according to a model of his own, every timber being moulded by his own hands. In this vessel he traded for some years to America; until, in 1771, he was induced by Sir Richard Hotham (who had discovered and appreciated his judgment and knowledge) to leave the brig and engage in the East India mercantile marine. In this extensive field of usefulness, Huddart evinced the superiority of his talents, and his inflexible integrity; and his example as a commander was generally followed. While in the Indian service his attention was drawn to the defects in the usual manufacture of cordage, and led to the improvements which he afterwards so successfully accomplished.

He subsequently took a prominent part in the direction of affairs at the Trinity-House, the Ramsgate Harbour Trust, and the London and East India Docks, where the valuable advice given by him was pro-

perly appreciated, as it was also by the civil engineers, with whom he was so frequently called upon to co-operate.

The Memoir then relates many interesting anecdotes of his private life, illustrative of his general scientific acquirements, and of his amiable disposition. It then details, at considerable length, his experiments for the determination of the lines for ships, which, consistent with stability, and what might be required for stowage of cargo would give the greatest velocity through the water.

The author enters fully into the account of Huddart's inventions and improvements in rope machinery, which he raised to such a pitch of perfection. This machinery, which is now transferred to the Royal Dock Yards, has already been before brought under the notice of the Institution by Mr. Cotton and by Messrs. Dempsey and Birch, in communications, for which prizes were awarded.* The general introduction of chain cables rendered this machinery less useful, but could not take from its original merit; and, in its present position, it will long remain a monument of Captain Huddart's perseverence, mechanical skill, and scientific knowledge.

Sir James South thought that Captain Huddart's scientific attainments as an astronomer had not received their due meed of praise in the Memoir; but more especially, that the equatorial instrument, which he was now fortunate enough to have in his possession, should have been alluded to more particularly. That instrument was constructed by Messrs. Luke Howard and Co., of Old-street, from the designs and under the daily superintendence of Huddart. The greatest part of the instrument was put together with his own hands, and the result of this combination of skill and attention was, that up to the present time, the instrument had been unequalled; in fact, he must be permitted to to say, that he considered it *perfect*. It had been used for all kinds of observations,—transit, declination, and equatorial; and, in all, with equal satisfaction to the astronomer. With it Mr. Herschel had made many of his observations, and always expressed himself in the highest terms of it. It had been examined by most of the eminent constructors of instruments, as well as many civil engineers, who all entertained the same opinion of its perfection; and, after a minute inspection, one constructor observed, "Here is the best system of edge-bars and bracing I ever saw, and my opinion of the instrument is, that it is perfect in every part."

Sir James then related several anecdotes of Huddart's habits of observation. On one occasion, being ordered to sail from Madras at a certain time, he delayed his departure, because he observed a sudden fall of nearly three-quarters of an inch in the mercury of the barometer. The result of this disobedience of orders (for which he incurred momentary censure) was, that his vessel alone of all the convoy escaped destruction.

The President believed that Captain Huddart was the first to mark out the direct course to China, which is so generally followed at pre-

* Minutes of Proceedings, 1838, pp. 1-38 and 39; 1841, p. 171.

sent. He was also the first observer who took a transit instrument out with him, to determine the rate of the chronometer. It was particularly worthy of notice, that the equatorial instrument and the rope machinery, both of which had been designed by and executed under the directions of a self-educated man, destitute of the means of acquiring instruction either in astronomy or mechanics, had been, up to the present time, unequalled either in conception or in the perfection of their execution. Huddart was the constant coadjutor of civil engineers: he assisted the late Mr. Rennie in many of his surveys of harbours, and on those occasions had always the command of the vessel, even if he did not participate in the actual operations of the survey. Whether Huddart was viewed as a sailor, boldly striking out for himself a new track to his destination; as a shipbuilder, constructing a vessel in order to avoid the defects which he observed in the ordinary class of ships; as a hydrographer, displaying in his chart of the St. George's Channel* those powers of observation and of reasoning which made him an astronomer; as a constructor of the equatorial instrument, which had been so justly commended; or as a mechanic, designing and constructing one of the most beautiful pieces of machinery on record,—he appeared equally great.

The Institution was much indebted to Mr. Cotton for this Memoir of Captain Huddart, whose name would be always venerated by every member of the profession of civil engineering.

Mr. Thornthwaite must in justice correct a misapprehension relative to the laying machine for cables; the idea of that machine originated with the Rev. Edmund Cartwright, who had projected more improvements in cotton machinery than any person, except Arkwright. The machine was materially modified by Captain Huddart, and to him must be given all the credit for the perfection of its proportions, and its careful construction, which had enabled a machine weighing 20 tons, and revolving rapidly upon one vertical spindle, to work a number of years without costing 5*l.* for repairs. The register, which preceded the laying machine several years, was entirely Huddart's invention, and was the origin of his improvements in rope machinery.

The Variation of the Compass.

(Continued from p. 699.)

Royal Observatory, Greenwich, Oct. 13, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Declination for July 1842—23° 17′ 14″.

Mean Magnetic Dip for July 1842.

at 9 A.M.	at 3 P.M.
68° 34′	68° 39′

G. B. Airy, *Astronomer-Royal.*

* His chart of the Hebrides is the best yet published.—Ed. N.M.

Great Britain Steam Ship (late Mammoth.)

[We have already given some account of this vessel, and make the following extract from the "Civil Engineer and Architects Journal," as to her anticipated speed, in the observations of which we fully concur. The table alluded to here is an excellent authority for the sea-rates of Steam-vessels, and should be referred to in all Steam-ship calculations.—Ed. N.M.]

The *Mechanic's Magazine*, No. 996, gives an account of the construction and dimensions of this ship, together with drawings of her machinery and its arrangement, explanatory, although necessarily drawn to a very small scale; and useful, could we depend upon their accuracy; but the author (Mr. Hill) tells us "his rough dimensions were obtained by pacing, others by a graduated walking stick," a system of mensuration somewhat unusual among engineers of the present day. From the materials there furnished, we form the following calculations:—

The diameter of each cylinder is said to be 88 inches, the stroke 6 feet, which at 19 strokes per minute, or 228 feet, is equal to 295 horses each, or of four cylinders to 1180 horses, and not of 1000, as stated by the author. Thus, area $\frac{88 \times 7 \times 228}{33.000} = 294.15$ horses, or 1176.60 *for four engines*, doubtless intended to be of the collective power of 1,200 horses, which in fact, an additional ¼ of a stroke per minute would produce. The air pumps at 3′ 9″ diameter and 6′ 0″ stroke have a content of 66.24 cubic feet; *one* pump and condenser being apportioned to *two* cylinders. The cylinders have a content of 253.38 cubic feet; both = 506.76 cubic feet, we have, therefore $\frac{506.76}{66.24} = 7.7$ times, or about the proportions of our best engineers. The condensers are $12.0 \times 8.6 \times 5.0$ content = 510 cubic feet, here we have $\frac{510}{66.24} = 7.65$ times, or nearly thrice as much as experience shows to be necessary. If any dependence is to be placed on the boiler sketches, the Bristolians have yet much to learn in that department of marine engineering. We are inclined to doubt their authenticity, for, having so good an example as the boilers of the Great Western before them, they ought to have certainly produced something nearer perfection, but of course we can only reason on what is before us. For example, we have 24 fires, each 6 feet long by 2 feet wide; a total grate surface of 288 feet for 1,200 horse power, or about ¼ of a foot per horse power (nominal) or *less than half the proper quantity*. This fact, coupled with the indifferent arrangement of the flues, are plain indications that the consumption of coals will be the reverse of economical.

We make this analysis with reference to an article on "The Great Britain the largest vessel in the world," published in the *Times* last month, wherein it is stated she has stowage for 1000 tons of coals and 1,200 tons of measurement goods. The former amount seems inadequate for the purpose intended, viz., a voyage from Bristol or Liverpool to New York.

If we take the consumption at the moderate computation of 8 lb. per H.P. nominal per hour, we have $1200 \times 8 = 9600$, or, per day = 103 tons; and supposing an average passage 12 days, the consumption would in that time be 1236 tons of coals without any surplus for the contingency of bad weather and prolongation of voyage. We think the consumption of coals will be nearer 10 than 8 lb. per horse, per hour; and if we are correct in this opinion, we have 1200 lb. per hour, or, 129 tons per day, or 1548 for a voyage of 12 days—and mind, no surplus.

But, will she make the passage in less than 12 days? The same authority informs us that her load line is at 16 feet; at this, her immersed section is about 600 feet. Taking the powers as the cubes of the velocities, and using the factor 1400 (which experience shews to be correct for this class of vessel) we have $\frac{1400 \times 1200 \text{ H.P.}}{600 \text{ section.}} = 2800 = 14$ miles per hour in still water, presuming her to be propelled by paddle wheels; but according to the Great Western experiments, as stated in *Machanic's Magazine*, p. 255, the screw *is inferior* to the wheel in the proportion of 12 to 10, or one fifth, so that instead of 14 miles her true velocity will probably be 11.65 miles in still water, as aforesaid.

Now, Cunard's packets attained a greater velocity than 11.65 miles when tried experimentally, and yet their average passages, show a *sea* speed of about 8½ miles only, the average length of passage being 13 days 6 hours out, and 11 days 5 hours home. The passage out gives 7.86 miles per hour, while that home influenced by prevailing wind and current gives 9.3 miles, in this case the mean sea rate is 8.58 miles per hour.

We take the facts from the *Nautical Magazine*, subsequently published in the *Times*. It appears to be a compilation from registered results, and therefore entitled to the highest credit. It states the passages of Cunard's line to be *outwards*, from 10 days 19 hours to 16 days 12 hours, and one reached 20 days 17 hours; the *home* passage from 9 days 17 hours to 12 days 18 hours, and this between Liverpool and Halifax only.

We draw two conclusions from these data: the first, there is no reason to suppose the Great Britain will make quicker passages than the present vessels; the second, that provision should be made for 20 days consumption of fuel, for we need not point out to our nautical readers the position of such a vessel in the broad Atlantic, *minus* her steam power, rigged as she is. What then becomes of the 1800 tons space for measurement goods? Supposing this vessel buffetted about for upwards of 20 days (as one of Cunard's superb vessels has been), she would require stowage from 130 tons × 20 days = 2060 tons of coals at the moderate computation of 8 lb. per horse per hour; if we reduce it to the minimum of safety, say 16 days stowage, we require 1648 tons, at 8 lb. per horse only; which we may say is the general average of the best and most economical boilers. We know enough of marine engineering to state confidently that the boilers of the Great Britain will not reach this point.

We hope we may not be misunderstood, and our remarks considered inimical; our desire is simply to correct what we believe to be erroneous conclusions and to put the proprietors on their guard, that they may be moderate in their expectations. It would conduce to our utmost pleasure if their most sanguine expectations become realized, not in the narrow spirit of pecuniary gain, but as a national triumph and convincing proof that Great Britian is, and ever shall be, mistress of the seas.

HURRICANE ON THE COAST OF THE UNITED STATES OF AMERICA, July 12, 1842. —A furious circular storm occurred at Acracoke, (wind N.E.) and other parts of the coast about Hatteras, &c., considerable damage among the shipping. Twelve or fourteen vessels were driven on shore northward of Cape Hatteras, and twenty to the southward of it. Several dismasted vessels have been seen at sea; and one of about 120 tons, bottom up on 14th, eighteen miles north of the above Cape. The storm visited Washington.

NORTON'S CONCUSSION SHELL.—After a series of experiments commencing in October 1841, at Woolwich, and continued at Portsmouth, Addiscombe, Deal, and again at Woolwich, this powerful auxiliary to the Naval and Military armament of England, has been approved of by the Ordnance, and adopted by the Government. It will now take its place as the most formidable war engine belonging to this or any other country.—*From U. S. Mag.*

Table LXV.

For reducing Bavarian feet to English feet, and English feet to Bavarian feet.

1 Nuremberg foot = 0·99671445 English foot.
1 English foot = 1·00329638 Nuremberg foot.

Nuremberg or Eng. feet.	English feet, and Dec. parts.	Nuremberg feet, and Dec. parts.	Nuremberg or Eng. feet.	English feet, and Dec. parts.	Nuremberg feet, and Dec. parts.	Nuremberg or Eng. feet.	English feet, and Dec. parts.	Nuremberg feet, and Dec. parts
1	0·997	1·003	40	39·869	40·132	79	78·740	79·260
2	1·993	2·006	41	40·865	41·135	80	79·737	80·264
3	2·990	3·010	42	41·862	42·138	81	80·734	81·267
4	3·987	4·013	43	42·859	43·142	82	81·731	82·270
5	4·984	5·016	44	43·855	44·145	83	82 727	83·274
6	5·980	6·020	45	44·852	45·148	84	83·724	84·277
7	6·977	7·023	46	45·849	46·151	85	84·721	85·280
8	7·974	8·026	47	46·846	47·155	86	85·717	86·283
9	8·970	9·030	48	47·842	48·158	87	86·714	87 287
10	9·967	10·033	49	48·839	49·161	88	87·711	88·290
11	10·964	11·036	50	49·836	50·165	89	88·707	89·293
12	11·961	12·039	51	50·832	51·168	90	89·704	90·297
13	12·957	13·043	52	51·829	52·171	91	90·701	91·300
14	13·954	14 046	53	52·826	53·175	92	91·698	92·303
15	14·951	15·049	54	53·823	54·178	93	92·694	93·307
16	15·947	16·052	55	54·819	55·181	94	93·691	94·310
17	16·944	17·056	56	55·816	56·184	95	94·688	95·313
18	17·940	18·059	57	56·813	57·188	96	95·685	96·316
19	18·937	19·062	58	57·809	58·191	97	96·681	97·320
20	19·934	20·066	59	58·806	59·194	98	97·678	98·323
21	20 931	21·069	60	59·803	60·198	99	98 675	99·326
22	21·928	22·072	61	60·799	61·201	100	99·671	100·330
23	22·924	23·076	62	61·796	62·204	150	149·507	150·495
24	23·921	24·079	63	62·793	63·208	200	199·343	200 660
25	24·918	25·082	64	63·790	64·211	250	249·179	250 824
26	25·915	26.085	65	64 786	65·214	300	299·014	300·989
27	26 911	27·089	66	65·783	66·217	350	348·850	351·154
28	27·908	28·092	67	66·780	67·221	400	398 686	401·319
29	28·904	29·095	68	67·777	68·224	450	448·521	451·483
30	29·901	30·099	69	68·773	69·227	500	498·357	501·648
31	30·898	31·102	70	69·770	70·231	550	548·193	551·813
32	31·895	32·105	71	70·767	71·234	600	598·029	601·978
33	32·892	33·109	72	71·763	72·237	650	647·864	652 143
34	33·888	34·112	73	72·760	73·241	700	697·700	702·307
35	34·885	35·115	74	73·757	74·244	750	747·536	752 472
36	35·882	36·118	75	74·754	75·247	800	797·372	802·637
37	36·878	37·122	76	75·750	76·250	850	847·207	852·802
38	37·875	38·125	77	76·747	77·254	900	897·043	902·967
39	38·872	39·128	78	77·744	78·257	1000	996·714	1003·296

LIVERPOOL SHIPMASTERS' ASSOCIATION.—We are glad to observe that the Committee of the Shipmasters' Association have been taking means for disseminating much valuable information to the young shipmasters of the port, by making arrangements for the delivery of lectures every alternate Monday evening, on subjects interesting to navigators. An introductory lecture on practical navigation was delivered on Monday, 26th of Sept., by Lieut. Tracey, R.N., as stated in our paper of the 28th. Mr. Livingston, on Monday evening last, commenced a series of lectures on that most intricate and mysterious subject—Oceanic Currents. We regret that our space will not admit of our giving even an outline of Mr. Livingston's observations, which were ranged under several important heads, as Channel tides, Currents in the Bay of Biscay, on the coast of Portugal, and in the Straits of Gibraltar; Tropical Currents; the Gulf Stream; North-east winds on the Coast of Portugal; Trade winds, &c. Mr. Livingston concluded by earnestly advising masters desirous of acquiring as thorough a knowledge of currents as can as yet be attained by study, to consult the interesting work of the late estimable and revered Major Rennel. We were much pleased to see so many shipmasters present, and were particularly delighted with the attentive manner in which the lecturer was listened to throughout his discourse, which was delivered in a pleasing, familiar, and perspicuous manner. We are induced to hope that the good example thus set by Lieut. Tracey and Mr. Livingston will be followed by many others of the intelligent shipmasters who visit this port. It is the bounden duty of every man to make known his experience for the benefit of others; and as it is of the greatest consequence that every information should be given respecting the currents, rocks, shoals, and the dangers which beset the mariner's course, a register has been opened by the master of the rooms of the association, for the purpose of recording such extracts from the log-books as may relate to any new discoveries or the confirmation of previous observations. As these notices will be sent periodically to the *Nautical Magazine*, it is hoped that masters will assist in so desirable an undertaking by forwarding to the association all such particulars as they may deem interesting or useful.—*Liverpool Standard.*

FATAL EFFECTS OF A WATER-SPOUT.—The Mersey, Captain Steele, belonging to Liverpool, arrived at Oporto from the former port, reports having seen a water-spout, on the 3rd inst., which rapidly approached his vessel, but passed within about three ships' length of her. It then made a direct course towards a small Schooner about a mile and a half a-head of the Mersey, which Captain Steele supposed was ingulphed in the vortex, as the weather was thick at the time, with heavy rain, thunder and lightning, and on its clearing up in about fifteen minutes after, the schooner was not to be seen either from the deck or from aloft.

The Schooner was apparently steering the same course as the Mersey, when the water-spout was first seen, and was under a press of sail at the time; and as the weather was hazy, she did not perhaps perceive the meteor until it was upon her. The Bayonne Islands bore by compass S.E.b.S. distant thirty-six miles; the wind blowing from the N.W.

As doubts have been expressed that there is no danger to be apprehended when a water-spout passes over a vessel; this statement of the fatal effects of one, may serve as a caution to masters of vessels, especially of small ones, when they may happen to find themselves in the vicinity of these meteors, to be prepared to reduce their sail in time.

The gyrating current of air within the circumference of the meteor, may be expected to blow with the strength of the hurricane whilst it lasts, and therefore powerful enough to upset a small vessel, or carry away the masts of a large one, if either be under sail.

Wrecks of British Shipping

(Continued from p. 273.—cs. ceew saved, L lost, D drowned.

VESSELS.	BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.
Adele 167	———	Peile	Liverpool	Mexico	I. Blanql	Dec. 5.
Agenoria	Wivenhoe	Dumertn	capsized	in squall	Scarbro'	Mar. all L
Anne and Mary	Newcastle	Crosthwt	Newcastl	Montrose	Heads R.	Mar. 8
Astrea 170	———	———	Liverpool	M. Video	Hartwl R	Jan. 6 cs
Britannia	———	Cook	Liverpool	N. York	Ferrland	July 23 cs
Buoyant	———	———	———	———	Brazos R.	Feb. 7 D
Caspian	———	———	Newcastl	Petrsbrg	Baltic by	ice Mar 9 cs
City of Edinburgh	———	Hast	London	Ostend	Ostend	Mar. 3 cs
Colomba 175	———	———	———	———	Imbros	Jan. cs
Commodore	———	Barrile	Niagra	Kingston	L.Ontaro	May 3 cs
Confidence	Barking	———	———	———	Gunfit S.	Ap. 12 cs
Crescent	———	Payne	Swansea	London	Lundy I.	June, aban.
Crystal, timber ladn	Sunderland	wreck	drifted	on shore	Milford	Mar. 12
Despatch 180	Torquay	———	Stockton	———	Kntish K	Mar. 2 cs
Diana	———	Patrick	Dundee	Newcastl	Dundee	Feb. 28 cs
Eliza Payson	———	Payson	W. Ind.	Westp'rt	Seal Isld.	Mar. 4 cs
Flirt	———	Jewitt	Sundrlnd	Hambro'	Mellum I	Ap. 7 cs
Foster	Drailau	McLaren	Constnpl	Salina	Danbe	May 18 cs
Francis Lawson 185	timber ladn	abandond	at sea	and	burnt	Nov. 1840
Garland	———	Doane	Liverpool	Apalachi	C.S. Blas	Feb. 11 2 D
Gazelle	St. Johns	———	Liverpool	Newfdld	at sea	May 7 cs
Georgia	Newcastle	Mitchell	Calcutta	London	Indian O	by fire, 5 D
Grenada	———	———	———	Aden	Aden	Dec. 31
Harriet 190	———	Beech	Calcutta	London	Hooghly	Ap. by fire
Havannah	———	Baldest'n	Genoa	Glasgow	abandond	seen Jan 13
Helen	———	Hendes'n	St.Helna	Cape	Table B.	May 29 cs
Isabel	———	Warrel	Adalia	London	Archiplg'	Feb. cs
Jane	Limekilnes	Wilson	Chrlest'n	Travemd	at sea	Mar. cs
Jane 195	London	Clark	run down	by HMS.	Athol	Mar. 5 cs
Jeremiah	———	Stirling	Newport	Stetin	Riben B	May 7 cs
Jos. Story	———	Spencer	London	S. Petrbg	Baltic by	ice May 9 cs
Kent	———	———	Gre'nock	Montreal	St. Lawr	May 8 cs
Liberty	———	Howard	———	———	Berry I.	Feb. cs
Mary 200	———	Thomas	Hull	Leghorn	Almeira	Feb. 24
Mary and Ann	Rochester	Duffell	Hartlep'l	Pillau	Aalbourg	June 26 1 D
Morning Star	———	Walker	Mayagu'z	Halifax	DuncanR	July 6 cs
Nancy	Newcastle	———	———	———	North Se	Mar. 26 cs
Penelope	Lynn	Peak	sunk	off	Orfordn's	Mar. 4
Prince Albert 205	Wivenhoe	Jones	Bristol	Terceira	not heard	of since Nov
Rival	———	———	Liverpool	Halifax	———	Feb 1. 1 D
Robert Haines	———	Blasgrov	Surinam	Demrara	by fire	Dec. 5
Sharp	———	Maxwell	Hartlep'l	London	WhitngS	May 2 cs
Speculator	———	———	———	———	N.Zeelnd	Aug. 1841
Star 210	Whitby	abandond	May 12th	cr. sd. by	Britannia	to Saguenay
Success	Arundel	Wheeler	L. Hamtn	Swansea	Caermar'	Mar. 15 1 D
Thos. Worthington	Cork	abandond	at sea	49° N.	17° W.	1 s
Transfer	———	———	———	———	N.Zeelnd	Aug. 1841
Trusty	———	———	Cork	Nwfdlnd	Off Cape	Mar. 8
Victoria, stmr. 215	———	———	Fleetwod	Belfast	Manghd Head	Feb 9
Victoria	———	McKenze	P. Ed. I.	Camblt'n	B. Gaspe	Nov. 12 cs
Viscout Melbourne	———	McKerle	———	———	Luconia R.	
Washington	———	Jervis	Goole	Pillau	Cattegat	June 12 cs
W. Salthouse	———	Brown	Quebec	P. Philip	P. Philip	Nov. 28 cs
William 220	———	Eagon	Poole	Trinity	Newfdld	Jan. 30 6 D

Nautical Notices.

A correspondent has obligingly forwarded us the *Royal Nassau Gazette* in which we find the following:—

"The following singularly expressed Memorandum was received at this office, on the 11th instant, enclosed in a private letter from a subscriber at Ragged Island, addressed to the Editor of this paper.—*Nassau Royal Gazette.*

"Drift of the Ocean.—Brig Flora, July 29th, 1840, Francis W. Shaddock, Commander.

"There is a Divinity that shapes our ends,
Rough hew them how we will."

"And this is to inform the mighty World, that the said brig is this day in the lat. 43° 55′ N., and long. 18° 4′ W., from Greenwich, all well.

"Therefore, *you*, the lucky finder of this enclosure, in whatever part of the Globe it may be, are requested to send it under cover, addressed to the Editor of the *Nautical Magazine*, for the benefit of navigation, in some small degree towards ascertaining the currents of the ocean.

"We left Poole on the 19th inst., bound to Carboneur, Newfoundland, and until these past two days, have had very rough weather.

"The passengers have just had their morning lunch, with a glass of brown stout, and intend drinking 'Success to the above *Magazine*,' and hope they may soon succeed in sending forth to seamen a full and succinct theory of the cause of winds, founded on accurate information from experienced navigators.

"Long live our beloved Queen, and always in the hearts of her devoted subjects.

"[Found in the Bay of Nepe, on the Island of Cuba, April 1st, 1842.—Wm. Heastie.]"

We must first express our acknowledgments to the parties who have forwarded the Gazette, and also to those on board the Flora, whose remembrance of us in the midst of the Atlantic has thus called forth their best wishes. We have the gratification of adding that we have placed the above on the chart, which we hope to see in a very early number of next year, and by which they will find that it drifted to the southward, and was carried to the West Indies by the Great Equatorial stream.

Swan River.—*Directions.*—A letter has been received at Lloyd's, drawing attention to a circumstance not generally known, namely, that a clear channel for entering the Swan River exists between Rottenest and the main. It states that it is not until after a ship is clear of all dangers that she is boarded by a pilot; and that a vessel to the northward of a patch of sand called "The Winding Sheet," is four miles inside of all danger, and that the clear channel between Rottenest and the main is about nine miles wide, and void of danger; whereas the more intricate passages do not exceed a quarter of a mile in width.—*Shipping Gazette, Oct.* 13.

Hydrographic-office, Admiralty, Oct 7th, 1842.

Light-house on the Morant Point, in the Island of Jamaica.—On the 1st of November next a bright light, revolving once every minute, will be exhibited from the above light-house. The tower is painted white, and is 103 feet above the level of the sea. The centre of the light 96 feet, and can be seen in clear weather 21 miles. Yallah's Hill bears from the lighthouse W. ¾ S. N.E. Point N.W. ½ N., and the Morant Keys S.S.E. ½ E., 33 miles distant, lat. 17° 56′ N., long. 76° 11′ W.

Rio Grande de San Pedro.—*Brazil.*—We take the following directions for Rio Grande from the *Shipping Gazette*, which states that they were published from the Department of State at Washington, on the 16th of July, 1842, in the absence of any other recent information. At the same time we may refer seamen to the excellent directions given by Captain Harrison of the General Wolfe of Liverpool, in No. 56 of the former series of this work, and also to the same gentleman's letter on the subject in our volume for 1838. With these instructions before them, and the following, vessels will be prepared for entering Rio Grande with that caution which the shifting nature of its bar requires. In running along the coast we recommend attention to the *Reid Shoal* the account of which is given in p. 576 (No.8) of our present volume.

All vessels bound to Rio Grande of San Pedro do Sul coming from the north should keep in 6, 6½ fathoms of water until they bring the tower to bear N.N.W. when they will see the pilot boat on the bar, and the town, with a red flag hoisted, which is the signal to approach the bar to enter. If the flag on the tower is hauled down, vessels should lay off and on until it is again hoisted, and when they cannot get in they should keep under sail if the wind is from N. to N.E.

The winds that prevail generally after mid-day to dark, are E.N.E. to E. from December to April, and when not able to get in during these months they can anchor in 7, 7½ fathoms of water, bringing the tower to bear N.N.W.

If preferred to keep under way, ought not to approach the shore to less water than 7, 6½ fathoms, and to stand to sea as far as 14 fathoms water.

Vessels coming from the south should keep in 6 fathoms water, until the tower bears N., the wind being from W. to S.E., the course in is N. and S., with the tower.

If not able to enter and wishing to anchor, it should be in 7 fathoms, the tower bearing N. and S.; this from May to November, when the prevailing winds are W. to S.E.

Vessels should not draw over 16 to 17 palms bound to this place. The wind being from S.W. to S.E. is the highest water on the bar.

The preceding directions are good so long as the bar remains to the southward, but it happens that every four or five years it changes, and will next be S.E. and E.S.E.

When the red flag is hoisted it is a signal for vessels to approach the bar; if on the tower another flag is hoisted to the south, the vessel should sail farther south until it is hauled down—in like manner if a second is hoisted to the north, and a vessel is to the south, she should sail further north.

If no flag is hoisted on the tower, vessels will stand off and on, or anchor as already described.

Navigating during the night along the coast, the bottom both to the north and south is sand of different kinds—but muddy bottom is in front of the bar, and a vessel should keep within as short a distance as it is practicable.

Bar of Rio Grande, April 15th, 1842.

(Signed) Izidoro da Costa e Oliveira,
Inspector of the Bar for the Province of de San Pedro do Sul.

N.B.—The palm is about 9 English inches. The signals for vessels to hoist are the same as hitherto.

When crossing the bar vessels should follow the pilot boat, and luff or fall off in the direction the flag is pointed by the boat.

[The Inspector should forward us a plan of this harbour.—Ed. N.M.]

Villa Nova.—*Portugal.*—*Instructions* for ships intending to run into the harbour of Villa Nove di Portimao, in Algarvia:—Signals made by the fort of Ferraguda, east of the bay:—

1. A red flag with a broad pendant under the same, indicates that ships are to choose a proper place where to take a pilot on board.

2. A broad pendant, with a red flag under the same, signifies that no pilot can be sent on board.

3. The Portuguese flag, with a red one under the same, is a signal that ships must immediately return to sea again.

4. The red flag by itself signifies that a ship may approach the bay to take a pilot on board.

5. If it should so happen that on account of stormy weather he could not venture to leave the bay, and ships are forced to enter the same without one, signals will be made with the red flag from the fort.—*Shipping Gaz. Aug*, 15.

Cockburn Sound, *Western Australia.*—(The following information, dated April last, has been received by Her Majesty's Government.) *Disappearance of the Buoys and Beacons at the Entrance of Cockburn Sound.*—Mariners are hereby informed that the buoys and beacons which at various times have been placed between Garden and Carnac Islands, for the purpose of shewing the channel into Cockburn Sound, have disappeared; and that until they are replaced, the pilots have been directed not to attempt the passage.

There is a perfectly safe entrance to the summer anchorage of Gage Roads either to the northward of Rottenest Island or near its southern end, and also from Gage Roads to the winter resort of Owen Anchorage, on approaching which all vessels will be boarded by a Pilot.

Light of Christiansand.—*Norway.*—The Marine department of the Royal Norwegian Government, on the 12th Aug., announced that the lights of Quitholm and Stavenass, near Christiansand, would for the first time be lighted on the 1st Sept., and now adds the following information :—The light of Quitholm is a revolving one, which every minute throws out a light of 10 to 12 seconds' duration, and is followed by an eclipse, through not a total one. The said light under ordinary circumstances, when the eye is 10 to 15 feet above the level of the sea, may be seen at the distance of 4½ to 5 sea miles, in the direction of S.S. W. ¾ W., through W., N., and E. up to S.S.E. ¾ E., and is situated in lat. 63° 1′ 15″, and long. 7° 12′ 15″ E. of Greenwich ; its altitude above the level of the sea being 130 feet. The light tower is painted white. Coming from the W., at night-time, with the intention to enter the Fugel Channel (Fugleledit), the light must be brought to bear E.S.E. ½ E., after which a ship may steer for the same till within about a half a league, when the course must be altered to E. ½ N., by which she will pass at about two to three cables' length outside of the Fognan.

In case the Fognan Fall should be straight a-head, it would be well to keep it on the starboard side ; but this is no danger in passing the same on either side ; however, if the course is kept E. ¼ N., as directed, the noise of the waterfall will of itself convince any one that he must be near it, though, for better security, it is to be observed that the light of Quitholm is then S.W. by W. ¾ W. From this point the course lies E. and E. ½ N. for 1¼ leagues, till the Brakafalls are passed, when the course is altered to E.N.E. ¼ E., till the light of Stavenass is in sight. With an intention to pass round the Fugel into the Channel a ship ought not to come nearer the light of Quitholm than 1 to 1½ sea miles, or before it bears S. 21° E. when she may steer straight up to it, but not if the Quitholm lights should bear more southerly than S. 2° E., in which case it would bring her to near the Olan rock.

The light of Stavenass is a fixed one, which, under abovementioned circumstance, may been seen at 3 leagues distance in all directions of the compass from N.W. to W., ¾ W., through N. and E. to S.E. It is situated at 63° 7′ lat., and 7° 39′ 6″ long. of Greenwich ; its altitude above the level of the sea is 63 feet ; and in order to serve as a landmark for ships intending to enter the Trefloss, the buildings are painted with a bright colour. Ships bound for Christiansand

must, as soon as the light of Stavenass is in sight, altar their course from E. to S. and steer the same, till the light of Stavenass bears S.S.E. ½ E., and till arrived at the side where the light is visible, when the course is to be altered to S.E. A vessel will pass between Smorviganas and the shore, and as soon as the Sound is open an easterly course is kept in to the harbour, where there is a good anchorage in eight to twelve fathoms water. Should a ship have drifted past the harbour, she may, by the assistance of the light of Stavenass, put into the Trefloss, as, by steering straight for it, as soon as it bears S.E ½ E. she will run free of all rocks. Bound for Christiansand, the course is the same as above described, as soon as a ship has neared the lights within three-quarters of a league.

Both lights will burn from the 15th August to the 30th April, and be lighted from Easter to Michaelmas one hour, and from Michaelmas to Easter half an hour, after sunset, and burn till sunrise.

The variation (misweisung) of the compass is calculated at 18 deg. W., and the foregoing are compass bearings.—*Shipping Gazette, Sept.* 27.

Caution to Seamen.—The Amplimont Rocks.—*North East of the Azores.*

"On the 13th of May, I sailed from Paimbœuf for Quebec with the wind at N.E. We had a fine run to long. 19° 44′ W. On the 23rd of May (at noon, in lat. 42° 31′ N. by two good observations, and long. 24° 3′ W.) at 7h. 20m. P.M., I passed a rock within two ships' length. When I first saw it, it was a little before the larboard beam, and appeared like a ships' anchor-buoy. When it came on the quarter, I saw the sea-weed quite plain upon it, as did also the watch on deck. Another part of the rock we saw under water, about 8 or 10 feet from the rock we saw above water; at intervals it was covered and uncovered. We had not much swell on at the time; fine pleasant weather. At the time of passing the rock the ship was in lat. 42° 51′ N. and long. 24° 15′ W. The rock was seen a considerable time after we passed it. Wind at the time W.N.W., ship's head North, going 3 and 3½ knots per hour."

157, *Leadenhall Street, London, Oct.* 15*th*, 1842.

Sir.—The prefixed is the extract of a letter received by my correspondents at Sunderland, from Captain Thomas Alderson, of the "Morning Star," of that port, and I now take the liberty of handing you a copy of it.

I am, &c.,

Charles Wilson.

[We are obliged to Mr. Wilson for the above important communication, being a decided confirmation of the Amplimont Rocks, the following account of which appears in Purdy's Atlantic Memoir, eighth edition, p. 434.]

Amplimont Rocks, in lat. 42° 30′, long. 24° 5′.

In M. Bellin's Memoir, of 1742, a danger is mentioned in lat. 42° 30′, and long. 24° 5′, which was seen in 1735 by M. Guichardi, commander of the ship Dauphin, of Nantes. It has two points of rocks, separated, and 30 feet above water. He ascertained the height within a league of the danger, which appears to be the same as that called *La Basse d'Amplimont*, stated to be nearly in the same latitude and longitude.—We have given it the position originally assigned by the Memoir. Some Englishman has called it by the name of *Edmund Knowle's Rock*, by whom it is supposed to have been seen.

These rocks, appearing like the two masts of a brig, and nearly in the position assigned, were seen by Captain Mills, in the brig *Tamer*, early in 1829.

New Lighthouse off Gottenburg.—The Royal Naval Board has notified for the guidance of mariners, that the revolving light at Hallao, situate about a

quarter of a mile S.E. of Salo Beacon, in lat. 58° 20′ 30″ N. and long. 29° 25′ 45″ East of Ferro, or 11° 16′ 45″ East of Greenwich, which was announced by the ordinance of the 11th of January last, will be exhibited on the first of November of the present year, and will after that time continue to be lighted at such periods of the day and night as is appointed by law. This light, the flame of which is 116 feet above the level of the sea, will revolve, and consist of nine polished reflections, so placed, that during the period occupied by each revolution, which is six minutes, they will show nine flames of short duration, with dark intervals. This light cannot, therefore, be mistaken for that at Maistrand, which shows only four lights of longer duration during each revolution of eight minutes. The tower is of stone, coloured white, is 44 feet from the ground to the light, and is built upon the south-eastern side of Hallao, about the centre of the island, near the principal entrance to Kogsholm, by which means it will be possible for vessels which may have entered into the dangerous north-east bay, and during a west wind find it difficult to keep clear of the shore, by the assistance of the light to seek shelter behind the beacon land. The light will be visible from the sea in every direction, except when made E.S.E. by the compass, when the same is concealed for some minutes of the circle by the Salo Beacon. Towards the land it is seen obscured between N.E.b.E. and S.S.E. from the light.—*Shipping Gazette, Oct.* 19.

Cornwallis Reef.—This reef was discovered in 1807. It is laid down on some charts in lat. between 16° and 17° N., long. 166° to 168° W. In Bowditch's Epitome it is laid down lat. 16° 54′ N., long. 169° 33′ W.

I was recently informed that the brig Waverly, when she left the Sandwich Islands on her unfortunate voyage in 1834, anchored on this reef in the night, in three fathoms water. The weather was fine, wind moderate, and but little swell. In the morning they got under way, and were in some deep water. The reef appeared to extend some distance easterly and westerly. This is the first vessel we have heard of that has fallen in with this reef since it was discovered by the Cornwallis. Although out of the usual track of vessels leaving this island for Manilla and Canton, it will be safe to pass to the northward of lat. 17° N.—A Sailor.

Devil Rock.—As we shall have something to say on this subject in our next, we offer no comment on the following at present.

Sir.—I have the honour to add that her Majesty's brig under my command, on the 6th of August, was distant from the Devil Rock at noon thirty-five miles, and doubting its existence, I shaped a course directly for it. At 7 P.M., whilst looking over the taffral, my attention was suddenly attracted by a change in the colour of the water under the ship's counter, which had been of a blackish green. On looking over the starboard quarter, the change to whitish green was more vivid, extending in a N.N.W. and S.S.E. direction for a mile and a half, its greatest width close to our wake, about three-quarters of a mile; having very irregular and indented sides, in bold outline with the dark water surrounding it. A heavy swell from north-west seemed smoother over the patch, without any visible break; but that it was a shoal, no doubt exists on my mind, or on many that saw it. The mast-head-man unfortunately did not report it, though he admits having seen it three miles before reaching it, and about the same before he lost sight of it astern. From the deck, in about fifteen minutes it disappeared, preserving its shape and colour to the last.

The sun was 6 or 8 degrees high at the time, the vessel going 8 knots, and as we had no more than four days provisions on reduced allowance, I did not feel justified to return and sound, nor would I have attempted to pass over it in the brig. Its situation by our reckoning deduced from afternoon sights by the sea, and the Planet Jupiter, places the spot in lat. 46° 12′ N. long. 15° 3′ 30″ W.—*Extract of a letter from Lieut. Sprigg, commanding H.M.S. Brisk.*

Brig Mary of Kirkaldy, Liverpool. Sept. 1842.

Sir.—Averse as I am to add to the list of Vigias, and imaginary shoals, with which the chart of the North Atlantic is already so well stocked; still, I think it a duty incumbent on me to report the following circumstance, and which, if you will deem worthy a place, in your valuable work, I shall feel obliged by your inserting.

On the 20th of August last, then on my passage from Alexandria hither, about half-past 5 P.M., weather dark and lowering, we were steering N.E. with studding sails set on larboard side and going about seven knots, when green water was descried at no great distance ahead. I immediately ran forward and up on the foreyard when I saw it very distinctly right ahead, and extending a short distance on the lee bow; our helm was put to starboard and we passed close to windward of the north end of it. It appeared to be a shoal or bank extending about 150 yards north and south by compass. Having had good sights for the chronometer an hour previous as well as the latitude correct at noon, I place the spot in lat. 46° 29′ N., and long. chronometer 11° 29′ W. All hands saw it distinctly, as the contrast between the light pea green water over it and the dark blue of the ocean was very striking.

Our provisions getting short and the threatening appearance of the weather prevented my sounding and overhauling it more minutely, which I regretted very much, as I am quite confident that there was bottom at no great depth. Knowing that we were near the parallel of the Devil's Rocks, I at first imagined that some unaccountable error had been in the reckoning, but the long. deduced from an excellent Lunar distance the same evening (agreeing to within a very few miles of the chronometer) gave me greater confidence, and I had the satisfaction to find on making Tuskar eight days afterwards that my chronometer was quite correct.

I am, &c,

To the Editor, &c. Andrew Smith, *Master.*

Rock off Stoke Head.—The bearings of a dangerous rock off Stoke Head, eastward of the Mew Stone, near Plymouth, as ascertained correctly on the 11th of Oct.—Maker Church, a handspike's length within Renny Point; the bluff parts of Stoke Head N.E.b.N. 600 yards, or one-third of a mile; the corner of a wall eastward of Stoke Head, on with a large rock about half way down the hill. The base of the rock covers a space of about a furlong; it has only 3 feet water, on the shoalest part at low water, spring tides, with from 11 to 7 fathoms all round it very close deep water from the inner part to 5 fathoms, close in with the shore; Maker Church open of Renny Point will clear you to the southward.—By W. H. Miller, commander, Royal Charlotte, revenue cruiser.—

Errors of St. Lawrence Charts.—*Northerly Currents off the Cape of Good Hope.*

Liverpool, 20th Oct., 1842.

Sir.—Being bound from Newcastle to Montreal in April last, I purchased a chart of the Island of Newfoundland, and the Gulf of St. Lawrence, published in 1835 by Laurie and Co, and corrected and improved to 1841, from recent surveys, the directions by John Purdy. I also got Capt. Bayfield's directions for the Gulf and River St. Lawrence, but was informed on asking for his chart, that it was not published.

On making St. Pauls, with a light breeze from the S.E. we steered a course to pass between Bryon Island, and the Bird rocks, but to my surprise at daylight we were considerably to the N.E. I then compared Laurie's chart, with Bayfield's directions, and I give the difference of a few places, the lat. not being much out, but the longitudes from 15′ to 40′.

	Bayfield.			Laurie.			diff. long.
St. Pauls -	47° 14′ N.	60° 11″	17′ W.	47° 11′ N.	60°	4′ W.	7′
N. Bird Rock	47 51	61	12 11	47 54	60	50	22
SW. Anticosti	49 24	63	38 47	49 22	63	23	15
Cape Gaspe	48 45	64	12 22	48 42	63	52	20
Cape Chat	49 6	66	48 19	49 4	66	15	33
Point de Monts	49 19	67	26 22	49 25	66	44	42

In Lieut. Raper's Maritime positions, the longitudes are the same as Capt. Bayfield's, so may be assumed as correct, and Laurie's chart as faulty, to a very considerable degree, and that too, in regard to a most intricate and dangerous navigation, occasioned by the dense fogs so prevalent with easterly winds. What consequences might be the results of such an error in the chart, to a vessel turning down, it would be needless to mention, but would no doubt afford an opportunity to the public of declaiming, against the ignorance, drunkenness, and incompetency of the masters in the Mercantile marine, which now is such a common topic of conversation.

With respect to the charge of embezzlement of groceries by the Sea-Chiefs, of your Hull correspondant, although very probable, there would be less inducement, were they better paid, or afforded a part of their pay, small as it is, during the time the vessel is laid up in winter, as they are expected to pay her every attention.

In your March number I observe an account of the "Robert Wilson" being set inshore off Cape L'Agulhas, and can furnish you with another instance of a similar nature, which occurred to the Barque "William Gales" from Calcutta in November last. After experiencing heavy gales from W.N.W. to W.S.W. for about 21 days, with short intervals of moderate weather, on the noon of the 9th, we were by a good meridian altitude, 11′ to the south, and by chronometer 31′ to the eastward of Cape Agulhas, the wind light from the southward, which freshened as the night advanced. We were running with the wind about W.S.W. to S.b.W., steering by compass W.N.W. or W. ½ S. true; and from the distance run supposed we were off the Cape, about 1 A.M., but the night being dark intended to keep on the same course until 4 A.M., and then keep away. I left the deck a little after 1 A.M., and at 2h. 30m. the mate reported land on the weather bow, which proved to be the case. The ship was brought round, as soon as possible, and we stood to the eastward, run the booms in, got all clear, kept the lead going, and tacked again in 7 fathoms. At daylight we were about a mile and a half from the land, but did not get clear until 7 A.M. for a reef run out from the west point which we crossed in 7½ fathoms, the soundings very irregular, at about two miles from the land. The ship was very often to windward of her course, but very seldom to leeward, so that a strong current must have set upon our weather bow, which not only retarded our progress, but set us inshore. Knowing your desire to benefit the Merchant seamen, I have taken the liberty of troubling you, and remain, Sir,

Yours, &c., T. C.

[Our Correspondent is doing a service to seamen by communicating these important facts to them, through the medium of this journal, and will find us always ready to attend to him. His remarks on the discrepancies in St. Lawrence Charts, give us the opportunity of saying, that it is to be regretted, that the Commanders of our Merchant Ships in too many instances, place themselves at the mercy of *Chart-Makers*, by taking their wares when they might have much better from the Admiralty, on which the manufacturers themselves so much depend. On referring to the chart of the Gulf of St. Lawrence, we find it dated September 1841, and it should, therefore, have been accessible to our correspondent in "April last." But we tell seamen, as we have told them before, that a Chart-Maker will sooner sell his own charts than those of the Admiralty, and we recommend them, when they want an Admiralty chart, to apply by letter, or, in person to the Admiralty Chart Agent, (Mr. Bate 21,

Poultry, London,) and they will then know whether a chart is, or is not published. Our correspondent's remarks on rounding the Cape will not be lost on seamen.—Ed. N.M.]

Liverpool Shipmasters' Association, Old Hall Street, Oct. 13, 1842.

Sir.—I have opened a Register for the purpose of recording from the Log Books of the Members of this Association and others, such information as I can obtain of the discoveries of Currents, Rocks, Shoals, &c., or the confirmation of previous observations, and of any other information which may be beneficial or interesting to Shipmasters; and as I know no means better adapted for disseminating such information among those to whom it will be most useful than the pages of your very excellent Magazine, I intend, if it meets your approval, to forward them to you. I enclose two extracts from the log of Captain Scott, of the Lady Lilford, and am, Sir,

Your most obedient servant,

To the Editor, &c. Samuel Moss, *Master of the Rooms.*

Extract from the Journal of the Brigantine Condor, on a voyage from Gibraltar to Buenos Ayres, July 1837, between the parallels of from 8° to 3° N. and from 25° to 13° W. long. "Experienced a strong current setting to the N.E.b.E. for six successive days at from 28 to 35 miles per day. Winds at the time light from S.S.W. to S.W.b.W. Richard Scott, *Master.*"

Extract from the Journal of the Ship Lady Lilford, on the passage from Bombay to Liverpool, 1842.

Sunday, July	17,	Lat. 00°	20′ N.,	long. 21°	44′ W.,	Current S.W.b.W.,	25 miles
Monday,	18	1	40	23	45	W.b.S.	80
Tuesday,	19	3	56	25	10	W.b.N.	65
Wednesday,	20	6	48	25	36	N.b.E.	30
Thursday,	21	9	17	25	16	E.b.N.	20

Next day spoke the barque Broad Oak, from Liverpool for Bahia, when the chronometers agreed to within 5 miles. The long. is ascertained by two good chronometers (with good sights twice per day, morning and afternoon) the one of which has varied 25″ the other 37″ during the passage from Bombay.

Richard Scott, *Master.*

Biographical Memoirs.

Rear Admiral Butterfield—(See Obituary)—entered the service in the year 1781, was on the 11th of April, 1794, made lieutenant, and in April 1798 promoted to the rank of Commander for his gallant conduct in the capture of the French line-of-battle ship the Hercule, of 74 guns. When first-lieutenant of her Majesty's ship Mars under the late lamented Captain Hood, who was killed in the action, in the year 1802 he obtained his post rank, and on the 10th of January, 1837, was promoted to Rear-Admiral of the White. The late admiral was in the whole in seven general actions. He was in the action with the Dutch fleet under Admiral Hyde Parker off the Dogger Bank; also the action with the Count de Grasse under Lord Rodney, when the French Admiral and six sail of the line were taken, also in Lord Howe's actions of the 28th and 29th of May, and the 1st of June 1794, when six sail of the line were captured; in 1806 was at the taking of the Cape of Good Hope, under the late Sir Home Popham; and subsequently commanded the Malacca, frigate, and Stirling Castle, 74.

Admiralty Order.

Admiralty, June 24th, 1842.

My Lords Commissioners of the Admiralty are placed to direct, that the Reports on articles under trial (Form No. 20, in the General Printed Instructions) shall in furture be made every six months instead of quarterly; and the respective captains are to be very careful to insert in the said reports full particulars of the several Articles, and to state in each successive report the opinion which has been formed of the advantages of such articles since the period at which they were supplied.

By command of their Lordships,

Sidney Herbert.

Promotions and Appointments.

[From the Naval and Military Gazette.]

PROMOTIONS.

Commanders—J. A. Gordon (*b*). G. W. Smith, R. H. Budd.

Lieutenants—W. H. Stewart, W. L. Lambert.

Surgeon—W. Woodcock.

APPOINTMENTS.

Captain—G. R. Mundy (1837) to *Iris*.

Commanders—G. W. Smith (1842) to *William and Mary*—W. A. Willis (1835) to *Jaseur*—A. Drew (1824) to *Wasp*—E. Burt (1808) to the out-pension Greenwich hospital.

Lieutenants—H. Lloyd (1841) to *Thunderer*—L. R. Place (1842) to *Queen*—B. Young (1841), W. G. Buchanan (1825), and C. R. Read (1841) to *St. Vincent*—W. Rattray, 1842, to *Monarch*—C C. Powell (1833) to Royal Naval College for study—W. H. Dobbie (1837) and W. Kendall (1841) to *Excellent*—G. Sneh (1825) to *Royal George* yacht—L. G. Heath (1840) to *Salamander*—G. B. Jeffreys (1840) to *Alfred*—C. Thurtell (1841) and Hon. C. St. Clair (1837) to *Caledonia*—J. M. Mottley (1829) to command *Imaum* v. Stewart superseded—J. A. Pritchard (1842), S. Morrish (1841), J. Strettell (1841), and W. T. Rivers (1841) additional to *Illustrious*—J. H. Maxwell (1828) and H. Jenkins (1810) to *San Sosef*—W. H. Stewart and W. L. Lambert to *Volage*—J. B. Willoughby (1841) to *Warspite*—H. Stokes (1841) to *Stromboli*.

Masters—G. B. Hoffmeinster (1828) to *Jupiter*—A. L. Vanzetti (1837) to *Warspite*.

Mates—W. B. Wills, G. R. Moyle, G. Hancock, H. B. King, and G. W. Whyte to *Excellent*—R. Coote to *Royal George*—C. A. Lodder to *Orestes*—H. Hannant to *Imaum*.

Second-Masters—F. Niblett to *Warspite*—E. L. Buist to *Rhadamanthus*.

Surgeons—J. Osborn to *Camperdown*—J. Lardner to *Jaseur*.

Masters'-Assistants—G. Richards to *Seaflower*—R. O. Whyte to *Imaum*.

Assistant-Surgeons—F. B. Pritchard to *Orestes*—A. Woodcock to be Surgeon of *Volage*—Birtwhistle to *Romney*.

Midshipmen—G. F. Broughey to *Orestes*—R. Meads to *Excellent*—N. G. Spencer to *Spartan*—Hon. A. Cochrane to *Salamander*—D. G. O. Slaughter to *Malabar*—C. Hall to *Daphne*.

Volunteers 1st Class—F. M'Dougall, C. Rickets, and A. Phillips to *St. Vincent*—E. Hardinge and C. Parker to *Excellent*—C. Grant and D. Saunders to *Camperdown*—E. Dyer and E. Elliot to *Caledonia*—G. Ormond to *Phœnix*—S. Christian and E. Shaw to *Cambridge*—G. Bushell to *Winchester*—F. Campbell and G. Visconte to *Vanguard*—C. Guthrie to *Volage*—B. Johnstone, J. Baker, and G. Holden to *Howe*—C. Balfour to *Spartan*.

Pursers—W. Boone to *Illustrious*—W. Young to *Jaseur*.

Chaplain—Rev. D. Carson to *Daphne*

Clerks—C. Colman to be secretary's clerk to Vice-Admiral Sir Edward Owen—A. Tweddell to *Formidable*.

Coast Guard.

Appointments—Com. R. Kerr to be Inspecting commander at Montrose—Lieut. Wilson to command a station, v. Lieut. Newenham to Wells—Lieut. Hewlett to Swale Cliff—Lieut. Percival to Littlehampton.

Removals—Lieut. Mitchell to Calshot Castle—Lieut. Ashby to 42 tower—Lieut Carrol to Newcastle Castle Wellan—Lieut. Hill to Hedbury—Ralph to 31 tower—Seaward to Fishergate—Lieut. Hawkins to Portobello—Mr. Dunster to Shingle End.

Promotions during the last Quarter.

Captains—Hon. K. Stewart, G. W. C. Lydiard.

Commanders—P. H. Somerville, G. T. M. Purvis, H. Dunlop, J. C. Gill, H. F. Seagram, Hon. Lord W. Compton, R. H. Budd, C. E. Tennant.

Retired Commander under H. M.'s Order in Council of the 30th Jan., 1816, J. J. Rorie.

Lieutenants—C. J. Brickdale, W. H. Stewart, G. Richards, A. D. Jolly, J A. Prichard, T. J. Smyth, F. Vyse, G. Marriott, E. E. Turnour, G. Newcomen, H. Hannant, A. C. Gordon.

Masters—T. W. R. Pike, J. Chambers, J. W. King.

Mates—J. Corbett, R. Dew, J. Mann, G. Teal, S. Winthrop, F. Crauford, C. Lodder, F. Smith, J. Parish, F. Warren, S. Henderson, A. Wodehouse, Hon. F. Pellew, J. Darrell, H. Maddock.

Movements and Stations of Her Majesty's Navy.

AT HOME.

Alban, (st. v.) Mr. J. King, Oct 10, left Portsmouth with supplies for the windward vessels in the channel

Avon, (st. v.) Lieut-com. H. Byng, Sept. 15, at Madeira, 20th proceeded to W. Indies.

Daphne, 20, Capt. J. F. Onslow, Sep. 30, at Plymouth from Portsmouth, Oct. 3, sailed for South America.

Flamer, (st. v.) Lieut. Robson, Oct. 19, arr. at Portsmouth from Antigua, 20th sailed for Woolwich.

Imaum, 72, Lieut. J. M. Motley, Sept. 25, left Portsmouth for Jamaica.

Jaseur, 16, Oct. 1, crew paid off, 12th re-commissioned by Com. A. Willis.

Racer, 16, Com. Harvey, Oct. 15, arr. at Spithead from Canada.

Resistance, (tr. s.) Com. Patey, Oct. 20, arr. at Portsmouth from Quebec.

Salamander, (st. v.) Com. A. S. Hammond, Oct. 3rd, at Plymouth, 4th sailed for Brazils.

Volcano, (st. v,) Lieut. Featherstone, Oct. 20, arr. at Portsmouth from Bermuda.

Warspite, 50, Capt. Lord John Hay, Sep. 18, arr. at Portsmouth with Lord Ashburton from New York, Oct. 20, left Portsmouth for Gibraltar with the newly appointed Governor General Sir Robert Wilson.

Wasp, 16, Hon. A. H. Murray, commissioned at Sheerness by Com. Andrew Drew.

Ships in Port.—St. Vincent, Royal George yacht, Victory, Excellent, Bellona, (Austrian), Orestes, Jaseur, Nautilus, Alban, and Volcano.—*In Harbour*, Caledonia, San Josef, Kite, Confiance, Java transport.—*In the Sound*, Thunderer.

ABROAD.

Alligator, 26, Capt. S. P. Pritchard, K.C.H July 30, arr. at Ceylon from Bombay.

Bittern, Com. Hon. C. F. P. Carey, July 30, at Rio.

Cambrian, 36, Capt. H. D. Chads, April 27, at China from Calcutta.

Cambridge, 78, Capt. E. Barnard, Oct 3, at Malta from Corfu.

Childers, 16, Com. E. P. Halstead, May 29, at China.

Curlew, 10, Lieut-com, T. C. Ross, July 30, at Rio.

Dee, (st. v,) Mr. Driver Sept, 25, at Gibraltar from Plymouth, 13th returned.

Devastation, (st. v.) Com. J. J. Robinson, (act.) Oct. 1, left Malta.

Dido, 18, Capt. Hon. H. Keppell, May 30, at Hong-Kong from Singapore.

Driver, (st. v.) Com. Harmer, July 9 at Singapore from Mauritius.

Endymion, 38, Capt. Hon. F. W. Gray, May 28, left Hong-Kong, for Chusan.

Fantome, 16, Com. E. Butterfield, July 30, at Rio.

Grecian, 16, Com. W. Smyth, July 28, at St. Helena.

Growler, Com. C. H. M. Buckle, Aug. 8, at Bahia from a cruise.

Harlequin, 16, Com. Hon. G. Hastings, May 31, arr. at Hong-Kong, from Singapore.

Hyacinth, 18, Capt. W. Warren, July 4, at Singapore from Macao, 6th sailed for England.

Lily, 16, Com. J. J. Allen, June 20, at Cape from Angola, July 2nd sailed for Port Natal.

Lizard, (st. v.) Lieut. W. G. Estcourt, Sept. 29, left Gibraltar for Tangier.

Magicienne, 24, Capt. Warren, Sep. 29, left Smyrna for Vourla.

Malabar, 74, Capt. Sir G. Sartorious, July 30, at Rio.

North Star, Capt. Sir J. E. Home, Bart., May 31, at Hong-Kong.

Persian, 18, Com. Eden, July 28, at St. Helena.

Phoenix, (st. v.) Oct 2. at Gibraltar on way to England. Oct 17, arr. at Portsmouth from Mediteranean.

Polyphemus, (st. v,) Lieut. J. Evans, Oct. 1, at Malta, and proceeded to the Ionian Islands and Greece.

Savage, 10, Lieut. J. H. Bowker, Sept. 1, at Malta.

Serpent, 16, Com. W. Nevill, May 30, at Hong-Kong, from Singapore.

Siren, 16, Com. W. Smith, Aug. 5th at Bombay from Trincomalee.

Snake, 16, Com. Hon. W. Devereux, Oct 4, at Malta from Tunis and Tripoli.

Thalia, 36, Capt. C. Hope May 31 at Hong-Kong from Singapore.

Thunderer, 84, Capt. Pring, Sept. 29 left Gibraltar for England, Oct. 18, arr. at Plymouth from Mediterranean.

Vindictive, 50, Capt. J. T. Nicholas, June 4, at Anjer from Spithead in 78 days.

Vixen, (st. v,) Com. W. Boyes, May 28, left Hong-Kong for Chusan.

Wanderer, Com. Troubridge, July 14, at Singapore from the Mauritius.

Winchester, 50, Capt. C. Eden, July 30, at Rio.

Wolverine, 16, Com. Johnson, June 29, at Singapore from Cape Good Hope.

Births, Marriages, and Deaths.

Births.

At Purbrook, on the 15th Oct. the lady of Capt. T. Brown, R.N. of a son.

At Miltown Malby, Oct. 4th, the lady of Capt. Creagh, R.N. of a son.

At Crowlink, Sept. 23rd, the lady of Lieut. Mapleton, R.N. of a daughter.

At Malta, Oct. 5th, the lady of Lieut. Hector Loring, H.M.S. Thunderer, of a son.

At Deal, Oct. 2nd, the lady of Lieut. J. M. Boxer, R.N. of a still-born son.

At Brighton, the lady of Capt. W. Preston, R.N. of a son.

Marriages.

On the 18th, Sept. at Newton Ferrars, Devon, Ellen Mary, eldest daughter of Capt. Fairfax Moresby, R.N., C.B., &c., to Lieut. J. C. Prevost, R.N., eldest son of Capt. James Prevost, R.N.

Oct. 11th, T. Chapman, jun, Esq., of Ampthill, Bedfordshire, to Jane Phœbe Murray, eldest daughter of Capt. W. H. Smith, R.N., K.S.F.

At Hagley on the 18th, Sept. Com. W. Chambers, R.N., to Eliza Ann, only daughter of J. W. Hodgetts, Esq., of Hagley, Worcestershire.

Aug. 31st, at St. Andrew. N.B., Harvey Morris, Esq., Surgeon of H.M.S. Racer, to Louisa, youngest daughter of Dr. Clutterbuck.

At St. Saen, in Normandy, Sept. 27th M. Pascal Buzot, to Isabella Henrietta, only daughter of the late Capt. W. H. Brisbane, R.N,, and grandaughter of the late Adm. Brisbane.

Oct. 6th, at Brighton, W. Dudley, Esq., of Stoke Newington, to Julia Ann Finnimore, widow of the late Capt. Finnimore, R N.

Oct. 11th at Paddington, F. Liardet, Esq., Capt. R.N., to Caroline Ann, widow of the late J. J Gregory, Esq., R.N.

Sept. 15th, at Lacock, Capt. W. W. Rooke, 47th Reg., son of Capt. F. W. Rooke, R.N., to Julia Humphreys, daughter of C. Rooke, Esq., of Westwood House, Essex.

Oct. 1st, at Westminster, J. Cubitt, Esq., of Great George-street, to Ellen, youngest daughter of the late Lieut. J. Moore, R.N.

At Portsmouth, Lieut. Sidney, R.N., to Miss Sydney, of Newport.

Sept. 5th at St. John's, Newfoundland, H. J. Harvey, Esq., Lieut. R.N., and second son of Maj. Gen. Sir John Harvey, K.C.B. and K.C.H. (Governor of the Island), to Ellen Louisa, eldest daughter of Aubrey George, Lord Bishop of Newfoundland.

Sept. 26th, at Truro, Com. W. Griffin, R.N., late of H.M.S. Ganges, to Mrs. Borlase of Plymouth.

At Kingston, Mr. V. G. Roberts, R.N., Master of H.M.S. Wasp, to Mary, daughter of John Stone, Esq., of Portsea.

Sept. 14th, at Malta, Lieut. Frederick Holland, R N., to Susan, eldest daughter of S. Christian, Esq., of Malta.

Deaths.

Oct 3rd at Portsea, W. Butterfield, Esq., Rear-Admiral of the Red, in the 76th year of his age, having been sixty-one years in the navy.

At Deptford, Com. John Bude, also Lieut. C. Hopkins, and Lieut. C. Nash, (1824).

At Haslar Hospital, on the 23rd Oct. Lieut. John Hall, R.N., lately employed in the Peninsular Packet Service.

Lately at the Royal Naval Hospital, Com. Frederick Boyce, R.N., of Belle Vue-house, Southsea.

Lieut. G. Collins (1827) of the Coast Guard Service.

Commander C. C. Bricket (1840).

At Gosport, Second-lieut. H. W. Hall, R.M., eldest son of Lieut. T. S. Hall, of H.M S. Victory.

At Herbert Lodge, Sidney-avenue, Francis Douglas, Esq., aged 70, a Post Captain in the Royal Navy.

At Deptford, Mr. E. R. Haggins, purser, R.N.

At Deptford, Com. G. Rogers, R.N., (1836).

At Deptford, Mr. R. Frampton, master, R.N. (1837).

On the 14th Sept. at Buckland, Jane, daughter of the late Mr. Card, R.N. aged 15, years.

Oct. 11th, at Stoke, Devonport. aged 21, Henry James, eldest son of Capt. Groves, R.N.

At Buckfastleigh, Devon, Lieut. E. Young, R.N., (1856) aged 34.

Oct. 17th, at Coton Hall, Shropshire, Mary, widow of the late George Bowen, Esq, Admiral of the White.

Oct. Maria Sarah Jekyll Rye, fourth daughter of Capt. P. Rye, R.N. aged 28.

At Hong-Kong, Lieut. Lord E. P. Clinton, her Majesty's sloop Harlequin.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of September, to the 20th of October, 1842.

Month Day	Week Day	Barometer In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Qnarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9AM.	3.PM	Min.	Max	A.M.	P.M	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	W.	29·50	29·54	51	58	43	63	W	SW	2	3	bc	bcp (3)
22	Th.	29·50	29·49	45	55	41	57	NW	N	2	4	ofg	bc
23	F.	29·51	29·49	51	55	43	56	SW	SW	2	3	o	ogr 3) (4)
24	S.	29·40	29·40	54	53	50	55	E	NE	2	3	or (1)	or (3) (4)
25	Su.	29·54	29·60	55	60	50	61	NE	NE	2	4	o	bcr (4)
26	M.	29·84	29·80	56	58	50	60	NE	NE	3	5	bcp 2)	o
27	Tu.	29·90	29·88	50	51	48	52	NE	N	6	7	qgr 1) (2)	qgr (3)
28	W.	30·05	30·07	53	55	48	56	NE	N	5	7	qbcp (2)	qbcp 4)
29	Th.	30·06	30·05	48	53	46	55	NE	NE	5	6	bcp (1)(2)	qo
30	F.	30·15	30·15	49	53	44	54	NE	NE	4	5	b	bcp 4)
1	S.	302·0	30·25	47	56	45	57	N	N	2	3	bcmf	bc
2	Su.	30·30	30·24	43	52	37	53	SW	N	2	2	bcmf	b
3	M.	30·06	30·02	48	57	39	59	N	NE	1	1	o	bc
4	Tu.	30·04	30·08	49	55	43	56	NE	NE	3	3	bc	bc
5	W.	30·16	30·20	39	51	34	52	NW	NE	2	3	bm	bc
6	Th.	30·27	30·30	42	55	36	57	SW	N	1	2	bm	bc
7	F.	30·27	30·27	47	57	41	58	NW	NW	1	2	bcm	o
8	S.	30·36	30·42	52	58	46	59	NE	NE	3	2	bc	bc
9	Su.	30·49	30·48	50	57	43	58	N	NE	1	1	o	bc
10	M.	30·48	30·46	52	58	50	59	NE	NE	1	1	o	o
11	Tu.	30·38	30·34	47	55	42	56	NW	NE	1	1	bm	b
12	W.	30·30	30·25	49	54	46	55	N	NE	2	4	bc	bc
13	Th.	30·25	30·24	50	55	47	56	NE	N	2	3	o	o
14	F.	30·22	30·21	46	51	42	52	SW	NW	1	1	o	o
15	S.	30·25	30·27	49	54	47	55	W	N	1	1	o	o
16	Su.	30·25	30 21	50	55	48	56	NE	NE	1	2	o	o
17	M.	30·05	29·92	50	52	48	53	E	N	1	1	og	og
18	Tu.	29·50	29·35	49	53	47	55	SW	SW	3	3	bc	or (4)
19	W.	29·22	29.40	41	43	38	45	NW	NW	5	6	qo	qbc
20	Th.	29·62	29·66	33	44	29	45	W	W	2	5	b	bc

Sept.—Mean height of barometer = 29·852 inches; mean temperature = 56·9 degrees; depth of rain fallen = 4·29 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

The papers from the Marshal Bennett at Manilla have safely reached us, and shall appear in our next. Also Mr. Bartlett's communication from Tenerife.

Our old correspondent Mexicano, will find a letter for him at Liverpool P. O. should it not have reached him.

We hope Lieut. Jennings as well as Mr. Moss (p. 796) will follow up their good intentions.

Thanks to a friendly hand for the Madras papers. The cuts not being ready we are obliged to defer the remainder of the Melville papers for our next.

A press of matter has compelled us to reserve our notices of Books for our next.

We have received the new Edition of Mrs. Taylor's Navigation, and we perceive that Raper's is on the point of publication.

Nautical and Commercial Observations on Rio de Janeiro, Cape of Good Hope, New Zeeland, and Valparaiso.—*By the Commander of a British Merchant Ship.*

[All Bearings are Magnetic.]

The question as to the best route to be pursued towards the equator, and the best meridian on which to cross it, has been so often discussed, that it is almost superfluous to say anything further on the subject. I may, however, warn the navigator to take into calculation the season when he is making the passage, as the different seasons influence the direction of the south-east trade winds so much, as to render attention to the subject very necessary. In what is termed the northerly monsoon, on the Brazil coast, from September to March, when the wind in that portion of the ocean, generally termed the south-east trades, will be found E.N.E. to N.E., the passage to Brazil may be considerably shortened by crossing the equator well to the westward from 24° to 30° W., where the winds will be found steadier and stronger, than farther to the eastward. In the southerly monsoon, however, from March to September, the prevailing winds, in the same part of the ocean, are from S.S.E., and very often for weeks together from south to S.S.W. At this season it is absolutely necessary to cross the equator much farther to the eastward, and from 16° to 22° W. will be found the best meridians. Masters of vessels will always do well when consulting books of directions, to weigh well the difference of seasons, and not implicitly follow the directions of a person, who, from a single passage, may lay down a rule. When I was in Rio Janeiro on the present occasion, in June, several masters of vessels from crossing too far westerly, with the prevailing southerly winds and westerly current, found themselves unable to weather Cape St. Roque, and in consequence, were obliged to tack to the eastward coming into Rio, after from eighty to ninety days passage. None of the vessels I now allude to crossed the equator to the westward of 28° W. It is, therefore, highly advisable to act cautiously, and with reference to the seasons.

For approaching and entering the various harbours on the Brazil coast, the directions published in the *Nautical*, and since copied into the last edition of the Direction Books, are so copious and correct, that it is useless to add any thing more. Bound to Rio Janeiro the Abrolhos shoals require to be passed with care, and to have a good berth. It is also advisable to pass the parallel of Cape Thomé with due caution. At the same time I feel satisfied, that no shoal on which a vessel could ground, over which the water would break, lies so far from the land as the one mentioned in the *Nautical*, on the authority of the officers of the Brazilian frigate, Principe Imperial. With a foul wind I stood in on the parallel of the shoal with the lead going carefully and regularly. The soundings were not very regular, but we carried deep-water far within the position where the shoal is represented to be, and with a good look-out could see nothing indicating a shoal, although there was a fresh breeze blowing at the time. I also, when at Rio Janeiro,

questioned several Englishmen commanding the Brazilian steamers trading on the coast. One of them in particular, a well informed, careful man, shewed me his chart, with many tracks well within and over the position of the shoal, and declared his firm belief that it does not exist. I would not, however, notwithstanding all this evidence, wish the shoal to be erased from the charts. Detached shoals are very difficult to find, and the navigator will do well to pass its parallel with caution, particularly in the night.

On the southern part of the Brazil coast from March to September, commanders of vessels should be prepared to meet stiff south-west gales, at intervals of eight or ten days; at times oftener. I have known several vessels jogging onwards towards their destination, with an old summer suit of sails, but their spars adrift on deck, and boats unlashed, busy painting and cleaning up for a harbour, taken completely unawares, lose their canvas, thrown into considerable confusion, damage cargo, and detained some time longer on their voyage. All this is easily obviated by a little care and attention; and the simple noting of the height of the barometer or sympiesometer, every four hours, would prove a complete guard, as I found both instruments gave timely warning of the approach of these gales.

While on this subject, I cannot avoid urging on the attention of the commanders of merchantmen, the great advantage of keeping an accurate register of the height of the barometer, sympiesometer, and thermometer, at regular stated periods of four hours. It is very easily accomplished, either by the officers of the respective watches, or some of the intelligent youngsters, who are now entering the merchant service. The dead-reckoning should also be carefully attended to, the line and glass measured every Saturday, and the difference between the dead-reckoning and that by observation and chronometer carefully noted every day. It is hardly necessary to point out how very important and useful, such a host of evidence would be. It would not only materially assist future navigators in forming opinions, but add vastly to our knowledge of currents, winds, and weather; and by it those parties who are now endeavouring to benefit the world by their discoveries in science would lessen the dangers of our profession: it would induce officers and youngsters to become methodical in their duties, and by attracting their attention to the higher, and more interesting branches of their profession, bring forward a class of men, as commanders, superior to what we find in the present day. In the absence of any legislative enactment to benefit the merchant service, the conduct of commanders must have the principal influence in forming its character; yet it is found that eight out of every ten, never even keep a private journal, never pay any attention to their instruments, never think of rating their chronometers in a harbour, never care whether the log is hove or not, pay no attention to prevailing currents, winds, or weather; but jog on in the same beaten path they have always pursued, without devoting one moment of their vast idle time at sea to the advancement of their own knowledge, the progress of science, or the interests of those officers and youngsters committed to their charge. It may be said now, as it often has to myself personally, when expressing opinions similar to the foregoing; "Why expose the merchant service? It is gradually improving; a few years

will make a difference;" and a long list of other such useless and ineffective remarks. I expose it as I would every system that is bad, and with which I am conversant. I expose it for the benefit of the parties themselves, for the benefit of humanity; and I intend at no distant day, to state facts which have come under my own observation during my nautical life, which I am sure will scarcely be credited out of the merchant service; facts which, if any thing can, will induce every subject of Great Britain to petition our legislature, for some act, to alter and amend the laws now governing the merchant service,—some power to control the actions of officers and men, and render this most important arm of our national power respectable in itself, and respected by others. This is not getting to Rio Janeiro however.

Running down towards Cape Frio, it is advisable to keep about ten miles to the southward of its parallel, in order to prevent getting into the bay to the northward of that cape; and at night no one must trust to see the light at any distance, it being placed so high as generally to be enveloped in the thick fog, or haze, which hangs over the high land, particularly in summer. I made the land of Cape Frio in the night, running in with the lead going. We struck soundings, and saw the land low before the light, and it was only when very close, that it could be discerned twinkling through the haze. Even when seen it was very much doubted whether or not, it was a star. Many have made the same remark respecting the light, and it has been represented to the authorities. It is rather surprising, therefore, that they have not altered its position; the expense of removal however, and the cost of re-erection are, I presume, serious obstacles with a poor Government.

Approaching the entrance of the harbour of Rio Janeiro no difficulty is met with, in ascertaining the vessels position, from the very conspicuous land in the neighbourhood of the harbour. The Sugar Loaf Hill on the left hand side of the entrance, forms the most conspicuous object, and renders the approach easy, and without danger. The regular winds in the harbour, and for several miles outside, are a land and sea breeze, the former giving place to the latter, at from 9 to 11 A.M.; after this time, therefore, there is generally a fair wind for entering. After passing the Paya and Maya Islands, in the entrance, two forts will be seen, one on the starboard hand in entering, called Santa Cruz, the other, called Fort Sagea, situated on a small island almost immediately opposite. Passing between these two forts, the harbour regulations require the vessel to be carried within hail of Santa Cruz, in order that the master may, in passing, give the name of the vessel, the port from whence she came, and the number of days passage. These questions being answered, and passing on upwards towards Fort Vilganhon, situated about half way between the entrance and the city, and on the larboard hand, it is necessary to shorten sail in time, as the vessel must be anchored previous to coming abreast of this fort, otherwise guns will be fired, for each of which the offenders must pay. While anchored here, the vessel will be visited by two boats, one from the fort, the other from the custom-house, which visit being passed, the master may proceed with the vessel to the customary anchorage, above the Island of Cobras, (which is easily recognized on the larboard hand from the plan on the chart,) and then anchor amongst the vessels, mooring as soon as possible,

and with a short scope of cable, the holding ground being good, and no risk of driving. If the vessel has a stream chain she will be quite safely moored with one bower and the stream anchor, which is easily weighed.

There are two ways of discharging cargoes in Rio Janeiro; one by putting the vessel on a list at the custom-house, for her turn at the wharf, and the other by discharging in lighters, the vessel paying the lighterage. As regards dispatch, from all I could see, the former plan is the best, although far from good. Generally speaking a vessel lies in harbour ten days previous to being in turn. She may then be hauled alongside a small jetty at the custom-house stores, inside the Island of Cobras, and during fine weather discharge cargo, being allowed to work on an average, *four hours every day*. Only three vessels can discharge at the same time, the jetty only allowing this number to lay alongside. The vessel is moored here with one bower on the stream, the stream anchor on the off side quarter, and two onshore warps; hauling off every day after discharge about ten yards, and hauling in on the morning to within three or four feet of the wharf.

No custom-house officer remains on board the vessel, neither are any places on board sealed up. A strict watch is, however, kept from several guard vessels and boats, which latter are constantly rowing about. The shore is also well watched, and the master must be particularly careful, as the fines imposed for contravention of the custom laws, are enforced and the property confiscated. While the vessel has inward cargo on board, and until she is discharged and cleared, no person, not belonging to the vessel, can come on board without a written order from the custom-house. Neither can any trifling article be removed from the vessel, even for repairs, without a permit. A permit is also required for every thing taken on board. I knew a chart to be seized, which a master was carrying openly on board his vessel, after having purchased it on shore.

It generally occupies from fourteen to twenty-one days to discharge a vessel of about 300 tons, after she is at the wharf, and when the cargo consists of bales and cases of manufactured goods. I have never in any part of the world, seen a worse regulated custom-house than that at Rio Janeiro; every possible obstruction is put in the way of the vessel's discharge, and every possible inconvenience must be submitted to, by the shipmaster. He himself, should carefully superintend the discharge, and the mate should be most particular in his account, comparing every day when the discharge is finished with the landing officers' account. Bales and cases are often said to be missing, although landed. When in the stores even, the merchant often cannot find his goods for months, and in some instances never succeeds in meeting with them. Peculation and robbery, are openly carried on by men in the custom-house department. I brought forward evidence to prove that two bales were broken open, and part of the contents abstracted, by the marker of the goods himself, on the wharf; yet the party continued in his employment, his superiors evidently being cognizant of the robbery, and participators no doubt in the proceeds.

The shipmaster previous to leaving England should not receive coals, iron, or lead, as ballast, if he can avoid it. They are not allowed to be

discharged at the wharf, and cause infinite trouble in removing the vessel, &c. Iron particularly, actually costs more to the vessel to land it, than the freight amounts to; an officer must be got and paid, lighters must be hired, and the iron carried through the surf on the beach, then comes the receiver declaring it damaged, &c. Crates and bale goods are the best cargo for dispatch; coals as a whole cargo are easily landed, the vessel proceeding at once to a wharf, and discharging from twenty-five to thirty tons per day.

It is very seldom that return cargoes to Europe, can now be procured in Rio Janeiro. Even in the coffee season, that commodity is generally shipped in foreign vessels, at low freight; their low prime cost, and lessened expenses, enabling them to carry cargoes at less freight. Every vessel ought therefore, to have as much ballast on board in England as the broker will allow, or the cargo permit, as it is an expensive item in the vessel's account in Rio. Altogether this is a very expensive place for a vessel discharging a cargo. The anchorage alone amounts to 30 reis per ton per day for fifty days. If the vessel remains longer than fifty days there is no further payment; but if she be cleared at the custom-house, previous to the fifty days, and afterwards detained by foul wind or other unavoidable circumstances, the additional anchorage must be paid up to the moment of sailing, before the vessel can pass the Forts. It is also said that this tonnage duty is about to be increased. For the calculation of this tonnage duty, every vessel is measured by an officer of customs, according to some rules, which must be peculiar to Rio Janeiro, and suitable to the impoverished state of the finances. As measured by it, the vessel is always made to be a greater number of tons measurement, than she can carry tons of dead weight! Another charge most unjust in its principle, and illiberal in its adjustment, is a duty charged on all provisions on board the vessel, such as beef, pork, flour, bread, &c., beyond a small quantity allowed the crew, according to a scale calculated at a certain number of days, from Rio Janeiro, to the port for which she clears at the custom-house. The quantity allowed to each man is almost too little to keep him in existence; neither is any allowance made for a residence in the port of destination, or the homeward passage to England. Moreover, I decidedly deny the right of any foreign power, to charge a duty on provisions purchased in England, and actually necessary for the supply of a vessel's crew, during her intended voyage, wherever that may be, and particularly, so long as there is no trading, or intention to trade with them in Rio Janeiro. I cannot conceive for what purpose a British Consul and Minister are retained at the Brazilian court if not partly to protect British interests; yet this iniquitous overcharge on British vessels has been represented to them times out of number, and still is allowed to exist. I would advise every shipmaster to pay this overcharge under protest, lodging that protest with the consul, and I trust that this representation of the injustice of the charge, will meet the eye of some one, who has time and opportunity to obtain redress. Altogether the charges are high, and the detention great in Rio Janeiro, and every one will do well to take these matters into consideration when chartering a vessel for that port.

In chartering vessels for Rio Janeiro, the brokers generally insert in

the charterparty that the vessel must be consigned to their agent, and pay the customary commission. I would recommend every one to erase both these clauses, previous to signing any charterparty, as they are unjust in their principle, and prejudicial to the vessel's interest, although the British merchants in Rio Janeiro are generally highly respectable; still, when they are perfectly secure of consignments, the vessel's interests are not so well attended to. They always charge a commission on the whole amount of freight inwards, although the greater part of the sum is invariably paid in England, and never passes through their hands at all. This is a manifest overcharge, the only commissions they can in justice demand, being on the amount of disbursements, and also the amount of freight payable in Rio Janeiro.

Vessels calling for refreshments only, and not discharging cargo, are allowed to enter the harbour without paying port charges, and from the extent of the market, and the facility of filling water from tank-boats, I consider Rio Janeiro decidedly preferable to any port on the coast.

No description of the beauties of the scenery in the harbour of Rio Janeiro, and its vicinity, has in my opinion done justice to their merits. In fact, I cannot think any description can convey an adequate idea of this splendid country. I have visited several parts of the world, and seen many specimens of romantic scenery, but none have at all come up to the neighbourhood of Rio Janeiro. Every visiter will be much gratified in viewing it, and while the vessel is waiting her turn to discharge, time is afforded the shipmaster to make several excursions. Nothing can be finer than the ride to Tsucha, to the waterfalls, round the Gavia, and back to the city by the botanical gardens. The latter are well worthy a special visit. The ride alongside the aqueduct, which conveys water to the city from the Corcovado, particularly if commenced previous to sunset, affords a view, or series of views, the most magnificent that can be conceived. Every variety of scenery is seen, the city itself is spread out before and underneath you, as in a plan; on one side every variety of hill and dale, mountain and valley is perceived, covered with the most luxuriant vegetation, and studded at intervals with the beautiful country residences of the merchants, with the range of mountains behind, towering towards the sky, on the peaks of the Corcovado and Gavia; all these objects illumined by the glowing tints of the setting sun, amidst the fragrant odour exhaled from the various fruit trees around, lead you to fancy yourself in some imagined fairy-land. On the other hand the splendid harbour and bay, with the immense number of vessels, the various sail boats, the distant mountains beyond with their singularly rugged outline, the entrance of the harbour so distinctly marked by the Sugar Loaf Hill, the white fortifications perched on the heights around, the men-of-war just hauling down their colours, their bands saluting the departing day with their music, its strains wafted towards you by the last faint puffs of the sea breeze, and softened by the distance, complete a picture which cannot be excelled in any part of the world.

Bound to the Cape of Good Hope, or wishing to pass round it to the Indian Ocean, no particular directions seem to be required. It is only necessary to make something, as quickly as possible, in order to get

into the westerly winds, which will be found to prevail from 30° southwards. A strong northerly current will frequently be experienced in crossing towards the Cape. On the present occasion I found it particularly strong, and on nearing the land, when bound to Table Bay, it requires to be attended to, as it runs almost constantly to the northward, or a vessel will have difficulty, and lose time in gaining the Bay. For recognizing the land in the neighbourhood of Table Bay no other remarks seem necessary than those given in the Books of Directions, the land being very remarkable. The directions by Capt. Owen for entering the bay, are also very plain, pertinent, and easily understood. It is very surprising, however, that so many valuable vessels which have been lost on entering this Bay, many during the night, but others during the day, and under favorable circumstances. A great many commanders of vessels on nearing the high land, during the day, and fancying themselves near the port, run on, and enter, or attempt to enter, during the the night, thinking it an easy matter from the presence of the light on Green Point, the width of the entrance, and the apparent simplicity of the directions. I certainly think, however, when a man is entrusted with valuable lives, particularly in passenger and emigrant ships, when the decks are crowded, and all, eager in anticipation of landing, are bustling about, insensibly interrupting the necessary duties of the vessel, and abstracting the commander's attention from the great care requisite to the general safety, that "discretion is the better part of valour;" and would seriously recommend every one not quite sure of being in with day light, to haul off and enter in the morning. I know from experience that it is very difficult to judge correctly of a vessel's distance from the entrance. The land immediately contiguous being very high, and appearing much nearer than it is, renders it not only very difficult to judge correctly, but there is generally a haze over the low land. I have also invariably found, that when a lighthouse is situated immediately in front of, and underneath high land, it adds very much to the difficulty of judging correctly of its distance at night. Besides, although it appears easy to keep the light on a certain bearing, and run into eighteen fathoms then haul into the bay, &c., according to certain directions, it is not so easy in a short-handed merchantman going four or five knots, to get soundings in eighteen fathoms, with sufficient facility. It is useless however arguing such a point, I strongly recommend every one, to wait for daylight: a few hours are of little importance, and they can be easily made up, by a strict attention to dispatch, when once fairly at anchor.

Table Bay, as a place of discharge, and even as a place of call for refreshments, has obtained a very bad reputation. Many owners put a positive veto on their vessels going there. I think, however, its bad character is overrated, and an unnecessary degree of fear entertained with regard to the safety of vessels riding in the roadstead. I write advisedly, when I affirm, that three-fourths of the wrecks which have taken place on entering this bay, have arisen from running unnecessary risks, or, from the carelessness and ignorance of the parties in command. Neither would a vessel properly moored on arrival with good ground tackle, and a good scope of cable before the violence of the gale sets in, be so liable to drive or part her cables. A sufficient degree of care and

attention is seldom paid to seeing anchors laid down clear, and in a proper position. In most cases so soon as one anchor is gone (that very likely foul from the vessel's having head-way, and overlaying it with the cable,) the master goes on shore, where he remains, never thinking of mooring, in all probability, until a gale commences. It is also quite common for vessels calling for a temporary purpose, to get huddled together in such a manner as to prevent their paying out cable when it commences blowing. The same circumstance occurred during my present stay in the bay. The consequence was, so soon as the gale commenced, four or five vessels were all driving together; and had the gale been of ordinary violence they must have gone on shore, and added to the unjust degree of dread with which this anchorage is viewed at the present time. All vessels bound eastward, or, to the Australian colonies with passengers, or emigrants, and intending to call at some intermediate port for supplies, should in my opinion give a decided preference to Table Bay, over any harbour on the Brazil coast. Supplies in the Cape are of superior quality and moderate price, whereas in the Brazils they are very inferior and expensive. Neither in general cases would there be so much detention caused to the vessel by calling at the Cape, as on the Brazil coast.

Port charges at the Cape are very moderate, and vessels calling for refreshments only pay one half. The shipmaster must, however, beware if he has cause to enter into repairs or outfits. I have seldom seen a place where agents understand so well the art of summing up accounts, and suiting their own views. It is well known that parties here, considered respectable, have an understanding with the several tradesmen who supply vessels, receiving a per centage on the accounts. There are honorable exceptions to this rule, and I was fortunate in falling into the hands of as honest, upright a man of business as could be met with in any part of the world. Not only their concurrence with tradesmen, but the influence of a certain acting functionary, whose occupation leads him to an early interview with the shipmasters, is invariably used towards a certain well known house. The fact is notorious, and the remuneration hinted at in Cape Town. I have also known a partner in a house here, acting as agent for a vessel on shore on Green Point, so refined in his ideas of religious propriety, as positively to deter the boats from saving passengers' baggage and effects, because it was Sunday! (although the vessel was in danger of breaking up every minute, and many of the poor passengers had their all on board), who the very Sunday previous, could fidget about all day in person, and keep agents employed persecuting the master for the agency of the vessel. There seemed a wonderful difference in his so called principles, when his own, and his employers interests were concerned. A heavy charge was also rendered for personal superintendence, which consisted I believe, in once going down on the beach opposite the wreck, and remaining a few moments. Salvage claims are here made, which in any other part of the world, the parties themselves would be ashamed of. One claim was made by the acting-harbour-master for himself and boat's crew, paying his first, and I believe, only visit to the wreck, where he remained only long enough to receive the letters, and I understand one or two passengers. I should certainly consider such a visit within the range of his

official duties, and, moreover, I consider that under the circumstances of the wreck I allude to, he should have gone on board, taken charge of the vessel, and given the suffering parties the benefit of his supposed local knowledge. Neither does it appear to me, that a sufficient degree of care is exercised, in behalf of the Underwriters in cases of wreck. Although at the one I allude to, peculation and robbery were carried on openly, both on board, and in the boats on their way to the shore, no authority remained on board to prevent it, and in some cases the passengers actually used force to drive men from breaking open their own private cabins. Certificates of survey and imputed damage on goods are also understood to be easily procured, and it is alleged that goods are sometimes, through a very minute inspection, found to be damaged after they have been some time in the bay; at the same time it somehow occurs that they arrive to a bad market.

Crossing the Southern Ocean from the Cape of Good Hope towards the Australian Colonies or New Zeeland, no particular instructions seem necessary. From 36° to 40° south latitude will be found as good parallels as any, and westerly winds will generally be met with throughout the year. Bound to New Zeeland, it is advisable to pass to the southward of Van Diemen Land. Bass Straits are at all times dangerous, and the passage through them shortens the route very little. In sailing towards New Zeeland, I possessed all the small, as well as the general chart of the islands, published by the Admiralty, together with the map or chart lately published by Wyld. The general chart of the Admiralty is, however, the most correct, and it is really astonishing to conceive that any coast could have been so correctly delineated, principally from Cook's surveys, with the imperfect instruments he possessed, and the inadequate means at his command. To no one individual does the hydrographical knowledge of our country owe so much as to Cook's skill, energy, and unwearied exertions; and I was annoyed to find that instead of honoring the new capital of New Zeeland, and commemorating his discoveries, by giving it his name, that name is conferred on a nobleman, in no *public* manner connected with the colony.

Vessels bound direct to Auckland, the capital of the colony, situated on the north-eastern end of the Northern Island, will make the best and quickest passage by passing round the north end of that island. The passage along the east coast, from the east end of Cook's Straits to Auckland is seldom made in less than ten days, and every one who has made this passage once or twice, will recollect the east cape, with its never-failing foul wind. Bound to Port Nicholson, or any port in the straits, or on the east side of the Middle Island, vessels should be steered so as to make the land at the Rocky Point, to the westward of Cape Farewell. It is a bold coast, free from dangers, so far as it is yet known, and readily distinguished at a considerable distance by a broad white mark on the face of the cliff like a broad causeway, but said to be a cascade, being seen several leagues at sea. From Rocky Point the land, which along the sea coast to the southward, is composed of high cliffs, now gradually falls on proceeding northwards; Cape Farewell appearing in the distance like a small island. I passed along this part of the coast, with a fine opportunity of discovering any reefs or rocks

lying at short distance from the land, and kept for that purpose a good masthead look-out, particularly when passing the position assigned on the chart to some small rocks about ten miles to the northward of Cape Farewell, and feel assured that they do not exist, at least to any extent above water. A very dangerous sandy peninsula proceeds in an E.b.N. direction from Cape Farewell, extending about twenty miles, being very low, particularly where it joins the land. It requires the greatest caution in being passed, more especially from its position at the entrance of Cook's Straits. In running for the straits, some advise making the high land about Cape Egmont on the other side. I should, however, decidedly prefer pursuing the course above directed, as the vessel will have the weather shore on board, with strong westerly gales. All the various headlands, and conspicuous points, in the straits, may be very easily recognized from their appearance on the charts, and the vessel's position ascertained by cross bearings. The general outlines of the coast as laid down in the general chart by the Admiralty, are pretty correct, although the detail in many places is in error. The passage through Cook' Straits has been hitherto considered more dangerous than in my opinion it merits. Unquestionably until a regular survey has been made, it requires great caution, and a good look-out. The tides are also strong, and in a gale somewhat alarming from the sea they create off the various headlands. The gales of wind also, particularly in the winter season, are violent and sudden; yet I conceive no occasion for unnecessary dread on the part of the navigator. I would much rather pass through Cook's Straits than the Irish Channel. I viewed with longing eyes the entrance of Queen Charlotte's Sound, rendered so celebrated by the visits of the immortal Cook, and would most willingly have visited this truly classic spot, but the calls of duty were imperative, and urged me onwards.

Capiti or Entry Island, and the Island of Mana are readily distinguished. There is I believe indifferent anchorage under both. The former is described in the pages of the *Nautical*, by that excellent officer, Capt. D. Bethune, commanding H.M.S. Conway. Allow me here publicly to return that gentleman thanks in the name of the merchant service, for the praiseworthy manner in which he communicates to the *Nautical*, the result of his experience, and for the very explicit manner in which his remarks are always made. It is a pity that his example is not more frequently followed by other captains of her Majesty's ships, who have many excellent opportunities of adding to our hydrographical knowledge of the various unknown coasts they visit. I trust they may follow Capt. B's. example, whose promptness also in forwarding his remarks deserves commendation.*

Bound to Port Nicholson, and having rounded Cape Teerawitte, which

* It is right that we should add here, for the information of our correspondent, whose useful remarks cannot fail being read with great interest, that the papers of Captain Drinkwater Bethune to which he alludes, were selected by us in common with those of other naval officers, whose papers have appeared in this journal, in consequence of the good judgment and general conciseness with which they were drawn up; besides the interest attaching to the places referred to. More we would readily insert from the many excellent remarks of our Naval Officers at our command, but our space, already extended far beyond that of any other periodical of similar cost, has its limits.—Ed.

is bold and clear all around, a difficulty has been experienced by strangers, in finding the entrance of the harbour. The difficulty and want of a beacon or distinguishing mark, lately caused the loss of two vessels, from their being caught in a violent south-easter, when close in on the coast looking for the entrance. Being on board a vessel in the middle of the straits, and having passed Cape Teerawitte, their prominent headlands will be perceived on the North Island, Cape Teerawitte, Cape Toura-kira, and Cape Pallisser. Under the north-western side of Cape Toura-kira, the middle headland, and about three or four miles from it, lies the entrance of the harbour. On approaching it, and particularly when open, it is easily recognized. The chart of this harbour, published from the survey of Mr. Chaffers, appears very complete, and correct, and with its assistance, no difficulty can be experienced in entering. Since the survey was made, however, and a few months previous to my arrival, a sunken rock with three or four feet water on it has been discovered off Point Jerningham in Lambton harbour, a small schooner having struck on it and received damage. It lies about a cable's length distant from the point, and vessels entering with a scant wind must be careful not to approach too close to the point.

Once within the harbour, a vessel is safe and secure, and this gives a favourable turn to the first impressions of New Zeeland: it is surrounded by high hills, terminating abruptly at the water, covered with trees and vegetation. First impressions and the excitement consequent on a safe arrival, after a long passage once over, it is difficult to conceive, what could have induced the New Zeeland Company to choose this as their principal settlement for agricultural purposes, apart from the facility of entering, and safety and security of the harbour. It is true, that there is a portion of flat, cultivable land in the Valley of the Hut, at one end of the harbour; but it is rendered in a great measure useless by the liability of the River Hut to overflow; so much so that the original town once commenced there, was soon abandoned, and a site chosen at the head of the harbour, now called Wellington. The site now chosen is also extraordinary, as in almost every place along the beach, the hills terminate so abruptly, as to leave no room for the houses, without excavating sites from the hills around. On reading the Journal published in England by the New Zeeland Company, I was much pleased to find, that it was intended to colonize this country on more equitable principles, than had generally been followed hitherto, between the Aborigines and British settlers. I was particularly pleased with that part of the Company's plan, which ordered every tenth portion, or allotment of land, in town and country, to be set apart as a reserve for the benefit and occupation of the natives: but I was surprised when in Wellington to find, that in the whole water frontage (which is of course most valuable), which extends at least one mile and a half, only one allotment is reserved, and that is the least valuable part of the beach.

I trust there will soon be a Government Protector of Aborigines appointed to enquire into and support the rights of the natives, and prevent them from supposing, that the British Government, to whom they have ceded their Sovereign rights, and to whom they now look for protection, do not mean to keep faith with them.

Even in the summer season, gales of wind are very prevalent, blowing from the north-west and south-east alternately. Being surrounded by high land, these gales blow through the ravines into the harbour with great violence. During these gales, there is often no communication between the vessels and town for some days, although only two or three cable's length distant. These gales, and rainy weather, which is also very prevalent, are often the cause of much delay to vessels landing cargoes. A light-house or beacon is very much wanted at the entrance of the harbour, to render it conspicuous: had such a beacon been erected both vessels wrecked during my stay would have been saved. The necessity of having such a mark, is fully recognized by the inhabitants of Wellington, and a meeting for the purpose of taking steps to erect one, was held immediately subsequent to the wrecks above alluded to. One of the most respectable merchants took the chair, and several nautical men addressed the meeting, pointing out the necessity for, and use of, a beacon. Some of the *Politicians* of the settlement then interfered, and after a very few words regarding the matter in hand, entered into Colonial Politics and abuse of the Government. So far was this carried that the meeting actually broke up without any resolution being adopted, to effect the object in view. The most determined and rancorous hostility exists between the Company's followers and the Government, and the low scurrilous abuse into which the Editor of the *Company's* paper, published in Wellington, is allowed to enter, is unworthy the sanction of parties calling themselves respectable.

During the passage from the Cape of Good Hope to New Zeeland, I was much amused by the opinions entertained by my passengers, respecting the new colony to which they were proceeding. They were mostly Government officers, who had been shipwrecked in entering Table Bay; the C——r of C——s having a large family, and the S——r-G——l his family and staff. Leaving England for the first time, with no better ideas of a new colony, than reading and report had given them, they looked forward to the place of their destination with glowing expectation: they viewed it as the "Promised land flowing with milk and honey," where they would encounter few difficulties, and find every thing they could desire. Experience having long ago enabled me to judge of the disappointment they would meet with, and the many difficulties and privations they must encounter, I endeavoured sometimes to allay the enthusiasm; but I might as well have attempted to stem the torrent of a mountain stream. The description of Cook was ever appealed to against my opinion: the New Zeeland Journal, with the various extracts of letters from the settlers, said to be true, were shewn to me; and while I was wont sometimes to designate it, as a land of "pigs and potatoes;" they not only affirmed that every thing was plentiful and cheap, but that fruit was so abundant the pigs were fed on peaches: the very fact of there being two hotels in Wellington was triumphantly held forth, as a proof of the state of advancement to be met with in the "Promised land."

On nearing the islands all evinced a sort of restlessness and impatience: "the vessel sailed worse than before," the "wind did not blow hard enough," &c.; and when baffled in Cook's Straits with light breezes, a party insisted on having a boat, with which they would pull

to Port Nicholson, at that time twenty miles distant. We neared the entrance to the harbour on the morning of a most beautiful day; the wind was fair, and the vessel sailing up this certainly fine harbour, under favorable circumstances, added to the already excited feelings of my friends. Rounding the point to haul into Lambton harbour, the wooden houses of Wellington, and the vessels lying near it, became visible. The enthusiasm could no longer be contained, and the loud and long protracted cheers, announced to the wondering inhabitants, the arrival of another band of adventurers.

Relieved from the confinement of the vessel, and once more on terra firma, where there was no limit to their peregrinations, meeting also with kind reception, from their official character, the first few hours on shore were spent as pleasantly as possible. Determined to spend the first day comfortably, they resolved to dine at the principal hotel and afterwards luxuriate on the comforts of a roomy bed. Dinner passed off without much comment, the word "colonial" being applied as an adjective to every thing which did not exactly tally with their European ideas. On being ushered to bed, one of my friends rather fastidious about his personal comforts, began to scrutinize the linen, in which it was proposed he should envelop his body. Certain very significant marks and stains, proved at once that he was not the first occupant, and calling the landlady to remonstrate and procure redress, instead of being instantly and obsequiously served with the required article, he was very coolly told that, "It was very well; that washing was not easily procured in a new colony; in short, if he could not be satisfied she had no other bed or linen." The landlord made his appearance, and after a few words my friends were ejected from the premises at a late hour, and told they were no gentlemen. Previous, however, to leaving, they had discovered that the marks on the linen in question, only proceeded from its having been used the previous week as a table cloth, for which purpose it had been originally intended.

During the four days passed in this place, my friends began to think some of the descriptions overdrawn. However, the Company's official being anxious to keep up the delusion as much as possible, prejudice still retained some hold. Having read many accounts of the richness of the soil, and luxuriance of the vegetation in this place, my friend Mr. S., was anxious to see them, as they had not yet come under his observation. In reply it was stated, that Wellington was merely conceived as a Commercial emporium, that the agricultural district was the Valley of the Hut, at the other end of the harbour, and he was earnestly requested to visit that place, previous to our intended departure for the seat of government. For this purpose we embarked at noon in a small cutter yacht of five or six tons, our party consisting of the C—r, the S—r-G—l, Mr. Y. (a young gentleman just from College,) and myself from the vessel: from the settlement we had the Crown Solicitor, Police Magistrate Dr. E., and Mr. C., a Barrister. The wind, a nice north-west breeze, being fair, and the distance about eight miles, we intended to return to dinner, and sail for Auckland next day.

The distance being short we soon arrived, and proceeded through the various allotments, and clearings, on the banks of the river. The rich alluvial soil appeared excellent, the various patches of cleared land

were covered with crops of grain, vegetables, &c., the settlers were busy clearing away the trees, and thicket, composed of parasitic creepers, and tangrass; the various huts composed of wood were situated close to the river, the best and largest amongst them being appropriated as a grog-shop, the never failing accompaniment of an English colony. Satisfied with the richness of the soil, and the luxuriance of the vegetation, at the same time certain that the river will always be liable to overflow its banks, and wash away the cultivation, we thought of returning. Wending our way down a narrow path by the river, and emerging from the forest, the wind which hitherto had been a nice north-west breeze, and the sky without a cloud, we found calm, with a dense black mass of clouds rising in the south-east quarter, and fast approaching the zenith. Fancying it would only be a temporary shower we pushed on. In a few moments however, the storm burst upon us with tropical violence; the wind blew a hurricane; the rain poured in torrents; the lightning flashed most fearfully around us, and peals of thunder reverberated through the forest. Except Dr. E. and our party from the vessel, the others being in advance took shelter with a settler of their acquaintance: our party retreated into the houses at hand, and waited in expection of an abatement of the storm. It continued, however, in all its primitive strength, and night approaching, it became evident that we could not proceed. A settler kindly offered us one half of his hut, as a shelter from the weather, the other half being reserved for his sick wife; at the same time informing us that he could give us nothing, except the use of his frying pan and a kettle. My friends, who were cold, hungry, and thoroughly drenched, looked aghast at this announcement; the idea of starving in the "promised land" had never entered their calculations. More accustomed to such difficulties, I soon learned that, being Saturday night, one of the settlers had killed a pig for the Sunday dinner of himself and neighbours. Proceeding there, we found it was all disposed of. I, however, saw a nice leg reserved for family use, and begged so hard that it was given to us. From another we procured a basket of potatoes; from a third home-made bread; from others plates, knives, forks, &c., while in the grog-shop before mentioned, I rooted out some stray bottles of porter, and a bottle of brandy. The spirits of my friends began to rouse at our success; but no servants or attendants being to be had amongst the independent colonists, we were obliged to carry our provender to our intended quarters. Behold us then marching along in Indian file, ancle deep in mud, amidst the pelting of the pitiless storm; her Majesty's C—r with the leg of pork, the S—r-G—l with the potatoes, my young friend, Mr. Y. with the plates, and knives and forks, the grand looking Dr. E. with the bread, while I brought up the rear with the liquids. Once within our new quarters, which were neither wind nor water tight, with the fire at one end, we soon commenced operations, made a comfortable supper, (I speak of my own comfort,) and kindling a large fire in the middle of the mud floor of the hut, we lay down on the ground around it, one side half roasted, and the other cold, while the steam from our wet clothes, and the smoke from the fire, rendered the atmosphere impervious enough.

Morning at length made its appearance, the gale still blowing, and

the ground near the river completely overflowed. A report soon reached us that our yacht had driven on shore, and was embedded in the sand; that a boat caught in the gale had been capsized and the crew drowned; that some vessels had come on shore at the entrance of the harbour, &c. All this, added to the already increasing fears of my friends for the safety of their families on board, and we resolved to walk through the woods by land to Wellington. This we accomplished after a fatiguing march, found all well on board, and concluded the day comfortably with Dr. E,, having in a short, and summary manner initiated my friends into some of the mysteries of a colonial life. The vigorous and well constituted mind of my much-esteemed friend Mr. S. soon, however, rose superior to all the unexpected difficulties he met with; and previous to my departure from Auckland, he was clearing away the site of a house for his family, himself handling a pickaxe, and my young friend Mr. Y. assisting him with a spade, both determined to make themselves comfortable in their new abode, at the same time confessing that, had they known the truth they never would have left England.

From Port Nicholson bound to Auckland, vessels proceed either by the west or east coast, according as the wind prevails on leaving. We followed the latter route, and entered the Waitemata on the tenth day, which is considered a fair passage. It is however a long time considering the distance, but it is difficult to meet with fair winds, the courses being so various. From Cape Pallisser we coasted along to the East Cape, with a north-west wind, and clear weather, at an average distance of about ten miles from the land, and saw no danger not mentioned in the chart. The outlines of the coast seem generally pretty correct, although the relative positions of the headlands are not so. Off the East Cape the tide appeared strong, and with a contrary wind it is a difficult cape to weather, the cross irregular sea retarding the vessels progress very much. We passed close to Sulphur Island, near which there are several islets not inserted in the chart. This island was in a state of ignition at the time we passed, emitting immense volumes of smoke from the ravine on the east side, and a most unbearable effluvia, causing us to tack so soon as we came under its lee, although five miles distant. The sulphur procurable here is said to be of indifferent quality. On all this part of the coast from the East Cape, to the Great Barrier Island, great circumspection is necessary in approaching it, or beating along. Until a survey is made, no vessel should stand in shore at night.

There seems no difficulty in determining the south-eastern entrance, to the Gulf of Shouraka, from the latitude and appearance of the Great Barrier Island, as well as its relative position to Cuvier Island. The latter island is bold to, and may be passed on either side. We turned into the Gulf through this passage and soon accomplished it. I had the Admiralty chart of the Gulf, which is in many places incomplete, although it is of vast assistance in navigating the Gulf. Cape Barrier, the extreme southern end of the Great Barrier is not clear, as represented on the chart. I saw rocks above water at least a mile from it. Moto-Takapou, the conical shaped islet in the entrance between Cape Colville and the Great Barrier, is seven to eight miles distant from

Cape Colville, instead of about four as placed in the chart; and a reef partly above water, runs about a mile, in a W.N.W. direction, from a point projecting from the main land, about half way between Cape Colville, and the two islets close to the main, and to the eastward of that cape. These notices are far from satisfactory, as I had no time to examine any of the places minutely, or determine their positions correctly: they will serve in the mean time to warn the navigator to act cautiously. There is however plenty of room to avoid all the dangers in the passage.

Once within the Barrier, and past Cape Colville, all the various islands lying off the mouth of the Waitemata may be seen. The vessel may almost be considered as in a harbour; the water is smooth, and little difficulty will be found in turning towards the harbour, even with a stiff breeze. The best passage, and that generally used, is between the Islands of Tiri-tiri, and Ranguitoto, and once between these two islands the vessel may be anchored any where in safety, according to the wind, the holding ground being excellent, and depth of water moderate.

It would be superfluous for me to say anything respecting entering the Waitemata, and approaching Auckland, the Government having soon after its establishment, printed directions, which are copious enough.* There is now a buoy on the extreme of the sandy shoal within the entrance on the north side, and a beacon on the reef running out from the southern side of the entrance. With the charts of the harbour now published, from the surveys of the officers of the Herald, and more recently by those of the Britomart, no difficulty can be met with on entering the harbonr.

The great question between the New Zeeland Company's followers and the Government, respecting the place chosen for the seat of government, continues to cause considerable excitement. Apart from the interested motives of the Company, who are nothing more than a commercial company, endeavouring to enhance the value of their territory, as much as possible, and realize as much as they can from land speculation, no one can for a moment hesitate to commend the Governor's choice of Auckland. Situated on the banks of a fine wide and deep river,—possessing water sufficient for the largest vessels,—every facility and safety in entering,—shelter when inside the Barrier Island,—uninterrupted communication with the shore when in harbour, and every facility for the construction of quays and docks; surrounded as it is by thousands of acres of fine, rich, and comparatively level land, with no thick, and almost impervious woods to cut down,—within six miles of the extensive harbour of Manoukao on the west coast, in the midst of what must always, from the extent of fine agricultural land around it, be the most thickly populated part of the islands, possessing a complete chain of inland water communication, (extending many hundred miles, and embracing the finest agricultural district in either island, a communication invaluable to a new colony,)—unfettered as is the situation by the previous claims of either private companies, or, private individuals, I again repeat, no one can for a moment question the propriety of the Governor's choice. In the harbour of Port Nicholson, there is

* These will be found in our vol. for 1841, p. 403.

not even ground sufficient for the site of a capital; and from the harbour there is no communication with the interior, unless roads can be made over high hills, and deep ravines. The comparison, however, is absurd. Would Government only take the same active means to encourage emigration to the neighbourhood of Auckland, that the Company are doing to their territory, the latter would soon sink into comparative insignificance. Settlers in Auckland have hitherto had much to contend with, in consequence of the scanty portion of land offered for sale at the public sales. The result was great competition and high prices; and, although the colonial treasury was for a moment enriched, the colony was injured, as the money expended in the original purchase had better been laid out in improving those purchases.

Provisions and supplies for vessels are already expensive in New Zeeland, from the great influx of settlers. I paid £5 per ton for indifferent potatoes, and native pork cost 7*d*. per lb.: beef, which was first introduced during my stay for Christmas, sold at 1*s*. per lb. Cattle were, however, coming down in quantities from Sydney and Port Philip, and prices of provisions will soon be nearly equalized in both colonies. Brick-making is going on with vigour in the Waitemata, and plenty of wood for constructing houses can be had from the west coast, where several saw mills are erected. Intending emigrants should never bring English-made houses to put up in the colony; they cost nearly as much in erection, as building new ones here. Ready-made doors and windows, with flooring ready for laying can be had in Auckland.

From New Zeeland to Valparaiso no particular directions seem necessary. Westerly winds will generally be found from 36° to 40° S. lat., although during my present passage I encountered winds in the eastern quarter for forty-two days. It is, however, an unusual occurrence. Except during the months of June, July, and August, I would recommend the land to be made well to the southward of Valparaiso on account of the prevailing southerly winds on the coast. During the above named three months, from the frequent northerly gales, I would prefer running in, on the parallel of the ports. On entering or leaving the harbour of Valparaiso, great care is requisite, not to approach too close to the light-house point, or, the Baja Rock; as although a strong southerly breeze may blow outside, it is often quite calm in the bay, and near this point there is an indraught, which, during the two months I was on the coast, drove two vessels ashore.

During the summer months southerly winds prevail in Valparaiso, blowing during the day, and generally falling calm towards evening: occasionally these southerly breezes blow with great force over the high lands surrounding the harbours, and vessels should never be allowed to remain with a short scope of cable. During the winter months, from May to October, northers are frequent, sending a very heavy sea into the bay, from which there is no shelter. Fortunately the wind seldom blows hard, otherwise no vessel could hold on. It is however very requisite to moor with great care in this season. Having the anchors clear, and at once paying out a large scope of cable, there is little fear of driving, the holding ground being good, and the bank steep; but the

water being deep, and the swell heavy, chains are very apt to part. Naval stores, and provisions of all sorts may be had here in abundance and cheap. It is quite refreshing after a long voyage to see the market, filled as it is, with all the European fruits and vegetables, intermixed with many of the tropical ones. From the first appearance of the hills around Valparaiso, and the coast near it, you are not prepared to expect such fertility, the land so far as visible, presenting a barren appearance. A short trip to the interior however, proves the capabilities of this fine country.

Port charges on vessels are moderate, and only charged on vessels discharging or loading in the bay. Vessels calling for provisions, seeking freight, or to refit, are exempt. The custom-house regulations here are also very just, and give no detention, or annoyance to the vessel. It is the best regulated custom-house I have seen in South America, and now I understand carried on in all its departments, with a strictness, and respect to justice equal to our own. It is very evident even to a casual visiter, that Chili is very far in advance of any of the other South American Republics.

Cargoes for England are very seldom loaded in Valparaiso. It is, however, the residence of the principal English Merchants on the coast, and consequently the place where vessels are generally chartered to load in Peru, Bolivia, or Chili. Proceeding to any port on these coasts to load, no directions for making a passage are necessary. A distance of about sixty miles from the shore, will generally ensure a steady southerly wind, which prevails all along the coast, and renders the passage to leeward easy. To return it is requisite to stand out on the larboard tack, until you reach westerly winds, or at all events the meridian of 82° W. when you may proceed southward in the most suitable track.

I cannot take leave of Valparaiso without again referring to the degraded state, in which the British Merchant Service still remains, from the conduct of its Commanders. Out of about twelve or fourteen, who were on the coast at the same time with me, one third, were confirmed drunkards, and fully one half, in every way disqualified for their situations. Illiterate in their conversation, rude in their conduct, with no command over their passions, and even without the necessary degree of shame to hide their faults from the public gaze, I really was ashamed to acknowledge myself a fellow companion and member of the same profession. Several of them were in a state of stupid intoxication by noon, and in that state, calling on Brokers and Merchants, attempting to do business in the most insolent, and often disgusting language.

Towards evening they were generally in Burns' words

" O'er a' the ills of life victorious ;"

with just sufficient sense left to find their bed in a brothel. Two of them were frequently lying in the public streets in daylight completely senseless. I once heard some such parties discussing one of the articles I sent you for the *Nautical* some time ago. They came to the conclusion, that the writer, must be some " cynical or methodistical old man," who had in nautical phrase, " walked through the *cabin windows* to the command of a vessel." Now, I beg leave to inform these said parties,

that respecting age, I have scarcely yet arrived at what is generally called middle-age,—that my friends do not at all consider me either cynical, or methodistical, but very much inclined to enjoy myself in a rational manner; and respecting the command of a vessel, which I have now had for some years, I assure them I obtained my entrance to it through the *hawse holes*, having left home, with no farther assistance than a good education, entered on board a strange vessel, and never received assistance from, or visited that home, but once till I had command. Moreover during the very first *three years* of my nautical life, while under the command of others, I was once washed overboard, twice ashore shipwrecked; once eighteen days without a rudder, in the Atlantic Ocean, in the month of January; once in a small vessel, with decks swept and on her beam-ends, expecting death every moment; and four months in an hospital, with rheumatism, in a foreign country, unable at first to speak a word of the language, and without a penny in my pocket, or a friend in the country. I, therefore, consider myself perfectly at liberty to point out what I consider to be faults in the character, and conduct of my brother skippers.

I happened to be in a Bolivian Port, on the arrival of one of the parties above mentioned, a young man of twenty-two years of age. I went on board with the Consignee, and found the mate bringing the vessel to an anchor, while the master was holding on with both hands to a rope by the main rigging, incapable either of moving or speaking. In this port it is customary for a master to call on the Prefecto or Governor of the department, on arrival. On the second day, the Consignee brought this man for the purpose, and as he came staggering along towards the Prefecto, the latter exclaimed to some gentlemen with him, "Alla viene una verdadera muestra de un Capitan Ingles" I went down the coast in the vessel commanded by this man, a distance of about forty miles, to join my own vessel, accompanied by some gentlemen, who were going with me to Valparaiso. Even in our presence he never refrained. One dose of brandy followed another, until he dropped into a short disturbed sleep. Again the stimulus was renewed, again to be followed by the state of quiescence. Such a course he pursued while I was near him, even at his soberest moments utterly incapable of knowing what he was about.

Again I would ask, are such fellows as these to be continued members of a profession, where they are entrusted with valuable property, and of far more importance valuable lives? How long will the national character continue to be disgraced for the want of some legislation to amend the merchant service? Year after year the ocean continues to receive her thousands of victims, sacrificed to the ignorance, incapacity and misconduct of this class of men;—yet we have no alteration, no amendment or improvement. I must not however enter farther into the matter here. I will at a future time recur to this interesting subject, and so far as my time permits, and my poor abilities suffice, I am determined, never to remain satisfied until something is done to recover the merchant service, from the awful state in which it has been allowed to continue. Perhaps some landsman may smile at the degree of importance I attach to the situation of master of a vessel? To such, I only reply, make one voyage as a passenger, and then give me an opinion.

For my part I consider a commander of a ship, not only responsible for the safety of property, and security of life entrusted to his charge, but as regards his crew, *in loco parentis*; and as such, responsible for the example he sets before them, and the means he takes to improve their moral condition.

I will not continue remarks on the voyage further. We have now rounded the dreaded Cape, at this inclement season, with beautiful mild weather, and under favorable circumstances; and I am highly gratified to find the vessel every day approaching that "dear native home" to which, however distant, my thoughts continually recur, and which becomes particularly interesting after a protracted absence during a voyage round the world.

MEXICANO.

At Sea, July 25, 1842.

[The wreck of the Sir George Arthur convict-ship in p. 507, of this volume, is an unhappy instance of the truth of these remarks. It is stated that when she was lost her commander perished in a state of drunken insensibility.]

EARTHQUAKES NEAR THE EQUATOR.—*Atlantic.*

FROM the repeated indications of disturbance which have been observed near the equator, by navigators, it seems probable that, the pent-up gas of a sub-marine volcano has for a long time been struggling to escape, and from which action the bed of the ocean may be gradually rising towards the surface.

If there be any truth in this conjecture, although the precise effect cannot be predicted, yet we may anticipate that one of two results will follow. If an opening be made the gas may be dissipated, and the progress of the ascending crust arrested; in which event, the indications of volcanic action may be suspended for an indefinite period, in the immediate vicinity. But, should the materials of which the bed is composed, be sufficiently tenacious to retain their compactness, a shoal, or, an islet may be brought to light, to the manifest astonishment of those seamen who, forgetting that, such phenomena are common in the ocean, and are to be expected in this part, where volcanic islands are situated, dream only of shoals composed of *Lophiuses*.

The destruction of the city and towns of Haiti, may, not improbably, be connected with the operations which have been going on about the equator; for, it is not unreasonable to believe that, there exists, under the crusts of the earth some means of connection between the agents of these terrible convulsions, even at remote distances. It would not be an incurious matter of speculation to trace the connection of some of the seats of volcanic action, active, and dormant; for instance, we may commence with Iceland, and reasonably connect its fires with those of the Azores, although 1500 miles apart. From the latter towards the coast of Portugal and the Madeiras, tubes may run; and still more southerly to the Canaries, Cape Verds, to the Equator, and, perhaps, onwards to Ascension, St. Helena, Tristan de Cunha, round to St. Pauls of the Southern Ocean; and to the westward and southward, Cape Horn, and the Polar islands.

The play of the igneous materials at the equator probably lies between the 19th and 29th degrees of longitude, the St. Paul of the northern hemisphere, being a specimen of its upward exertions.

Some of the volcanic islands may be mere shells, in which case, they may ultimately fall in. In others, the hollow may have been filled up, and a depression left in the bed at a short distance. The process may be easily imagined. All persons must have remarked in bituminous coal, when ignited, a vivid burst of flame, occasionally thrown out in jets, accompanied with clouds of smoke, and a vehement and rushing sound from an orifice, at first, not larger than a pin's head, but which very soon begins to throw out and inflate (somewhat in the manner which bottles are blown by the glass-men,) a black protuberant substance, the softened carbon probably, which rapidly enlarges, preserving an oblong rounded shape, until the gas has entirely evaporated, or is consumed by the flame, when the substance becomes in some degree indurated.

It is reasonable to believe that, in a similar way the shoals and islets hove up by submarine fire, are formed, and that they are, for the most part, at first, either hollow, or extremely porous, as the appearance of the scoriæ and pumice suggests. If this be the fact, such may account for their bases giving way, and the entire fabric falling in, and ultimately disappearing. Upon a large scale, and when the subterranean furnace acts with great vigour, yet, from the stubborn nature of the incumbent materials it is unable to bore an orifice for the escape of the expansive fluids, the whole crust of the superficies of the immediate space of action, may be forced upwards, and so produce an island of some extent, which from its thickness and stability retains its new position. In time, however, what the pressure beneath was unable singly to perform, may be effected by the assistance of the atmosphere. The heat of the sun, evaporation, and moisture alternating, would render the materials more yielding, and thus by the conjoint agency, internal and external a chimney or vent is formed, and a volcano established. There are no doubt, various modifications of this process, which when inquired into, and explained at length, would readily account for the different forms in which we find volcanic lands.

It is not improbable that, the efforts of the expansive fluids near the equator, may have been in play ever since the crater of Ascension ceased to emit fire, or, St. Paul Island made its appearance above the surface; as it is reasonable to believe that, when a hitherto existing vent becomes closed, another will inevitably be opened in some other direction in the lines of communication; and, if the bed of the ocean there assumes the same character as the general shape of the earth's central crust, we should expect to find the depth of water less along the entire aqueous portion of the line, than to the northward or the southward.

The effects on the earth's surface of the expansive fluids are generally confined to a peculiar sort of motion, which is repeated at intervals, and often spread over a vast extent of land and sea. In these instances we may suppose the cause to be deep seated, but the reverse when those terrible results which accompany the shocks are manifested in the destruction of towns and villages. These physical disturbances appear not to be confined to any particular portion of the earth; they have

been experienced in almost every country, of more or less intensity. In an old newspaper of the 22d of March, 1783, which has recently come into my possession, I find some extracts of letters written from Naples, which relate to the extensive earthquake that occurred in Calabria Ultra and Sicily on the 5th, 6th, and 7th of February of that year.

It appears that the calamity extended along the coast of lower Calabria for the distance of 150 miles. From Tropea to Squillace, most of the towns and villages were either totally or in part overthrown, and many of the inhabitants buried in the ruins. The first shock took place about noon of the 5th; but those which followed on the two succeeding days were much more violent, creating, as may be supposed, universal consternation. Three hundred and twenty villages and hamlets were stated to have been destroyed! The towns of Palma and Seminara, and the episcopal city of Geracia were demolished, and the town of Sylla swallowed up. The prince of that name in attempting to escape in a boat was drowned; and the Princess of Grimaldi buried in the ruins of Geracia!

Of the episcopal city of Reggio, "Universally famed for its trade and riches; and situate opposite to Messina, scarce a vestige remained to remind mankind of its splendour." The river Pietra became entirely dry.

"This dreadful earthquake was accompanied with a most violent storm of thunder, lightning, and rain, together with almost total darkness!"

Messina was nearly destroyed with part of its citadel. "The sea rose very considerably on the Sicilian coast, and retired from that of Calabria; and, it is remarkable that, the houses in Sicily fell in a direction from the sea; and those of Calabria towards it." This circumstance seems to denote that the direction of the shocks was from east to west.

It was to such a phenomenon, probably, that the Strait of Messina owed its existence, and Sicily its insular state; and it is not at all unlikely that other disunions may occur, as the lands are still symptomatic of quakes.

X. Y. Z.

Mindoro and Sooloo Seas, Straits, etc.

Having observed several inaccuracies in the charts of these places, also instances in which Mr. Horsburgh's Directory and his Charts do not agree, while endeavouring to point these out, I must disclaim the slightest wish of depreciating the great merit of that gentleman's labours. In fact, I consider the Directory to be the most useful work on nautical subjects which has ever been published; yet, as the works of no man are infallible, I trust no further apology is necessary.

Commencing these remarks at the Straits of Mindoro, a shoal (not inserted) has existence, of which I have previously sent a notice; since then have been informed by the master of the Margaret, that he had four boats sounding on it at the same time, and that one of these had several casts of three fathoms; in his own boat, the least water found

was four fathoms; thus showing the necessity of having this bank properly overhauled. In page 448 of the Directory it is said the East India Company's surveying ships had two casts of twenty-four fathoms about nine miles to the westward of Apo Shoal; this is a remarkable coincidence in situation which I leave others to speculate upon. Proceeding to the southward Mr. Horsburgh gives a minute description of coral banks on which he sounded in the Anna, bearing nearly west from Ambolon; these, however, are omitted altogether in his chart. None of the vessels which have been cruising near here chancing to get on these banks I conceive them to be small. There are no soundings contiguous to the west side of Ambolon, which may be rounded at any discretional distance.

Then, of the Semirana Islands it is said in the Directory, "that a long sand projects a great way out from them to the westward, with two islets on its centre covered with trees." Nothing of the kind is inserted in the chart. This is the reef on which two ships were wrecked lately. You will, therefore, no doubt have a particular account of it by this time; it is called by the Spaniards, Panagatan, and appeared to us in passing to be separated from the Semirana Islands about five or six miles by a clear channel. The latitude of it, from a sight taken about six miles distant, I should call 11° 49′ N. centre; and the course from the west side of this reef to the west side of Ambolon is N.W.b.N., therefore, this latter situation being called 121° 15′ E., will place the western part of the reef in 121° 29′ E. It bears west from the south side of the Semirana Islands, which brings that group farther to the southward than delineated. Of Ambolon also it will be seen that the chart disagrees with the situation assigned to it in the Directory.

Farther to the southward in p. 413 of the Directory, a statement is made of an island bearing south-west, and distant four or five leagues from Point Potol, having a safe and wide channel between it and Panay. This account is quite correct, but the island is omitted altogether in the chart. It is of moderate height, about five or six miles in circumference, inhabited, and with a reef projecting from it to the south-west about half a mile. An island is placed in the chart about two miles from Point Potol, of which I can say nothing, not having sounded the Point so closely.

Then mention is made of "two islands near the shore in latitude 11° 32′ N." One of these is high, and lies at least six or eight miles from the other, or, any part of Panay. Of the Cagayanes Islands the paragraph in the Directory says, "they are surrounded by a reef which projects a great way out from their northern extremity; detached from the easternmost island at one or two leagues distance there is another reef." Referring again to the chart we see the islands delineated near each other, with a reef around them; but extending nowhere above one or two miles, and the reefs to the northward and eastward entirely forgotten. I have only approached these islands on the south side, where the reef extends a very short distance from the land: however it is quite certain that the reef extends to the northward, (I have been informed to 9° 50′ N.,) and that there is a narrow passage between it and the reef surrounding the islands. It will be well also to give the book credit for the eastern reef, of which I have no account.

Again, quoting from the Directory, Cavelli Island is stated to be a high sand bank surmounted with a tuft of trees, and with breakers projecting from its western side five or six miles. In the charts we can find nothing of the breakers. At this island I have had boats ashore, therefore can speak with greater precision. It is wooded with heavy timber, and has a reef extending from it in all parts about three-quarters of a mile. The breakers mentioned by Mr. Horsburgh are on a detached reef, having a clear and safe passage between it and the island of one mile and a half or two miles; the centre bearing about W.S.W. from Cavelli Island, and having on it a small sand bank (or cay) with trees: in other parts also the sand is dry, of an oval shape, the greater length being in an east and west direction, and in size similar to Cavelli with its island, about six or eight miles in circumference. Westward of Cavelli Island are two extensive reefs which I saw and passed near on the 14th of July, 1841. These reefs are in shape, extent, and direction of trending exactly similar to those inserted as Goob Bataha: it is reported that these latter have no existence in the situation assigned to them, but I cannot speak to the fact, not having crossed the locality. Of the reefs mentioned I made the south end in 8° 45′ N., which, will be observed, is nearly a degree northward of Goob Bataha, and my chronometers measured 1° 18′ between the same point and Manook Manookan, which island appeared to agree nearly with Cagayan Sooloo; also fifty-nine miles from thence to the middle of Cavelli Island. From the south point they take generally a north easterly direction, and seemed about twenty miles in length by five or six miles in breadth at the widest part; the southern reef being small in comparison with the northern one, and having a channel of about one mile and a half between them. They are steep coral reefs forming a perpendicular wall to seaward, and elevated a foot or two out of the water in some places on which sand has collected; there are also a few black rocks interspersed on them; still, it will be proper to state that, we only approached the southern of these two reefs near enough to see distinctly its whole extent: the northern was seen from a greater distance, therefore, I cannot pretend to give any particular account of the limit in that direction.

The three small islands inserted as Manook Manookan, Bancawang, and Bancooran, appeared to us in passing to be erroneously placed as to relative positions; the southern islands Manook Manookan, and Bancawang, from our view seemed near each other, with shoal water extending across; they are somewhat elevated, perhaps 100 feet. Westward from the southern part of these islands and distant two or three miles there is a sand bank and a cay, with the adjoining patch of coral reef rather extensive; indeed, altogether to the westward of these islands it appeared foul ground. The other island, Bancoonan, which is inserted N.N.W. from those last mentioned, distant four miles, lies N.N.E. from them, and is distant at least fifteen miles: this island is very small, and lower than the others, steep to on the south side, but has a reef extending from it to the northward and north-west about two or three miles. Standing in to the north-westward from hence towards Palawan the sea appeared clear.

To these may be added a few other disagreements, some of which seem to be typographical. The Tahow bank is said in the Directory to be

situated in 6° 44′ N., and is inserted in 5° 44′ N., which is correct. Samboangan is stated to be in 6° 43′ N., and is placed in 6° 53′ N.; D'Urville calls it 6° 55′ N. Sooloo Towa is stated to be in 121° 12′ E., and is delineated in 120° 45′ E., making a difference of twenty-seven miles; with respect to which I may remark that Sooloo, and all the islands between it and Borneo appeared to me to be inserted in Mr. Horsburgh's chart about twenty-seven or thirty miles too far to the westward, speaking with reference to Bassolan. Then, Belawn is described as having "a high round mount on its western part, with a long span of low level land, extending several miles to the eastward." I have passed near this low land several times, and to me it always appeared a distinct island, from that having the high round mount, with a passage of six or seven miles between them. I am, indeed, certain that the south-easternmost of the Sooloo Islands is low with no high land attached to it whatever. R. L. H.

Heaving Down H.M.S. Medina.—*By Com. R. Harris, R.N.*

The Medina having struck upon a rock near Cape Colonne, in 1824, made so much water that the ship was with difficulty brought to the entrance of Port Leone, where she was grounded. On September 14th, at 8h. A.M., she was found by H.M.S. Euryalus, Martin, and Cyrene, lying on her starboard side with the water washing over the upper deck.

The pumps of the two corvettes were got out, and at 9h. 30m. A.M parties were sent to pump and bail her out. At 3h. P.M. the Medina floated, was warped into the harbour, and securely lashed to the Euryalus, with a stream cable.

15th.—The water was reduced to one foot, and preparations were made for heaving the ship down.

16th.—The Euryalus and Cyrene were moored head and stern, in positions for heaving the Medina down.

17th.—At 8h. A.M. commenced heaving. Carried away the main purchase fall, owing to the ground ropes not being taut enough; at 9h. rove a new fall, and hove the ship keel out; employed repairing false keel and fore foot until the 21st, when the Medina was righted and fitted for sea.

Preparations.—Every thing was taken out of the Medina excepting two tons of ballast, which were placed under the poop: several water casks were lashed under the bow on the side to be hove down: pieces of plank were nailed over the bull's-eye: the forecastle and poop decks were bulkheaded half way across, and well caulked; tarred canvas was nailed over the quarter gallery: pumps were put down the hatchways, resting on the starboard side, so that when hove down they could be brought into use; platforms were rigged for the pumpers.

Securing the Masts.—The wedges were taken out and the rigging set up so as to bring the masts against the partners; the mast-head shores were well lashed aloft, and the heels stepped on strong planks

and lashed to the side; the belly shores were lashed one-third from the trussletrees and stepped on the same side as the mast-head shores. There were two outriggers for the fore-mast, and three for the main-mast, all of which were secured by martingales to ring bolts driven into the side below the copper. A stout spar was lashed over the outriggers inside and secured to the breeching bolts, so as to bring them all to an equal strain. They were also shored in the portsills, and gammoned to the side tackle bolts; runners and tackles were used for outrigger shrouds.

Spars for stores and outriggers.—Main-mast head shores, fore ditto, belly shores, main outriggers, fore ditto, Euryalus' spare top-mast, corvette's top-mast, jib-booms, corvette's top-masts, Euryalus' yard-arm piece, corvette's top-mast.

Positions of the Ship.—The Euryalus was the outside ship, moored with two anchors ahead and two astern. The Cyrene was half a cable in shore of her, with two anchors ahead, a stream anchor astern and a hawser from her quarter to the shore.

Two corvette's hemp cables were passed between the Euryalus and Cyrene, the ends secured to the ports of the latter, and the bitts and capstan of the former; these formed a cradle for the Medina to rest in. The ground ropes for tripping, were fast to the Medina's fore and mizen masts, and worked or belayed on board the Euryalus. The relieving tackles secured to the Medina's fore and mizen masts, passed under her bottom and hooked to the Cyrene's runners at her mast-head.

The lower purchase blocks were toggled at the water's edge to the bight of the Cyrene's cable marled to form an eye, which passed under the Cyrene's bottom and secured to the opposite ports. The leading blocks were lashed to the eyes of the Euryalus' messenger secured in a similar manner.

The main purchase was three-fold, and led to the Cyrene's capstan. The fore purchase was two-fold and led along the deck.

The Medina was found to be much injured, the fore foot being completely knocked away, and the false keel much damaged.

In ten days from the date of the arrival of the ship at Port Leone, the Medina was at sea! On her return to England, two years after the accident, the ship was docked and the copper stripped; the writer has been told that no further repair was considered necessary.

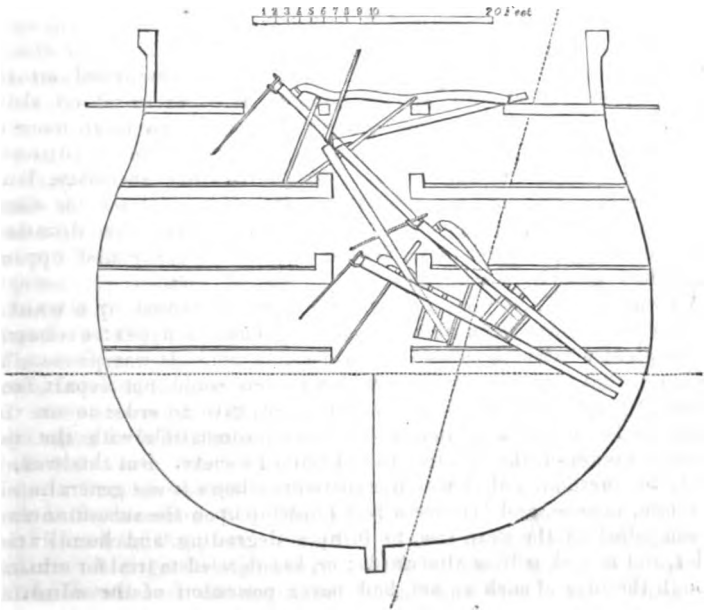
Note.—The method of securing the lower purchase blocks is exceedingly simple, and well worthy of notice.

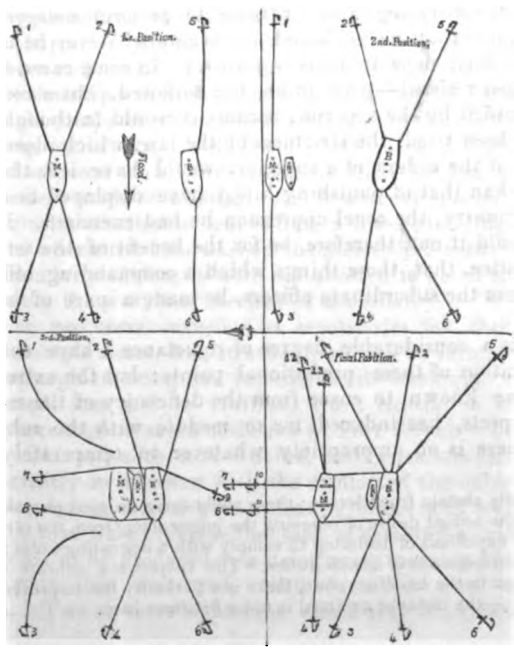
In heaving down a corvette on a very recent occasion, the adoption of a similar plan would have saved some trouble.

In heaving down in deep water, a cradle similar to that used for the Medina is advantageous. In old vessels it is very difficult to keep the upper works tight, and it was not long ago that a 16-gun brig sank twice in the operation of heaving down.

The spar lashed above the outriggers is recommended in small vessels.

[The annexed Diagrams belong to the article on "Heaving Down of the Melville," concluded in number 10, p. 693.]





Nautical Rambles.—The Leeward Station during the War.
Port Royal and its Associations.

(Continued from p. 753.)

I need not apologize for the strong opinion I have expressed on the manner authority has been, and no doubt is still, exercised on shipboard. All those who have gone through the war know much more on this head than they would willingly state: indeed, I am not tilting at individual instances, nor am I aiming at depreciating authority, I am an advocate, and always have been, for well defined reasonable discipline, and a proper, but not humiliating or degrading subordination. Anything carried beyond these, degenerates into tyranny and oppression, which everybody condemns.

A great deal of the mischief which ensues, is caused by a want of definite restrictions upon the commanding officer's power: a chapter pointing out what he *may not do* is a desideratum. It was presumable no doubt, that a gentleman in so high a station could not depart from the strict propriety of gentlemanly feeling, or, give an order to an inferior, he being also a gentleman, that was incompatible with the understood usages of the service, and of refined society. But this was, or would be, presuming that which experience shows is not general. It, therefore, became, and becomes a real hardship upon the subordinates to be compelled by the stern law, to fulfil a degrading and humiliating order, and to seek redress afterwards; or, be subjected to trial for mutiny, though the idea of such an act had never possession of the mind. I have just said that, the law does contemplate the possibility of a commanding officer directing a subordinate to perform a degrading order under the plea that he is bound to execute whatever he is directed; yet, this has been done in some instances. In some cases, indeed, the order has been resisted—persecution has followed, but a court-martial has been avoided by the superior, because it would (although, had the subordinate been tried, the strictness of the law, which does not recognize refusal of the orders of a superior, would have left the court no alternative than that of punishing him,) have displayed to the service, and to the country, the cruel oppression he had exercised. I here state facts.* Would it not, therefore, be for the benefit of the service; and, an act of justice, that, those things which a commanding officer should not exact from the subordinate officers, be made a part of his instructions?

It is with a considerable degree of reluctance I have entered upon the consideration of these professional points; but the extreme misery which I have known to ensue from the deficiency of the military law in these respects, has induced me to meddle with the subject at all; although there is no impropriety whatever in temperately doing so.

* I designedly abstain from details; these could serve no good purpose. I have a higher aim,—the ardent desire of relieving the junior officer from the very distressing and hazardous expedient of declining to comply with a degrading order; such for instance as the performance of *menial* duties. The subject is a delicate one, and requires discretion in the handling; but, there is a necessity for improvement in this very particular,—the instance assumed is not a fictitious case.

If every man invested with power could be found regulating his actions in strict conformity with the principles of justice, humanity, and integrity of purpose, then, indeed, there would be no necessity for laws to guide his conduct: but, when it is found far otherwise, surely those, equally useful in their stations, who have to *obey*, should be sufficiently protected from caprice, laxity of principle, or from tyranny and oppression. Return we again to the "associations." I do not recollect Divine Service to have been performed on board our ship whilst in Port Royal, although it was often attended to whilst at sea, and in other ports; the Captain officiating as Minister. The Church here is on too small a scale to admit the crews of vessels; and very few ships at the time I speak of, were provided with a Chaplain; indeed, there are not many now. The expense of erecting a suitable building for this desirable purpose, may probably be avoided by sending out one of the old seventy-fours to be fitted as a Seamen's Chapel, for the use of the crews of the frigates and sloops of war which are without a Clergyman.

Some Commanders were averse to the presence of a black-coat on board, fancying that Jack was liable to be turned into a "psalm singer," and when once so, becomes good for nothing. This species of character could never be tolerated within the bulwarks of a man-of-war. But I think the alarm was groundless, for it was quite unlikely that the seaman, from his habits would have fallen into a state of fanaticism (such is the meaning, I suppose, attached to the term "psalm-singer,") from attending the plain, though impressive rights of the Established Church. A large sheer either in a hulk or fixed was a desideratum during the war. I do not know if one has been erected since the peace.

In such a warm climate bathing is so far conducive to health as it keeps the microscopic pores of the body clear from obstructions. On ship board the men have no convenience for such a purpose: whilst in Port Royal a division of the ship's company may be permitted to bathe at Green Bay, or the old prison hulks may be converted into "bathing machines" for this purpose, if they still hold their place. There were few captains and surgeons who did not agree in their opinion of the utility of such a perfect mode of ablution, for it was not uncommon in most ships during calm weather at sea, to have a lower-studding sail spread overboard, in which the men washed themselves. I need scarcely add that the reason why the crews were not allowed to go on shore for that purpose, during the war, was the fear of desertion.

A hulk or two were wanting as repositories for the purpose of receiving the ship's stores, &c., in order to rid her of vermin, and purify her by a thorough smoking and internal white-washing. A frigate in which I served, was sent to Halifax, Nova Scotia, to undergo this process, as there was no accommodation at Port Royal. This ship was so infested with rats, mice, cock-roaches, centipedes, scorpions, and huge spiders, as greatly to interfere with the comfort of the officers and men, and to render her in some degree a floating museum of zoology.

The ship's boys were ordered the task of catching a certain number of cock-roaches to be produced on a string every morning; but, although thousands were thus destroyed, their numbers were not sensibly diminished. Two or three oppossums would slay ten times the number

the boys did, and require no other food. This we found out from having one of those animals on board; he took up his abode in the cable tiers, and became in "high condition" from such delicate fare. The spiders, although of formidable appearance from their great size, are not venemous; their assistance, however, in destroying the cock-roaches is but feeble, as they content themselves with catching those that unwarily approach too near to their lurking places. I do not believe that the rats eat the blatta; they appear to require more substantial food, such as biscuit, peas, &c., of which they consume large quantities; and the mice are little less destructive. Many of the rats became so familiar as to step upon the men's shoulders to be fed.

In some of the small ships the cock-roaches were so extremely numerous as to become very tormenting to all on board; awake or asleep, sitting or walking, they invaded the person; and often flew into the glasses and cups, and sometimes extinguishing the lights; defiling every thing they touched with their disagreeable odour. I have seen the bulwarks so covered during the evening, or just before rain fell, that scarcely a foot of the wood could be distinguished through the living swarms!

Clearing the ship of everything on board, and subjecting her to a thorough purification, occasionally appears to be the only mode for lessening the nuisance. To accomplish this properly, hulks are required, and as we have plenty of old ships, two or three of these may advantageously be sent out to Port Royal. These vessels would also be of great use in expediting the fitting, or rather refitting of the ships. The repair of sails, the painting of the blocks of the gun-tackles, and sundry other small duties which require room for their performance, and which, when carried on on board the refitting vessel, interfere with the reception of stores, provisions, and water, might be conveniently carried on board of them.

I recollect that the want of such accommodation in port, once induced the captain of a frigate to order the gun-tackles to be removed from the guns and painted, whilst returning to Jamaica from a cruise of ten or twelve weeks. The guns were secured, as there was no apprehension entertained at the time of meeting with any of the enemy's larger vessels; when during the darkness of night, a ship under a crowd of canvas came sheering up close alongside, as suddenly as if she had risen that instant out of the water, or had dropped from the clouds. The breeze was light, and the sea quite smooth, and she gave no intimation of her approach until alongside! The surprise was complete, but most fortunately she proved to be —— corvette, but recently captured from the French, and commissioned in our service. Not knowing such a vessel by her foreign name, which she retained, it was some time before our alarm entirely subsided. Had she proved an enemy, we must have stood a broadside or two before we could have fired a shot. Of the risk run I shall not say a word; but had there been a hulk in port the dilemma we fell into would not have occurred. The necessity that existed for such a convenience could not possibly have been more clearly made out.

Animate nature, both in the air and the water of the harbour of Port Royal, vies with the inanimate but attractive objects and the various

embellishments of art in giving a finish to, and enlivening the beautiful picture. It is impossible for the most indifferent spectator to row across this fine port, without having his attention arrested by the astonishing number of living things moving about its surface and immediately beneath it, glistening in the rays of that glorious luminary, to which we owe so much comfort, and from whose warmth they seem to derive a large share of that corporeal gratification which a beneficent Creator has not denied to the lowest of His creatures. The great Medusæ figured with a star, at times almost cover the surface; and, although of a colourless jelly-like substance, from their semi-spherical shape, and constant motion, the reflection of the rays of light adorns them with prismatic colours. A variety of fish, differing in size from the huge *Lophius* of 90 or 100 feet, to the small fry of a few lines only in length, are seen pursuing that universal object,—the catering for food,—which is inherent in everything that breathes. There are among these a few which delight to swim at the surface, and are of that slender sword-like shape, which appears to be favorable to the velocity of progressive motion for which they and their congeners are so remarkable.

Of birds we do not, indeed, hear the delightful notes of the nightingale, or mock bird, or those of the Xanthemus or Banana bird; but we are amused with the vigilance of the sea-gull as he sweeps along the surface of the water; or with the drowsy flight of the heavy pelican as he plods his way towards the Palisades, the bare point of which he has chosen as his place of rendezvous. And there too may be seen many of those ugly, but useful birds which are inseparable from tropical scenery, the carrion crow or turkey buzzard.

The following circumstance which occurred to me, and which relates to this tribe of birds, is of so amusing a character that I shall introduce it without apology.

Whilst our ship lay in the beautiful harbour of Lucea, I was on two or three days' leave visiting some friends. Early one morning I strolled along the fine sandy beach, which stretches in a crescent-like form from the Rock to Barberry Hill. It was my intention to have gone as far as the entrance to Riley's river, to examine the bar of this small stream, which I had been told was composed of very fine quick-sand; but, before I had got a few hundred yards, observing a number of carrion crows alighting one after the other upon the strand, I seated myself upon the prow of a canoe to watch their movements.

Whilst intent upon this observation I was surprised at the sudden appearance of a Mulatto lad, named Frank, (servant of a friend of mine who lived at a delightful place called Friendship Grove, on the coast to the eastward,) who I did not see until he stood by my side. Frank was a very lively intelligent fellow, very fond of asking questions for the purpose of gaining information on subjects which he did not correctly comprehend; and in return was very communicative when information was required of him; but, I was subsequently told that, he was constantly getting into scrapes by riding his master's horses during the night, successively, to visit his sweetheart, who dwelt a few miles from his residence, a common practice with the domestic servants.

He accosted me with the usual salutation; "Hope, massa, is berry well dis morning?" and, before I could reply, he added, "Massa look

'pon John-crow, sa?" This was said with an air of surprise, as if the crows were a class of animals perfectly beneath the dignity of buckra to notice. "Why not, Frank, they are of some importance in the economy of nature?" said I. "'Portance, for true, sa! dey 'trut (do dem poor enough,) like buckra dat hab plenty of money; but, for all dat, dey 'tand de same as nega man who hab white somebody for him massa." "How do you make that out Frank, except in colour I do not see any resemblance to the negro, whether he has, or, has not a white man for his master?" "Massa don't know den dat John-crow hab white king?" Suspecting that Master Frank was playing off a little sarcastic wit, (at which he was an adept,) at the expence of "buckra," by insinuating that the white man considered himself sovereign lord over the vultures, as well as over the negroes; my answer was, therefore, given in such a way as to elicit his real meaning,—with an air of surprise I repeated his words: "John-crow have white king! no, Frank, I did not know that these birds owed fealty to any king, whether white or black. What is it you mean?" Frank laughed heartily, and seemed to enjoy greatly the enviable position in which Fortune had, once in his life placed him, in knowing something which was not known to, at least, one buckra; and merely repeated his former assertion, with a declaration that it was true.

This reiteration almost convinced me that my former surmise was correct. I, therefore, determined to push the attack for explanation by circumlocution, instead of making a direct demand for his surrendering it instanter. "Where does the John-crows' white king reside?" "Oh! he lib in de mountain, sa." "Indeed!" "Yes, sa." "Does he live in a house?" At this question Master Frank indulged in a very unrestrained fit of laughter, and could scarcely articulate his reply of "Oh! dear, sa, no lib in house." "Where the de'il then does he live—in the bush?" "No, massa, (still laughing) he no lib in house nor bush;—he hab high trone where him sit all day long!" "What, sit upon a throne all day?" "Yes, sa." "Where then does he sleep?" "Oh, nobody can tell dat,—he hold great court sometimes,—hab too many—plenty to pieces—subject dat sit in state round him; and dere dey sit like fool—look 'pon one-a-noder,—neber mobe, nor stir, nor open dem mouth! Massa, I nebba see sight lik dat but once. 'Twas all de same as Massa Parson wid him white gown at nega berrying to look 'pon, all but de talkee!"

Perceiving that the rogue was working himself up into a state of excitement, by the earnest manner in which he delivered himself; and fancying that like the improvisatore of Italy, he was pouring out an unpremeditated romance, I determined to let him continue his tale, without interruption; and merely said, "Go on, Frank, go on;" for I felt as anxious to listen to his story, as he seemed to feel to relate it. He continued,—"Well, massa, you must sabby, de place 'tand in de mountain dis side of Cacoon Castle Penn, 'back of doctor Walker place which dey call Chigwell; and between dat and Forest Penn. Well massa! dat same places lonely to piece;—Cho! 'nough to make hair 'tan 'tiff on nega man head." Forgetting my resolution of not interrupting him, I involuntarily exclaimed, "It must be a good purchase to do that my lad!" This brought on another fit of laughter, and after it sub-

sided he continued: "Big, big rock-'tone, you see, massa, shoot up high, 'tand twice higher dan ship mast,—plenty tall, tall tree grow ebbery side—dem branch dis way, and dat way—'pread out ebbery where; suple-jack tic-tic. 'Cotchman-'queeze creole,* creep up tree top, plenty, too much, you see, sa, 'till ebbery ting look dark like hurricane time! no see no sun, no sky, no ting but big rock, and tree, and one lilly bottom wid grass smooth like Miss Nelly's piazza! Well, you see, massa, I hearry old Massa Sam Pinto,† at de Forest, tell how dis ya king of de John-crow keep him court in dis same bottom, from one berry long bullet tree, dat hab no branch, no leaf; because, you see, massa, de lightning 'trike him one day, break all de branch smash, and so kill de tree right out. Dey say, too, dat de tree all white like de king; no hab no bark; woodpecker tap, tap, tap, tap till him work all off. Dis berry tree de king use fa him trone. Now, massa, you begin sabby someting 'bout John-crow king." "Aye, I understand, Frank, go on, go on with your story." "Cho? no 'tory, sa, all true, sa." "Well, well, I believe it, go on."

"Well, massa, I hab curiosity too much, I long too much to go see dis place—so I make up mind, next I go dat way, to go see dis same king of de John-crow in all him glory; and so I tell old Massa Sam Pinto out right. But him old wife she say: 'No go Frank, boggaboo‡ lib dere, and Obia man 'top de pass!" At this old Sam laugh, and him say, 'Go, Frank, you no see such ebbery day, my fine fella; you no hab woman heart, nebba fear da de clucking hen,§ dey take fa boggaboo, and humming-bird nest look like Obia man bag.' Berry well, sa, I 'tiff for go; so one day when I go by 'pon Massa Billy Walker mule, (dey call him Old Blunderbuss,) and when I come to de lilly open place, I turn de mule head dat way, but, he 'top short; no budge, no mobe! I gib him 'pur, gib him whip, all de same, he 'tand 'tiff! Dis look berry 'trange fa true. So I begin to tink mule hab some sabby 'bout boggaboo, he fear fa someting in dat dark place; but, 'what fa *me* fear? *me* no hab mule heart!' I say dis out loud to myself, sa, 'cause I no hab nobody but de mule to talk to. 'What me fear fa boggaboo?' At dis moment, massa, I tink I hearry voice say, 'Frank, you tell lie, you fear too much man!' I look round quick—I listen—no hearry noting mobe, all 'till,—too much softly fa somebody fa like; but den I say to myself, 'If I no go, old Massa Pinto, and de negas at de Forest hab laugh 'gainst me.' So I make bold, massa, feel 'trong heart; and den I jump right off de mule: de poor creature him turn him head round, look me full in de face, and cock him long ear; one turn one way, one toder way; and den him shake him head, much as to say—no go Frank. But I tell him, poor ting, 'him coward! him better 'tand 'till, I come back presently.' So den, sa, I 'tand up 'tiff, 'trike breast two or three time, and crow¶ like a game cock! Oh! den I feel brave like trooper.

* This is a name given to those large climbing plants (with turning stems, *Caulus volubilis*) by the negroes. They are similar to the *nebus*, or ligneous ropes described by Capt. Stedman, as being common in the forests of Surinam.

† Old Sam was a "character;" he was factotum to R. B. James, Esq., of the Forest.

‡ Ghost. § A sort of jungle fowl.

¶ This is a practice among many of the negroes; it probably excites, and infuses

"Ebbery 'tep I take, sa, it grow darker and darker, noting mobe, I 'top short, look round, and begin to tink it too much quiet; but, den I say to myself out loud, 'Suppose him quiet, Frank no feard, he hab 'tout heart, he h—ll of a fella fa face danger.' Well, massa, you beliebe me, I hearry de berry same voice again say, 'Frank, you lie, you fear too much man!' Dat make me 'tart. De voice no like dat belong to libe somebody. You no wonder den, massa, dat I begin to feel cold, when I tell you, no sun fa warm somebody; grass, and bath, and tree, all wet,—drip, drip, drip, doo it no rain. Well, I say, to myself, dis time I no talk loud—'When you carry Busha's* gun, and go in de rear rank after Maroon, you hab bold heart, wha' fa you slow just now, Frank!' Den I crow again like game cock, and I feel 'trong,—make up mind to go, boggaboo, or, no boggaboo; so I push troo bush, and soon come to de Flog-tree Bottom—buckra call em Cock-pit, sa.

"Oh! massa, den I see de sight— I look up 'trait before me, and dere I see John-crow king upon him trone, and all him black John-crow 'pon tree round him,—oh! plenty, plenty, too much plenty—all sit 'tiff—no hab de least mobe,—ebbery ting softly! I look 'pon him, massa, 'till eye-ball sore. I 'top dere long time to see if dey mobe,—all de same,—dey all face de king,—no hab least motion. Well, sa, I begin feel cold again, when I tink say it look like someting no belong to dis here world; me heart feel sick wid de silence, cold too much great—blood creep up head—tingle, tingle all ober—teeth dem play hornpipe, chatter, chatter, and I no hab power to mobe from de place; I no know what come ober me; I feel like somebody go fa die, and I tink say I must hab turn *berry pale in de face!*" Here, I could refrain no longer; but burst into a convulsion of laughter that held its course for ten minutes! Frank laughed too, but the poor fellow did so from mere sympathy, and never dreamed at the cause of my committing so great a breach of good manners. When the ribs had resumed a state of quiescence, I desired Frank to proceed.

"Well, sa, dere I 'tand, 'till I tink some ting draw cross fa me yie—no see plain; and jus' as I was going to call out, Frank hab 'tout heart, someting touch fa me back. Whey! massa, you beliebe me, I 'pring tree yard good, and den I fall down flat 'pon me face; when I recober meself, great noise ring in me ear,—flap, flap, flap,—rush, rush, rush; it sound, sa, jus' like Massa Gilpin waterfall when rain fill de gully up at de place dey call Cascade. Well, massa, at last, I venture to look up, all John-crow, king, and all—gone. I see no ting but de poor old Blunderbuss; him feard fa top at de pass, so him come in fa look fa me."

As soon as Frank had concluded his story, he ran off as fast as his legs could carry him, although I held up a nackaronie† as a reward for his entertainment.

I found upon inquiry that Frank had not been romancing; that the circumstance he related was perfectly correct. The reader, perhaps, will not find it difficult to make out the negro patois; it is not more

an artificial courage into the heart that is wavering; at all events it seems better than *grog* to create "Dutch courage."

* Overseer. † A silver Spanish coin a fourth of a dollar.

unintelligible than the language of Chaucer's Tales. Some years after the recital of Frank's adventure, I had the satisfaction of seeing a white "king of the vultures," not far from the spot alluded to in the story. It had a very singular appearance as it sat alone on the top of a very high tree, which from some cause had been completely denuded of its branches, and blanched by the weather. I presume it was not "court day" with his winged majesty, as I did not see a single "John-crow" near the place. In so far, it will be seen that this opportunity verified in some parts the correctness of Frank's description.

(To be continued.)

LIFE-BUOY.—*Proposed by Commander Beadon, R.N.*

Two great deficiencies in the present excellent Life-Buoy, invented by Lieutenant Cook, and now used in the Royal Navy, have for a long time occupied my attention: these are the want of some method to prevent the rapidity of its drift, and some means whereby a man can regain the ship after he has got upon the buoy. Of the first, numerous proofs are afforded by the fact that good swimmers have often struggled almost to the last stage of exhaustion, before they could reach the buoy, although they were close to it at first, and simply because it continually drifted from them, almost as fast as they could swim.

In proof of the second it is often recorded that an unfortunate fellow shipmate has been left on the buoy to meet a protracted and miserable death, because the sea has been running too high to lower a boat. Other instances are given, were attempts made to assist men on the buoys now in use, have proved most disastrous. It will be sufficient for the present to name the loss of a whole boat's crew belonging to H.M.S. Melville, bearing the flag of Sir John Gore, off the Cape of Good Hope, in 1832. It is, perhaps, unnecessary to state that in all cases when a man falls overboard, the buoy is "let go," and the ship rendered as stationary, or kept as near to the buoy and man as circumstances will permit. A life buoy when disengaged is influenced by the same causes as a ship; but as a ship offers greater resistance to the wind by her lofty spars and gear, it follows that she drifts faster than the buoy, consequently the distance between them is continually increasing, until both buoy and man are lost to view to windward. I can refer to several eye witnesses of such agonizing and indescribably heart-breaking farewells. The drift of my buoy is materially prevented by its deep keel, and the wind acting on the light staff and the oar, by which it is caused to drift in an oblique direction to the wind.

I consider a man will be able to return to a ship in any weather, by the means described in the drawing, and I moreover think that my buoy will be found valuable for taking a line on shore in case of wreck, or *vice versa*. Also that it will be found a ready means for one man to proceed to the rescue of another. In short it is a portable life apparatus, calculated for use when boats cannot encounter the sea, or are

not immediately at hand, or may have been rendered unfit for use by shot or other causes.

In conclusion, I beg to observe that the present invention does not owe its origin to a mere chance thought, or a speculative imagination, but that it has been conceived in a desire to obviate the foregoing imperfections of the common buoy, and has been matured by a laborious and expensive course of practical experiments. I have tried many plans for propelling, and find I cannot improve upon the simplicity and effectiveness of the oar for this purpose. I offer the invention untrammelled by any restrictive right, and as its expense cannot exceed £10., I trust that prejudices may be thrown aside, and for humanity's sake that its utility may be further tested.

The new life buoy invented by Commander Beadon is a metal tube 8 feet long and 12 inches at its greatest diameter, and is tapered towards its after end so as to permit it to pass freely through the water. It is conical at each end, and being divided into compartments or cases, which are water tight, it is less liable to fill with water. These cases or drums are distinct and separate from the outer cylinder, but are made to fit its interior nicely, whereby it is much strengthened and supported on the inside from external pressure. On each side of the cylinder is a wing which is secured by stop hinges and screws to cylindrical blocks of wood fitted inside the cylinder. On the under side of these wings are semi-cylindrical buoys, terminating in semi-conical extremities. These wings hang down when the buoy is suspended at the taffrail, but form outriggers when in the water, It is fitted with a light staff and fuze, and is suspended under the taffrail by chain slings passed under its keel, and terminating in one shackle, and is let go and fired in the usual way. The double-bladed oar by which it is propelled is attached to a moveable rowlock, suffering it to have a perpendicular and a horizontal motion, but securing it to the buoy.

The annexed wood cut represents a man on the buoy in the act of returning to the ship to leeward.

[We recommend this to the attention of our Yarmouth correspondent.—Ed.]

Notices of Japan.—No. IX.

(Continued from p. 690.)

These horrible, as well as tragical scenes, are blended, according to Meylen with comedy; and any such law as that of the unities of time and place appears to be altogether unknown, One play often dramatizes the birth, life, and death of its hero, whilst the scene changes from island to island, and passes over to the continent, if it does not even ascend from earth to heaven, when the adventures of a deity form the subject. The only additional information given touching the plays themselves is, that more than two persons are seldom, if ever, upon the stage at once.

The actors are said to consider declamation as the most important part of their art; and from the astonishment expressed at their maintaining for a quarter of an hour together an unnaturally raised, strained, and passionate tone of voice, it must be inferred that their style of declamation is ranting. What is esteemed the perfection of histrionic talent, however, is one actor's performing several different characters in one and the same piece. This frequent alternation of the parts played by one individual is of course much facilitated by the small number of persons who appear upon the stage together: and it is not unlikely to have given rise to a singular practice of the Japanese theatre; the performers are said frequently, if not habitually, to pass through the pit in their way on to the stage; the reason assigned for which is, that the audience may be the more familiarly acquainted with the costume and appearance of each character. If this species of knowledge is so much more difficult to be impressed upon a Japanese audience than upon any other, it must probably be from the frequent breaking of the association of each actor with his especial character, elsewhere established once for all for each play.

Actresses there are none in Japan; the female parts are therefore filled by boys; but it does not clearly appear whether this proceeds from the excessive fatigue of the profession in that country, to which no woman's strength is thought equal, or from the utter contempt in which actors, although extravagantly remunerated, are held, and which no woman can be suffered to incur. This contempt originates in an idea, that the man who will temporarily renounce his own character, and assume one foreign to his nature, for the amusement of others, can have no sense of honour; and, as a common consequence of being despised, the Japanese actors are said to be distinguished for immorality and licentiousness. In common justice to the players, the concluding remark of one of the Dutch critics (Fischer), who speaks contemptuously of their skill in the histrionic art, should be added: "This satisfactory and inartificial representation in all respects surpassed our expectations."

But, perhaps, the most original point relative to the Japanese stage yet remains to be told. It is the mode, or rather the order, of performance. Three pieces are frequently represented the same day; not, as with us, successively, in wholes, but in portions or fragments, viz. first,

the first act of one, then the first act of a second, then the first act of a third; and then, returning to the first play, the second act of this first play, and, successively, the second acts of the second and third plays, and so on, till all three are completed. Thus any of the audience who wish only to see one of these pieces, or who dislike the confinement of sitting out the whole—it need hardly be said that the three tragi-comedies occupy great part of a day, from early in the afternoon to late in the evening—may withdraw to smoke, drink sake, or attend to business, whilst the pieces they care not to see take their turn of representation, coming back refreshed to witness the next act of the favorite drama. The Japanese ladies, however, so far from objecting to the length of time to be spent in the theatre, appear to consider it as a peculiarly happy opportunity for displaying the stores of their respective wardrobes. They are attended to the theatre by their female servants, with an ample supply of dresses, and repeatedly change their attire in the course of the afternoon and evening. The theatre is said to be a very favorite amusement of the Japanese, but it is also very costly; and in that country, few persons can afford to indulge in unnecessary expenses.

Before leaving Ohosaka,* the Dutch deputation receive the goods bespoken on their way to Yedo. On the island of Nippon, they likewise provide themselves, amongst other things, with a stock of charcoal, an article of first necessity, and said to be very expensive at Dezima, whither all are dispatched by water, along with the heavy baggage.

The last night of the journey, the travellers sleep at Yagami, where their friends, interpreters, and others, from Nagasaki meet to congratulate them upon the prosperous termination of their expedition. Here, too, their trunks and baggage are examined and sealed up; but the investigation is conducted with a forbearance that allows the prohibited wares, that are well known to have been purchased, to pass undiscovered.

The next morning, every person acquainted with the Dutch meets them between Yagami and Nagasaki. Upon the arrival of the bark with the remainder of the baggage, the president gives the gobanyosi, who has accompanied him, an entertainment. A few days, afterwards,

* Ohosaka is distinguished among Japanese cities for its amusements of every sort, and for the wealth and mercantile enterprize of its citizens. The theatres there are famous above all others in the empire, and are moreover stationary establishments; for in Japan, as in China, this amusement is presented to the people at intervals by companies of strolling actors, who hire themselves out by special arrangement. At Ohosaka, the patronage is such as to call forth the best actors, but in other large cities, (as the capitals of different principalities,) the stationary theatres do not appear to attain to as much excellence. In small towns and villages, among which probably Nagasaki may be included, theatrical entertainments are held only at intervals. Companies of players, including wrestlers, tumblers, musicians, and mountebanks, as well as actors, are found in all parts of the country, ready to perform for individuals at entertainments, for corporations on festivals, or for whoever else will pay for them. The price of admission varies from two to five dollars or more, besides which the spectators are expected to eat at the theatre on the mat which they have hired. In Chinese theatres, the stalls for selling hot and cold provisions, confectionary, &c., form no inconsiderable revenue to the managers.

he pays the governor of Nagasaki a visit, and with that closes the ceremony of the periodical journey to Yedo.

As we are now to turn from the personal narrative of the Dutch, (to adopt an expression of modern travellers), in order to take a somewhat methodized, summary view of their desultory information respecting the manners, government, language, arts, &c., of the Japanese, it may not be amiss here to insert a few matters relative to that personal narrative, which, however irrelevant to the Yedo journey, must not be omitted, as being illustrative both of the ingenuity of the Japanese, and of the friendliness of their nature, when not interfered with by their singular and rigid system of policy; and for which no fitter place offers.

One of the writers, who has supplied the materials for the present papers, Heer Doeff, resided at Dezima from the year 1799 till 1817; consequently, through the whole of the period during which the subjection of Holland to France, and subsequent incorporation with Napoleon's empire, involved the former country in war with England. That war not only cost Holland most of her colonies, but interrupted her intercourse with those she retained, and also that of the colonies with each other. There were, accordingly, many years in which no ships from Batavia reached Dezima, and the factory remained destitute of many articles that are unknown in Japan, though almost necessaries of life to Europeans. Nor was this privation of comforts the most serious evil resulting from the partial or total cessation of intercourse. The tolerated strangers in Japan occasionally found themselves altogether without either merchandize or salaries with which to pay their daily expenses. This last formidable calamity was alleviated by the liberality of the native government, which at once ordered the factory to be supported in their temporary distress by the Nagasaki exchequer; and the governor sent regularly twice or thrice a week to enquire whether their purveyors duly supplied them, or they were in want of anything; but the Dutchmen had wants that the purveyors could not supply.

Though thus saved from all danger of perishing from hunger or from cold, the Dutch languished for butter and cheese, for beer, wine, gin, and brandy, for which potations they found sake a poor substitute—the sake, it should be said, is always drunk warmed, as is every Japanese beverage, water included. The edible luxuries were wholly and absolutely unattainable, inasmuch as the Japanese hold themselves so deeply indebted to the race of horned cattle for their services in agricultural and other labour, that it would be an act of base and criminal ingratitude, either to eat their flesh, or to rob their young of the mother's milk. The use of milk in any form is therefore unknown, or if known, prohibited, in Japan. With respect to drink, the case was less desperate. "They made every exertion," says Doeff, "to relieve, as far as possible, the disagreeableness of our dismal situation. The spy, Sige Dennozen, amongst other things, took great pains to distil us some gin, for which purpose I lent him a large still and a tin worm that I chanced to possess. He succeeded tolerably, though he could not get rid of the resinous taste of the juniper berries; but he produced corn brandy that was really excellent. He likewise endeavoured to make us some wine from the grapes of wild vines; but in this his efforts

were less happy. He obtained a red juice that fermented, but it was not wine."

We are now to seek such information concerning the social, political, and religious condition of the Japanese, as can be gathered from the different members of the factory; and it is scarcely necessary to say, that a very ample harvest cannot be expected to repay the search. The mode of existence to which the Dutch residents at Dezima are condemned, does not authorize us to anticipate that it is in their power to afford a very complete picture of Japanese manners. They have, however, notwithstanding every disadvantage, collected a good deal of information, seeing something and hearing more; which, methodized and arranged, may afford at least a general view of this extraordinary nation, whose really high state of civilization is so very dissimilar, both to our own, and to that of every other people with whom we are familiarly acquainted.

Our gleanings with respect to the domestic and social life of the Japanese shall first be presented, as being the part of the national idiosyncrasy that strikes the stranger, and by its very singularity awakens his curiosity to investigate the political and religious causes in which much of this singularity originates. But, in order to convey any sort of connected notion upon the subject, some degree of unity must be given to the sketch; and the most effectual way of accomplishing this, will, perhaps, be, to take the Japanese gentleman at his birth, and trace him, as we best can, through childhood, youth, and manhood, to his grave. But so much of the difference between the Asiatic and European, as well as between ancient and modern civilization, appears to be intimately connected with, if not actually to result from, the different treatment and appreciation of women in Asia and in Europe, in ancient and in modern times, that the condition of the female sex in Japan must be first considered, as far as means for ascertaining it are within reach.

The position of women in Japan seems to be unlike what it is in all other parts of the East, and to constitute a sort of intermediate link between their European and their Asiatic conditions. On the one hand, Japanese women are subjected to no seclusion; they hold a fair station in society, and share in all the innocent recreations of their fathers and husbands. The fidelity of the wife, and the purity of the maiden are committed wholly to their own sense of honour, somewhat quickened, perhaps, and invigorated by the certainty that death would be the inevitable and immediate consequence of a detected lapse from chastity. And so well is this confidence repaid, that a faithless wife is, we are universally assured, a phenomenon unknown in Japan. The minds of the women are as carefully cultivated as those of the men; and amongst the most admired authors, historians, moralists, and poets, are found several female names. In general, the Japanese ladies are described as lively and agreeable companions, and the elegance with which they do the honours of their houses has been highly eulogized.

But if thus permitted to enjoy and adorn society, they are, on the other hand, held during their whole lives in a state of tutelage and complete dependence upon their husbands, sons, or other relations. They are without legal rights, and their evidence is inadmissable in a

court of justice. The husband may not only introduce as many subsidiary, unwedded helpmates as he pleases into the mansion over which his wife presides; and these women, though inferior to her in rank, dignity, and domestic authority—in proof of which, they are not permitted to shave their eyebrows—are not deemed criminal or dishonored but he has also a power of divorce, which may be called unlimited, since the only limitation is, his sense of economy and expediency. A husband must support his repudiated wife according to his own station unless he can allege grounds for the divorce, satisfactory to a Japanese tribunal; among such grounds, barrenness is one that leaves the unfortunate, childless wife, no claim to any kind of maintenance. Under no circumstances, upon no plea whatever, can a wife demand a separation from her husband. At home, the wife is mistress of the family; but, in other respects, she is treated rather as a toy for her husband's recreation, than as the rational, confidential partner of his life. She is to amuse him by her accomplishments, to cheer him with her lively conversation, not to relieve, by sharing, his anxieties and cares. So far from being admitted to partake the secrets of his heart, she is kept in profound ignorance of his affairs, public or private; and a question relative to any such matters, would be resented as an act of unpardonable presumption and audacity.

With a few exceptions in their favor, the estimation of women in Japan is probably similar to that of their sisters in China. Literary attainments are prized in both countries, and the lady who can write an elegant letter, read a book fluently, and above all, compose verses rapidly, is considered by them as highly accomplished; but the demands of their families, the necessity laid upon them by poverty to follow some manual occupation, or some other like reason, act as preventives to high, or even ordinary, attainments in literature to the great proportion of females in China, and no doubt in Japan too. The declaration in the text on the education of females should be considered as applicable chiefly to the nobility or wealthy commoners; for none of the female relatives of our informants knew how to write a letter. Polygamy is confined for the most part to families of rank, or to very rich commoners; when a man takes an unwedded helpmate, she is often provided with a miniature establishment of her own, or is not obliged to associate with the legal wife. The statement given in the text of the fidelity of wives must be taken with great allowance. Paganism in Japan, as in China, and elsewhere, produces the same fruits; one of our authorities avers that he himself saw a man murdered by the injured husband, who was caught with his paramour; the man afterwards ripped himself up. The younger female members of a family are allowed much more freedom than in China, sisters associate with their brothers, and as their feet are not cramped, they go whither they please. Infidelity to the marriage bed is the most common grounds for dismissing a wife, for the adoption of an heir is preferred to divorcing the childless wife and taking another, especially where long continued conjugal intercourse has cemented the affections of husband and wife.

Turn we now to the life of a Japanese, and the ceremonious observances that nearly fill it. These begin prior even to birth, and indeed, with the very incipiency of existence.

Upon the first symptoms of pregnancy,* a girdle of braided red crape is bound round the future mother's body, immediately below the bosom. This is performed in great ceremony, with religious rites appointed for the occasion; and the selection of the person who presents the girdle is a point of extreme importance and dignity. This singular custom is, by learned Japanese writers, said to be practiced in honor of the widow of a mikado, who, some sixteen centuries ago, upon her husband's death, being then in an advanced state of pregnancy, thus girding herself, took his vacant place at the head of his army, and completed the conquest of Corea. The name of this Amazon, herself of the mikado blood (according to Klaproth), was Sin Goü Koö-Goü, and her exploits were rewarded with sovereignty. Whether she was actually acknowledged as a mikado seems to be a disputed point amongst Japanese historians; but she certainly governed the empire during the remainder of her life, sixty-nine years; and dying at the age of one hundred, was succeeded by the son she had borne to her husband after his death. Both mother and son are deified. The more vulgar opinion represents the girding as a mere physical precaution, by which the unborn babe is prevented from stealing the food out of the mother's throat, and so starving her to death! But whichever be the cause, the red fillet must remain, as at first fastened, until the birth of the infant.†

Upon the occurrence of this happy event, the mother is relieved from her long-endured binding; but her sufferings from ceremonious or superstitious observances are not yet over. She is forthwith placed in an upright sitting posture upon the bed, fixed in it by bags of chaff under each arm and at her back; and thus is she compelled to remain during nine whole days and nights, most sparingly fed, and actually kept wide awake, lest, by dropping asleep, she should in some way alter the prescribed position. Perhaps the most extraordinary part of the whole business is, that no ill-consequence is said to ensue to the patient. It is to be observed, however, that Japanese women recover more slowly than those of other countries, from parturition; probably, in consequence of this severe treatment. For one hundred days after her delivery, the recent mother is considered as an invalid, and nursed as such; at the end of that period only, she resumes her household duties, visits the temple frequented by her family, and performs her pilgrimage, or any other act of devotion that she may have vowed in her hour of peril.

* Meylen and Fischer.

† This personage is more usually known under the title of Hachiman Go, and her son is called Ko Hachiman Go (ko meaning son); he is also called Hachiman Tarou, and legends are now told of his famous exploits. The hare obi or girdle spoken of is about three inches broad, and one, among other supposed uses, is that it strengthens and braces the mother, for it is girded upon her body very tightly. It is said to be the custom in some places for the woman to be confined of her firstborn in the house of her parents if their residence and circumstances render it expedient. Elderly females of established character and experience are, as is the case in China, employed as midwives, though perhaps the advice and attendance of the regular physician is not altogether neglected as regards the mother's subsequent health. Immediately after this event the mother shaves her eyebrows, though this outward sign of maternity may in some places be performed in anticipation as well as consummation of her delivery; they are henceforth kept shaved for the rest of her life.

The infant, immediately upon its birth, is bathed, and remains free from all swathing and clothing that could impede the growth and developement of body or limb. Upon one occasion only is this early state of freedom interrupted, and that occasion is the bestowing a name upon the new member of society. This takes place on the thirty-first day of a boy's age, on the thirtieth of a girl's. Upon the appointed day, the babe is carried in state to the family temple; the servants follow, bearing a whole infantine wardrobe, by the abundance of which the father's wealth and consequence is estimated. Last in the procession walks a maid-servant, with a box in her hand, containing money for the fee of the officiating priestess, and a slip of paper, on which are inscribed three names. These names,* the priestess submits, with prescribed rites, to the god to whom the temple is dedicated; then announces which of the three is selected, and confers it on the child, whom she sprinkles with water. Sacred songs, chaunted to an instrumental accompaniment, conclude the naming ceremony. The infant is then carried to several other temples, and, for its final visit, to the house of the father's nearest kinsman. He presents it with a bundle of hemp, destined symbolically to spin it a long life, talismans, relics, and other valuables; to which he adds, if his new-born relation be a boy, two fans (as representatives of swords), implying courage; if a girl, a shell of paint, implying beauty.

In the unconfined state above described, the child continues for three years, at the expiration of which the clothes are bound at the waist with a girdle. Religious rites accompany the first girding, and the child is now taught to pray. At seven years' old the boy receives the mantle of ceremony, and, what could hardly have been anticipated from the great importance apparently attached to the choice of the name given the baby, a new name. For this change, likewise, there is an appropriate religious ceremony; and, to avoid repetition, it may be said, once for all, that every change, every epoch in Japanese life, is consecrated by the rites of the national religion. After the reception of the mantle of ceremony, a boy is permitted to perform his devotions regularly at the temple.

Children are trained in habits of implicit obedience, which, independently of any beneficial effects on the future character that may be anticipated, Japanese parents value as obviating the necessity of punishment. Children of both sexes, and of all ranks, are almost invariably

* It may be remarked, once for all, as applicable to much of the information we possess concerning Japan, that when accounts from different sources by several authors vary with regard to any particular custom, it is possible that both are correct, but applicable to different parts of the country. For instance: in this case of naming a child, we are assured that in the principality of Figa (or Higo). infants are not carried to a temple to be named, but the father confers the name upon the child at home. In Owari, it is not named by a priestess but by the father or grandparents in the temple; the period after birth for this ceremony is not fixed, sometimes it is a week, and sometimes it is three months. We are, however, rather doubtful whether the word priestess is a proper term for the person officiating; we are told that the name is given in a Budhist temple, where, of course, there are no priestesses, and we doubt very much whether women (besides relatives or midwives) have anything to do with the ceremony. The observances attending the naming of a child, it appears would vary more, than on other occasions, according to the religious sect of the parents, their rank, wealth, &c.

sent to the inferior or primary schools, where they learn to read and write, and acquire some knowledge of the history of their own country. For the lower orders, this is deemed sufficient education; but of thus much, it is positively asserted, that not a day-laborer in Japan is destitute. The children of the higher orders proceed from these schools to others of a superior description, where they are carefully instructed in morals and manners, including the whole science of good breeding, the minutest laws of etiquette, the forms of behaviour, as graduated towards every individual of the whole human race, by relation, rank, and station; including also a thorough knowledge of the almanac, since it would be as vulgarly disgraceful as it could be disastrous, to marry, begin a journey, or take any other important step upon an unlucky day. Boys are further taught arithmetic, and the whole mystery of the hara-kira, or abdomen-ripping, by which a well-born man is often compelled to terminate his existence. They are taught not only the proper mode of performing the operation, and the several accompanying ceremonials, varying with the occasion, but also the nature of the occasions, *i.e.* of the causes and situations, which render this form of suicide imperative upon a gentleman. Girls, in lieu of this fearful indoctrination, receive lessons in the craft of the needle, with every species of ornamental work, in the services and management of a house, and in whatever it is thought may be useful to them as mothers and mistresses of families.

During this period of their lives, Japanese children are very ill-dressed. Even when accompanying their splendidly attired mothers through the streets, their shabby appearance offers a disagreeable contrast to hers. The object of this is to prevent the noxious effects of the admiration which, if well-dressed, their beauty might excite; and it is not a little curious thus to find the same strange superstition of the evil eye in the most remote and dissimilar countries.

At fifteen, education is deemed complete. The boy as of man's estate, now takes his place in society; his head is shaved in Japanese fashion, and again he receives a new name. But even this third name is not destined to be permanent. Upon every advance in official rank—and half the Japanese above the working classes appear to hold office—the placeman takes a new name. Nor is it only upon an occasion thus agreeable, that he must change his designation; no official subaltern may bear the same name with his chief; so that whenever a new individual is appointed to a high post, every man under him who chances to be his namesake must immediately assume a new denomination. The system of changing the name with the post extends even to the throne, and occasions great perplexity to the student of Japanese history, whose undivided attention is requisite to trace, for instance, the progress of an usurper through all his varying appellations.

(To be continued.)

The Variation of the Compass.

(Continued from p. 783.)

Royal Observatory, Greenwich, Nov. 10, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Declination for August 1842—23° 15′ 10″.

The observations of the Magnetic Dip are suspended for the present.

G. B. Airy, *Astronomer-Royal.*

Chinese Intelligence.

The news from China comes down to the 28th of July, and affords grounds for forming hopes of an approaching termination of the war there. After the arrival of the reinforcements, the expedition on the 13th of June entered the Yang-tze-Keang, the most magnificent river of China, on the banks of which the Chinese had erected many strong fortifications, and garrisoned them with large bodies of their best troops. Having passed three days in making observations and in taken soundings, which was seen and permitted by the Chinese, the fleet at daylight on the 16th, prepared for action, and on the ships taking their stations the batteries from the shore opened. The progress and results of this conflict have been officially published in the following terms:—

(Circular.)

The gratifying duty of announcing further highly important successes of her Majesty's combined forces again devolves on her Majesty's Plenipotentiary in China.

After the necessary delay in destroying, the batteries, magazines, foundries, barracks, and other public buildings, as well as the ordnance, arms, and ammunition, captured at Chapoo, the troops were re-embarked, and the expedition finally quitted that port on the 23d of May, and arrived on the 29th off the Rugged Islands, where it remained until the 13th of June, on which day it crossed the bar, which had been previously surveyed and buoyed off, into the Yang-tze-Keang river to the point where the river is joined by the Woosung.

At this point the Chinese authorities had erected immense lines of works to defend the entrances of both rivers, and seem to have been so confident of their ability to repel us, that they permitted a very close reconnoissance to be made in two of the small steamers by their Excellencies the naval and military Commanders-in-chief on the 14th inst.; and even cheered and encouraged the boats which were sent in the same night to lay down buoys to guide the ships of war to their allotted position of attack.

At daylight, on the morning of the 16th, the squadron weighed anchor, and proceeded to take up their respective stations, which was scarcely done when the batteries opened, and the cannonade on both sides was extremely heavy and unceasing, for about two hours; that of the Chinese then began to slacken, and the seamen and marines were landed at once, under the fire from the ships, and drove the enemy out of the batteries before the troops could be disembarked and formed for advancing.

Two hundred and fifty-three guns (42 of them brass) were taken in the batteries, most of them of heavy calibre, and upwards of 11 feet long. The whole were mounted on pivot carriages of new and efficient construction, and it was likewise observed that they were fitted with bamboo sights.

The casualties in the naval arm of the expedition amounted to two killed,

and twenty-five wounded, but the land forces had not a man touched. It appears almost miraculous that the casualties should not have been greater, considering how well the Chinese served their guns. The Blonde frigate had 14 shot in her hull, the Sesostris steamer 11, and all the ships engaged more or less. The loss on the part of the enemy is supposed to have been about 80 killed, and a proportionate number wounded.

On the 17th of June some of the lighter vessels of the squadron advanced up the Woosung river, and found a battery deserted, mounting 55 guns, of which 17 were brass.

On the 19th two more batteries, close to the city of Shang-hai, opened their guns on the advanced division of the light squadron, but on receiving a couple of broadsides the Chinese fled, and the batteries, which contained 48 guns, (17 of them brass,) were instantly occupied, and the troops took possession of the city, where the public buildings were destroyed, and the extensive government granaries given to the people.

His Excellency the Admiral proceeded up the river Woosung with two of the small iron steamers on the 20th inst., about fifty miles beyond the city of Shang-hai, and in this reconnoissance two additional field-works, each mounting four heavy guns, were taken and destroyed, bringing the total of ordnance captured in these operations up to the astonishing number of 364, of which 76 are of brass, and chiefly large handsome guns; many of the brass guns have devices showing that they have been cast lately; several of them have Chinese characters signifying "the tamer and subduer of the barbarians," and one particularly large is dignified by the title of the "barbarian."

The Chinese high officers and troops are supposed to have fled in the direction of the cities of Soochow, Wang-chow-foo, and Nankin. The same high authorities have made another indirect attempt to retard active operations by an avowed wish to treat, and have also given a satisfactory proof of their anxiety to conciliate by the release of 16 of her Majesty's subjects (Europeans and natives of India,) who had been kidnapped; but as the overtures were not grounded on the only basis on which they can be listened to, they were met by an intimation to that effect.

God save the Queen.

Dated on board the steam-frigate Queen, in the Yang-tze-Keang river (off Woosung,) the 24th of June, 1842.

HENRY POTTINGER,
Her Majesty's Plenipotentiary.

OFF CHAPOO, *May* 23.—We moved from Chusan on the 8th, and on the 16th we reconnoitred in the Phelegethon and Nemesis without interruption, and satisfied ourselves of the Chinese means of defence. The line of land from east to west for about three miles, ending at the suburb of the city, comprised three separate hills; the slopes between were fortified by field works, and on the last of these hills next the town were two batteries about one-third up, consisting of seven and five guns. In front of the town facing the water was a circular battery, mounting, I suppose, 14 or 15 guns, and further to the westward another, altogether about 45 guns on the sea face. The hills and works appeared to be covered with soldiers. On the 17th we moved in; and on the 18th the Cornwallis, Blonde and Modeste, being anchored abreast and as close to the batteries as possible, opened their fire, which was very faintly returned. To our right (eastward) the troops disembarked on a fine sandy bay, without accident, and, headed by the gallant Sir Hugh Gough, pushed on over the heights, and soon came upon a causeway leading to the city. The Chinese fled before them in every direction. As soon as possible after the troops moved from the east the naval brigade landed at the west end of the heights and joined the troops between the heights and the suburbs. Up to this time every defence had been carried with scarcely any loss; but about three hundred Tartar troops

finding escape impossible, and being inspired with the idea that the English would give no quarter, took possession of a joss-house on the spot, and defended themselves most desperately; and it was not until the house fell upon them that about forty were taken—the rest perished.

In this affair we have met with a very severe loss, Colonel Tomlinson, of the 18th, and eight men of the army killed. Colonel Mountain, the Adjutant-General; Campbell, 35th; and Jodell, 49th, wounded severely; and forty-five men. The navy, two killed and four wounded. The Chinese had about 10,000 men, one-third Tartar troops. We captured an immense quantity of arms of all sorts.

The greater part of the transports had arrived at Hong-Kong, and the fleet was to sail on the 6th of June for Chusan, with the plenipotentiary, on whose arrival, it was believed, operations in the Yang-tze-Keang and the great canal would be commenced. Pekin, apparently, will not be attacked at present.

At Chusan the Chinese have resorted again to their old plan of sending down fire-rafts amongst the shipping; and, not content with conflagration afloat, have attempted to blow up some of the houses, in the occupation af Europeans, by undermining them with gunpowder. There had been some fresh cases of kidnapping on the island.

Subjoined is a statement of the stations of our fleet, taken from the *Canton Press*:—

Her Majesty's Squadron to the Northward, at Chusan, Ching-hae, and Ningpo.

Cornwallis, 72, bearing the flag of Rear Admiral Sir W. Parker, KCB., Commander-in-chief; Capt. Richards.
Blonde, 42, Capt. T. Bourchier, CB.
Cambridge, 36, Capt. H. D. Chads, CB.
Calliope, 28, Capt. A. L. Kuper.
Cruiser, 18, Com. J. Pearse.
Pelican, 18, Com. Napier.
Modeste, 18, Com. Watson.
Columbine, 18, Com. Morshead.
Clio, 16, Com. E. Troubridge.
Algerine, 10, Lieut. Maitland.
Lady Bentinck, surveying vessel, Com. R. Collinson.
Troop-ship Jupiter, Mas.-Com. R. Fulton.

Hon. Company's Steamers.

Nemesis, Lieut. W. H. Hall.
Queen, Mas-Com. W. Warden.
Phelgethon, Lieut. M'Cleverty.
Sesostris, Com. Ormsby, I.N.
Tenasserim, Com. Wall, I.N.

At Amoy.

Herald, 26, Capt. J. Nias, CB.
Pylades, 18, Com. Tindal (absent).
Camelion, 10, Lieut. Hunter.
Starling, 6, Com. H. Kellett.

Squadron at the mouth of Canton river.

Blenheim, 72, Capt. Sir T. Herbert, KCB., senior commanding officer.
Druid, 44, Capt. H. Smith, CB.
Nimrod, 18, Com. Glasse.
Hyacinth, 18, Com. G. Goldsmith.
Royalist, 10, Lieut. Chetwood.
Young Hebe, 4, Lieut. Wood.
Vixen, steam-vessel Com. H. Boyes.

Hon. Company's Ships.

Hooghley, Mas.-Com. Ross.
Ariadne, Mas. Com. Roberts, I.N.
Auckland, Mas.-Com. Ethersey, I.N.
Medusa,
Pluto, Lieut, Tudor, R.N.

Health of Ships.

(From the "Report on the Sanatory Condition of the Labouring Population of Great Britain.)

The following examples are adverted to as to the efficiency of preventive measures, furnished by the naval medical service:—

So dreadful was once the condition of the navy that, in the year 1726, when Admiral Hosier sailed with seven ships of the line to the West Indies, he buried

his ships' companies twice, and died himself of a broken heart. Amongst the pictures then presented, as in Anson's Voyages, 1740-44, were those of deaths to the amount of eight or ten a day in a moderate ship's company; bodies sown up in hammocks and washing about the decks, for the want of strength and spirit on the part of the miserable survivors to cast them overboard. Dr. Johnson, in the year 1778, thus describes a sea-life:—"As to the sailor, when you look down from the quarter-deck to the space below you see the utmost extremity of human misery; such crowding, such filth, such stench!" "A ship is a prison, with the chance of being drowned,—it is worse, worse in every respect; worse air, worse food, worse company."

Dr. Wilson, in his preface to the "Medical Returns," observes that, within the limits of the South American command the Centurion, exactly a century ago, lost in a few weeks 200 out of 400 men by scurvy. During the years from 1830 to 1836, the British squadron employed in South America lost by diseases of every description only 115 out of 17,254 men.

The mortality of the home force ships employed chiefly in harbour duty, &c. (where of course they were not cut off from communication or means of infection from the shore), in Great Britain and Ireland, gives the rate of mortality obtainable by sanatory means, even now confessedly imperfect, especially in ventilation, amongst a male population ranging from 15 to 50 years of age, and may be taken as illustrative of the amount of health attainable on shore.

In 1830 the deaths in the navy from disease, independently of external causes, were—

1830	Disease, per 1,000	6·0	All causes, per 1,000	8·7
1831	"	11·5	"	3·4
1832	"	11·9	"	14·0
1833	"	6·3	"	7·9
1834	"	4·9	"	6·7
1835	"	5·9	"	7·2
1836	"	7·5	"	9·5

Mr. Finlaison has lately calculated that the deaths on shore, out of 1,000 of the population of 29 years of age, may be estimated at about 12 per annum. Mr. Rickman calculated that the deaths at that age in Essex and Rutland would be about 12½ persons per 1,000 per annum; for the metropolis it would be about 15½ deaths. Out of 1,000 workmen in the Government dockyards, the number of deaths were 15.

The yearly mortality in the Royal Navy from "all causes," as shown above, upon the average of seven years, is no more than 8·2 out of 1,000 individuals; but in the Merchant Service what does it amount to?—perhaps four or five, or even six, times as much; and the cause of this difference exists in that marine now as it did in the navy formerly. Were any naval officer or medical man to visit the shipping which arrives in this river, and make note of all that met his observation, we are persuaded he would, in a vast majority of instances, exclaim, as Dr. Johnson did, "upon looking down to the space below—'What crowding, what filth, what stench!'" There is great occasion for imprvovement in the victualling and berthing of crews in the Merchant Service: the shipowner and the sailor may be both benefited by alteration in these matters; and it will be hereafter regretted if the attempts lately commenced here and at Liverpool to induce the adoption of better arrangements in the commercial navy should not succeed for the want of general concurrence. But while these ameliorating changes are agitating, we find some well meaning and estimable persons elsewhere urging, rather untimely we think, the advantages of "temperance" under the circumstances. Now, temperance in its real meaning is an observance to be insisted upon on all occasions; but, granting the excellence of the virtue, it seems to us somewhat harsh to press the practice of it at this moment to extremity. The element that has no enmity to temperance, filtered to purity itself, cannot be very acceptable to a man "imprisoned, in darkness, stench, and

filth." The foregoing affords much for attention and remedy in our Merchant Shipping.

Iron Lighthouse.

[The following account of the lighthouse alluded to in our last number, p. 789, may be new to some of our readers.]

An enormous tower, which, for the last month, has daily been seen rising from the ground within the walls of the manufactory of Messrs. Bramah and Robinson, of Belgrave-place, Pimlico, and during that time created much admiration and inquiry in the neighbourhood, has at length completed its growth, and attained its maturity. It is a light-house, which is intended to be placed on the Morant Point, on the western coast of the island of Jamaica.

This lofty building is composed entirely of iron, and is the first of the kind that has been attempted. In architectural appearance it very much resembles the Celtic towers which are to be seen in Ireland, the origin and uses of which have been matter of dispute among antiquaries.

The height of this edifice, from the foundation to the roof, is 105 feet, fifteen of which will be sunk into the solid rock, and loaded in and out with rubble and concrete, which will give an entire security to it. The whole tower is formed of iron plates, one inch in thickness, and of these plates there are nine tiers, eleven plates at the bottom, and nine at the top; the whole are strongly bolted together with iron flanges, and when permanently fixed will also be cemented with iron cement, and thus, in effect, become one entire whole.

To reduce the heat in the interior, which the strength of a tropical sun acting on a building of metal only one inch in thickness would render unbearable, the whole will have an interior lining of slate, with an interval of one inch and a half between it and the iron, by which a current of air will constantly be in circulation over the whole.

In the sides of the tower there are twenty-four windows; they are 14 inches by 10, and are glazed with thick ground glass. When the tower is erected on its final destination, it will have a height of 90 feet to the gallery, on the platform of which will be the lanterns. This is the workmanship of Mr. Deville, and is very ingeniously contrived; it is 10 feet in height, and has eight revolving lights, five of which are open, and the rest of cast iron.

The diameter of the tower is 18 feet 6 inches at the base, and decreases at the top to 11 feet 6 inches. The entire weight of the whole fabric is exactly 100 tons. It has been doubted whether it was necessary that it should be secured from the effects of lightning by the conducting rod, as the tower itself, from its altitude, its form, the material of its fabrication, and insulated position, would, in effect, be a conductor; but, a rod will be carried into the earth to convey the electric fluid, should it be struck by it.

It is a curious fact that, this lofty fabric was erected entirely without the aid of scaffolding, the expense of which both here and on its final location in Jamaica would have been very considerable. At present it stands upon the ground, and merely rests on a plane of temporary timber, &c. The manner in which this was effected is ingeniously simple; the lower plates were secured together, a cross beam passed over them, from which a derrick and cradle, (or windlass,) were fixed; by this the second tier of plates were elevated, and thus continued till the whole were placed in a very short time, and very few hands were necessary to effect it.

The entrance is elevated from the ground ten feet, and has a solid door of oak; it is reached by steps of iron.

The expedition with which this tower has been completed has been like railroad speed—it is little more than two months since the order was given for it. The whole expense, including the plan, the building, the passage over the Atlan-

tic, and the erecting it over the promontory of Morant, will not exceed, we understand, 7,000l. At the top, the platform is a square of sixteen feet, which consequently projects over the sides; this is surrounded by a rail three feet in height.

Over the entrance is a large tablet of iron, supported by two small ones, and on them, in bas relief, are the following inscriptions:—

Erected A.D. 1842,
Under the act 3 Victoria, cap. 66.

Commissioners.

Vice-Admiral Sir Charles Adam, KCB.	P. Lawrence, Esq.
Commodore Douglas, RN.	Hon. T. M'Cormack.
Hon. S. J. Dallas.	Hon. E. Panton, Speaker.
W. Hyslop, Esq.	A. Barclay, Esq.
J. Taylor, Esq.	H. Leslie, Esq.
Hon. H. Mitchell.	G. Wright, Esq.
E. Jordan, Esq.	

On the designs and specifications of Alex. Gordon, Civil Engineer, London.

And on the side supporters:—

Captain St. John, RA., Island Engineer | C. Robinson, Engineer, London, *fecit.*

FRENCH TRANSATLANTIC STEAMERS.—We have translated from the *Railway Moniteur* the following list of these vessels, with the ports at which they are being built, and the names of the engineers who are making the engines. They are 14 in number, of 450-horse power each.

The Ulloa, Christopher Columbus, and Labrador have been already launched, and it is expected that they will all be ready for sea in the course of next year.

At Cherbourg—*a*, Darien, *a*, Ulloa; at Brest—*b*, Canada, *a*, Christopher Columbus, *a*, Magellan; at L'Orient—*b*, Carib, *c*, Cacique, *c*, Eldorado; at Rochefort—*c*, Greenland, *d*, Montezuma, *d*, Panama, *b*, Albatross; at Toulon—*b*, Labrador, *b*, Orinica.

Four war-steamers of 220-horse power are also being built, viz.:—*e*, Espadon and *e*, Caiman, at Indret; *f*, Phoque and *f*, Elan, at Bishwiller.

Names of Engineers—*a*, M. Cave, Paris; *b*, M. Schneider, Creuzot; *c*, Government Steam Factory at Indret; *d*, M. Haillette, Arras; *e*, M. Aauwells; *f*, M. Stehelin.

SCREW PROPELLER.—The following vessels have been already built, and fitted with the Screw Propeller:—

Archimedes	237 tons	70	horse power,	belonging to	London.
Princess Royal	101	45	"	"	Brighton.
Bee	30	10	"	"	Portsmouth.
Beddington	270	60	"	"	South Shields.
Novelty	300	25	"	"	London.
The following are building:—					
Great Britain	3600	1000	"	"	Bristol.
Rattler	800	200	"		
Two for the French Government		120	horse power.		
One for Ditto		350	"		

Propellers on the same principle have been fitted to some other vessels by other parties, with various degrees of success. The old river steamer Swiftsure, has been fitted with one, and it is said that a considerable increase of velocity has been obtained. Ericsson's propeller is substantially the same in principle, and is said to answer well. The same remark applies to that patented by Capt. Carpenter.

Nautical Notices.

Buoys at the Entrance of Smyrna.

The want of buoys on the north side of the channel leading to the bay of Smyrna, having been long felt by all vessels navigating the Gulf, by Messrs. Hanson and Whittell, merchants of Smyrna, caused four to be constructed, which were laid down in September 1842, by Commander Graves, of her Majesty's surveying vessel Beacon.

The buoys are painted black, and moored with chains to stones, each having the depth of water in which it lies marked on its head in roman characters, excepting the outer or westernmost, which is marked S.W. Spit; this lies in 4½ fathoms on the south-west projection or elbow of the shoal. One mile and a half eastward of this is the mouth of the Hermus which may be known by the rushes growing near it. It was not thought necessary to place a buoy on the spit which projects from it, because the shoal water is very apparent, the bank being nearly dry, and covered with bushes and stumps of trees. A beacon has been placed on its outer edge in 5 feet water: there are 5 fathoms at half a cable's distance south of it, thence increasing to 13 and 25.

Three quarters of a mile east of this is another spit, on which a buoy has been placed in 3 fathoms, E.b.N., 1½ miles from it is a buoy in 4 fathoms, and E.¼N. 1½ mile farther another in 3 fathoms: this last is on the spit opposite St. James Castle, where the channel is only 3½ cables wide, and the shoal very steep, there being 6 and 7 fathoms immediately without the buoy, and at 50 yards distance within it not more than 6 or 7 feet: this buoy is placed on the most projecting point, and nearly in the middle of the flat head which bounds the channel.

It is not considered necessary for navigation to give distinct marks for each buoy. We have only to observe that, they are placed on the extreme points of the shoal, which have been minutely examined throughout, and that no vessel should endeavour to pass beyond a direct line drawn through them, by keeping without she will avoid all danger.

To assist vessels in making the S.W. Spit buoy, and to enable them to avoid the shoals, if the buoys should be removed, the following directions are to be attended to.

The peak of Mimas in the middle of the hollow between the two northermost peaks in Long Island, bearing N.W.b.W., clears the south-west elbow in 16 fathoms at 3 cables distance; a ship may pass close as the bank is steep, but if bound out of the Gulf do not bring the peak to the northward of the mark until you are 1½ miles north-west of the buoy, as there will be danger of running on the western projection of the bank.

The north end of the Old Castle over the City of Smyrna, on with the south end of St. James Castle, E. 1° S., clears the south edge of the bank, leading close to the S.W. Spit, Mouth of Hermus, and Hermus Spit buoy,—to the eastward of this buoy a vessel may stand more to the northward, taking care not to pass the line of the buoys.

No mark can be given for standing towards this part of the bank; that used in the narrows abreast of the Castle is exceedingly difficult for a stranger to make out, and can only be distinguished in certain lights, it is the cliff over Koolujah, on with the south end of the barracks at Smyrna bearing E. 3½° S. The barrack is a long white building near the water in the south end of the town; high mountains rise behind Koolujah cliff, which prevents its being seen in the mornings when the sun is behind it.

When Mount Sipylus, which has a black appearance from the trees on its summit, comes on with Menimen Scala bearing N.E. ¾ N., you will be to the eastward of the shoal.

No stronger evidence need be adduced of the utility of these buoys than the fact that there is no good mark for tacking in the narrowest part of the channel, and that the bank is so steep as to render the lead useless as a guide.

The coast from St. James Castle eastward is steep and clear of danger.

The above bearings are true.

THOMAS GRAVES, *Commander R.N.*

CLARKS ROCK.—The following account of a rock recently seen by the Barque Hartley, will serve as a revival of one of the old *Vigias* of the charts, and shows the danger of expunging them hastily.

On board the barque Hartley, W. B. Bradford, Master, bound from Sierra Leone to Plymouth, passed on Friday the 26th August, at half past five o'clock P.M. in lat. 45° 40′ N., long. 19° 17′ W., at the distance of three-fourths of a mile from the ship, a double headed rock, which during the fall of the sea was uncovered to the height of six or eight feet.

The sea broke over it with a gentle spray, and during the rising and falling of the water, it was observed to be of a dirty white colour, interspersed with dark coloured patches. At the time it was noticed the ship was sailing at the rate of four knots an hour, with the wind from the North. The stormy petrel, and other birds were flying about it. It was first seen by one of the crew, and was supposed to be the carcase of a whale; to me, however, it was evidently a rock, in which opinion Captain Bradford (on perusing the chart) coincided. It is to be regretted (the weather being fine) that an examination was not instituted, which could have been easily accomplished at the time, but which was declined as occasioning delay. Later in the evening the weather became squally. It is well to remark that its position was ascertained by chronometer.

ROBERT CLARK,

Senior Assistant-Surgeon to the Colony of Sierra Leone.

BLOOM ROCK, *off Falconera.*—Extract of a letter from Commander T. S. Brock, R.N. of H.M.C. Magpie.—I searched in vain for the reported rock, in the direction given. I do not believe it exists, and am borne out in my opinion, by some old fishermen whom I met at Falconera, who had been familiar with the different Islands for 20 years, and had never before heard of it. At Milo likewise I made the most particular enquiries, but no one there could give any information respecting it, or placed the slightest credence in the report of its existence. Many thousand ships, must annually pass over the spot given me as its locality, and it would most likely have been seen and known before this.

I however took every means to find it; and send the soundings taken in so trying, in the spot, and within a mile in all directions round it. With four men constantly looking out, the lead constantly going, smooth water, and a clear sky, I think it almost impossible to have missed seeing it, if it existed in that locality.

PERNAU LIGHT.—Sept. 10:—The new light-tower erected on the island Felsand, near Oesel, has broken down; in consequence of which there will be in future, as before, but one light visible.

BUOY AT CUXHAVEN.—The Hamburgh Shipping and Harbour deputation has, under date the 21st Sept. given notice that the white buoy No. 14 (near Altenbruch) has been removed farther northwards; so that the second white buoy No. 12, above Cuxhaven, is now in a line with No. 13 and 14. S.E. and N.W.

CARACCAS DUTIES.—A decree has been passed by the Congress of Caraccas, that all vessels that arrive there direct from foreign ports are to be charged six cents. per ton, and if they have touched at an intermediate port, as La Guayra, for instance, where they have paid that sum, then they are to be charged at Puerto Cabello only three cents. per ton, for every ton exceeding 25 tons register. The proceeds are to be expended in the erection of light-houses at the principal ports of the republic. The first will be on the point of Punta Brava.

FALSTERBRO' LIGHT.—The Royal Swedish Marine Administration has made known that, it being impossible to finish the lenticular light at Falsterbro' this year, the tower being erected, the former open coal fire, just as it formerly used to burn, will be substituted instead of the lantern used this summer, and be lighted from October, this year, till the middle of April next, at the same altitude; after which a large lantern will be lighted till the lenticular light is completed.

THE BAROMETER AT NEW ZEELAND.—Care should be taken to watch every indication of the barometer—for here, unlike the eastern coast of New South Wales, it falls with a S.E. as well as a N.W. wind, and with any lowering appearance to the south-eastward when near Cape Teerawitte, accompanied by an unsteady N.W. or other wind, vessels should not approach too near the coast until the harbour is open, when they may safely haul in. Before the approach of the last S.E. gale, when those vessels were lost, my barometer had fallen as low as 29·20, continuing so during the whole of Saturday and Saturday night, and then gradually rose on Sunday morning, to 29·50. The barometer if used in conjunction with the thermometer, is here invaluable.

It may as well here be noticed, that the best anchorage seems upon consideration to be in mid channel, between Barrett's reef and the eastern shore, rather than under Pencarrow Head; because in the channel the wind sets right down it, and N.W. becomes a due north wind there.

W. HOLDERNESS, *Barque Eleanor.*

PALLISSER BAY is a large open bay or bight, the distance between the extreme points forming the bay may be about twenty-five miles, and the depth of the bay about thirteen miles. It lies entirely exposed to the full force of the south-east winds, and as the bottom is sandy there is no holding ground for vessels, which renders it very dangerous, but the natives say there is a small harbour on the south-east side called E-kopi, formed by a projecting point of land, where there is excellent anchorage, and where a ship of four or five hundred tons might remain in safety even in a strong south-easter. If this be the case, and I have no reason to doubt it, Pallisser Bay presents most excellent opportunities for establishing whaling stations, from its proximity to Port Nicholson, and the ease with which provisions might be supplied to them, and the oil be brought away at the end of the season.

POINT CASUARINA AND CAPE NATURALISTE.—The Beagle's observations at Koombanah Bay, place Point Casuarina four miles south of its present position. By bearings from the latter, Naturaliste Cape and Reef, was found to be also that quantity in error in latitude, confirming our former position of the Cape. The Beagle passed half a mile from the south side of Naturaliste Reef in, from 25 to 27 fathoms, and five from the North in 29 fathoms; sixteen miles West of it there was 60 fathoms. The centre of it bears (true) N. ½ E. sixteen miles

from Cape Naturaliste, and occupies scarcely half a mile in a N.E. and S.W. direction.

Portland Bay, *Australia.*—The holding ground being mud, with a thin coating of sand, a ship may always be considered safe if properly found. The Settlement already assumes the appearance of a town, and the country behind is now occupied by squatters as far as the River Glenelg, the mouth of the latter by the Beagle's chronometers with a short run to Hobart Town, is nearly two miles East of Mr. Tyer's position, and therefore more within the New South Wales boundary.—*Act-Com. Stokes.*

Cape Van Diemen.—On the passage to Hobart Town from Portland Bay, the latitude of the S.W. Cape of Van Diemen Land was found to be by sea observation 43° 35′ S.—*Act.-Com. Stokes.*

Welsh Hook, *Bristol Channel.*—Trinity-House, November 9th, 1842.—This Corporation having caused a Black Buoy to be placed on the southern part of the Welsh Hook, notice thereof is hereby given, and that the said Buoy lies in 4 fathoms at low water, with the following marks and compass bearings, viz:—The South House at Portishead, in line with Blacknose Cottage. E. ½ S. See me, or See me not, in line with the west end of Clevedon Cliff S.S.W. ½ W. Grounds Light Vessel West. Walton Castle S.S.E. ½ E. Usk Light House N.b.W. ½ W.

By Order, J. Herbert, *Secretary.*

Comus Shoal, *New Grenada.*—On our passage from St. Martha to Carthagena, on the 14th of August, 1840, we found a shoal, at three miles distance from the land, not noticed in the Columbian Navigator, on which we found from ten to three fathoms. Cape Aguja bearing N.E. ½ N. extreme of land W.S.W.

Gulf of Honduras.—Having found the Anchorage at Omoa much exposed, I ascertained by soundings that we could lay in Caldera, a natural basin formed by a sand bank stretching east and west. I got the ship warped in this snug berth into five fathoms water, and lay there for five weeks. At the entrance however we found only three fathoms, and as the sands during the Northers which are felt on this coast are continually shifting, it is always advisable to make good use of the lead line before taking up this berth.

Whilst at anchor off the Bar of Dulce in seven fathoms, I had the bar well sounded with the view, if possible, of sailing up the Gulf, but could only find seven feet at most, whilst within there was from two and a half, to five fathoms.

With reference to currents which often impede the Navigation in these Seas, as a general rule I should say that, they change with the prevailing winds, though at times it is difficult to assign any reason for their course.—*Comus, R.B.*

Sabannilla Coast of New Grenada.—The marks in the book of directions are correct, with the exception in this anchorage, that we found a spit running out near two miles to the south-west of the harbour reef, with only one fathom on it, though close to it there are four and a half. By taking a wider sweep to the westward in rounding Isle Verte when running for Morro Hermosa than than two miles, say half a mile more than is laid down in the Columbian Navigator, when the same marks however with the red cliff (though I should rather call it a dirty yellow) on with hummock having the appearance of a ruin or fort, might still hold good, and will take you into five or six fathoms good anchorage in the outer roads.—*Comus, R. B.*

The Comus was warped four miles up the River, taking up a berth amongst the Merchantmen, in three fathoms, right abreast of the Battery.—*H.M.S. Comus Remarks, E. Nepean, Capt.*

COURT MARTIAL.—*Malta* Oct. 15.—A court-martial assembled on the 11th inst., on board of her Majesty's ship the Impregnable, for the purpose of trying Lieut. E. H. Alston, of her Majesty's ship Cambridge, for marked indifference in carrying into execution the orders of his captain and commander, and for having beaten Francis Fitzgerald, a volunteer of the first class, whilst on shore at Besika, and using violent language to him.

The court, which was composed of Rear-Admiral Sir J. Louis, Bart., president; Captain Robert Maunsell, of her Majesty's ship Rodney; Captain Thomas Forrest, of her Majesty's ship Impregnable, Captain Sir J. Stirling, Knt., of her Majesty's ship Indus; Captain the Hon. George Grey, of her Majesty's ship Belvidera; and Mr. Brown, officiating judge-advocate, after hearing the evidence brought forward by the prosecutor, as well as what the prisoner had to say in his defence, found him "Guilty" of the charge, and sentenced him, the said E. H. Alston, to be dismissed the service.

THE BREAKWATER.—This noble national undertaking is fast increasing in interest to visitors. As a stupendous work of art it stands unrivalled in the world, and therefore thousands yearly go to see it. Even these enjoy its peculiar advantages, for even when it is rough weather in the channel they pass through Plymouth Sound in comparatively smooth water, so effectual is the protection afforded by the breakwater. There is now being erected on its western extremity a light-house, having for its model, that elegant and substantial work of art the Eddystone light-house. It is certainly highly interesting to behold how each successive layer of stone, being what is technically termed—dovetailed together and forming so many rings perfect in themselves—are perfectly secured to each other. Visitors take a great delight in viewing the progress of this delightful structure.

ORIGIN OF PORTSMOUH DOCK-YARD,—In turning over the large folios lately published by the Record Commissioners, among many royal mandates, we meet with the following notices:—In one instance King John, in June the 9th, 1205, addressing the Barons of the Exchequer, commands them to account to William de Wrotham, Archdeacon of Taunton, and William de Cornhill, Clerk, from the issues of the Lord Bishop of Winchester, the sum of three hundred and fifty pounds, which they had paid for wages for ships, and galleys, and mariners, and the employment of the mast of a large ship, in the King's service, according to the King's order, given from Portsmouth, where the King then was. And in the Records, called the Close Rolls, and of the same reign, may be found the following precept:—"The King (John) to the Sheriff of Southampton greeting—We command you that, without delay, by the view of lawful men, to cause *our Docks at Portsmouth* to be enclosed with a good and strong wall, in such manner as our beloved and faithful William, Archdeacon of Taunton, will tell you, for the preservation of our ships and gallies, and likewise to cause penthouses to be made to the same walls, as the same Archdeacon will also direct you, in which all our ships' tackle may be safely kept, and use as much diligence and dispatch as you can, in order that the same may be completed this summer, lest in the ensuing winter our ships and gallies and their rigging incur any damage by your default, and, when he knows the cost, it shall be accounted to you—20th May, Anno Domini 1212—the fourteenth year of the reign of King John." The publication of this document carries back the institutions of the Dockyard at Portsmouth to a much earlier date than has hitherto been generally known, while it affords a curious example of clerical superintendance in the early naval concerns of England.

STATE OF THE NAVY OF GREAT BRITAIN AT VARIOUS PERIODS.

Years.	120 to 100 guns	98 to 90 guns	84 to 70 guns	68 to 60 guns	58 to 50 guns	46 to 38 guns	36 to 20 guns	Packets, Sur. ves. &c.	Steamers.	Hulks, trp. ships, ychts	18 to 10 guns	Total.	Number of			Sums voted in each year.
													Seamen.	Marines.	Total.	
1017	The	num	ber	unce	rtain	in	1027	the	king	sail'd	with	50 ships	for Nor	way agnst	Olaf.	£ 70,000
1346	The	royal	fleet		con	sisted of	25	ships	and	419	men.	Total	fleet em	ployed ag	nst Calais	a Danegeld
1548	3	3	3	2	5	10	6				21	53			748 and	11,000
1652	1	1		1	11	11	33			3	41	102			14956	City London
1688	5	17	33	8	14	24	21			28	24	174			men.	varying from
1702	7	14	47	14	41	15	28			62	44	272				200,000
1714	7	13	32	10	49	24	42			42	28	247				to
1744	6	20	36	31	35	30	40			40	64	302				800,000
1760	5	12	47	63	28	27	88			87	55	412	51,645	18,355	70,000	5,214,707
1775	4	16	67	43	12	14	86			57	45	313	13,500	4,500	18,000	1,674,059
1782	5	24	86	59	23	37	138	84		52	99	607	69,683	20,317	90,000	8,702,277
1793	7	24	70	40	20	35	108	32		88	73	498	37,000	8,000	45,000	3,971,915
1800	11	30	97	45	24	97	91	40		162	150	747	100,000	20,000	120,000	12,619,000
1805	10	30	91	44	24	72	150	51		312	173	957	90,000	30,000	120,000	15,035,630
1810	13	34	160	36	16	158	128	53		203	237	1038	98,600	31,400	130,000	19,238,000
1820	28	22	99	10	13	119	62	60		121	76	613			30,000	6,586,700
1827	26	23	81	12	23	117	58	80		121	75	616			28,965	6,472,000
1836	25	22	75	1	21	108	57	80	22	65	79	555	16,500	9,000	26,500	4,245,723
Jan. 1, 1839	24	19	50		19	52	47	82	69	113	85	560	25,165	9,000	34,165	5,549,374
Apr. 1, 1840	21	25	50		19	66	37	98	77	94	87	577	26,165	9,000	35,165	5,584,851

Remarks.

In the reign of Alfred we find great attention paid to the fleet, and many battles fought which added lustre to the British navy. In 957 Edgar had 3,500 sail, and by a solemn act at Chester, on the river Dee, he received the homage of all his feudatory princes on board his barge, and claimed the sovereignty of the seas. These kings were Kenneth king of Scotland, Macolm king of Cumberland, Macusson king of Man and the Isles, and five petty kings of Britain.

It is impossible to ascertain accurately the precise expense of the navy, until 1760, as money was levied, and towns compelled to furnish ships, at the will of the sovereign; in the days of Charles I, and the Protector it was about £500,000. About 1714 between 6 & 7,000,000 was voted for the war, without distinguishing the service.

PORTUGUESE NAVY ON THE 15TH JULY, 1842.

Rates.	Names.	Guns.	Crews	Situations.
Ships	Don John VI.	74	631	In ordinary
	Vasco da Gama	74	631	Ditto
Frigates	Duchess Braganza	50	402	Stationed in Belem
	Diana	50	402	Sailors' depot
	Rainha (Queen)	46	383	Repairing
	Don Pedro	56	404	In ordinary
	Donna Maria 2nd	42	160	On her way to Goa
Corvettes	8 de Julho	24	150	Stationed in Angola
	D. Joao 1	24	177	Brazil
	Urania	24	170	Algarve
	Isabel Maria	24		Repairing
	Infante Regente	24	*	Goa
	Iris	—		Dock
Brigs	Audar	20	130	Angola
	Villa Flor	16	89	Azores
	Don Pedro	16	100	Tagus
	Tejo	20	130	Repairing
East Indiamen	Cinco de Julho	48	200	Repairing
	Magnanimo	26	160	Returning from Macao
	Princesa Real	26	160	In ordinary
	Principe Real	2	80	On her way to Angola
Schooners	Liberal	13	60	On her way to Algarve
	Amelior	10	60	Azores
	Esperanza	8	45	Madeira
	Fayal	6	40	Cape de Verd Islands
	Faro	8	60	In ordinary
	Boavista	1	*	Prince Islands
	Cabo Verde	1	*	Cape de Verd
	Ninfa	1	*	Angola
Steamer	Terceira	2	50	Repairing
Packet Brig	S. Boa Ventura	2	39	Returning from Bissao
Cutter	Andorinha	6	20	Tagus

The vessels marked * belong to the places where they are stationed, and their crew is not ascertained.

ADEN, ARABIA, &c.—The following details relative to the commerce of Aden, Arabia, the Persian Gulf, &c., may be of interest. They are extracted from a continential paper, but detached portions of the information presented have been collected and transplanted from the Indian press, in which it originally appeared.

Aden, better known by its port seated on the Indian Ocean, and destined to be the great calling-place for steamers between Bombay and Suez, and which, therefore, may come at no distant date to resume its ancient importance, offers but few facilities for foreign commerce in respect of domestic products or manufactures. It produces, however, some aloes, myrrh, coffee, mother-of-pearl, and ostrich feathers. The local trade of Aden is chiefly in the hands of the Jew residents in the country. It is by them the stuffs most in use are manufactured and sold, such as blue or red cotton cloths, dyed in the country, which are found most convenient to all classes, and the value of which is stated at 1¼ talari, or about 5s. 3d. per piece.

The chief monies current among the Bedouins are the colonnats, or Spanish dollars, and the mansouris, of which 160 go to the colonnat or dollar, the latter being equal to 4s. 2d. sterling. Gold coin are not in use, but the silver rupees of Bombay have become current for some time.

The spices, cotton, and cotton fabrics of India are generally in request at Aden; but mostly, it may be assumed, for the transhipment to other parts by the coasters and other vessels which are in the habit of frequenting the port for traffic and exchanges. Aden itself is too poor and ill-peopled to render its local consumption of any moment. Potashes from Bombay are saleable there for the coast of Berbera, but at 50 per cent. below those of Cutch.

In consequence of the war with China the navigation of the Persian Gulf by steam-vessels has been greatly interrupted: the traffic is nearly altogether carried on, therefore, by about 300 vessels of those parts, of from 150 to 200 tons burden each; but the means of transport and communication are found to be defective, and so insufficient as to occasion much irregularity in the commercial relations between Bombay and other points of the Persian Gulf and the Red Sea.

Since the commercial route of Persia to Trebisond has become again frequented, the importance of Bushire as an entrepot for Indian commodities has considerably declined. The exports of that place consist in rose waters at Bombay, in wines of Shirez for India, Bussorah, and the Red Sea, and in tobacco. White cotton fabrics, with small flowers delicately printed, as also jaconet muslins, clear-sown with embroidered flowers, are in much esteem and request there. The sugar candies of China, the common sugar of Batavia, tea and indigo, find a ready market there. Glass ware, which formerly constituted a lucrative branch of European commerce with Persia, and passed in transit to Bushire, is now supplied to that country exclusively from the glass works of Russia.

The total amount of the exports from India to the Persian Gulf, principally directed upon Bussorah, varied little from 1838 to 1840, and only rose from 1,628,946 rupees to 1,646,930; the rupee, as well known, being equal to about two shillings. Manufactured stuffs were the chief articles of this commerce. In 1839-40 cotton printed fabrics of British make were brought to Bushire and Bussorah to the number of 38,831 pieces, worth in Bombay 120,975 rupees. Of other cotton fabrics from the same quarter the number of pieces imported was 69,421, value 345,654 rupees, or in the whole 466,629 rupees for cotton goods alone. Tin and Swedish iron in bars find a fair market at Bussorah; but English iron meets a better sale still. French wines at moderate prices it was thought might be readily disposed of there for Bagdad, where the heady wines of Marsala in Sicily are despatched. The export of the wools of Kurdistan and the borders of the Euphrates by way of Bussorah for India had commenced, and was found to constitute a profitable article of exchange for Indian trade.

The Great Britain.—*The largest vessel in the World.*

[In our last number we inserted some important remarks concerning this vessel. We now take the following account of her from the *Bristol Mirror*.]

Some few particulars respecting this immense iron steam-ship, the largest vessel in the world, now building by the Great Western Steam-ship Company at Bristol, and which will be ready for sea in the early part of the next year, cannot fail to be interesting at this period, when the questions of transatlantic steam-navigation and of our communications with India form prominent subjects of discussion. The Great Western steam-vessel commenced running

between Bristol and New York in the spring of 1838, and has continued her voyages ever since, often too, under the most adverse circumstances, with a speed and regularity unequalled. The Great Western Company in order to maintain the high ground which they had attained, and taking advantage of the improvements made known by scientific research, resolved to build an iron steam-ship of such vast dimensions and power as should as much surpass the Great Western as that vessel had itself surpassed everything previously afloat. As the new vessel proceeded it soon became apparent that she would be a most extraordinary vessel, and the emphatic exclamation of his Royal Highness the Duke of Cambridge, on the occasion of his being shown over her, on his Royal Highness's late visit to Bristol, viz., ' She is justly named the Great Britain, and is a noble specimen of British skill and British enterprise. I feel that no other nation on the earth could produce such a ship, and that she will truly be one of the wonders of the world," will be fully borne out by every person that sees her. Taking advantage of their experience of the peculiar excellencies or defects in the Great Western, and other steam-ships then in existence, and with the power of adopting every improvement that skill or vigilance could suggest, the Directors proceeded to build a vessel with which nothing yet seen upon the waters of the world can be compared, and which is destined to prove experiments as novel and of as great public interest as the first opening of the transatlantic steam navigation. As the huge ship proceeded on her stocks various names were assigned her, among which, in allusion to her immense size, that of the Mammoth became the favorite. After mature consideration, however, she was named The Great Britain, a name appropriately emblematic of British skill and British greatness. She has been variously described at various periods, but now that she is all but completed I have obtained the following description of her, which may be relied on as being accurate:—The Great Britain is built entirely of iron, with the exception of the flooring of her decks, and the flooring and ornamental parts of her cabins. She is 324 feet in length aloft, or upwards of 100 feet longer than our largest line of-battle-ship. Her extreme width is 51 feet, and the depth of her hold 32 feet. She is registered 3,200 tons, so that her bulk far exceeds that of any two steamers in the world. She has four decks, the lowest of which is of iron, and appropriated for the reception of the cargo. The upper deck with the exception of a small break in the forecastle, is completely flush from stem to stern, without building or elevation of any kind, so that, besides the masts and funnel, there will be nothing above deck to offer resistance to a head wind.

The two intermediate decks are appropriated exclusively to the use of passengers and the equipage of the ship, and consist of four grand saloons, forming together a length of dining room of 350 feet, two large ladies' cabins or family rooms, and 180 state rooms, each containing two spacious sleeping berths, so that, besides the portion appropriated to the crew, stewards' department, &c., the immense number of 360 passengers can be accommodated with a separate bed without requiring a single sofa to be made up in any of the saloons. The principal saloon is 108 feet long by 32 feet wide, and 8 feet 3 inches high. Besides the vast space appropriated to the passengers, crew, &c., and that occupied by the engines, boilers, &c., she has sufficient room for the stowage of 1,000 tons of coals, and 1,200 tons of measurement goods. There are three boilers, capable of containing 200 tons of water, which will be heated by 24 fires, and she has four engines, each of 250 horse power, making in all 1,000 horse power. Some idea may be formed of her vastness when I state that 1,400 tons of iron have been used in her construction.

The most novel feature about the Great Britain is her mode of propulsion, which is by the newly improved screw-propeller, patented by Mr. Smith, of London, (with improvements made upon it), and applied by that gentleman with complete success to the Archimedes. With a view to ascertaining the

powers of the screw, as compared with paddles, the Archimedes was hired for some months by the Great Western Company, and a series of experiments made with screws of various size and form; and it being found that fully and equal velocity, with an equality of power, could be obtained as with paddles, conferring a great advantage under adverse circumstances particularly in strong head winds. The machinery at the same time being infinitely more simple, and at no time an incumbrance to the vessel, it was resolved not to use the paddles in the Great Britain, but to adopt the screw, with the improvements which had been made in the course of the various experiments with the Archimedes. The screw with which she will be fitted will be 16 feet in diameter, and placed under the stern, between the stern post and the run of the ship, in which situation it will be quite out of the way of injury. It is calculated that this substitution of the screw propelier for the paddles will relieve the Great Britain of 100 tons of top weight, and admit of the boilers and engines being adjusted in that part of the ship which is best suited to receive them, and where they best act as permanent ballast.

The Great Britain will be fitted with six masts, on five of which a single fore and aft sail only will be carried, the mainmast alone being rigged with yards and topmast. These masts will be low as compared with the size of the vessel, although the mainmast will be ninety-five feet long, and the quantity of canvas, though inconsiderable to what she would carry as a full rigged ship, will still be as much as would cover three quarters of an acre of ground. Her decorations are intended to be in the first style of nautical embellishment. It remains only to speak of the speed and qualifications which may be looked for in this large ship and the services she may be expected to accomplish. It is difficult to ascertain the precise limits of the speed which she is calculated to perform at sea. Probably the expectations of the Directors are greater on this point than they choose to confess until an actual trial; but something considerably exceeding that of any sea going steam ship at present afloat may be looked for.

The rate at which the Oriental steam-vessels accomplish their voyages does not average more than eight miles an hour; the Atlantic steamers about nine, and the most rapid sea voyage yet accomplished has not exceeded an average of ten miles an hour. It is estimated that the Great Britain will accomplish from 10 to 16 miles an hour, according to the nature of the weather and the sea, and no doubt is entertained but that her average will be at least 12 to 13 miles per hour. Taking the lowest of these rates, there would be an amazing increase over the greatest triumphs of steam navigation hitherto heard of. Let us consider some of the advantages which might accrue to this country by the success of the Great Britain. Our overland mail is now received by us by the favour alone of jealous neighbours in Europe and of semi-barbarians in Africa. By these means alone is our overland correspondence and our passengers to and from India transmitted in about thirty-five days, at a great expense and inconvenience, in various transhipments and intermediate land carriage, subject to many annoyances and anxieties; our Indian correspondence liable to be intercepted and all communication cut off for at least a month at any moment that either of these powers to which we have alluded might choose to do so. Who then can properly estimate the value of our being able to secure, in defiance of the world, the same expedition by our old and rightful track round the Cape of Good Hope?

And by the Great Britain this may be done, for she would be able to deliver despatches and upwards of 1,000 troops if necessary, at any point between the banks of the Indus and the mouth of the Ganges in from thirty-five to forty days. Allowing her consumption of coals to be fifty-five tons per day, to secure an average of twelve miles an hour, she could, by dispensing with goods, carry forty days' stock of coals without occupying the least portion of the space appropriated to the officers, crew, and passengers of the ship, or adding an iota

to her regular lading and draught of water, in which time; by following out the calculation, she would have run a distance of 12, 000 miles: besides, should the patent fuel be found to answer, she would be able to carry upwards of sixty days' stock.

In the Indian Seas, too, it must be remembered, there are advantages not to be found in the North Atlantic, in which nothing is more common than for a vessel to have a head wind during the whole outward passage to America, and consequently the steamer traversing it has to often battle with the elements the entire way. In the tropics, on the contrary, the presence of the trade winds enables the commander to calculate with certainty on performing a very large portion of his voyage at the very maximum of speed. When it is considered that after making a liberal allowance from these calculations, the steamer is constructed so as to sail with great rapidity, having a fair wind, there being no paddle to drag along, and no hinderance from the screw, there is no saying what length of voyage she might not accomplish with great expedition without a relay of fuel; and it must be granted the experiment is of vast importance in a national point of view.

Experiments at Yarmouth with Apparatus for Saving Life.

A variety of experiments were recently tried on the South Beach, Yarmouth, with Dennett, Carte, and Manby's apparatus for saving life from shipwreck, under the superintendence of Captain Pulling, R.N., Inspecting Commander, to whose kindness we are indebted for being able to furnish our readers with accurate statistics of the result. The apparatus were severally superintended,—the mortar by Mr. B. Silvers, Dennett's rocket by Mr. Lugat, and Carte's rocket apparatus by Mr. Carte himself. The weather was delightful, and, with a fine light breeze from the north-west, proved highly favorable for the experiments. Two flag-staffs were placed at a distance of 240 yards from the spot where the rockets and mortars were fired, and a third flag-staff 60 yards further. The result of the several experiments will be seen by the annexed tabular statement. After the firing of the rockets and mortar a number of experiments were made with Mr. Carte's life buoys and belts, by means of which many lives have been preserved.

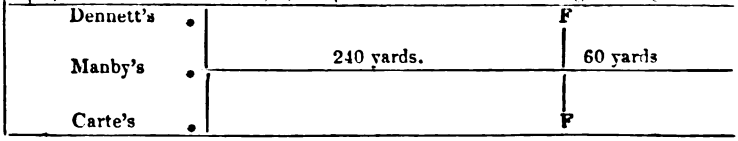
Two sailors belonging to the Defence cutter leaped from a boat into the sea with their clothes on, one having the belt on which supported him with his shoulders out of the water, the other having the life buoy thrown to him, into which he immediately got by turning it over his head. The belt being taken off the first man, another life buoy was thrown to him, and the two continued in the sea for about half an hour, getting in and out of the buoys at pleasure. A lad who witnessed what was going on, appeared unable to restrain himself, and striking out for the boat was furnished with the belt, with which he continued a long time in the water, apparently enjoying himself very much.

Lieut. Kisbee's floats were also tried, and likewise the loop with running sheave for hauling on board a vessel after communication should be obtained by the rocket or mortar. Mr. Carte also fired one of his rockets from a boat across the jetty, but unfortunately the stick broke. The whole of the experiments excited considerable attention, as well as admiration, and the aquatics were repeated the following day, when a sailor belonging to the Defence revenue cruiser, was brought on shore from one of the boats with Mr. Carte's double life buoy and Lieut Kisbee's float, as also from the jetty and the shore with the latter, which is constructed with a view to rescue those who may be insensible or timid from a vessel in distress or a wreck.

We cannot but hail with delight the success of experiments, the object of which is the rescuing from a premature and watery grave those gallant men

who do business on the mighty waters, and traverse the trackless ocean to promote our comforts and increase our wealth.

Rounds.	Weight of Rocket in lbs.		Weight of Stick in lbs.		Manby's Mortar 5½ in. brass.		Weight of line per 100 yds	Elevation in degrees.	Range in yards.	Remarks.
	Dennett's.	Carte's.	Dennett's.	Carte's.	Weight of Shot & Strop in lbs.	Charge in oz.	lbs.			
1	..	..	..	..	29	12	10½	35	274	Shot and line fell in the centre betwn flags
2	8½	..	2	..	..	..	6	23	307	Rocket fell 30 yds to leeward, line 20 do. of flags, stick much burnt, and broke on touching the ground.
3	..	5½	..	2	..	..	7	30	244	Rocket and line fell in centre between flags
4	8½	..	2	..	..	..	7	29	304	Rocket fell 20 yds to windwd, line btwn flgs
5	..	..	..	..	33	10	6	34	246	Shot and line fell in centre between flags
6	..	5½	..	2	..	..	5½	30	224	In a direct line for the centre.
7	..	..	..	..	29	12	10½	34	232	Line foul, fell lewrd of flgs, shot good directn
8	8½	..	2	..	..	..	6	28	288	Rocket fell 10 yds leeward of flags, line 15.
9	..	5½	..	2	..	..	7	35	248	Rocket and line fell just within lee flag.
10	..	..	..	..	29	12	7	32	298	Shot fell 8 yds to windward, line in centre between the flags.
11	..	11½	..	4	..	..	8	30	2010	Becket to which line was attached broke from stick during flight, and stick broke close to rocket on falling to the ground.



Direction of firing N.N.E. to S.S.W.—Light breeze, wind N.W., fine weather.

On Monday morning week the experiments were resumed with Mr. Carte's 12lb. rockets. The first line unfortunately fouled, and parted, carrying out about 95 yards of the line; but the second ranged 344 yards, laying the line directly in the centre between the poles. One of our splendid yawls was then manned by the beachmen, and Mr. Carte, accompanied by Capt. Pulling, Lieut. Gill, R.N., and several gentlemen, proceeded to make trial of his sea-service apparatus. A position was taken up about 100 yards from a small vessel, a fresh breeze blowing. The first rocket fell just to leeward, but the second effected the communication, laying the line across the boom. It was not a little gratifying to hear the beachmen express their opinion in favour of this apparatus, and mention several cases of wrecks on the sands off Yarmouth where it might have been the means of saving many lives. The subject of its adoption, we are happy to hear, will be brought before the Norfolk Association for Saving lives from Shipwreck.—*Yarmouth Paper.*

Harbour of Cha-poo.—January 5th, 1833, we sailed from Shang-hae, shaping our course for Cha-poo, a harbour on the north coast of Chekeang, in lat. 30° 37′. Until you come to the high lands, which form the harbour of

this city, the whole coast from the Yellow River is very flat, and scarcely visible, even with the ship close to the land. The sea is everywhere receding from the land, so that the flats formed along the shore, which are dry at low water, constitute a barrier to the whole coast, and are gradually becoming arable soil. We tried to reach the shore a few miles north of Cha-poo, but even our jolly-boat got aground, and we must have waded more than a mile through the mud before we could reach the shore. But from Cha-poo the country becomes hilly, with undulating ridges, and continues so, for a long distance with little variation.

Cha-poo is the only place from whence the imperial monopoly with Japan is carried on. It has a tolerable harbour, with considerable overfalls. The rise and fall of the tide is very great, so much so that the smaller junks are left high and dry at low water. Together with its suburbs the town is perhaps five miles in circuit, built in a square, and intersected by numerous canals, which are connected with the Hang-chow river. Nothing can exceed the beautiful and picturesque appearance of the surrounding region. We may say that, as far as the eye can range, all is one village, interspersed with towering pagodas, romantic mausoleums, and numerous temples. The adjacent country is called the Chinese Arcadia; and, surely if any territory in China is entitled to this name, it is the tract around Hang-chow and Cha-poo. It seems that the natives also are sensible of the prerogative of inhabiting this romantic spot. They have tried to improve upon nature, and embellished the scenery with canals, neat roads, plantations, and conspicuous buildings. We found nowhere so much openness and kindness as among them. Their intelligent inquiries respecting our country were endless, and they seemed never satiated with our company.—*Shipping Gazette.*

Gunnery Experiments on board H.M.S. Excellent.

A highly interesting experiment was tried on board the Excellent, gunnery-ship, Captain Sir Thomas Hastings, a few days ago, to test the efficacy of the defences of the boilers in steam-ships of war. One of the greatest difficulties to surmount, in order to render the steam navy of greater efficiency in action, is to afford adequate protection to the boilers against the shot of the enemy, as a shot perforating them would at once place the vessel *hors de combat.* With the view of affording this protection to the boilers, several war-steamers, have been fitted up with extra defences at the parts where the boilers are fixed. These defences consist of fifteen plates or layers of metal, each three-eighths of an inch thick. The object of the experiments on board the Excellent was to ascertain what resistance these defences of boilers would offer to a cannonade at point blank distance, which is 400 yards.

An iron target was prepared, made exactly of the material which constitutes the protection of the boilers of a steamer, and placed at the distance of 400 yards from the ship, from which guns of different calibre were fired at it.

Admirals Sir E. Codrington and Parker, and a great number of naval officers, including those from the Austrian frigate, were present to witness the experiment. The first shot that was fired was an eight-inch hollow shot, and was projected from a 68-pounder, medium gun. It struck the bull's-eye, or centre of the target, and, slightly indenting it to the depth of about five inches, rebounded therefrom, and was split into several pieces by the concussion.

The second shot was a solid 32-pounder, and was fired from a gun of nine feet six inches; it struck the edge of the target, glanced off, and was split into two pieces. The third shot hit the centre of the target, where it lodged, having penetrated several plates. The fourth shot struck the third, and sent it clean through all parts of the iron, splitting it into numberless pieces, which

were found on the off side of the wooden stage on which the target was fixed. The fifth and sixth shots went through the perforation made by the third and fourth. About ten other shots were fired, all striking the target in various parts, and completely destroying it.

The result of this experiment has shown how totally inadequate are the present defences of the boilers of war-steamers to protect them from the assaults of the enemy where a precision of fire had been attained. It has also shown, what is much more satisfactory, the high state of perfection which the gunnery practice has been brought to, by those studying it on board the Excellent, thus practically proving the great utility of this admirable institution, from which gunnery officers and seamen are supplied to the fleet.

All officers now are obliged to undergo a strict examination in gunnery before they can pass for lieutenants. Should any of the Excellents hereafter be "called out" they can render duelling much more interesting than it now is, for having the choice of weapons they can choose long 32-pounders—distance a quarter of a mile—and calculate with the same certainty of winging their man, as a crack shot does now of snuffing a candle at twelve paces, with hair trigger pistols.—*Hants Standard.*

Extraordinary Experiments with the Marine Glue at Woolwich.

At half past 1 o'clock P.M. September 27th, Colonels Turner, C.B., R. Jones, and J. E. Jones, Majors Wood, Sandilands, and Hope, Captain Grant, and a number of officers of the Royal Artillery, and Major Aldrich, of the Royal Engineers, assembled at the mortar and howitzer battery at the south-west end of the Royal Artillery Barracks, to witness experiments of a description as singular as they were important in their results.

On several former occasions details have been given of the result of experiments, made by order of the Lords Commissioners of the Admiralty, with a composition invented by Mr. Jeffery, and now named "Marine Glue," the object being to test its adhesive qualities and strength, as it was shown to be insoluble in water, and consequently invaluable, if proved of a strong binding nature, when used for marine purposes, or in any of the naval departments.

The experiments were conducted under the immediate superintendence of Major Sandilands. Severe test had been formerly applied to the invention, but those now made were of such a description as to place its value beyond a doubt, and as they were made openly, without the slightest reservation or concealment, every person present appeared fully satisfied.

The first experiment consisted in charging an eight-inch mortar with four ounces of powder, and afterwards adding a ball of hard wood, weighing about eight pounds and a quarter, formed of two solid pieces, which are joined together in the form of a globe by means of the marine glue. On the mortar being fired at an angle of 45 degrees of elevation, the wooden ball was projected into the air, and fell to the ground with great force at a distance of 260 yards, rebounding to a considerable height, without the least symptom, on its being closely examined, of having yielded or showing a tendency to separate by the violence of the concussion.

The second shot was fired with a charge of eight ounces of powder, and reached a much greater altitude than the first, and having fallen to the ground at a distance of 518 yards, rebounding several times, and on being examined did not appear to have yielded in the slightest degree.

The third shot was fired with a charge of 15 ounces of powder, and attained a still greater altitude than the former, falling to the ground with tremendous force at a distance of 760 yards, but it did not rebound so much as the two first, owing to the depth it entered the ground when it fell. On examining

the wooden ball it appeared quite sound, and had not yielded in the least in the joining, although the wood appeared shaken in one or two places.

The fourth shot was fired with 15 ounces of powder the same as the third, but the two halves of the wooden ball, in this instance, were joined together with the composition on the spot before all the parties. The operation was quite simple, merely bringing the marine glue, used the same as common glue, through the medium of boiling-water, or, as in this instance, by direct application to a fire lighted in the mortar-battery for the purpose. The wooden ball was immediately afterwards immersed in a bucket of water, where it remained about 15 minutes, and in exactly 16 minutes from the time of its being joined, was fired from the mortar, and fell to the ground at a distance of 750 yards, without the slightest appearance of the joining having given way, although so recently formed.

The first four shots were fired with the solid end of the wooden balls next the powder, but in order still further to test the powers of the marine glue, the mortar was again charged with 20 pounds weight of powder, and the first-fired wooden ball placed with the joined parts next the powder, and the mortar elevated from 45 to 75 degrees, as in the event of the parts of the wooden ball not being separated by that severe test, it would prove invaluable. On being fired, the wooden ball went such a height as to be invisible, although its course could be traced until it appeared not larger than a marble, and it fell at a considerable distance on the common, about 900 yards from the spot whence it was projected.

At the conclusion of these experiments Major Sandilands asked Mr. Jeffrey if he had any objections to fire one of the wooden balls from an 8-inch howitzer against the ground at a short distance? and on being answered that he had not the slightest objection, a charge of 2½ ounces of powder was made, and the wooden ball fired in the usual manner when it struck the ground at about 200 yards' distance and rebounded several times over a further distance of nearly 500 yards without any effect whatever being produced upon it. The same wooden ball was fired a second time from the howitzer with a similar result.

A powerful sledge hammer was afterwards applied to one of the wooden balls for some time to endeavour to separate the parts, but without any visible effect, the solid wood being alone shattered.

The result of these experiments appears to have been altogether so satisfactory as to render it probable that no others will be made, unless the marine glue is found useful for other purposes not yet contemplated.

Experiments with Percussion and Concussion Shells at Woolwich.

September 30.—At half-past seven o'clock to-day Major-General Drummond, C.B., Director-General of Artillery, Colonels Cockburn, Paterson, Lacy, and Turner, CB.; Lieutenant-Colonels Dundas, CB., Chalmer, Macbean; Majors Hardinge, K.H., Sandilands, Hope, and Anderson, and a great number of officers of the Royal Artillery, assembled in the Marshes to witness experiments with percussion shells, the invention of Mr. Howard, and concussion shells, the invention of Captain Norton, all fired at a range of 400 yards.

Mr. Howard had six 32-pounder shells, and Captain Norton ten 32-pounders and ten 8-inch shells.

The first percussion shell fired from the gun appropriated to Mr. Howard burst at the mouth of the piece, scattering the fragment in a spreading direction towards the bulk-head or target, but proving that it had failed in its object. One of Captain Norton's 32-pounder, and one of the 8-inch shells, both struck the bulk-head, and exploded with tremendous effect, shattering the timber in all directions.

Second Round.—Mr. Howard's shell burst at the mouth of the gun; Captain Norton's 8-inch shell did not burst, but the 32-pounder burst with excellent effect.

Third Round.—Mr. Howard's shell burst at the mouth of the gun; Captain Norton's 8-inch and 32-pounder both struck the bulk-head, and burst at the moment of passing through the front part.

Fourth Round.—Mr. Howard's shell burst at the mouth of the gun; Captain Norton's shells both had good effect.

Fifth Round.—Mr. Howard's shell burst at the mouth of the gun; Captain Norton's shells both very effective.

Sixth Round.—Mr. Howard's sixth and last shell struck the bulk-head, and burst at the moment of striking; Captain Norton's shells both excellent.

Seventh Round.—Captain Norton's 8-inch shell and two 32-pounders were fired and not one of them exploded.

Eighth Round.—Captain Norton's 32-pounder shells, two of which were fired, both burst with great effect, but the 8-inch shell did not burst.

Ninth Bound.—Captain Norton's 8-inch shell was fired, but did not burst.

Tenth Round.—Captain Norton's 8-inch shell fired, and burst with an awfully-grand effect, tearing the wood of the bulk-head to small fragments.

The firing to-day was decidedly the best ever witnessed on any occasion in the Marshes, as, out of 26 shells fired, 21 entered the bulk-head, within a distance of less than 12 feet of each other.

THE LIGHT FOR ALL NATIONS.—We extract the following letter from the *Times* of Tuesday:—

Royal Hotel, Deal, Oct. 23rd, 1842.

"My Dear Sir,—Lieutenant Batt, R.N., has just been to inform me that the caisson has disappeared. From the observations he took himself, a ship laden with timber ran foul of the caisson: the said ship has gone to pieces, and all hands supposed to be lost, as none of them have been seen or heard of. We lost three of our boatmen; two boats were capsized, but the crews swam ashore, with the exception of the above-named men. To report the observations of a captain just come ashore, who made for the caisson for safety, saw the said ship so near that he took a different course. Had a light been placed where it was, the ship would have been saved. This man has come ashore on purpose to congratulate you on this wonderful project. Let it be a light or a beacon Bush's name will, in America and France, go down to posterity; for he will himself speak as he found it, and you will hear from him as soon as he reaches his destination, signed by all the passengers who witnessed their fellow-creatures' death, but who could not get near them. They were not far distant from the caisson when she first struck: her name is not known."

I am, &c.,

GEORGE QUIDDINGTON.

To Mr. W. Bush, 25, Union-street, Deptford.

SHIPS REQUIRING WATER AT DEAL.—A company having been recently formed for supplying the town of Deal with water, we have induced them to lay on pipes to the end of Deal pier, which has been done at considerable expense, for the more easy supply of that invaluable comfort.

Ships' boats may now lay at the end of the pier at all times of tide, except dead low water, spring tide, and fill their casks without any risk.

We think this of so much importance, that we trust you will give it all the publicity you can in your valuable shipping intelligence.

We are, &c.,

Oct 12, 1842. GOODWIN, CURLING, HODGES, & Co.

Table LXVI.

For reducing Oldenburgh feet to English feet, and English feet to Oldenburgh feet.

1 Oldenburgh foot = 0·97251125 English foot.

1 English foot = 1·02826563 Oldenburgh foot.

Oldenburgh or Eng. feet.	English feet, and Dec parts.	Oldenburg feet, and Dec. parts.	Oldenburgh or Eng. feet.	English feet, and Dec. parts	Oldenburg feet, and Dec. parts.	Oldenburgh or Eng. feet.	English feet, and Dec. parts.	Oldenburg feet, and Dec. parts.
1	0·973	1·028	40	38·900	41·131	79	76·828	81·233
2	1·945	2·057	41	39·873	42·159	80	77·801	82·261
3	2·918	3·085	42	40·845	43·187	81	78·773	83·290
4	3·890	4·113	43	41·818	44·215	82	79·746	84·318
5	4·863	5·141	44	42·790	45·244	83	80·718	85 346
6	5·835	6·170	45	43·763	46·272	84	81·691	86·374
7	6·808	7·198	46	44·735	47·300	85	82 663	87·402
8	7·780	8·226	47	45·708	48·328	86	83·636	88·431
9	8·753	9·254	48	46·680	49·357	87	84·608	89·459
10	9·725	10·283	49	47·653	50·385	88	85·581	90·487
11	10·698	11·311	50	48·626	51·413	89	86·553	91·516
12	11·670	12·339	51	49·598	52·442	90	87·526	92·544
13	12·643	13·367	52	50·571	53·470	91	88·499	93·572
14	13·615	14·396	53	51·543	54·498	92	89·471	94·600
15	14 588	15·424	54	52·516	55·526	93	90·444	95·629
16	15·560	16·452	55	53·488	56·555	94	91·416	96·657
17	16·533	17·480	56	54·461	57·583	95	92·389	97·685
18	17·505	18·509	57	55·433	58 611	96	93·361	98·713
19	18·478	19·537	58	56·406	59·639	97	94·334	99·742
20	19·450	20·565	59	57·378	60·668	98	95·306	100·770
21	20·423	21·594	60	58·351	61·696	99	96·279	101·798
22	21·395	22·622	61	59·323	62·724	100	97·251	102·827
23	22·368	23·650	62	60·296	63·752	150	145·877	154·240
24	23·340	24·678	63	61·268	64·781	200	194·502	205·653
25	24·313	25·707	64	62·241	65·809	250	243·128	257·066
26	25·285	26·735	65	63·213	66·837	300	291·753	308·480
27	26·258	27·763	66	64·186	67·865	350	340·379	359·893
28	27·230	28·791	67	65·158	68·894	400	389·004	411·306
29	28·203	29·820	68	66·131	69·922	450	437·630	462·719
30	29·175	30·848	69	67·103	70·950	500	486·256	514·133
31	30·148	31·876	70	68·076	71·979	550	534·881	565·546
32	31·120	32·904	71	69·048	73·007	600	583·507	616·960
33	32·093	33·933	72	70·021	74·035	650	632·132	668·373
34	33·065	34·961	73	70·993	75·063	700	680·758	719·786
35	34·038	35·989	74	71·966	76·092	750	729·383	771·200
36	35·010	37·017	75	72·938	77·120	800	778·009	822·613
37	35·983	38·046	76	73·911	78·148	850	826·635	874·026
38	36·955	39·074	77	74·883	79·176	900	875·260	925·438
39	37·928	40·102	78	75·856	80·205	1000	972·511	1028·266

The Trial of Philip Partridge at the Central Criminal Court.

[We take the following, for the comment of our readers, from the *Shipping Gazette*, and fully participate, as all Englishmen must do, in the sentiments of that Journal. A repetition of such cases will render English justice a bye-word with Spaniards.]

It is with a feeling of no slight shame that we have reported in our papers of Saturday and Monday last, the result of three indictments against a certain Philip Partridge, master of an English ship called the Jarrow, founded on the deaths of three Spanish sailors under his command, during a voyage between Princes Island and Tenerife. These men he is charged with having murdered by ill-usage and starvation. The first indictment was for the "wilful murder of Jose Maria Balager," in support of which five witnesses were examined, the men who went out as mate and steward, (the latter a black man named Allen,) the ship's cook, carpenter, and an American sailor. On the evidence given by the first of these the counsel for the defence attempted to throw discredit, on what ground our report of the trial does not inform us; we will, therefore, state the case as it appears by the evidence of the other deponents.

It appears that the deceased Spaniard was in good health, but of a weak constitution when shipped, and the witnesses all assert that he was attentive to his duty, and did it as well as he could. With regard to the captain's treatment of him, the ship's cook, the carpenter, a negro steward, and an American sailor give evidence pretty much to one effect. We will give the black's account of it:

"The prisoner used him (Jose) very ill, often beating him with thick ropes'-ends, or anything else he could get hold of for the purpose. The man appeared to attend to his work as well as other men. The prisoner gave him as many blows as he thought proper. When the deceased had been pumping, the prisoner would say, 'You don't work hard enough.' and flog him over the shoulders, body, and hands; and his left hand became useless and mortified in consequence of the blows he received upon it. The prisoner beat the deceased on the shoulders and body about two days before he died; and at the time he had the wound in the hand. He was in a very weak state before he died in the forecastle, at which time he was lying on the planks, without hammock or bed, having nothing but a night covering. When he was beaten by the prisoner about two days before his death, he was in a very sickly state."

"The Captain," says the carpenter, "did not always use a rope, but sometimes his fist, and struck him on the head." And the American sailor "has seen him beaten for the space of ten or fifteen minutes;" and he further deposes (his evidence being corroborated by that of the cook) that "the man did his best at the pump, but the captain knocked him down, and sent him forward, telling Tear, the apprentice boy, • • who had been made steward, • • *to put that fellow on half allowance, for he was not worth his grub.*"

Our readers will naturally ask what this half allowance was. Will it be believed that at the time this weak, over-worked, ill-used Spaniard was put on half allowance, the *full* allowance to which (no doubt wisely) it had been thought necessary to limit the crew, was ¼lb. of meat, ¼lb. of bread, and 3 quarts of water? It appears that for six weeks the captain compelled him to subsist upon ¼lb. of meat, ¼lb. of bread, and 1½ quart of water for the 24 hours; and then he died: the cook giving it broadly as his opinion that he came by his death through ill-treatment, flogging, and starvation.

Here, then, without having recourse to the evidence of the discredited witness, who deposes to a violent beating over the neck and elsewhere with "a billet of wood about three feet long, thick, and of a triangular form," about 10 days before his decease, we find inflicted upon a now sickly man, work of the heaviest kind, continued and cruel beatings, with miserably insufficient food, and deal planks for his bed, the whole terminated by—his death.

The Spanish authorities, shortly after the Jarrow's arrival at Santa Cruz, seized the captain, and called him to account for the murder of three of their countrymen. The English claimed the prisoner. He is brought home,—tried before an English jury. And what is the result? That jury, without waiting to hear the defence—at once, upon the evidence which we have laid before our readers, bring in a verdict, not of manslaughter—not of an aggravated assault—but simply and entirely "Not Guilty."

We could hardly believe our eyes when we saw the verdict. It might indeed be unjust to form a decidedly adverse conclusion upon a mere *exparte* case. The prisoner's witnesses may have been prepared (though little of the kind appears in the speech of his counsel) to give a point blank contradiction to all of the charges against him, and to prove a conspiracy amongst his crew to take away his life. Evidence may have been in reserve to show that these punishments were drawn down upon the deceased by wilful and obstinate indolence or insubordination. There are, as we have said, no symptoms of such a defence, but we cannot say that it was not intended. In spite of the indignation which boils in the veins of any man who has the ordinary feelings of humanity, who has the ordinary jealousy for the honour of the English name, at the recital of all this brutality on an unprotected foreigner, it would have been unjust to pronounce a hasty conviction.

But the jury did not hesitate to pronounce an acquittal. Twelve men sworn to do true and impartial justice—twelve to whom the solemn duty had been committed of vindicating the rights of the injured, of teaching tyrants that their savage caprices cannot be indulged with impunity under English law—that there are those who will look after and exact a stern account for the lives of the helpless and the stranger—these men, on this only evidence, pronounced the prisoner simply "not guilty." On him we have said we could not then have pronounced, but on them we *can*. We can say that we are ashamed that twelve Englishmen could have been found thus to dispose so summarily, and upon this only evidence, of a case so terribly serious. We are the more ashamed, because the alleged victim is not himself an Englishman—one of ourselves—one who is aided by all our national prejudices and sympathies—but a foreigner, who has taken service under an English captain, trusting himself to the rigour, indeed, of British discipline, but to the protection of British law. And it does not mend matters that this Englishman's trial has been taken by the English authorities out of the hands of the Spanish Government, who were proceeding in their own way, till thus prevented, to visit the injuries of their countryman; still less that the ruffian in whose hands three Spaniards have perished, had told two of the witnesses at Santa Cruz, that "he had once been in a ship where the Spaniards got the mastery, *and had never liked a Spaniard since.*"

It appears by the reports of the recent trial at the Old Bailey that Partridge, who was sentenced to imprisonment for his ill-treatment of the three unfortunate Spaniards, has been punished before on the verdict of a jury for a somewhat similar offence. What, then, is to prevent his once again being placed in a position to inflict injury upon seamen, as the master of a British ship, when he shall be released from his confinement? He found employment before, and will as readily be able to obtain another engagement in the Merchant Service, although he has been twice convicted of offences which do morally, and should effectually, bar him from occupation. At present any person, whatever may be his capability or his character, can be placed in command of a merchant vessel; and there are owners who are so careless in their selection of masters as to entrust their own property, and consign the property of others, and the lives of their seamen, to men devoid of all the attributes which should characterize the seaman. Partridge's case is only one instance; but there are hundreds of others; some that justice has dealt with—yet more that have never been exposed to public odium, or submitted to legal inquiry.

Sir.—As an old subscriber of 25 years, I hope you will insert the following few remarks upon the trial of Philip Partridge on Saturday last:—

With the whole of your observations upon the trial of this brutal captain I most fully concur, and regret that his sentence was not more severe. The real sentence however, was six, and not three months imprisonment; and the jury would have found him guilty of manslaughter, being satisfied that the death was caused by cruel beating, particularly with the log slate, and unnecessary exposure the following cold night in the shrouds without sufficient clothing, had it, towards the end of the trial, not come out in evidence, that after the captain had retired to his cabin for the night, the poor Spaniard was taken down from the shrouds, by the humanity of the crew, and afterwards severely beaten by the second mate (Joseph Fisher), and then beaten back into the shrouds. This circumstance alone saved the captain from a verdict of manslaughter.

A Juryman who Found for the Assault.

Saving Life at Sea.—Sir.—With the desirable object in view of lessening the loss of life at sea in stormy weather, and decreasing the too frequent consequent destruction of maritime property, I would earnestly recommend all shipowners and captains to adopt the following plan:—

Let every person in the vessel be furnished with a belt of a fathom and a half long, made gasket fashion.

Whenever it is necessary to take in the third reef of the topsails, *before it becomes dark* let a 3½ or 4 inch life-line be set up fore and aft the upper deck, with a few frappings to guy it to the side and amidships.

Order the watch or hands to wear their belts, which are simply rove round the waist with the end tucked in, and do not in the least interfere with their active duties, either on deck or aloft; but when men are then employed in conning, steering, looking-out, or in any exposed or dangerous position, two half-hitches may be taken with the end of their belt, which would secure any individual from being washed away,—an accident which very frequently occurs from a lop of a sea, broaching to, being pooped, taken in a sudden squall, or any other casualty to which seamen are constantly exposed.

In connection with this subject I must add that a great deal of "wear and tear" of spars and canvas, and even loss of shipping, might be avoided if owners and masters of merchant vessels would encourage—I ought to say insist on—the general use of a good barometer.

I shall be glad to offer a few plain practical directions on this subject, which, by the commonest attention, would enable any one to understand its indications sufficiently well for general use.

I am &c.,

Edward Jennings, *Lieut. R.N.*

Exeter, Sept. 15, 1842.

Death of Grace Darling.—This heroic and interesting female expired at Bamburgh, on the 20th of October, in her 25th year. She had been in a delicate state of health for a considerable time past, and her medical attendant recommended her removal from the sea. She, in consequence, went to reside with a friend at Wooler, and afterwards removed to Alnwick, accompanied by her sister, where lodgings were engaged for them by their Graces the Duke and Duchess of Northumberland, by whom the greatest attention was paid to the amiable girl. Her complaint having assumed the form of decided consumption, and all hope of her recovery abandoned, her father anxiously desired that she should return amongst her family, and she was accordingly removed from Alnwick to Bamburgh only about ten days ago.—*Newcastle Journal.*

Wrecks of British Shipping.

(Continued from p. 788.—cs. crew saved, L lost, D drowned)

VESSELS.	BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.
Adele	———	———	Bombay	Mauritus	Byramg(	Aug. 4 cs
Alicia	Cork	———	———	———	S Bride B.	
Auckland	run foul of	———	Llanelly	Dublin	St Gowen	Oct. 6 cs
Anne and Mary	———	———	Shields	Montrose	Montrose	Mar. 8 1D
Betsy A. Deas 225	———	Stevens	Shields	Dundee	Eyemoth	Oct. 18 cs
Beverley	Guernsey	Hall	Guerns'y	Rochestr	———	Oct. 23 cs
Brigand, steamer	London	Hunt	Bristol	London	Scilly	Oct. 11 cs
Brown	Whithaven	Jackson	———	Azores	Fayal	June 13 cs
Chalcedonia	———	Willott	St. John	cw.sd. by	Lavina	Sept. 30
Combatant 230	———	———	London	Saguen'y	at sea	Oct. 1 cs
Copeland	———	Sims	Liverpool	China	Sunda S.	July cs
Dahlia	Newcastle	Darlngtn	Liverpool	Petrsbg	Skerries	Sept. 30 cs
Economy	Blyth	———	Blyth	run down	at sea	Oct. 18 cs
Edward	abandond at	sea, c. 14	saved by	Aurelian	Quebec	June 27
Eliza 235	Kirkaldy	Willmsn	Leith	Bolderaa	Bolderaa	Oct. 4 cs
Evander	Aberdeen	Roberts	Gragmth	Hull	Off Inkth	Sept. 29 cs
Fancy	Sunderland	Noble	Sundrlnd	founder'd	Whitby	Dec. 26 cs
Friends	Carlisle	Baxter	Carlisle	Liverpool	at sea	Oct. 20
Galatia	———	Ness	Newcstle	Naples	Cabeza R	May 26 cs
Garland 240	———	———	St. John	———	Bridport	Aug. 16 cs
Gem	Hobart T.	———	———	———	Chathm I	April
Gloria	———	———	———	———	Aalborg	Oct. cs
Helen Mar	———	———	———	———	Bornhlm	Oct.
Hope, timber laden	London	———	Quebec	———	Goodwin	Oct. 22 cs
Humility 245	———	———	Hartl'pol	Scarboro'	Whitby	Sept. 10 cs
Isabella and Jane	Sunderland	Frost	Sundrlnd	Newhavn	not hd of	since Ap 1st
Jane	Perth'	run foul	of by Vir	gil, Wil	son, sunk	cs
John and Mary	———	Marfleet	Hull	Grimsby	N. Sea	Sept. 2D
Kate	———	Greenwll	Sundrlnd	Swinem'	abandond	June
Kent 250	———	Lakeham	Torquay	Sthmptn	So. C. of	Eng. cs
Kirby	———	———	Duddon	Youghal	at sea	Oct.
Langley	———	———	London	Petrsbg	———	Oct. 7 cs
Louisa	———	Baker	Marseille	N. York	Fire I.	Sept. 4 cs
Loyalist	Pictou	Marshall	Pictou	Hull	Lnglos I.	Aug. 30 cs
Lucy 255	———	———	Halifax	———	Labrador	Aug. 21 cs
Martha	———	Ridgway	———	———	Barrier R	
Medora	———	Carter	Liverpool	———	Barb Cob	Oct. 28
Middlesex	———	———	Sydney	London	Brazil C.	Aug. 30 cs
Northumberland	———	———	Archangl	London	Archangl	cs
Oceanus 260	Yarmouth	———	———	———	Dominca	Sept. 7
Otter	L Hampton	Pepper	Shields	France	founderd	Oct. 3 cs
Petrel	St. John	———	———	———	S Mary B	Sept. cs
Philander	Kirkaldy	watrlggd	aband'nd	seen in	S Lawrnc	Sept. 1
Pilot	Cardiff	M'Donal	Cardiff	Havana	Hebrides	June 22 cs
Rebecca & Eliza 265	Newcastle	———	Rouen	Dungens	———	Oct. 23 cs
Regina*	Exeter	wreck se	en floting	in Bristol	Channel	Oct. 5 cs
Romulus	———	Auld	———	———	Madeira	Oct. 5 cs
Sable	———	Kennedy	———	———	Labrador	Aug. 21 cs
Scipio	Dundee	Crom'rty	Arbroath	Baltic	Thrnby S	Oct. 11 cs
Sovereign 270	———	———	———	———	Kuysna	Dec. 29 cs
Stephen	———	Hensale	Newcstle	Pictou	ran into	iceberg cs
Sylvian	———	———	Celta	Boulogne	by fire	Sept. 22 cs
Thos. & R. Jackson	Whitby	Gales	Middleb'	London	Hasbro'S	Oct. 22 cs
Transit	———	———	C.G.Hpe	———	Rottnstl.	May 10 cs
Two Sisters 275	———	———	———	———	Torres S.	
Waterwitch	London	Christie	whaler	run away	with	Mar. 24
W. Shand 277	———	Dunn	Newcstle	Cronstdt	Baltic	Sep. part cs

* Said to have sunk about 3 miles N.E. of Nash Point, having been in contact with the Rose of Bristol.

Ice-Bergs in the longitude of 14° W!—The Maria, Captain Duffil, of London, recently arrived at Milford from Quebec, after a passage of forty-four days, reports that, during her voyage she struck on an Island of ice, which carried away her jib-boom and bow-sprit, sprung her fore-top-mast, and caused the ship to leak. On the 15th she fell in with the Dockfour of Bristol, the Captain of which ship gave them every possible assistance. Passed between several ice-bergs on the 15th, 16th, and 17th, as far as the longitude of 14° W.

This is by far the most easterly position in which the presence of ice-bergs have been reported, as low as the 50° of latitude. A thermometer suspended upon deck, will give warning, by its fall, of the approach to these formidable floating dangers, generally, in sufficient time to avoid contact.

The neglect of this essential duty, as also that of converting all the ships' boats into safety boats, renders the individual whose place it is to look into such matters—whatever he may think—as culpable as he who from any other negligence causes the loss of human life, whenever the former leads to the same distressing result.

Decisions in the Admiralty Court.

(From the Shipping Gazette.)

The Alexander.—An action brought under the 3rd and 4th Victoria. c. 65, for necessaries supplied to this foreign ship by Messrs. Mitchieson and Law, on the 9th July, 1835. The court held that they were not necessaries, and dismissed the suit with costs.

The Ark.—A suit for salvage services rendered by the Success to the Ark, on the 16th and 17th of October last, when on the Gunfleet Sand. A tender had been made of 60l., which the court increased by 25l., with costs.

The Athol.—A motion praying for a monition against the Lord Commissioners of the Admiralty, calling upon them to instruct their proctor to appear to a suit instituted against this vessel by the Jane Clark, for damage occasioned by a collision. The court rejected the motion.

The Aurora.—An appeal from the decision of three magistrates of the county of Canarvon, who had awarded the sum of 400l., for salvage services rendered to this vessel on the 17th of October last year. The court reduced the amount 100l., and left each party to pay their own costs.

The British Empire.—A suit for alleged salvage services rendered by the steam-tug Fidler to this vessel when on the Blyth Sand, or a shoal of mud adjoining it, on the 21st of February last. The court decreed the sum of 35l.

The Courier.—*Collision.*—The Margarets (the vessel the owners of which were proceeding in the action), a brig belonging to Hartlepool, was coming up the channel, on a voyage from Odessa to Antwerp, with a cargo, about two o'clock in the morning, on the 15th of September, the Start-point light bearing N.W. and by N., distant about six leagues, she was struck by a Dutch barque, which was going down channel, with only part of a cargo, from Rotterdam to Batavia. The Court said—Then it appears the conclusion is, that the Margarets was in no degree to blame, but the Courier was altogether to blame for the collision. Consequently, I must pronounce for the damage, and with costs.

The Cordelia Sophia.—An action for the damage sustained by reason of a collision between this vessel and the Unity, in Blackwall-reach, on 12th July last. The court was aided by Capt. Chas. Weller and Capt. George Probyn, of the Trinity-house, who considered that no blame whatever was imputable to the vessel proceeded against. The court therefore dismissed the suit, with costs.

THE DAVID.—A suit for salvage services rendered on the 4th Sept. to this vessel, when near Bridlington. A tender had been made of 20l., which the court overruled, and awarded 40l., with costs.

THE DRUID.—AN action entered against this vessel by the Sophie, a foreign vessel, for damage sustained by a collision in December last. The owners of the Druid prayed the court to require security from the Sophie for costs, in case she failed in making out her claim. The court granted the motion.

THE ELIZABETH.—In this case the court decreed the sale of the vessel. This vessel having been sold under a decree of the court, Dr. Addams moved that the net proceeds should be paid to the mortgagees. The court granted the motion.

THE GAZELLE.—On the motion of Dr. Bayford, the court granted the fourth default, and decreed a perishable monition, and also a monition of appraisement against this vessel, in a cause of subtraction of wages.

THE GOOD HOPE.—A suit for alleged salvage services rendered to this vessel on the 22nd and 23rd of July last, near Margate, was brought by the steam-ship Victoria. A tender had been made of 150l.

THE HARRIET.—The court was moved in this case to prevent an attachment going forth against the sureties for the owner of this vessel, which inflicted serious damage by collision with the Woodlark, the owner having since become a bankrupt. The court dismissed the bail from their responsibility.

THE HEBBLE.—In this case salvage services were rendered on the 4th of September, near Bridlington. The court awarded 25l. with costs.

THE IMMACULATO.—*Salvage.*—A claim on the part of some smacksmen, belonging to a smack named the Endeavour, for salvage services alleged by them to have been rendered to the Immaculato, a foreign brig of 220 tons, from Amsterdam to Messina and Naples, which they had rescued, according to their statement, from a situation of extreme danger, in the vicinity of the Cutler Sand and Cork Ledge, off the Suffolk coast on the 30th of October last.

'Court.—I am clearly of opinion, fortified by the judgment of these gentlemen, who are so much more competent than myself to form a correct view of this case, that no salvage service has been rendered; but, on the contrary, those who undertook to render such service as was requisite,—that of pilotage, have not discharged their duties as they ought to have done. I must, therefore, dismiss this action, and with costs.

THE JANE AND BETSY.—Salvage services were rendered to this vessel by Captain Morgan and the crew of the revenue-cutter Adder, at No-Man's Land, Isle of Wight, on the 9th and 10th of March last. A tender had been made of 50l., which the court overruled, and decreed 400l., but that sum was to include costs and damage.

THE LORD COCHRANE.—An action on a bottomry bond for 8,538l. The ship had since been sold for 1,675l., which had been paid to the holders of the bond, and they now moved the court to decree to them the amount of the freight 1,685l., subject to charges for wages. On the other side it was contended that large costs had been incurred, to cover which the freight should be retained in the registry. The court granted the motion.

THE MARGARET.—A suit for alleged salvage services rendered to this vessel by the City of London steamer, between the Red Sand and the Gillman Sand,

on the 14th of November last. A tender had been made of 40l., which the court overruled, and decreed 60.

THE MASSACHUSSETS.—An action was brought against this vessel by the Bullfinch to recover the damage sustained by a collision between the two vessels on the 16th Dec. last, off the London Docks. The court was assisted by Captains Locke and Ellerby, of the Trinity House, who were of opinion that the blame was attributable to the Masssachusets, and the court therefore condemned her in the damage.

THE MINERVA.—A suit for alleged salvage services, rendered to this vessel by the Commodore steam-tug, on the 4th of January last, near Margate. A tender had been made of 50l., which the court overruled, and decreed 65l.

THE NEPTUNE.—A suit for salvage services alleged to have been rendered to this vessel on the 14th inst,, by seven smacks and their crews, between the Kentish Knock and the Longsand. The case involving nautical points, the court was again assisted by the Trinity masters, who considered that the Atalanta, one of the smacks proceeding, was the cause of the mischief which arose, and the court therefore dismissed her claim. To the other six smacks the sum of 200l., was awarded, with costs.

THE NEW HOLLAND.—Dr. Addams moved the court to sign the *primum decretum*, and decree a perishable monition against this vessel, in a cause of subtraction of wages. The court complied with the prayer.

THE OCEAN.—*Salvage.*—A claim for remuneration for salvage service rendered to the Ocean, a collier of Whitby, by a steam-tug, called the Commodore, by towing her from Coal-house point, near Gravesend, to London, after she had been damaged by collision with two other vessels. A tender of 20l,, had been made. Taking all the facts of the case, seeing it was a service rendered by a steam-vessel of 80-horse power, and occupied an actual space of 12 or 13 hours; seeing that she performed the task successfully, and the ship and cargo were safely brought to port, without going into the minutiæ as to the quantity of water made, and without delaying the case by referring it to the registrar and merchants to ascertain what was the amount of damage done to the steamer, because that, in a case of this kind, would only be to subject the parties to great additional expense—I shall overrule the tender, and pronounce for 45l., including all the damage, and of course give the costs.

THE PANDA.—In this case a dispute has arisen as to whether certain dollars found on board this piratical vessel belong to the Crown, or to the Lord High Commissioners of the Admiralty. The court reserved its judgment.

A PIRATICAL VESSEL, Name Unknown.—An application on the part of Captain Anderson, of her Majesty's ship Pylades, his officers and crew, for head and bounty money, for the destruction of a pirate vessel in Chusan roads, China. It appeared that on the 31st of July, 1841, Captain Anderson detached his cutter and gig after three pirate junks. They came up with them, and in an action of twenty minutes, in which two of the Pylades' men were killed, 52 out of 100 of the pirates (Malays) were killed. As soon as one of the junks was boarded, the surviving Malays jumped overboard, and were either drowned or killed by the Chinese inhabitants on shore. Two of the junks slipped anchor and escaped in the dark.

Dr. Lushington said, there was enough to justify him in pronouncing the junks to be piratical, as they had been so designated by Admiral Elliott, and were treated as such by the Chinese inhabitants, he had no doubt, therefore, about giving 20l., for the 52 persons killed; but as to those who jumped overboard, he was not satisfied that he should be justified in pronouncing for head money for them, since the act meant that the persons should have been

taken, secured, or killed by her Majesty's officers. He gave, therefore, 20l., for each of the 52, and 5l. for the rest.

THE PLYMM.—Mr. Stokes the proctor for the mortgagees, applied to the court to dismiss his parties from the suit. The registrar read a letter received by him from Mr. Barnacle, begging the court to delay the case a few days. The court directed Mr. Barnacle to bring in an act on petition by the next court, otherwise he should dismiss the case.

THE SUSAN.—A suit for subtraction of wages. On the 7th September, the court pronounced for wages due, and decreed a perishable monition. That monition was now returned, and, on the motion of Dr. Robinson, the court decreed the vessel, her tackle, and appparel to be sold.

In this case the vessel had been sold, and the proceeds brought into the registry.

On the motion of Dr. Pratt, the court ordered the wages due to the seamen to be paid.

THE SELINA.—Salvage services were rendered to this vessel by her Majesty's ships Buzzard and Isis. The value of the property being small, the court decreed to Mr. Budd, by whom the vessel was brought home, the sum of 120l., and costs.

THE SHANNON.—An action entered by the Placidia against the Shannon, to recover the amount of damage sustained by a collision between the two vessels in Sea Reach, about half-past 7 o'clock, on the evening of the 13th of October, 1841. A cross action was brought by the Shannon against the Placidia. The court was assisted by Captains Nelson and Probyn, of the Trinity-house, who were of opinion that the collision arose from accident, and that therefore neither party were to blame. The court dismissed both actions, and ordered each party to pay their own costs.

THE ROSA.—A suit for salvage services rendered by the officers and crew of her Majesty's revenue cutter the Badger, on the 10th of March last, in Yarmouth Roads. A tender had been made of 75l., which the court overruled, and decreed 100.

THE SOCIEDADE FELIZ.—A slave ship captured off the Coast of Africa. An allegation was tendered on behalf of the Forrester, which claimed to be joint captor with the Harlequin.

THE TREMONT.—A foreign vessel, to which necessaries had been supplied at New Orleans. She had since been sold in this country under a decree of this court, and the proceeds brought into the registry. A balance of 73l., was still due to the parties by whom the necessaries had been furnished, and, on the motion of Dr. Addams, the court ordered that sum to be paid under the act of parliament, but intimated that, if a similar case arose and was contested, he should not feel himself bound by his decision on an *ex parte* motion.

THE UNDAUNTED.—This was a suit to recover the amount of damage sustained by a collision between this vessel and the fishing-smack, Diligence, at Bolt-point on the evening of the 1st of March last. A cross action was entered by the Undaunted against the Diligence. The court was assisted by Captain Drew and Captain Pixley of the Trinity-house, who were of opinion that the fault was entirely attributable to the Undaunted, and the court therefore pronounced in favour of the fishing-smack in both cases.

THE VERNON.—At the sitting of the court Dr. Lushington delivered judgment on the point reserved, as to the pilot on board being duly licensed and qualified under 6th George IV., cap. 125, section 2 and 14. He held that the

pilot was duly licensed, and therefore that the Vernon was not liable for the damage. Costs were not prayed by the Vernon.

THE VOLANT.—A cause of collision. The action was brought by the Beatitude, to recover the damage sustained by the loss of that ship on the 25th of February last, at the entrance to the Swin, and about a mile N.W. of the Sunk light. A cross action was entered by the Volant. The court was assisted by Captains Rees and Fitzroy, R.N., of the Trinity-house, who considered that the Volant was entirely to blame.

THE WILHELMINE.—A suit for alleged salvage services rendered by the Robert Burns, a steam-vessel, on the 12th of October last, off Milford. The court reserved its judgment.

THE WILLIAM BRANDT, JUNIOR.—A case of salvage services were alleged to have been rendered by the steam-vessel Copeland, on the 14th of November last, on the Blyth Sand. A tender had been made of 16l., the amount of an asserted agreement for towage. The court decreed 60l.

THE ZEPHYRUS.—*Saving of life not entitled to salvage remuneration.*—A claim for a remuneration for services alleged to be of the nature of salvage rendered to a vessel, by saving the lives of the crew in the Yarmouth life-boat.

My opinion is, that no additional authority has been conferred upon me which the court was not in possession of before the passing of the act, and I am bound, therefore, to reject the claim of the salvors—certainly not with costs. When I look to the case of the Queen Mab, and to the very meritorious exertions made in this case to save life, I shall certainly not condemn the salvors in the costs; but, so far as my opinion goes, this is to be considered now as a settled question.

Dr. Addams: Immediately after the service we offered the salvors 35l.

The court: Well, it was very handsome.

FEMALE ROWERS.—The female rowers of Saltash, who have acquired such laurels at Portsmouth, Plymouth, and Devonport, left Southampton in the Grand Turk to proceed to the Havre regatta, in order to contest for a prize for amateur rowers, open to all the world. They were most politely received by the committee, the mayor of Havre himself shaking hands with them and drinking their healths in champagne. But the Frenchmen declined the proposed encounter on even terms, and at length it was arranged that a match should take place between the Glenvillites and the English boatmen, and a subscription was entered into by the committee for a prize to be contended for by the amazonian champions with the Englishmen, and in a few minutes four hundred francs were forthcoming for the purpose. English rowers volunteered from the Grand Turk, the boats were manned and womaned respectively. The race, which was well contested on both sides, was soon begun and concluded, and amid the cheers of 20,000 spectators the Saltash women carried the day, and earned a new trophy on the bosom of the Seine. The successful Saltashers left the harbour amid renewed cheers at their success, and returned in the Brunswick to Plymouth, lauding the generous conduct of the French, and also speaking in grateful terms in praise of the kindness manifested towards them by—Luscombe, Esq., (Lloyd's agent at Havre), and Captain Russell, of Stonehouse.—*Hampshire Independent.*

LOSS OF A RUSSIAN MAN OF WAR.—A Russian ship of line, a new 74, going from Archangel to the Baltic for her stores, was lost last Sunday week on the coast of Norway, off Christiansand, with about 400 men. The wind was a high northerly gale, off the land, and it is not known whether she sprang a leak or was out of her reckoning, but many reports, all unfavourable to the captain and officers, were in circulation at Gottenburgh.

THE RECENT WRECKS.—By the recent wrecks we do not mean those in our usual tables of British Shipping, which appear to form an essential feature of our mercantile system in the way of annual loss and gain, but we are referring to the more than ordinary loss of life which has been occasioned by the wreck of the Reliance near Boulogne, and those of the Waterloo, and Abercrombie Robinson, at the Cape, which vessels are yet to take their places in those tables. Our space will not allow us to give the full accounts of these severe losses, and if it did, what should we present to our readers but a tale of sorrow, and suffering, at which the heart sickens. The Waterloo of 414 tons, was bound to Van Diemen Land, had 219 male convicts in charge of Dr. Helsell. She had anchored in Table Bay, and on the 28th of August at nearly mid-day parted her anchors, and in about a quarter of an hour became a mass of rubbish. In about two hours more, 190 persons * had perished! The Abercrombie Robinson, in like manner parted, but from the good condition of the ship, not a soul was lost. She held together, while the Waterloo went to pieces. Several other vessels it is also stated went ashore, but their crews were all saved. It is said that "the weather, the water, and the bottom are blameless, and of the Waterloo it is impossible to speak with moderation. Deadly blame rests somewhere, and justice will, we have no doubt find out the parties who deserve it." So says a writer at the Cape, who must be inexperienced in these matters to talk of justice reaching parties that are to blame, &c. Justice indeed, does he know anything about sea-worthiness in Insurance offices. If he did, he would not write thus. The next "Melancholy Shipwreck" we have, occasioning "dreadful loss of life," occured on the Coast of France, a few miles south of Boulogne. The Reliance a large Indiaman of 1500 tons, ran on shore near Melimont, and out of 122 persons on board only 6 were saved. It is difficult to account for the loss of this ship, otherwise than by neglect of the log, and neglect of the lead.

NEW BOOKS.

AN EPITOME OF NAVIGATION AND NAUTICAL ASTRONOMY, *with the improved Lunar Tables.—By Janet Taylor*, 103, *Minories*, 1842.

The present season is prolific in works of this kind, and has in consequence imposed on us a task which must not be hastily performed. We shall, therefore congratulate Mrs. Taylor on having concluded the labours of her new edition, and reserve our observations on her performance for another number, when we shall look further into these recent productions for enlightening the minds of our seamen.

THE PRACTICE OF NAVIGATION AND NAUTICAL ASTRONOMY.—*By H. Raper, Lieut. R.N.; Second Edition.*—R. B. Bate, Poultry, 1842.

For the reason we have given above, we shall also reserve our remarks on this new edition of Lieut. Raper's work. We may in like manner congratulate our talented brother officer on so soon appearing with a new edition of his excellent Navigation, and (although late) on the circumstance of his having received the Geographical Society's medal for the excellent tables of maritime positions, which he has compiled with so much care and judgment. In our last number we perceive in a letter from the commander of a Merchant Ship some remarks, which show the great importance of a proper attention to this essential part of a work on Navigation, and which must afford satisfaction to our naval author.

NARRATIVE OF THE EXPEDITION TO CHINA *from the commencement of the War to*

* Convicts 143, soldiers 15, sailors 14, women 4, children 14,—190.

the present period.—By Commander Bingham, R.N., late first-lieutenant of H.M.S. Modeste.—Colburn, Marlborough Street.

We have only time and space for the following extract at present; but shall revert to it again in a future number.

"On the 19th we were once more under all sail with Captain Elliot and a party for Tong-Tchou-foo. At eight Captain Elliot and Mr. Morrison landed on the west side the town, within a natural breakwater formed by a small reef, the surf being too heavy on the beach to admit of their doing so there. We now saw from the ship a large artificial harbour, formed by strongly built stone piers, between which an opening was left capable of admitting the largest junks, but which are obliged to go in and out at high water; several were at this time, it being low water, aground in the harbour.

"Captain Elliot, after a short stay, returned to the ship, accompanied by Paoupang; when the boat immediately went back for a mandarin and his servant, who were very anxious to accompany Captain Elliot, no doubt as spies on the compradore, of whom they evinced great jealousy; but as Captain Elliot wanted to have some private communication with this man, the smallness of the boat afforded a ready opportunity for declining their company.

"This mandarin was one of the finest specimens of man I had till then seen in China. He stood about six feet two or three inches, and was apparently stout in proportion. He wore the winter cap, the crown of which was a puce-coloured satin, shaped to, and fitted close to the head, with a brim of black velvet* turned sharply up all round, the front and hinder parts rising rather higher than the sides,—in fact, in shape much resembling the paper boats we make for children. On the dome-shaped top of this he wore a white crystal sexangular button, in a handsome setting. Beneath this was a one-eyed peacock's feather falling down between his shoulders. This feather was set in green jade-stone about two inches long, between which about ten inches of the feather projected, and though apparently but one, is, in fact, formed of several most beautifully united.

"His ma-kwa, or riding-coat, was a fine blue camlet, the large sleeves of which extended about half down the fore-arm, and the skirts nearly to the hip. Under this he wore a richly-figured blue silk jacket, the sleeves equally large, but reaching nearly to the wrist, and the skirts sufficiently long to display the full beauty of it below the ma-kwa. These loose dresses always fold over the right breast, and are fastened from top to bottom with loops and buttons. His *unwhisperables* were of a light blue figured Nankin crape, cut much in the modern Greek style, being immediately below the knee tucked into the black satin mandarin boots, that in shape much resemble the old hessian, once so common in this country, with soles some two inches thick, the sides of which were kept nicely white, Warren's jet not yet having been introduced. To this part of his dress a Chinese dandy pays as much attention as our exquisites do to the formation of a 'Humby.'

"The figure was completed by his apparently warlike, but really peaceable implements, which no respectable Chinaman would be seen without, viz., the fan with its highly-worked sheath; the purse or tobacco-pouch, in the exquisite embroidery of which great ingenuity is displayed; a variety of silver tooth and ear-picks, with a pocket for his watch, the belt to which these are attached having a small leather case fixed to it, to contain his flint and steel. I had nearly forgotten his tail,—his beautiful tail, the pride of every Chinaman's heart,—and in this case, if all his own, he might well be proud of it. I am afraid to say how thick it was, but it reached half way down his leg, and I would defy Rowland's macassar to give a finer gloss. In short, he was the very epitome of a dandy Chinese cavalry officer.

"On the subjugation of China by the Tartars an edict was issued, requiring the whole nation to shave the front of the head, and to plat the residue of the

* This, with the lower orders is frequently formed of black cloth.

hair into a tail, the length and size of which is considered in China a great mark of masculine beauty, in consequence of which great quantities of false hair are worked up with the natural hair, the ends being finished off with black silk cord. To the lower orders it is a useful ornament. I remember, on one occasion, to have seen a Chinaman flogging his pig along with it, while on another, the servant was dusting the table; and when their belligerent propensities are excited, which is not often, they will twist each other's tails round their hands, pulling with all their strength, and enduring the most horrible torture until one or the other cries out *peccavi*.

"While this mandarin was mounting the ship's side, his fan had been allowed to rest in its case; but he was no sooner firmly on the deck, than out flew this everlasting companion of a Chinaman: nor do I think he could have accomplished his salute without it.

"The attendant was not so tall, but an exceedingly muscular and powerful fellow,

"His leg would make a chairman stare;"

and I think they must have been picked out to make us imagine we had nothing but such herculean men to deal with.

"White Button having been ushered into the captain's cabin, where cherry brandy was produced, a long conversation took place between Paoupang and Captain Elliot relative to the supplies, &c.; the mandarin frequently asked what they were saying. On one occasion, when Paoupang had been exposing and abusing the whole fraternity, he answered White Button's query by assuring him, that he was telling the captain what very good persons mandarins were, and that the people liked them very much. Paoupang, at all events, made such a good story out of the mandarin's refusing to receive any compensation for the *small quantity* of supplies furnished, and of their squeezing him ultimately for it, that it was arranged that he should be paid for all that should have been supplied when he came to Canton with Keshen, by which means he would prevent the mandarins at this place getting hold of the dollars. That the inhabitants generally were squeezed and made to give their cattle as a bribe for us to go away, I think very possible; but I do not think that they would have ventured to squeeze an attaché of Keshen's: at all events, he succeeded in squeezing us.

"Having got rid of our visiters, the chief of whom seemed rather disgusted at his servant having found his way to the lower deck, where he had been revelling in the charms of a glass of grog, we made sail to rejoin the admiral; but light winds and a lee tide, obliged us to anchor for the night."

NEW CHARTS.

(*Published by the Admiralty, and Sold by R. B. Bate, 21, Poultry.*)

THE ADRIATIC SEA.—*Scale 3 inches to a degree of latitude nearly.*

HARBOUR OF ANCONA.—*Scale 6 inches to the mile.* HARBOUR OF TRIESTE.—*Scale 6 inches to the mile.* CORFU ROAD.—*Scale 3 inches to the mile nearly.*

THE PEARL ROCK, *off Cabrita.*

We perceive that two plans of this have appeared, one by Capt. Sheriff, R.N. assisted by Mr. Frembly, the other by the late Lieut. Arlett, R.N.

SCOTLAND, *East Coast, Sheet* 1.—*Eyemouth to the Tay, including the Firth of Forth, by Mr. George Thomas,* R.N.—*Scale about 4 inches to the degree of longitude.*

SCOTLAND, *East Coast, Sheet* 2.—*The Firth of Tay to Aberdeen.—Surveyed by Commander Slater,* R.N. F.R.A.S.

SCOTLAND, *East Coast, Sheet 3.—Aberdeen to Banff.*

The above charts of Scotland are on the scale of about 4 inches to the degree of longitude, and by the late Commander Slater, with the following plans :—

PETERHEAD.—*Scale about 4 inches to the mile.*

FRASERBURGH.—*Scale about 8 inches to the mile.*

BANFF AND MACDUFF.—*Scale about 4 inches to the mile.*

Some important additions have also been made to the charts of the Chusan Archipelago, and the neighbourhood of the Kwesan group.

TURKS ISLANDS.—By Capt. R. Owen.—Scale an inch and a half to a mile.—Includes the approaches on all sides, with the Bank, and the Endymion Rock on the south.

ADMIRALTY ORDERS.

Admiralty, June 9th, 1842.
By Command of their Lordships,

With reference to the directions of my Lords Commissioners of the Admiralty, dated the 19th of July, 1832, that seamen or marines when abroad who have completed their period of twenty-one years service, shall not be sent home until the ship in which they may be serving shall return to England, my lords are pleased to direct that in future such men may be sent home, if they apply for it, provided they can be spared from the ships in which they may be serving, and opportunities offer of sending them to England as part complement, or as supernumeraries in ships of war coming home; and, in the case of marines, provided their vacancies can be supplied from the returning ship.

But when seamen serving on board Her Majesty's ships who have completed a service of twenty-one years shall be desirous of obtaining their pensions without quitting the service, and their captains or commanding officers shall think it for the advantages of the service to retain them, the applications for the same shall be transmitted to this office by the officer commanding the ship, with the usual statement of the ships in which they have served, in order that their time of service may be immediately taken out, and the pensions to which they may be entitled then granted to them, without waiting as at present until the men are paid off.

The last paragraph of this order is to apply to men serving at home as well as abroad.

By Command of their Lordships,
SIDNEY HERBERT.

Admiralty, July 9th, 1842.

With the view of obtaining and Preserving an authentic record of marriages solemnized on board Her Majesty's ships, my Lords Commissioners of the Admiralty are pleased to direct that in future, when marriages are solemnized on board Her Majesty's ships out of the United Kingdom, a declaration of the marriage, signed by the minister of the church, by the contracting parties, and by two competent witnesses, shall be entered in the Log Book of the ship, specifying the fact, the day on which the marriage was solemnized, and the place where the ship then was. And the captain or commanding officer of the ship is to transmit to this office a certified copy of such declaration, which will be forwarded officially to the Registrar of the Consistory Court of the Lord Bishop of London, in Doctors' Commons, for the purpose of being registered.

By Command of their Lordships,
SIDNEY HERBERT.

Admiralty, July 23rd, 1842.

Referring to my memorandum of the 22nd. of last month and to the directions contained in it relative to seamen who may claim their discharge abroad after five years service, their lordships desire that such men shall, on their passage home, if employed in the navigation of the ship, retain the pay of the ratings they had in the ships from which they were discharged, and be victualled at full allowance, but if not so employed, they shall be borne as supernumeraries on two thirds allowance and considered as passengers only, and not entitled to any pay. Men who have been retained in the service under the act. 5. and 6. William IV. cap 24. clause 1, and who may subsequently obtain their discharge are to be paid and victualled according to the same rules, but are not in either case during their passage to receive the additional fourth, which is to cease on the day of their discharge from the ship in which they have been serving.

In order to insure regularity in the payment of those men during their passage my lords direct that the commanding officers of her Majesty's ships shall carefully note on the pay lists which they give to the men, whether or not they were necessarily employed in the navigation of the ship during their passage home.

By Command of their Lordships,
SIDNEY HERBERT.

Admiralty, Aug. 8th, 1842.

In transmitting the accompanying new sheet of Instructions for making out Ships' Books, which has been prepared with a view to prevent the continuance of the numerous errors and omissions daily discovered in the Muster Books now received, my lords desire the particular and minute attention of each commanding Officer to these Instructions, with which they are to make themselves completely acquainted before transmitting them to this office, in order to satisfy themselves that the Regulations are carried fully into effect, as my Lords will feel themselves obliged to notice very strongly any future errors or omissions.

By Command of their Lordships,
SIDNEY HERBERT.

THE KISH LIGHT.—The storm of the night of the 11th, amongst other ravages, carried away the piles erected on Mitchell's patent screw principle at the Kish bank, and on the top of which a light-house was about to be placed as a substitute for the light-ship. By some it is held that the injury was caused by some vessel coming in contact with the erection, but there is no trace of any wreck to lead to the supposition. The house which was to have stood on the top of the piles is ready in the Commissioners' yard, Kingstown. Whether the contemplated light-house will be again tried after this catastrophe remains to be seen. It seems a paradox to think how these piles, so firmly embedded in the blue clay, braced together so admirably, and presenting such small superficies for wind or wave to act upon, could have been prostrated unless by the shifting of the stratum.—*Dublin paper.*

HER MAJESTY'S RETURN FROM SCOTLAND.—SIR, In your notice of this interesting passage, your account runs as follows:—"The Voyage of her Majesty was brought to a safe and speedy conclusion, under the *skilful pilotage of Captain Bullock, R.N.*" Will you allow me to say that, Vice-Admiral Sir E. Brace, has favored me with a public letter, stating his satisfaction of my conduct as Master and Pilot of the Trident during the said passage. RICHARD SHARP.

[In our observation of the complete knowledge which Captain Bullock had obtained of the river, by his very elaborate Survey of it, we by no means intended any reflection on Captain Sharp whose letter we readily insert.—ED.]

CAPTURE OF WOOSUNG AND SHANGHAE, *with the conclusion of the Chinese war.*

IN a former page will be found the account of the operations down to the following:—

On the 11th of October the Hon. Company's steam frigate Sesostris, Commander Ormsby, arrived at Bombay, bringing news from Nankin to the 31st of August, and Hong Kong to the 10th September.

The last mail informed you of the capture of Woosung and Shanghae, in the Yang-tze-Keang, and of the destruction of numerous batteries and defences on the banks of the Woosung river; and it was stated that the fleet had proceeded towards Nankin for the purpose of commencing operations against that city.

The squadron set sail from Woosung on the 6th July, and on the 14th arrived opposite some batteries built on a range of hills commanding the river, from which a fire was opened on the leading ships. The guns were instantly silenced, and the whole of the defences destroyed. On the 20th the vessels anchored abreast of the city of Chin-Keang-foo, which commands the entrance of the Grand Canal, and the next morning the troops were disembarked, and marched to the attack of the Chinese forces. One brigade was directed to move against the enemy's camp, situated about three miles distant, where from 1,500 to 3,000 men, it was reported, were assembled; another was ordered to co-operate with this division in cutting off the expected retreat of the Chinese from the camp of the city; while the third received instructions to escalade the northern wall of the town. The Chinese, after firing a few distant volleys, fled from the camp with precipitation, and dispersed over the country. The city itself, however, was manfully defended by the Tartar soldiers, who prolonged the contest for several hours, resisting with desperate valour the combined efforts of the three brigades, aided by a reinforcement of marines and seamen. At length opposition ceased, and ere nightfall we were complete masters of the place. Chin-Keang-foo, like Amoy, was most strongly fortified, and the works in most excellent repair. It is supposed the garrison consisted of not less than 3,000 men, and of these about 1,000, and 40 mandarins, were killed and wounded. "The Tartar general," says Sir H. Pottinger, "retired

to his house when he saw that all was lost, made his servants set it on fire, and sat in his chair till he was burned to death! His private secretary was found, the day after the assault, hidden in a garden; and on his being carried to the spot, recognised the half-consumed remains of his master, who was worthy of such a death."

Our list of casualties was heavy; three officers of the land force, and one of the navy, being killed, and nine of the former, and two of the latter, were wounded. 154 men of both services were killed and wounded.

LAND FORCE.

Killed.—Col. Driver, 6th M. N. I., Capt. Collinson, 89th R. I., Lieutenant Gibbons, H. M. 49th.

Wounded.—Lieut. Bernard, 18th R.I. slightly; Lieut. Badeley, H.M. 49th, dangerously; Lieut. Grant, same regiment, slightly; Major Warren, 55th, severely; Lieut. Cuddy, same regiment, severely; Capt. Simson, Rifles, severely; Ensign Travers, 2d M.N.I., slightly; Waddle, Madras artillery, severely, Jamedar, 2d M.N.I., severely.

NAVY.

Killed.—Major Uniacke, Royal Marines.

Wounded.—Lieut. Crouch, and Midshipman Lyons.

Leaving a strong garrison for the retention of Chin-Keang-foo, the fleet proceeded towards Nankin, which was about 40 miles distant, and arrived on the 6th August, when preparations were immediately made for an attack on the city. A strong force under the command of Major-General Lord Saltoun, was landed, and took up their position to the west of the town; and operations were about to be commenced, when a letter was sent off to the Plenipotentiary, requesting a truce, as certain High Commissioners, specially delegated by the Emperor, and possessed of full powers to negotiate, were on ther way to treat with us. The attack was consequently deferred, but the commissioners did not arrive till the 15th. Their names and rank are thus given:—

1. Kee Ying, of the Royal Family, and Commander-in-Chief of the Tartar troops in Kuang Sung.

2. Eleepoo, Lieutenant-General of Shapoo, formerly Governor of Chekeang, but degraded for liberating the prisoners last year.

3. Gnu, General of the two provinces, Keeang-soo and Keeang-see.

After several visits and a good deal of discussion between the contracting powers, matters were arranged to their mutual satisfaction; and on the 29th of August the treaty was publicly signed on board H. M. S. Cornwallis, by Sir H. Pottinger, and the three commissioners. Of this convention the following are the most important articles:—

1. Lasting peace and friendship between the two empires.

2. China to pay twenty-one millions of dollars in the course of the present and three succeeding years.

3. The ports of Canton, Amoy, Foo-chow-foo, Ningpo, and Shanghae, to be thrown open to British merchants, consular officers to be appointed to reside at them, and regular and just tariffs of import and export (as well as inland transit) duties to be established and published.

4. The Island of Hong Kong to be ceded in perpetuity to her Britannic Majesty, her heirs and successors.

5. All subjects of her Britannic Majesty (whether natives of Europe or India) who may be confined in any part of the Chinese empire to be unconditionally released.

6. An act of full and entire amnesty to be published by the Emperor under his Imperial sign manual and seal to all Chinese subjects, on account of their having held service or intercourse with, or resided under the British government or its officers.

7. Correspondence to be conducted on terms of perfect equality amongst the officers of both governments.

8. On the Emperor's assent being received to this treaty, and the paymen of the first instalment, 6,000,000 dollars, her Britannic Majesty's forces to retire from Nankin and the Grand Canal, and the military posts at Chinhai to be also withdrawn, but the island of Chusan and Kolangsoo are to be held until the money payments and the arrangements for opening the ports be completed.

It appears the Emperor at first objected to throw open the port of Foo-chow-foo, on the ground that as this place was within seventy miles of the tract of country where the black teas are grown, the English would take their cargoes in here, instead of at Canton (which is 400 miles off), and consequently the trade of the latter place would be ruined. The Plenipotentiary, however, refused to yield the point, and his Majesty was obliged ultimately to give way.

At the time the Sesostris left Nankin, the Mandarins appeared most anxious for our departure from this neighbourhood, and the 6,000,000 dollars required to be paid ere the expedition would be withdrawn was in the course of collection. Four millions indeed had been already tendered, as an instalment, but Sir H. Pottinger refused to receive anything less than the whole sum.

It will be observed that in no one provision of the treaty is there the slightest allusion to the opium trade—the actual cause of the war,—and it is said that although the commissioners were very desirous of introducing some article on this point, Sir H. Pottinger refused to admit it, stating that the Chinese must impose restrictions on their own subjects if they wished to prohibit the traffic. Thus, recognized by neither power, the opium trade will henceforth be a system of dangerous but lucrative smuggling, and doubtless soon prove the source of fresh jealousies and misunderstandings with the Chinese. We can but regret that the question as to its lawfulness has not been finally set at rest.

Immediately after the signature of the treaty, it was dispatched to the Emperor for ratification, and on its return, which was expected in about ten days, Major Malcolm was to convey it to England, viâ Suez, by the Hon. Company's steamer Auckland.

At the time of the settlement of differences, sickness had begun to appear extensively among the men, both of the land and sea force. Upwards of 100 belonging to the 98th regiment had died.

When the first instalment of the 21 millions of dollars is paid, the troops return to Chusan. There are at present off Nankin, her Majesty's ships Cornwallis, Blonde, Modeste, Childers, Clio, and Algerine; her Majesty's steamers Vixen and Driver, and the Hon Company's steamers Auckland, Queen, Pluto, Phlegethon, and Medusa, which vessels retain their position until payment of the instalment.

The Tennasserim steamer was dispatched to Calcutta with the tidings of peace, and arrived safely on the 4th instant.

Her Majesty's ships Endymion, Calliope, and Dido, and the Hon. Company's steamer Proserpine, are stationed off the great canal. The steamer Nemesis was to proceed to Formosa, to obtain the release of the captured crews of the Anne and Nerbudda.

At Hong Kong there remain her Majesty's ships Blenheim, Wolverine, and Warspite, and the Hon. Company's steamers Memnon and Hooghly.

On the Preservation of Health in Africa.

The following maxims for European residents and travellers in Africa, and rules for the preservation of health on the western coast of Africa, we extract from the Appendix to the Report. They are the result of Dr. Madden's observations, and may be useful to those who intend to visit or settle in our African colonies:—

Maxims for European Residents and Travellers in Africa.

1. That in hot climates we cannot eat and drink, or endure fatigue, as we have been accustomed to do at home.

2. That the tranquillity of mind in those countries directly influences the health and strength of the strangers or settlers in them, and that the mental faculties and digestive functions, and as this influence is exerted, act and re-act on each other.

3. That so far as regimen, exercise, and the regulation of time for meals and business, the prevailing habits of the natives of the countries we visit are not to be contemned,

4. That in all hot countries less food is requisite to support nature than in cold ones.

5. That in travelling, the feverishness of the system, or its increased nervous irritability, so far debilitates the digestive organs, or impairs their action, that the quantity of food requires to be diminished, and the interval between meals to be regulated so as to avoid the sense of exhaustion that arises from long fasting.

6. That the traveller who drinks wine or malt liquor in moderation does well, and he who cannot do so in moderation would do still better to abstain from both.

7. That the langour occasioned in those climates makes the stimulus of wine or spirits more desirable than they can prove beneficial, being only temporary excitants, while the depressing influence of the climate is of a permanent nature.

8. That what is temperance in a cold climate would amount to an immoderate indulgence in a hot one.

9. That with respect to regimen in those countries, no general rules can be invariably applied, because there are no general laws that regulate the effects of food or physic on different consitutions, in different degrees of sanity or sickness.

10. That many things that are wholesome in one country are deleterious in another.

11. That there is no rule in life with regard to regimen of such general application as that of Seneca—namely, "that all things are wholesome which are not only agreeable to us to-day, but will be convenient for us to-morrow."

12. That cleanliness, cheerfulness, regularity in living, and avoidance of exposure to heat and wet, and especially to night air, constitute the chief means of preserving health in hot countries.

13. That fear, fatigue, and repletion, are the ordinary pre-disposing causes which leave us subject to the influence of endemic and contagious maladies in hot countries.

14. That in tropical climates exuberant vegetation is productive of miasma, prejudicial to health; and, as a general rule in selecting a locality for a settlement, or any long continued residence, that whatever influence is favorable to vegetable vigor is unfavorable to animal life.

15. That hypochondriasm and disquietude on the score of health, the frequent recourse to medicine for slight indispositions, and the neglect of timely precautions and early and active remedies in grave ones, are equally prejudicial to strangers in these countries.

16. That there is no dependence to be placed in the efficacy of medicine, or the observance of regimen, however strictly enforced, without a well-grounded confidence in the goodness of Providence, and the sufficiency of its power for our protection, in all places, and in all perils, however imminent they may be.

Rules for the Preservation of Health on the Coast of Africa.

1. To rise at 5 o'clock, and to retire to rest at 10.
2. To breakfast at 8 o'clock, to dine at 3, to sup at 8.
3. To repose when travelling, from 11 o'clock a.m. to 8 p.m.

4. To allow not the time of meals to be broken in upon by visitors, or to be changed or retarded, on pretext of business.

5. To dine out of one's own house as seldom as possible.

6. To refrain from exercising immediately after eating.

7. To repose from considerable fatigue always before meals.

8. To use wine rather as a cordial than a beverage to allay thirst, and neither wine nor spiritous liquors ever before dinner.

9. To avoid the use of sour and acid wines at dinner, whether with water or without, and where wine is required, a couple of glasses of sound sherry or Madeira at the most after dinner.

10. To avoid the pernicious custom in hot countries of taking copious beverages at all hours of the day, whether of lemonade, sangaree, or malt liquor.

11. To eat the simplest food, to avoid a variety of dishes, to abstain altogether from confectionary, and at first from all kinds of fruit to which we have not been accustomed; melons, apricots, and at all times from sour fruits of every description.

12. To use the tepid or warm baths occasionally, and as a general rule, the cold bath never, on the coast of Africa, not because, under some circumstances, it might not be salutary in itself, but because it, in all cases, demands precautions which strangers can seldom take. To all except the sound, the acclimated, those perfectly free from all visceral obstructions, it is injurious. More fatal consequences to travellers have come to my knowledge from cold bathing in hot countries, than had arisen from any other cause.

13. To wear flannel next the skin in all seasons, and never while perspiring or exposed to the breeze remove any part of one's clothing for the sake of coolness.

14. To be careful at night not to sit in the open air when the dew is falling.

15. Never to sleep with the windows of one's bed-room open.

16. To give up all idea of pursuing sporting amusements in this country, the exposure to wet and solar heat in going through jungles and marshy grounds in quest of game having proved fatal to hunderds of Europeans on this coast.

17. To refrain from all violent exercises and recreations requiring bodily exertion.

18 Never to travel between an hour after sunset and one before sunrise.

19. Never to sit down in wet clothes, or to shift wet clothes, without the use of a flesh brush.

20. To avoid sleeping on a ground-floor, or dwelling in a house contiguous to the sea-beach, or in the vicinity of wet and marshy grounds.

21. To take daily out-door exercise, either on horseback or on foot, either from 5 to half-past 7 a.m., or half-past 5 to half-past 7 p.m.

22. To avoid acidulated drinks, acid fruits, and sour wine.

23. To make choice of large, lofty, and well-ventilated rooms, especially for bed-chambers, in all hot countries.

24. To avoid sitting in draughts.

25. To pester one's-self with anticipated evils or possible occurrences that may be attended with difficulties as little as one can, but to follow one's course on the principle of first ascertaining that one is right, and then of pursuing one's route straightforward.

26. During meal-time to keep the mind disengaged from business, and seldom to devote the time of sleep to study or to society.

27. To look danger in the face, and in sickness to be determined (Deo juvante) to resist its pressure, and to recover from it.

28. To keep moving on one's journey, and once having set out, as seldom as possible to loiter on the way.

TRIDENT, Steam Yacht.—The Surveyor of the Navy has attended Prince Albert at Windsor Castle, by desire of his Royal Highness, to exhibit and explain the draught of the steam yacht ordered to be built for the use of Her Majesty.

The Prince was pleased to express his approbation of the plans, and to suggest some points with reference to the accommodations, a deficiency in which was manifested on board the Royal George during the late visit to Scotland. Orders have been issued to build the Royal steam yacht forthwith at Pembroke Dockyard. As far as we can learn, the dimensions will be about 200 feet in length, by 30 feet in breadth; burthen upwards of 1,000 tons, and of 450 horses' power. The yacht will be launched in March, and brought into the River for her engines, internal embellishments, and furniture. She is expected to be quite ready to receive Her Majesty by the month of June.—*Naval & Military Gazette.*

Promotions and Appointments.

[From the Naval and Military Gazette.]

PROMOTIONS.

Captain—W. Griffin.

Lieutenants—H. B. Mottley—J. A. P. Price—C. B. Strong, (the court-martial vacancy of Lieut. Alston.)

APPOINTMENTS.

Lieutenants—D. M'Kenzie (1841), H. B. Beresford (1842), and J. O. Bathurst (1838) to *Excellent*—C. Seaver (1830) to *Shearwater*—H. J. Giles (1841) E. R. Glynn (1840), and C. C. A. Kane (1841) to *Caledonia*—C. L. Hockin (1838) to *Wasp*—E. R. J. Balfour (1841) to *Geyser*—A. Cumming to *Frolic.*

Master—R. Fuller (act.) to *Kite.*

Mates—C. G. Fegan to *Philomel* as Assistant-Surveyor for surveying at Falkland Islands—G. T. C. Smith to *Shearwater*—F. P. Warren to *St. Vincent*—R. Reid, W. F. Warren, H. T. Veitch, and C. H. V. Temple to *Caledonia*—H. F. Ingram to *Geyser.*

Second-Masters—J. Mathews (act) to *Magicienne*—C. Greig to *St. Vincent.*

Surgeon—A. Stuart to Haslar hospital—J. Andrews to *Orestes.*

Masters'-Assistants—T. H. Draper to *Camperdown*—H. H. Smith to *St. Vincent.*

Assistant-Surgeons—D. Wilson to Royal Hospital, Stonehouse—W. Hannant to *Resistance*—J. Boland to *Volcano*—H. R. Banks to *Royal George*—J. Bernard to *Rhadamanthus.*

Midshipmen—F. P. C. Owen to *St. Vincent*—C. H. Simburne to *Camperdown.*

Volunteers 1st Class—J. B. Piers to *Warspite*—F. V. Hayden to *St. Vincent*—T. R. Alexander to *Illustrious*—J. F. Baker to *Howe*—J. W. Pike to *Frolic*—J. H. Bushnell to *Winchester*—T. J. Young to *Resistance*—T. Gree and C. S. Guthrie to *Thunderer.*

Clerks—W. H. Turner to *Queen*—J. Barrett to *Volage.*

Coast Guard.

Appointments.—Lieut. H. M. Miller to Blackwater—Lieut. E. C. Smith to Chadman Pool—Lieut. F. Drew.

Removals.—Mr. W. J. Standbridge, chief officer, to Hove, v. Lieut. E. Baugn, resigned—Mr. C. A. Lafargue to Lydd, v. Higginson to Standgate Creek—Lieut. J. W. Smith to Mellise—Lieut. Carroll to Newcastle, Castle Wellan.

Movements and Stations of Her Majesty's Navy.

AT HOME.

Hyacinth, 18, Captain W. Warren, Nov. 13th, arr. at Portsmouth from China.

Megera, (st. v.), commissioned Nov. 12, by Lieut. Oldmixen.

Orestes, Com. Hon. T. S. Carnegie, Oct. 31, ssiled from Portsmouth for W. Indies.

Pique, 36, Capt. Hon. M. Stopford, Oct. 30, at Portsmouth from Quebec.

Racehorse, 18, Com. Fitzgerald, 2nd Nov. arr. at Plymouth from West Indies, 11th paid off.

Racer, 16, Com. Harvey, Oct. 28, paid off at Portsmouth.

SOUTHAMPTON, 50, Capt. Ogle, Nov, 12, at Portsmouth from Cape Good Hope.

THUNDERER, 84, Capt. Pring, Nov. 9. left Plymouth for Downs, during her Majesty's visit to Walmer.

AT PORTSMOUTH.—*Spithead*— Pique, Curacoa, Dolphin, and Thomas Brown, convict ship.

In Harbour—St. Vincent, Excellent, Victory, Royal George, Bellona, (Austrian), Resistance, troop ship, Volcano, Rocket, and Echo, steamers, and Boyne, transport.

In Dock—Prince Regent, President, Powerful, Tyne, Conway, Emerald, Volcano and Athol, steam-vessels.

In Basin— Collingwood, Britannia, Frolic, Firebrand, and Thunderbolt.

ABROAD.

ACORN, 16, Com. J. Adams, Sept. 8, arr. at St. Helena, from Africa.

DRUID, 44, Capt. Robson, June 18, left China for Bombay July 13, touched at Singapore.

HORNET, 6, Lieut-com. R. B. Miller, Sept. 29, arr. at Bermuda from Vera Cruz.

ISIS, 44, Capt. Sir John Marshall, 8, Sept. arr. at St. Helena from Africa.

MINDEN, hospital ship July 23, arr. at Singapore.

PROMETHEUS, (st. v.) Lieut-com. T. Spark, Oct. 23, arr. at Gibraltar from Malta and returned next day.

RATTLESNAKE, (tr. s.) Mas-com. W. Brodie, June 4, arr. at Hong Kong.

ROVER, 18, Com. Keele, Oct. 11, arr. at Halifax from Bermuda.

SIREN, 16, Com. W. Smith, Sept. 13, left Bombay for Madras.

SPITFIRE. (st. v.) Lieut-com. J. Evans, Sept. 10, totally wrecked on Half-moon Key Honduras, officers and crew saved.

VINDICTIVE, 50, Capt. Sir J. T. Nicholas, June 19, arr. at Hong-Kong.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Donnington Cottage, Oct. 28th, the lady of Com. C. O. Hayes, H.M.S. Wolf, of a son.

On the 17th Oct., the wife of Mr. G. Johnson, Master R.N., of a daughter.

At Fleetwood, Lancashire, the lady of Captain F. W. Beechey, R.N., of a daughter.

At Stonehouse, the lady of Dr. George Mackay, R.N., of a daughter.

At Mellvile, Malahide, the lady of Capt. Sir T. Ross, R.N., of a son.

At Killaloe, Oct. 28, the lady of Lieut. J. Tully, R.N., of a son.

Marriages.

At Malta, Oct. 17, C. R. Johnson, RN. to Julia, daughter of Major-Gen. Bredin, R.A.

At Tynam, county of Armagh, on the 3d Nov., Capt. W. B. McClintock, RN., to Pauline, daughter of Sir J. Stringe, Bart.

Oct. 26, at St. George's, Hanover-sq., C. B. Dryden, Esq , to Eliza, daughter of the late G. A. F. Skottowe, Esq., RN.

Oct. 25th, at Southampton, R. Gillespie, jun., Esq. to Louisa, daughter of the late Capt. W. Dowers, RN.

Oct. 27, at St. Leonard's, Sussex, Lieut. H. Gill, RN., to Sarah Jane, eldest daughter of Lieut. J. Coleman, Coast Guard.

Nov. 2, at Bath, the Rev. J. R. Watson, son of the late Capt. J. R. Watson, RN., to Emily, daughter of the late J. Bettington, Esq.

Deaths.

Nov. 6, at The Views, Huntingdonshire, Vice-Admiral Sir R. H. Hussey, KCB., GCMG.

Mr. G. D. Nobbs, late Clerk RN.

Lately Lieut. L. Lyster, RN.

Nov. 6, at Devonport, C. Thomas, Esq., MD., Surgeon RN.

Oct. 25, in Molyneaux-street, Bryanston-square, Lieut. J. R. Wellsted, I.N., FRS., FAS., author of 'Travels in Arabia,' 'Travels to the City of the Caliphs, &c., aged 37 years.

At Haslar Hospital, Gosport, Lieut. F. Pragnall, RN.

June 17, at Landlord Parsonage, Wilts, aged 25, T. B. Girdlestone, Esq., RN., son of the Rev. H. Girdlestone, and grand nephew of the illustrious Nelson.

At Deptford, Capt. A. Gordon, (1814), he was midshipman in Howe's and Bridport's actions.

At Deptford, Lieut. W. Vale, late RN.

At Deptford, Mr. R. Malcolm, surgeon RN.

In Devonshire-place, Nov. 17th, the Hon Capt. M. Fortescue, R.N.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.

From the 21st of October, to the 20th of November, 1842.

Month Day	Week Day.	Barometer In inches and decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9AM.	3.PM	Min.	Max	A.M.	P.M	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	F.	29 85	29·93	32	42	28	43	NW	N	2	4	bm	bc
22	S.	29·70	29·25	37	45	27	47	SW	SW	6	8	qor 2)	qor (3)(4)
23	Su.	28·80	28·86	42	46	37	47	SW	SW	4	4	bcp (2)	bcp (3
24	M.	29·20	29·40	40	43	34	44	NW	NW	7	6	qbcp (2)	qbc
25	Tu.	29·63	29.51	31	45	32	46	SW	SW	3	5	or 2)	qor (3)
26	W.	29·57	29·65	38	42	30	43	SW	SW	2	6	b	bc
27	Th.	29·70	29·74	41	48	36	49	W	W	3	5	bc	qbcp (3
28	F.	29·65	29·65	38	48	37	49	W	W	2	4	bc	bc
29	S.	29·78	29·88	35	46	30	47	W	N	3	4	b	bc
30	Su.	30·10	30·17	34	46	30	48	W	W	1	1	b	b
31	M.	30·25	30·25	46	51	40	52	W	W	2	1	o	o
1	Tu.	30·23	30·20	43	48	40	49	W	NW	1	1	bm	bm
2	W.	30·15	30·14	44	49	36	50	NE	NE	1	1	of	od (3)
3	Th.	30·00	29·98	40	46	35	47	NE	NE	1	1	bc	bc
4	F.	30·03	30·11	37	39	34	41	NE	NE	2	4	bc	bcprs (3)
5	S.	30·18	30·14	38	43	33	44	NE	NE	4	4	bc	bc
6	Su.	30·17	30·16	37	41	31	42	NE	NE	2	3	bcprs (2)	bc
7	M.	30·14	30·14	39	45	37	47	N	NE	3	3	o	o
8	Tu.	30·14	30·10	41	42	38	43	NE	W	2	1	o	og
9	W.	29·84	29·72	41	44	40	45	SW	SW	4	6	og	qor (4)
10	Th.	29·67	29·65	47	49	43	41	SW	SW	3	4	o	og
11	F.	29 24	29·08	47	51	42	55	SW	S	4	6	or (2)	qor (3)
12	S.	29·11	29·33	50	53	48	55	SW	W	6	5	qbcp(1)(2	qbc
13	Su.	29·55	29·29	49	52	45	53	SW	SW	6	7	qor (1)(2)	qor (3)(4
14	M.	29·68	29·80	45	46	43	48	NW	NE	2	2	bc	bcr 4)
15	Tu.	29·64	29·63	43	43	42	44	NE	E	4	3	or (1)(2)	ogr (3)(4)
16	W.	29·75	29·76	43	43	42	44	NE	E	5	5	ogr (1)(2)	qo
17	Th.	30·15	30·33	39	42	35	43	NE	NE	2	3	o	o
18	F.	30·53	30·52	38	41	36	42	SE	S	1	2	o	bc
19	S.	30·24	30·07	41	44	32	51*	SW	SW	5	6	qor (2)	qor (3)(4)
20	Su.	29·76	29·78	46	46	45	47	NE	NE	4	3	bc	og

Oct.—Mean height of barometer = 29·770 inches; mean temperature = 45·5 degrees; depth of rain fallen = 1·56 inches.

* This took place at midnight.

TO OUR FRIENDS AND CORRESPONDENTS.

The momentous dispatches from China, came both too late, and too lengthy, for our present number. They will be duly preserved for our next.

Mr. Enys's paper in our next, and the continuation of the papers from the Marshal Bennett.

Several books have been received too late for our present number.

GENERAL INDEX TO VOLUME FOR 1842.

ENLARGED SERIES.

NEW BOOKS.

DEATHS OF COMMISSIONED AND OTHER OFFICERS.

ADMIRALS.

CAPTAINS.

COMMANDERS.

Chinese Navigation.

Being anxious to give the readers of the *Nautical* all the important information we can, and being desirous that no delay of ours may withhold from them that information, although it may reach us as late as the twelfth hour, and foreseeing that any hydrographical information concerning the China Seas, must now become an object of paramount and immediate importance, we devote an extra page or two by way of uesful appendage to our present volume to the following extracts from the *Shipping Gazette*. And, as we shall also reprint them in our January number, we shall make no comment on them, with reference to any similar previous information in our own pages at present.

We also annex to them the ratification of the treaty of peace with China, as the foundation of that future intercourse which must render such information necessary to our seamen.

We have been favoured with the following letter from Captain Laird, of the Chusan, to Messrs. Dent and Co., which, as will be seen, contains much interesting information to captains of vessels navigating in those seas. The Chusan left here on her voyage home on the 12th of June.—*Canton Press.*

To Messrs. Dent and Co.,

Barque Chusan, 10th August, 1842.

Gentlemen,—As we shall anchor in Batavia to-morrow to fill up our water and get some supplies, I beg to inform you of the arrival of the Chusan thus far on our passage in sixty days. We had very light winds from S.E. after we left Macao, and it was thirteen days before we got to the entrance of the Mindoro Sea; we had then calms for three days; on June 29th a light breeze sprung up from the S.W., and am sorry to say that that night, at 9h 30m pm. we grounded on a reef, going about three knots, in lat. 11° 51′ N., and long. 121° 30′ E., not mentioned by Horsburgh, or laid down in his charts; got the long-boat, and run the stream cable and anchor out in 4½ fathoms, brought the stream cable to the windlass, and our stoutest warp for a spring to the capstan, and am happy to say succeeded in getting her off by 2 o'clock, after striking very heavily for about five hours, but she has made no more water in consequence of getting on shore.

Had very light winds till we got down to Basseelan Straits, when we got becalmed again for five or six days; got a breeze from the S.W. that took us down to the entrance of Macassar Straits, and here it blew for ten or twelve days from the southward, that we could gain nothing. We stood over to the eastward to try to work to windward in smooth water. In standing over on the 25th July, at midnight, we saw a vessel to leeward throw a rocket and blue light, tacked at once, found afterwards that she was on shore, but saw her off next day. We ourselves struck on another coral reef on the afternoon of the 24th, and knocked off part of our false keel; finding we could make nothing of her between the reef and shoal, we gave them a wide berth, until the breeze moderated on the 29th; was then under single-reefed topsails, with main-topgallant sail for ten days previous. After this we got very easily down Macassar Straits, and have had a good run from there till now, and am happy to say

that she makes not the slightest drop more water than usual. The Castle Huntley was in company in the Sooloo Seas, also an American ship, and we have only lost sight of her this day. The vessel we saw on shore was the Cyrus whaler, Capt. Spratly; she was aground on the reef for 26 hours. He boarded us in the Straits, and gave us the following account of the different reefs and shoals not laid down in the charts, or if so, not correctly.

I shall begin at the entrance of the Mindoro Sea, where Captain Spratly says, there is a small reef or rock nine miles to the westward of the Apo Shoal, with only nine feet water on it, very dangerous; then of the reef we were on he says the native name is "Panakatan." Three small low islands, with a very extensive reef all round, from long. 121° 30′ till very near the Islands of Cravanes or Buffaloe, with a passage between them, and also between them and Simirara, and the same reef that the Francis Charlotte and Camden were wrecked on in 1839. To the S.E. of them is another low woody island, in about lat. 11° 40′ and long. 121° 40′ mentioned in Horsburgh's Directory, but not laid down in his charts;—a coral bank to the northward of the Dry Sandy Island, with only 4¼ or 5 fathoms on it, dangerous for large ships;—in lat. 10° 5′ and long. 121° 47′ an extensive reef, which he calls the Golconda, where she and many other vessels have struck, and right in the track of vessels. Next is one which the barque Ann got on, which I presume you have heard of before; it lies to the S.W. of Santa Cruz Island; also one off the same island, due west, in Basseelan Straits, with ten or twelve miles between them and the island. Captain Spratly was one of the whalers that assisted in getting the Ann off the rock; he says the Australasian Packet had a very narrow escape, having gone over the same reef, but at high water, and anchored inside of it. The Sooloo Islands, Captain Spratly says, are very imperfectly laid down in the chart. The next are the Maratua or St. John's Islands, in the Celebes Sea, where the reef off it is upwards of 30 miles farther to the eastward than laid down in any chart, and on this we saw Captain Spratly's ship aground on the 25th ult., his lat. 1° 54′ and long. 119° 8′. While on the reef the water was shoal north, and south as far as he could see from the mast-head, but could not see Maratua; the tide, while he was on the reef, rose in the morning seven or eight feet, and only two or three in the evening tide. He was on the reef the day after full moon, and it was high water at 4. A.M. To the south of this are the two Haring's Islands, bearing S.E. and N.W. from each other, in lat. 1° 40′, and long. 119° 15′ with a reef all round; also a very extensive reef four miles south of them, where we struck.

The Bemeeze Islands, lat. 1° 32′, long. 118° 56′, with reefs and breakers all round them, and a shoal between them and Point Ranncoongan. On the Celebes side there is a reef off Cape Donda, about ten miles to the N.E., and one off Cape Temoel to the westward five or six miles. Captain Spratly mentioned a number of others, but not in the track of vessels going to or coming from China, and that, in the many whaling voyages he has made in these seas, he has been aground on nearly all these reefs and shoals, and never knew such a continuance of southerly winds as we experienced before we entered Macassar Straits.

We came to anchor in Batavia Roads on the 11th, and will get away on the morning of the 13th.

I am, &c.,

JAMES LAIRD.

SIR.—I take the earliest opportunity that offers to inform you, for the information of commanders of vessels trading to China, that on my return passage, via Eastern route, I discovered an island in lat. 0° 25′ N., and long. 130° 44′ E., by two excellent chronometers by Frodsham, of Liverpool. This island is low, and covered with trees; no other islands were in sight from the mast-

head, it cannot, therefore, be considered as belonging to the "Yowl Group," from the nearest island of which it is distant twenty miles. I have named it Budd's Island.

Between the 'Eastern Paternosters' and the 'Postillions' having passed through the 'Straits of Salayer' I discovered another island in lat. 7° 9′ S., and long. 118° 51′ E. The 'Southern Postillion' lies in lat. 6° 58′ S., long. 118° 56′ E. The 'Eastern Paternoster' I consider to be fully twelve miles to the eastward of their position, as shown on Horsburgh's Chart. These islands are low, and well wooded, and I have been informed have channels of three fathoms water between them. At midnight, lat. by several stars, 7° 50′ the sea became suddenly smooth, which I attributed to the vicinity of the 'Barracouta Shoal;' passed on the following day over the position of 'Dutch Shoal,' no signs of such a danger were visible, but I was informed by Mr. King, English resident at Ampannan, that a vessel had been lately lost on the 'Sandbergs' My longitudes were measured from Whampoa, 113° 22′ 30″ E., and agreed with Horsburgh's position of 'North Island,' off Lombock, Bouton East Point, and Point Pigot, at the entrance of Dampier's Straits.

I remain Sir, &c.,

G. C. Budd.

Commander of the ship Regular, of Liverpool.

Seven Stones Light Vessel.—Information has been this day received, that the Floating Light Vessel, near the rocks called the Seven Stones, between the Land's End and the Scilly Islands, parted her Moorings on the 21st instant.

The Vessel is in safety, and will be re-moored with all practicable expedition, when the exhibition of the Lights will be immediately resumed.

By order, J. Herbert, *Secretary.*

Chinese Intelligence.

Steam-frigate Queen, off Nankin, Aug. 29, 1842.

Gentlemen,—The treaty of peace having now been happily signed, and the Emperor's assent to its provisions having likewise been intimated through an Imperial Edict, addressed to the High Commissioners and Governor-General, of which I enclose a translation, I feel anxious to relieve the people from the great distress and inconvenience which the present embargo on this river causes; and should your Excellencies concur in these sentiments, I beg that his Excellency the Admiral will issue the necessary orders, and also send instructions by the steamers under dispatch to her Majesty's ships at Chinhae and Amoy, not to interfere further with the trade of those places.

To their Excellencies Vice-Admiral Sir William Parker, K.C.B., and Lieut-General Sir Hugh Gough, G.C.B., &c.,

I have &c.,

Henry Pottinger,

Her Majesty's Plenipotentiary.

(True Copy.) A. S. H. Mountain, *Lieut-Col.*

Deputy-Adjutant-General Expeditionary Force.

N.B.—The enclosure to this letter is not forwarded, as it will of course be sent by her Majesty's Plenipotentiary, and being long, there was no time to copy it.

GENERAL MEMORANDUM.

To the respective Captains, Commanders, and Commanding Officers of her Majesty's ships and vessels, those of the Indian Navy, and to the Agents and Masters of transports.

Cornwallis, off Nankin, Aug. 29, 1842.

The Commander-in-Chief has the high gratification of announcing to the squadron and transports under his orders, that the Treaty of Peace between Great Britain and China has now been happily signed, and the Emperor's assent to its provisions being likewise received, the blockade and interruption of the Chinese trade and communications are to be immediately discontinued within the rivers, and on any part of the coast of China.

The officers are expected to exert themselves to prevent the slightest cause of offence or disagreement, to, or with the natives, with whom it is hoped the most friendly intercourse will be hereafter observed during the continuance of the British forces in this country.

W. PARKER, *Vice-Admiral.*

These documents set the question of the ratification of the treaty completely at rest, and most sincerely do we congratulate our fellow-subjects upon the result. It may now be said that GREAT BRITAIN IS AT PEACE WITH ALL THE WORLD.

LIST OF PLATES.

DIRECTIONS TO THE BINDER.

Errata.—Longitude of light-house on Petite Terre, (Guadaloupe,) p. 647, Sept., *instead of* 65° 45′ 36″ W., *should be* 61° 4′ 56″ W.

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