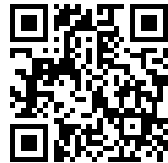
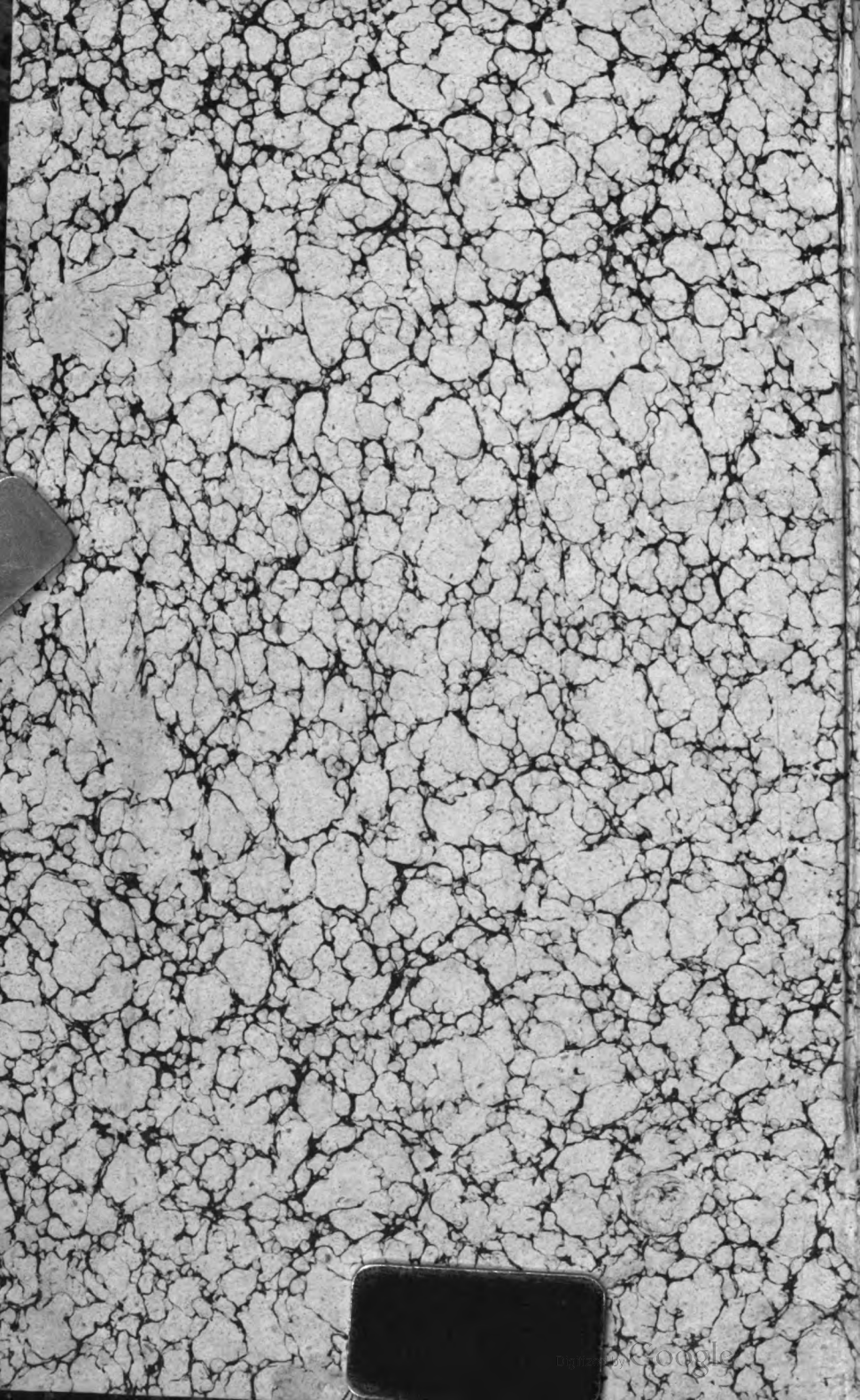
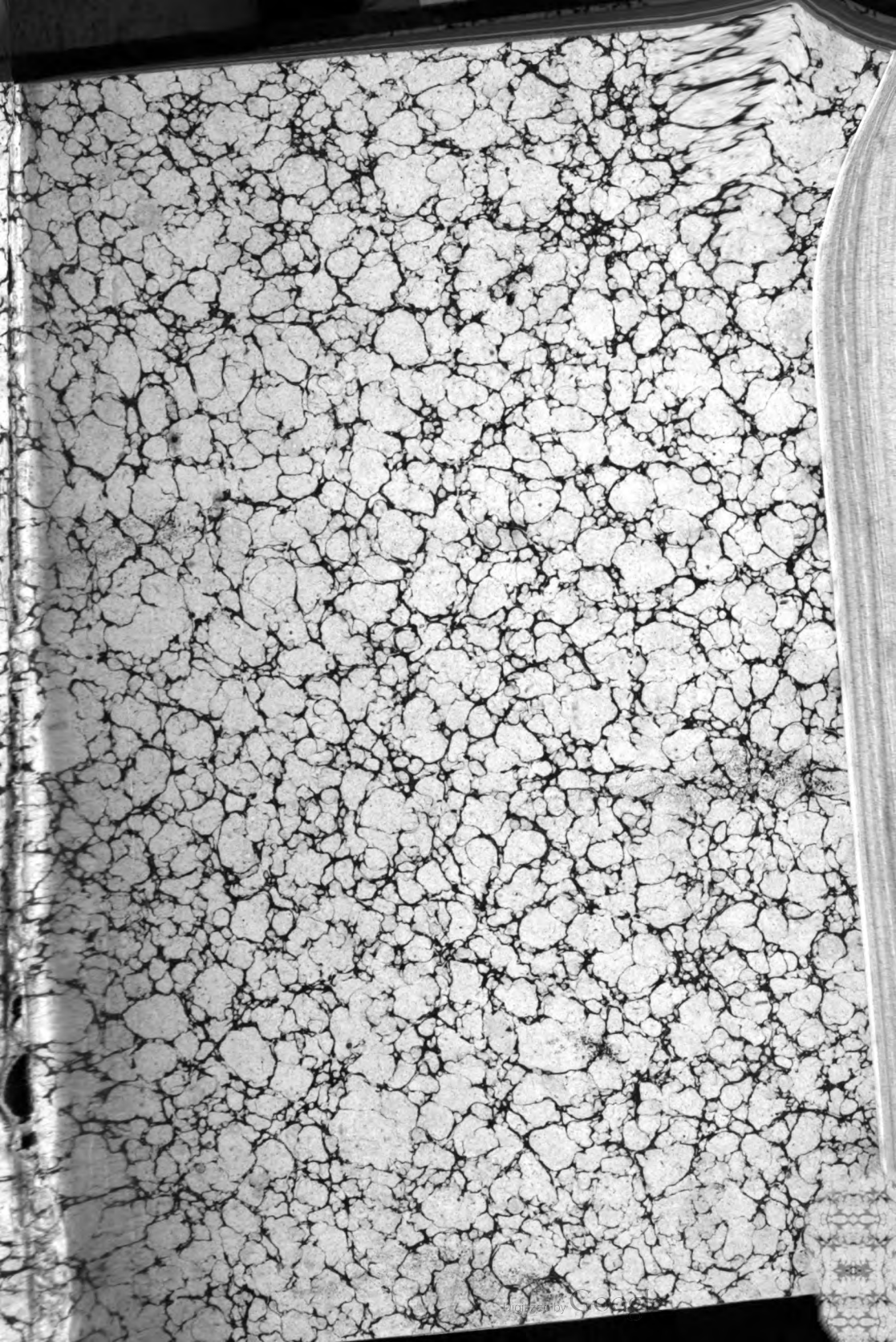

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FOR 1843.

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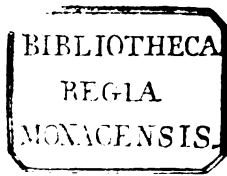
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WINDS AND CURRENTS OF THE PACIFIC OCEAN.

NEVER having seen any statement of winds in the Pacific Ocean, and believing that many imagine this ocean to be subject to uninterrupted trade winds throughout, or with such uncertain and transient deviations as to preclude any dependence being placed in them, (through which many circuitous and tedious passages are made from Manila, the Molucca Islands, &c., to Sydney, New Zealand, and other adjacent harbours,) I am induced to offer such remarks as appear likely to be serviceable, and which the experience of eighteen or twenty years cruising in the Pacific has enabled me to collect.

These observations will be chiefly directed to the western part of the South Pacific Ocean. Mr. Horsbugh briefly states that the west monsoon which blows regularly in the Indian Ocean, extends to New Guinea. This monsoon blows as steadily, strongly, and regularly, along the north side of New Guinea, at New Britain, New Ireland, and all contiguous Islands south of the Equator, so far eastward as Malanta, and the northern part of the New Hebrides, as in any part of the Indian Ocean whatever; and extending in a wind of gradually decreasing constancy and continuation, from hence far eastward to the Society Islands and Marquesas. The limits in latitude appear similar to the Indian Ocean, from one degree north to fifteen south,—occasionally to nineteen south, and the period from the beginning of January until the end of March. Having said thus much, as this is written principally with the idea of endeavouring to shew the practicability of making passages to the eastward in the Pacific, (instead of the circuitous route round New Holland,) which I have never heard has been attempted by trading vessels, although performed by whalers continually, I proceed to state a few facts of such passages, and will first attempt to prove the practicability of making a passage to the eastward, during the easterly monsoon in south latitude, or, from April until December or January, by keeping to the northward of the equatorial current, and between the trades or monsoons.

In October 1835, being off the Asia islands, and wishing to make a passage to the eastward, winds light and variable, and current running

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strongly to the westward, against which we could make no progress, stood to the northward and on the 19th of October were in lat. $2^{\circ} 6' N.$, and long. $134^{\circ} 11' E.$ Having lost the westerly current, pushed to the eastward between the parallels of $2^{\circ} 15'$ and $2^{\circ} 34' N.$ On the 27th were in long. $147^{\circ} E.$ From hence stood to the south-eastward and made Matthias Island, (it being my object to cruise in this neighbourhood,) on the 30th, passed through St. George's Channel quickly, current favourable, and to the Treasury Islands. Cruised here until 19th of December; started with a westerly wind which carried us to $169^{\circ} 36' E.$ on the 26th, having passed on the south side of Banks Islands, becalmed two or three days, then with variable winds chiefly from E.S.E. proceeded to the southward, and anchored in the Bay of Islands 15th of January.

These passages were made at a season deemed impracticable, before the west monsoon had set in steadily, by a southseaman of moderate sailing qualities, without using studding sails. The passage to the eastward may, I am convinced, be made at all seasons, by pursuing the same plan which is, as before stated, to keep to the northward of the equatorial current, and between the trades or monsoons. Here you will have a variable wind chiefly from the westward, with a drain of favourable current at times. Further to corroborate this opinion, June 23rd in $1^{\circ} S.$ and $149^{\circ} E.$ having been drifted from Matthias Island and New Hanover by a westerly current of two and a half or three knots an hour, stood to the northward, got westerly winds on the Equator. With these made easting, and on the 27th reached $155^{\circ} E.$ and $0^{\circ} 45' S.$; made Bouka Point soon afterwards; then found a current equal in strength to that at Matthias Island. At this time the westerly current did not extend quite to the Equator.

Again in September 1840, being unable to hold on near the Admiralty Islands, in consequence of strong westerly currents, stood to the northward, and when in $0^{\circ} 24' N.$ and in $146^{\circ} E.$, proceeded to $2^{\circ} N.$ before losing the current; then worked to the eastward, and stood to the southward on the east side of the Green Islands, which are in about $156^{\circ} E.$ The passage from Morty to Bouka has also been made in August by adopting the same plan. Although all these passages terminated in the longitude of the Salomon Islands, it was not through inability to proceed farther to the eastward, but merely in consequence of this being the destination. More might be quoted tending to show that these line currents seldom extend northward of $2^{\circ} N.$

During the west monsoon in south latitude, it has been a common practice, the last fifteen years, for ships to make passages from Timor to the Salomon Islands, some returning at the commencement of the easterly monsoon, and others spreading over the Pacific. Last year, five ships which had been cruising in the Indian Ocean, proceeded eastward between January and April, one along the line to the eastward of the Kingsmill Group, another to the Salomon Islands and New Zealand, and the remainder to New Ireland and elsewhere. From all which, I wish it to be inferred that, any ship leaving Manila between the beginning of December, and the beginning of March, or any port from which she can reach the north end of the Molucca or Gillolo passages, or, Dampiers Strait, between the middle of December, and the middle of

March, will make a speedy passage to any part of the Pacific Ocean in east longitude. And that during all other seasons the passage is practicable by keeping northward of the equatorial current, and between the monsoon winds.

In the period of the west monsoon, northerly and north-west winds prevail to the Cape of Good Hope of New Guinea. Passing eastward of this point the westerly wind will generally be experienced fresh and steady, with a current of two, or two and a half knots, running to the eastward, and extending from the New Guinea shore to about 1° north. A ship may pass near the St. David Islands, without risk of losing this wind or current, and northward of Providence Islands. From hence any of the passages may be chosen according to discretion. That by the Eastern Dampier Strait, although, perhaps, the most direct if bound to Sydney, I should not recommend, until the islands northward of New Guinea are more correctly inserted. If St. George Channel be adopted, it may be preferable to steer along the line until in the longitude of the Admiralty Islands, then pass to the south-eastward between these and Matthias Island, thus avoiding the low islands and reefs to the southward; sail could be carried during the night without fear. Keeping along the equator there cannot be many undiscovered dangers, this track having been a good deal frequented of late years. The other route to the northward of the Salomon Islands, when bound to New Zealand, the Feejee Islands, or, anywhere to the eastward, appears to be the best. In the case of New Zealand, the tenth degree of south latitude should not be crossed, until reaching long. 171° or 172° east, then steer to the southward on the west side of the Feejee Islands, passing pretty near, as the easterly winds prevail far to the southward in January, February, and March; but by weathering the reefs near the south end of New Caledonia a passage may always be effected.

The westerly monsoon in the Pacific, as in the Indian Ocean, is attended with cloudy overcast weather, squalls, and heavy rains. Some of these squalls are very severe, requiring all sail to be taken in when crossing the wind; even when running, close reefs will be found enough. I have experienced several near New Ireland and New Guinea, which generally gave warning, and commenced at W.S.W., blowing furiously the first hour, and continuing in a strong gale, veering to the north-west for five or six hours.

From lat. 10° S. to the southern tropic, hurricanes are likely to be experienced from November until April, agreeing also in this respect with the Indian Ocean; and I make no doubt that one of these occasioned the loss of La Perouse, and his fellow-voyagers. These scourges of the sea are more prevalent near the New Hebrides and New Caledonia, than the Feejee Group and Friendly Islands. In fact, the liability to hurricanes appears in exact ratio to that of the south-west monsoon, or, rather to the meridians in which the westerly monsoon blows, differing in latitude; the monsoon seldom extending beyond 17° or 18° south, indeed, at times 13° south is the limit, whereas hurricanes are experienced as far as the tropic. From all that I can gather of these hurricanes of the South Pacific, having conversed with several masters who have encountered them, some of whom have had their ships dismasted. I scarcely think they are of that terrific description occasionally expe-

rienced elsewhere; and am almost inclined to believe them, more often, and more severely felt near the islands, than well clear of the land, although aware of this disagreeing with the new theory; but, future facts, will be necessary to elucidate this subject.

They are still of unfrequent occurrence in the Pacific, several years intervening without any ship encountering one. I possess no facts which would be serviceable in pointing out their track or direction of rotation. They will, without doubt, be considered to agree with other places in the same latitude, yet a few more well authenticated descriptions of these southern hurricanes would not appear to encumber the evidence of their uniformity in these particulars.

Near the Friendly Islands, (and, perhaps, elsewhere,) storms occasionally happen of extreme violence, blowing from one point, and producing similar effects to hurricanes. In November 1835, eight or ten ships, English and American, encountered one of these near Tongataboo and Eooa from S.S.E., the heavy part of which lasted about eight hours, causing more or less damage to all; one or two were dismasted. It was described by the masters whom I saw, which included most of them, as being more severe than anything they had ever seen. Ashore at Eooa, it was most violent—houses and trees blown down, and all the crops destroyed. It likewise did great damage at Tongataboo, and was also felt very severely at the Hapai Islands and Vavaoo. Here, Mr. Thomas, the missionary, was obliged to shore his house up, although it was considered by the natives that a gradual decrease in strength had been experienced in proceeding northward. Still further north the “Nassau” encountered it in 16° N., in the shape of a heavy gale. At all these places the wind was from the southward; S.S.E. by the ships; ashore they had no compasses, but it certainly was from the southward, and without shifting. I have thus endeavoured to be explicit, through an impression that more is required to be known of hurricanes and gales in localities; and, having a strong belief that many of the hurricanes, even those producing the most disastrous effects, will be found very local.

Reverting again to the north-west monsoon,—at the Salomon Archipelago it commences in December or January. In some years these months are tolerably fine. During February and March strong winds with severe squalls and heavy rains may be expected. April generally is a fine month, with variable winds; also in May there is a good deal of fine weather. The south-east monsoon sets in strongly in June, with heavy rains and squalls, and continues so until the end of August; in all these months, nevertheless, there are considerable intervals of fine weather. In September the strength of the monsoon is spent, and the weather is more moderate from this time until the return of the north-wester.

Farther to the eastward, about the meridian of Rotumah, the westerly monsoon is less constant, beginning generally in January, and blowing strongly about seventeen or eighteen days consecutively; then declining; and, the easterly wind returning in a fresh breeze for nearly the same period, the westerly wind again intervenes, usually commencing with a gale, and always continuing in a strong breeze with squalls and rain; the easterly and westerly winds thus alternating until the end of March,

when the south-east trade sets in steadily. Proceeding still further to the eastward the westerly monsoon gradually becomes less constant, and finally disappears, I think, somewhere about the meridian of the Marquesas Islands.

Of currents I can only speak in very general terms, these being subject to great changes in many localities. From 1° or 2° north to about 3° south, a current of two or three knots an hour prevails, taking its course from the wind, which is easterly during the greater part of the year; current, therefore, westerly. I have, however, experienced an exception to this,—in July 1833, on the Equator, in long. 175° E., a current of about the strength already mentioned, ran to the eastward for fourteen or fifteen days, although the wind was then fresh from the eastward; and, I believe, such changes have generally occurred once a year, probably induced by a strong south-west or westerly monsoon in north latitude, reaching at this time near the line. They are fitful changes, and not to be depended on, nor can I state their extent eastward.

In other parts of this ocean, *well clear of the land*, there appears to be very little current. Mr. Horsburgh speaks of a drain to leeward, and this seems to express all there is. Indeed, I think, the swell may almost account for it; therefore it is obviously not such a serious matter to fall to leeward in the trades as may be imagined; almost any ship with perseverance may work to windward, the wind varying considerably, and veering at times far to the southward. For instance, in April I have worked up in a dull sailing and leewardly ship from the reefs off New Caledonia to the west side of the Feejee Group. From thence, in June, to the islands, called by the natives, Fotuna and Alloaffy, (marked in one as Alluffalli in the chart), and from thence to Wallis Island. Moderate westerly winds of two or three days' duration happen in nearly every month.

Off the islands, so far as my observation extends, the currents decrease in strength in proportion to the increase in latitude, that is, the nearer to the Equator, the stronger current, and generally with the wind. There are no doubt many exceptions, but without an account of each island, which I am unable to give, no statement can embrace all the particulars, yet one or two instances of such deviation may be mentioned. Cruising to the southward of New Georgia and Bougainville Islands, throughout the south-east monsoon from May until October, in the years 1836 and 1840, the current ran strongly to the south-east against a strong wind and heavy swell, although at the same time on the north side of these islands it was running as strongly to the westward. Off the north side of New Ireland where a westerly current prevails, changes to the eastward occur, for ten or twelve days at all seasons.

In concluding these remarks, I may be permitted to hope that some of your readers will follow them up. The winds of the Western part of the North Pacific seem very imperfectly known. No statement has appeared of the Eastern limit of the south-west monsoon; it certainly enters this Ocean. In June I have run to the northward, keeping about 3° eastward of the Philippines with a fresh and steady breeze

from south-west. The same wind prevailed until reaching 27° north and 138° east.

Guam and the other islands of the Ladrone Group are also understood to be subject to hurricanes, for which the inhabitants prepare, by lashing down and securing their houses; yet the seasons at which these are most likely to be experienced are not generally known. Having only crossed this locality once or twice in making passages, I can merely give hearsay evidence. The present governor of Lamboangan, who has resided in Guam two years, (in the same capacity,) informs me that in June, July, and August, also in December and January they are expected. December 1832, the "Japan," a new ship, encountered a severe hurricane in 13° north and about 160° west, the meridian of some of the Sandwich Islands, in which she was totally dismasted, and fears were entertained of her weathering it. This is the farthest to the eastward in the North Pacific of which I have heard.

[The seaman who is desirous of pursuing his investigation of this subject may consult with advantage, several important papers in the preceding volumes of this work. We may instance the voyage of H.M.S. Imogene in particular, in the Volume for 1838. But a reference to the Index of each will supply the information.—Ed. N.M.]

CLIMATE OF CANTON, AND MACAO.

FOREIGNERS in their present situation in China enjoy a very limited range for making observations on the climate of this country. But there seems to be little reason to doubt, what the Chinese generally affirm, that the climate of China Proper is, with few exceptions, agreeable and salubrious. Pestilences do not frequently visit the land; and the inhabitants sometimes attain to a very great age. One individual is mentioned in the Ta-tsing hwny-teen, who died, during the reign of the present dynasty, at the age of 142 years. The Chinese pay great respect to aged men; and their government honor with titles, and with bounties the few who have the good fortune to outlive the great majority of their fellow-mortals. Those who reach the age of 100 years receive a sum of money equal to about forty-five dollars, to be expended in building an honorary "gate-way," which is embellished with an inscription dictated by the emperor. Those who attain to 110 years receive about twice forty-five dollars. Those who reach the age of 120, receive thrice that sum, &c.

The climate of the middle provinces is said to be delightful. "That of Peking is salubrious, and agrees even with strangers. Epidemic disorders are very rare, and the ravages of the plague entirely unknown. The water is frozen every year from the middle of December until March; but, sometimes for a shorter period. In the spring there are violent storms and whirlwinds. The heat is very great in summer, especially in June and July; it is usually, however, accompanied with abundant rains. The autumn is the most pleasant part of the year,—particularly September, October, and November. The air is then mild, the sky serene, and the weather calm.*"

* See Travels of the Russian mission to China, by Timkowski.

The province of Canton is regarded by the Chinese as one of the most unhealthy portions of their country; and such it probably is. Yet still it is a healthy climate, and may be considered superior to that of most other places which are situated in the same degree of latitude. To enable our friends to form an opinion of the climate of Canton and Macao, we will subjoin a brief series of remarks from meteorological observations which appear in "the Anglo-chinese Calendar." The latitude of Canton is 23° 7' north; and that of Macao is 22° 11' 30" north.

The data on which the following remarks concerning the weather are founded, were taken from the Meteorological Diary, of the Canton Register.

January.—The weather, during the month of January, is dry, cold, and bracing, differing but little, if at all, from the two preceding months, November and December. The wind blows generally from the north, occasionally inclining to N.E. or N.W. Any change to the south, causes considerable variation in the temperature of the atmosphere.

February.—During this month the thermometer continues low; but the dry, bracing cold of the three preceding months is changed for a damp and chilly atmosphere. The number of fine days is much diminished, and cloudy or foggy days are of more frequent recurrence in February and March than in any other months. At Macao, the fog is often so dense as to render objects invisible at a very few yards distance.

March.—The weather in the month of March is also damp and foggy, but the temperature of the atmosphere becomes considerably warmer. To preserve things from damp, it is requisite to continue the use of fires and closed rooms, which the heat of the atmosphere renders very unpleasant. From this month, the thermometer increases in height, until July and August, when the heat is at its maximum.

April.—The thick fogs which begin to disappear towards the close of March are, in April, seldom if ever seen. The atmosphere however, continues damp, and rainy days are not unfrequent. At the same time the thermometer gradually rises; and the nearer approach of the sun renders its heat more perceptible. In this and the following summer months, south-easterly winds generally prevail.

May.—In this month summer is fully set in, and the heat particularly in Canton, is often oppressive;—the more so from the closeness of the atmosphere, the winds being usually light and variable. This is the most rainy month in the year, averaging fifteen days and a half of heavy rain; cloudy days, without rain are, however, of unfrequent occurrence; and one half of the month averages fine sunny weather.

June.—June is also a very wet month, though on an average, the number of rainy days is less than in the other summer months. The thermometer in this month rises several degrees higher than in May, and falls but little at night. It is this latter circumstance chiefly, which occasions the exhaustion often felt in this country from the heat of summer.

July.—This month is the hottest in the year, the thermometer averaging 88° in the shade, at noon, both at Canton and Macao. It is like-

wise subject to frequent heavy showers of rain; and, as is also the month of August, to storms of thunder and lightning. The winds blow almost uninterruptingly from south-east or south.

August.—In this month the heat is generally as oppressive as in July, and often more so, although the thermometer usually stands lower. Towards the close of the month, the summer begins to break up, the wind occasionally veering from S.E. to N. and N.W. Typhoons seldom occur earlier than this month or later than the end of September.

September.—In this month, the monsoon is entirely broken up, and northerly winds begin to blow, but with little alleviation of heat. This is the period most exposed to the description of hurricanes called *Typhoons*, the range of which extends southwards, over about one half of the Chinese sea, but not far northward. They are most severe in the gulf of Tonquin.

October.—Northerly winds prevail throughout the month of October, occasionally veering to N.E. or N.W.; but the temperature of the atmosphere is neither so cold nor dry as in the following months. Neither does the northerly wind blow so constantly, a few days of southerly wind frequently intervening. The winter usually sets in with three or four days of light drizzling rain.

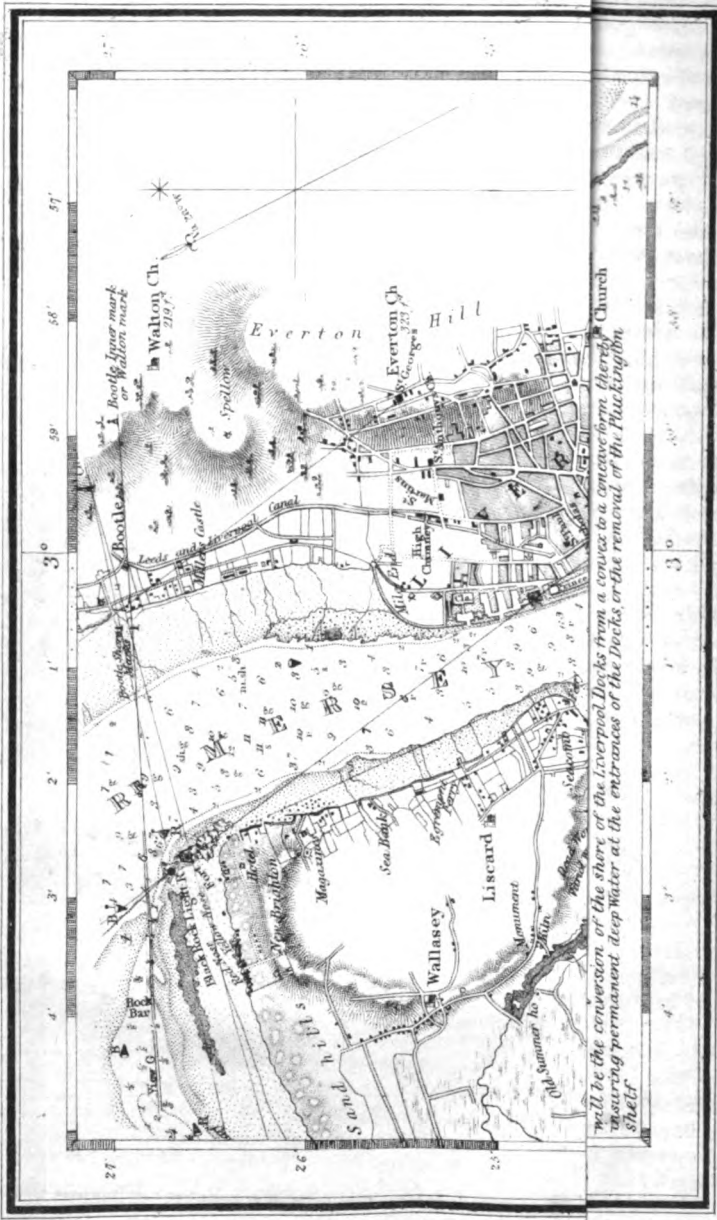
November.—This month and the following are the most pleasant in the year,—at least to the feelings of persons from more northern climes. Though the thermometer is not often below 40°, and seldom so low as 30°, the cold of the Chinese winter is often very severe. Ice sometimes forms about one eighth of an inch thick; but this is usually in December or January.

December.—The months of December and January are remarkably free from rain; the average fall in each month being under one inch, and the average number of rainy days being only three and a half. On the whole, the climate of Canton, but more especially of Macao, may be considered very superior to that of most other places situated between the tropics.

SEELONGS OF THE MERGUI ARCHIPELAGO.—By Dr. Helfer.

Jan. 19.—Spent the day amongst the Seelongs. At my first arrival, in the night, a general terror spread over the defenceless community they not knowing whether friend or foe was approaching. Suspecting an incursion of Malays from the south, the women and children had fled into the interior, and their best property, sea slugs and rice, had been buried in all hurry in the jungle.

Finding that a white man was come amongst them, (it was on their parts for the first time,) their apprehension changed into joy, and the whole community came in the morning where I had landed to welcome me. There were about seventy men, women, and children, altogether. They had encamped on the sandy sea beach. Each family had erected a little raised shed covered with palm leaves, where all the members huddled together in the night. There they sat, a dirty, miserable



will be the conversion of the thery of the Liverpool Docks from a concave to a convex form thereby assuring permanent deep water at the entrances of the docks, or the removal of the Black Bog

looking ungraceful description, from and much sought at the strange full chorus the ordinary extraordinary large pieces of which were seen of course, as in making. In the heart of the old world this contrasted with These have long. To one would have been for whom the does not even in common, the business of which end with the day in their the Bureau Elliptical Negro origin Antiquaries I spent time of the two others their own They that their who surfs from the by the ins They used nat of temples to which the Choir ingens, some and said been this to be said I g They the great ENLA

looking congregation, the women occupied in making mats of a peculiar description, from sea weed, (which are sold in Mergui and Maulmain and much sought after,) the children screaming apparently out of fear at the strange apparition, dogs, cats, and cocks, all joining to make the full chorus. Every thing had the appearance of confusion and even the animals seemed to be aware that my arrival amongst them was an extraordinary event. Some of these sheds appeared like butcher's stalls, large pieces of turtle cut in pieces, and rendering the atmosphere pestilential, were every where drying in the sun, (it is their main food,) shell-fish were seen to be extracted from the shells, and wild roots of a species of dioscorea, as well as the fœtid shoots of *cycus circinalis* were prepared for cooking.

On the beach lay about 20 or 30 boats, well built and light, like nut shells swimming on the surface; the bottom, built of a solid trunk, the sides constructed of the slender trunks of palms, strongly united and caulked with palm hemp.

These boats, not longer than 20 feet, are the true houses of the Seelong. To one of these he trusts his life and little property. In it he wanders during his life time from island to island,—a true Ichthiophay for whom the earth has no charm, and whom he neglects so much, that he does not even intrust to her care a single grain of rice. But even as fishermen, these people are to be considered yet in their infancy. They have even no nets; the trident is their only weapon with which they spear sharks and other fish as well as turtle. All the rest they want is done with the dah or with the hand; they know no other instrument.

In their exterior they are well built, apparently healthy, darker than the Burmese; part of them approach the Malay type, part of them the Ethiopian, the curly hair of some of them especially speaks in favour of Negro origin. Might they have had formerly communication with the Andamanese so close by?

I spent the whole day in conversation with them, through the medium of their head man who understood Burmese. Besides him and two others, the rest were unacquainted with it. Some spoke besides their own idiom, Siamese, some Malay.

They behaved with remarkable civility and decorum: they related that their children are exposed to sickness and death from 3 to 6 years, who survives that period is considered safe. I think they die, to judge from the description in consequence of dysentery, not improbably caused by the indigestible nature of their food at that tender age.

They know no medicine whatever,—a strange exception,—uncultivated nations being generally in the possession of the greatest number of simples, besides the host of charms and other indifferent substances to which great virtues are attributed. To get physic, and charms from the Chinese, they sell their most valuable produce, pearls, amber, lignum, aloes, etc. The greatest present I could make them, besides some ardent spirits, was medicine. When they saw me drink coffee and heard that I drank the black substance every day, they concluded this to be the great medicine of the white man, and were not satisfied until I gave them a good portion of it.

They are addicted to liquors in a frightful degree; intoxication is the greatest enjoyment they know. By all who have to do with them

(Chinese and Malays) they are provided with toddy in the first instance, and during the subsequent state of stupor, robbed of every valuable they possess. They gain, however, so easily what they want that they do not seem to mind much the loss when they come again to their senses. They are indolent; only young men work, that is collect what falls under their hand. Surrounded with valuable riches of nature, they remain miserably poor; the regeneration of this race will probably never be effected, but the Seelongs open a fine field to a truly philanthropic missionary; if they remain much longer in this state, their names will soon be erased from the list of nations. Their ideas of the Deity are very imperfect; they believe in superior agencies, without any distinct idea. The immortality of the soul, is an idea too high for their comprehension. When asked what they thought would become of them after death? they answered, they never thought about it, and added by way of excuse "we are a poor people who know nothing."

They are full of superstition and fear. When a person dies the body is exposed in the jungles; the whole congregation leave instantly, and do not return till after years, when the bleached bones are collected and buried.

I accompanied a party of young men on a fishing excursion. They were very dexterous in managing the spear, which was attached to a bamboo 20 feet long. They caught in an hour 3 large turtles, 2 sharks, and some other fish.

MEMOIR ON THE IMPROVEMENT OF THE PORT OF LIVERPOOL.
By W. A. Brooks, Mem. Inst. Civil Engineers.

"Should the process of deposit not be arrested by dredging, or, averted by a tide-diverting wall, the spit of Devils Bank and Pluckington Shelf will rapidly unite, and on growing up towards low water level, a damming up of all that eastern branch of the Mersey ebb, and a forcing through of a swathway (already begun at A near Garston,) must take place. The whole column of ebb water will then sweep the Cheshire shore, leaving the Pluckington to accumulate and spread across the Liverpool docks, in a ratio defying all sluicing, and leaving the necessity and desirableness of docks on the bolder and more sheltered shore opposite no longer a question."

The above forms a portion of the observations made by Captain H. Mangles Denham, R.N., in his work on the navigation of the Mersey and Dee, and in which that talented Marine Surveyor has sought to draw the attention of the Trustees of the Liverpool Docks to that all important subject, the preservation of the vast interests committed to their care. Interests second only to those of the great Metropolis of this Empire!

In Captain Denham's work a full account is given of the plan by which the gallant officer proposes to remedy the above great evil to which the port of Liverpool is subjected, but the purport of his views

may be thoroughly understood by the extract given above, when compared with the accompanying chart of the Mersey, as surveyed by him and his co-adjutors. His proposed "tide-diverting wall" is described by a double line on the chart, extending from Dingle Point, past Otters Pool, towards Garston, or, of a length of about one mile and three-quarters; and marked E E E.

I purpose, in the first instance, to show that Captain Denham's plan is inadequate to effect the removal of the evil which he has so laudably pressed upon the attention of those interested in the improvement of the Mersey, and then to humbly offer as a substitute that which I consider to be a preferable mode of action, while at the same time I acknowledge the assistance derived from his admirable survey.

Captain Denham bases his means for the required improvement, upon the fact that the current of the ebb is very much deflected from its course by the abrupt face of Dingle Point, which latter, he states, "becomes so decidedly the point of deflection as to hurry it (the lateral current of the ebb) into the deep water column with such impetus as to blend with and divert the whole obliquely towards Birkenhead; whereby the tidal stream off the southern portion of the docks becomes so weakened as to permit the sand held in solution to deposit thereat, besides being too weak to bear away the silt driven forth from the several dock sluices."

Holding the above view of the case, Captain Denham suggests the construction of his sea, or, tide-diverting wall above described, and here the Author of this memoir has to remark that although this wall were executed to the above great length of 3080 yards, the dock frontage to the Mersey would still preserve its original character, viz., that of a convex shore, and would therefore necessarily continue subject to the same deposit in front of it.

The observations made by Captain Denham have caused that gentleman to attribute the formation of the Pluckington Shelf solely to the operations of the ebb, because the latter, being deflected by Dingle Point, forms an eddy or comparatively slack water between it and Canning Dock.

It is not however solely to the above circumstance that the deposit in front of the Dock entrances is to be attributed. Referring to Captain Denham's survey we perceive that the current of the flood tide becomes also an agent in causing a deposit. We perceive that the current of the flood is subjected to a much greater deflection at "Mile End" which is only partially counteracted in its effects in the vicinity of the lowermost of the docks by the contraction of the channel of the Mersey which there takes place, and by the form of the Cheshire shore at Seacomb which, in its turn, has the effect of throwing the set of the flood tide so abruptly upon the Liverpool shore below Georges Pier that its further course is deflected towards the Cheshire shore again, as shown by the flood arrows in Captain Denham's chart, and forming an eddy, or place of the deposit, on the sites of the Pluckington Shelf and the Devils Bank. These two banks would unite but for the current of the ebb on being deflected by Dingle Point, which thus keeps open a swatchway opposite the Potteries.

In all tidal rivers we observe a marked distinction to be drawn be-

tween the causes of the formation of shoals. One portion of the latter are produced by eddies formed by deflections of the flood tide, and others by deflections of the ebb tide; and in the instance before us the Pluckington Shelf has its origin in a combination of both. Hence the great extent of the evil to which the entrances of the Liverpool docks are subjected, notwithstanding the rapidity of the tidal stream of the Mersey.

Let us imagine that the plan by Capt. Denham were carried out to its fullest extent, and push our enquiries as to what would be the result? Must we not conclude that the ebb tide would still be deflected by the *convex shore*, which his wall would continue to maintain of that character; and that the only change which would take place would be that the present channel between the Pluckington Shelf and the Devils Bank would be simply shifted about 100 fathoms lower down the river; or that the lateral current of the ebb would be merely inclined less abruptly towards the shore of Birkenhead, but would be unable to exert any influence in removing the deposit in front of the Liverpool docks.

The cause of the deposit would still remain. The Dock entrances would still continue on a convex shore during *both* flood and ebb tide.

Capt. Denham does not strike at the root of the evil, which I propose to remove by the following means, which are illustrated by the accompanying chart, and would, if executed, permanently secure the Liverpool docks from any future deposit before their entrances.

The first work which I propose to have executed is a pier or groin, marked A B on the plan, commencing from the rocky shore at a distance of 450 yards to the northward of Dingle Point, and extending into the Mersey in a magnetic westerly direction for a length of 600 yards. The western extremity of this jetty or groin, would be situated on the north end, or spit of the Devils Bank, as shewn in Capt. D's chart.

By the construction of the above described pier, a rapid alteration would take place in the forms of the Devils Bank and Garston Sands; a great deposit would be made between Dingle Point and Otters Pool, and the low water boundary of the Devils Bank in lieu of ranging about true north-west and south-east, would bear north and south by compass; and, acting as a new line of convex shore south of the pier or groin A B, would compel the current of the ebb to impinge upon the Cheshire shore above the new ferry, and from thence be reflected towards the Pluckington Shelf.

The second work would be an auxiliary to that already described, and consists of an extension of Royal Rock Ferry Pier for a length of 200 yards into the Mersey, as marked C D on the accompanying chart. The united effect of these two piers or groins would be a permanent set of the current of the ebb along the frontage of the Liverpool docks, abreast of where the evil complained of now exists, and would sweep away any deposit brought by the flood tide.

The eastern channel of the Mersey would be compelled to open out a channel on the south side of the Devils Bank, and, to thus add the weight of its waters to those of the western channel, in keeping clear the proposed new concave line of shore abreast of the Liverpool docks.

The letters A A A and C C C describe the new low water line, or

altered form of the channel of the Mersey, which would be produced by the construction of the piers or groins at A B and C D.

The strength of the ebb would be in the direction of the arrows on the chart, and the result, the conversion of the shore of the Liverpool docks from a convex to a concave form; thereby insuring permanent deep water at the entrances of the docks, now encumbered by the presence of the great Pluckington Shelf.

The advantages which would accrue to the port of Liverpool would not be confined to the improvement of the present docks, inasmuch as the pier proposed on the Liverpool shore would form the southern boundary of a space having an area of 120 acres which by the genius of the Engineer to the Dock trustees would be soon made available as a spacious wet dock for safely mooring ships out of the reach of the rapid tides of the Mersey, or, to otherwise increase the Dock accommodation of the great port of Liverpool.

This is however a subject of after consideration, and is more properly within the province of the Engineer to the Trustees of the Dock Estate; and, I shall not, therefore, intrude further upon your readers attention, by laying before them one of the numerous plans which may be designed for the conversion of this noble, and much wanted, space into increased Dock accommodation for the Commercial interests of Liverpool.

Guildhall, Newcastle-on-Tyne, November 12, 1842.

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.
Port Royal and its Associations.

(Continued from p. 835.)

Most readers have, perhaps, seen accounts of the African rite of Obiism. In a recent work we find it stated that since the abolition of slavery in the West Indies, the spread of education and Christianity, it is believed that the practice has gone out of repute and notice.* It seems to me that the abolition of slavery in the islands can have nothing to do in the matter. The second inferred cause no doubt will have a tendency to eradicate the system from the minds of those who are instructed. The third cause has long ago been doing its part in removing this and other superstitions. But that which is more likely to brush away the rite of Obiism and other "heathenish devices" is, the disappearance of the old African negroes, who imported and pursued these superstitions of their country. The decline may with more correctness be dated

* According to the following extract, from a Jamaica paper, which we find in the *Shipping Gazette*, the contrary seems to be the case:—"MYALISM.—The negroes have set up what they term 'Myalism,' a series of religious, maniacal, and riotous dances. These are interspersed with songs, the most popular of which is, 'John baptise in de riber.' Sixty-four warrants were issued on the 26th of September for the apprehension of as many blacks. In the parish of St. James the ramification of this doctrine have extended from the Spring Estate to the Moor Park, embracing a circuit of sixteen plantations. The negroes attack all who attempt to restrain their antics. At Montego Bay 'Obiism' has been incorporated with 'Myalism.' This is negro witchcraft engrafted on religious fanaticism."

from the period (1807) when the slave trade was discontinued; but Obiism still existed partially some years after, and, it is probable, is not entirely unobserved at the present time among the few native-born Africans who remain. The Creole blacks generally disregard them.

It seems obvious that the abolition of slavery is of too recent a date to have had influence in the matter; or, indeed, that the mere abstract change in the social condition of the negro could magically relieve him at once of a deep-rooted prejudice. The eradication of such requires time; and the idea which would attribute its removal to the extinction of slavery, like many other opinions hastily formed, passes current, because no person will be at the pains to refute it. Everybody has heard of the noted Obi-man, "Three-fingered Jack," the story of whose surprising adventures, Mr. Cumberland, the dramatist, introduced into a farce, which was extremely popular some years ago.

This extraordinary character figured in the years 1780 and '81, and, the recollection of his daring exploits had not subsided when I was on the station many years afterwards. A reward was offered for his capture by Governor Dalling; and a young negro named Reeder, but better known as "Captain Quashee," succeeded, after a desperate encounter, in killing the ferocious Obi-man. In 1808 I saw Reeder in Kingston; he was dressed in military uniform, and wore a cocked hat; he was of middle age, and appeared to be a very old man, but strong and healthy. The gentleman who pointed him out to me stated that, he enjoyed a pension, which the government of the island had awarded to him for his gallant deed. As a short account of the transaction may not be uninteresting to the reader, we add it here:—

"The famous negro robber Three-fingered Jack, was the terror of Jamaica in 1780 and '81. He was an Obi-man, and by his professed incantations was the dread of the negroes; and, there were also many white people believed he was possessed of supernatural power. He had neither accomplices nor associates; he robbed alone, fought all his battles alone, and always, either killed his pursuers, or, retreated into difficult fastnesses where none dared to follow him. It was thus that he terrified the inhabitants, and set the civil power, and the neighbouring militia, at defiance for two years.

"At length, allured by the rewards offered by Governor Dalling, in a proclamation, dated 12th of December, 1779, and, by a resolution which followed it,—two negroes, Quashee and Sam, both of Scott's Hall, Maroon Town, with a party of their townsmen, went in search of him. Quashee before he set out on the expedition, got himself christened, and changed his name to 'James Reeder.'

"The expedition commenced, and the whole party crept about the woods for three weeks, but in vain. Reeder and Sam tired with this mode of warfare, resolved on proceeding in search of Jack's retreat, and taking him by storming it, or, perishing in the attempt. They took with them a little boy of spirit, and who was a good shot, and then left the party. The three had not long separated from the rest of the party, before their cunning eyes discovered by impressions amongst the weeds and bushes, that, some person must have been that way. They silently followed these impressions, moving through the bushes with caution, and soon discovered smoke.

"They now prepared for battle, and, had not proceeded far before they came upon the object of their search unperceived by him. The formidable Obi-man was employed in preparing his repast! he was roasting plantains by a little fire on the ground at the mouth of a cave. The scene was highly picturesque, and, the part to be played in it was not one of an ordinary nature. It was one of those episodes of real life full of excitement; but, which called forth the cautious vigilance of the judgment, and the indomitable spirit of a firm resolution.

"Jack's looks were fierce and terrific; his voice loud and strong as his undoubted courage, warned the enterprising trio that, death awaited the mortal who was rash and bold enough to advance towards him. Reeder, with singular infatuation, or, it may have been magnanimity, refrained from ending the affair instanter, by shooting the gaunt figure of the renowned Obi Jack, that stood before him, which he might readily have done. Having imbibed faith, he contented himself for the moment, by informing the robber that his Obi had no power to hurt him, as he had been christened, and his name was no longer Quashee. Jack knew Reeder, and as if he too were infatuated, or deemed it beneath his high notions of honour, or, fair play, (for it is not likely a man of his intrepidity and cunning was paralyzed as was supposed,) disdained to take up either of his two guns, which lay on the ground beside him; but seized his cutlass, or, machete.

"It appears that, some years before, Jack and Reeder had had a desperate conflict in the woods, in which the Obi-man lost two of his fingers, and hence his sobriquet of 'Three-fingered Jack;' but, Reeder was beaten, and suffered severely, as well as several others who had assisted him. Jack had prophesied that, 'White Obi,' would get the better of him; and from experience he knew the charm would lose none of its strength in the hands of his old combatant, Reeder.

"Without further parley, Jack, armed with his cutlass, darted down a very steep descent at the back of the cave. As he was descending Reeder presented his piece, but it missed fire. Sam, however, fired and shot him in the shoulder. Without the least hesitation, the intrepid Reeder, sword in hand, dashed down the steep after him. The descent was about thirty yards, almost perpendicular. The base was to be the stage on which these two stout hearts were to begin the bloody struggle.

"On it they went—each sinewy arm strengthened by vengeance, and descending with a force that seemed sufficient to annihilate life at a single blow; but, the odds were against the Obi-man. The little boy, who had been ordered to keep back out of harm's way, stole on until he reached the top of the precipice, from whence, watching his opportunity, he levelled his piece, the shot entering the abdomen of the three-fingered robber.

"Sam was crafty, and coolly took a circuitous way to get to the field of battle; when he arrived at the spot where the combat first commenced, he found that Jack and Reeder had closed, and whilst struggling for mastery had both tumbled down another steep declivity on the side of the mountain, in which fall they lost their weapons. Sam descended after them, but in the descent he also lost his cutlass among the trees and bushes. When he came up to them, he found that, though without weapons they were not idle; but luckily for Reeder, Jack's

wounds were deep and desperate, and Sam came up just in time to save his comrade, for the powerful Obi-man had caught him by the throat with a giant grasp, and Reeder was almost powerless, as his right hand had nearly been severed from the arm; both were covered with gashes and gore, and the blood flowed copiously from Jack's wounds.

"In this desperate condition Sam found the combatants, and decided the fate of the battle. With a fragment of rock he struck the undaunted Obi-man a dreadful blow which felled him to the ground; and the little boy coming up cutlass in hand, the head of Jack was struck off with it, as also his three-fingered hand; and thus closed the career of the noted robber who had been such a terror to the peaceful inhabitants. The reward was paid to the successful party."

It has been said of rude, or, savage life, that, the priest-ruler,—the Obi-man for instance,—is not necessarily altogether, or maliciously selfish; as there are many examples of the juggler-priest playing off tricks upon his dupes in order to frighten them into good behaviour. This is true with respect to Obiism, which acting upon the superstitious feeling of the African negro, effectually keeps him honest within the circuit of its operation. I have passed through a plantation, where the trees were loaded with inviting fruit, and which was totally unprotected; but remained untouched by the many negroes that passed by, in consequence of a little Obi bag which hung suspended from a branch. The "taboo" was as complete as that observed with respect to the "morais," &c. of the Polynesian Islands. But the dread of violating the rites of Obiism was completely operative on the mind of the native African only; the Creole negroes, as I have said before, generally were not restrained from pilfering by the appearance of the mysterious emblem; yet some of these, principally among the old people, were not entirely exempt from fear on such occasions; and whilst they pretended to ridicule the office and power of the Obi-man, they were very cautious not to act in opposition to the well understood motive of his action in fixing his "official insignia" to property which it was desirous to protect.

It will be well for the present and future generations if the educational and moral and religious instruction, in their altered condition of life, will be equally efficacious in restraining them from all acts of dishonesty. The white people of the island, who are, or ought to be, particularly interested in the fulfilment of such a measure, must act with a hearty good will, for they alone have the power, and if that power is not beneficially exercised, retrogression of civilization will probably follow, and the sable peasantry instead of advancing, will fall back into habits as vicious as those pursued in the savage state, and there will be no security for life or property.

It is natural to conceive that when any body of men shall have all their wants supplied by some controlling and guardian power, and the only duty exacted from each individual of that body, being daily labour, in return for the protection, and care in supplying all wants, by the ruling power, that the temptation to theft would be considerably less than what it would be if every one of these individuals had to provide for all his own wants, as well as to labour. Experience has shown this to be the case in practical life among the negroes when in a state of

slavery, as compared with the white freemen. Now, it is obvious that, the mere difference of colour in the two races, can have nothing to do with this remarkable difference of moral action; and as the white peasant or labouring man is supposed to stand on a higher scale in intellect, civilization, and religion, than the black freeman, it would follow upon that presumption, unless duly instructed and encouraged in his own condition, the latter must sink lower in the observance of all the relations of life, than when a slave; in which state, if a curb was placed upon his personal liberty, he had "no thought for the morrow."

It may be anticipated here in the desultory style I have adopted that, after the loss of the Island of St. Domingo to the French, the vessels of war belonging to that nation, only occasionally appeared so far to leeward as Jamaica. The object which brought them down into this bight of the Caribbean Sea, was certainly not to seek adventure, or to try their valour in a yard-arm contest; but in most cases to avoid the watchful eyes that every where to windward were on the look-out for them. In fact their motive seems to have been the seeking of safety in flight; for none, we may believe, would voluntarily take such a route, not only from its being a roundabout one, but from the peril of interception which lay in their course, if by taking any of the more eastern passages there had been any chance of escape. Necessity, therefore, urged them to follow it, as the lesser evil of the two. How pointedly does this fact show the complete ascendancy which the British Navy had gained over the national marine of the "Grand Nation!" The more cautious of these fugitives, generally the smaller vessels, would steal along the less frequented routes out of sight of land, passing southerly of the Pedro shoals; but others more bold, from being of heavier calibre, would run the hazard of venturing on the usual track.

The vigilance of our cruisers to windward, whilst the French still held possession of Martinique and Guadeloupe and their appurtenances, seldom allowed their brethren to leeward an opportunity of reaping a laurel in a fair fight with the enemy. But it sometimes happened that a stray fugitive would slip through their hands, and by superior fleetness outrun them, and thus in their eagerness to escape Scylla fall into Charybdis, the wary lookers-out of the far west being at all times on the *qui vive*.

These incidental rencontres, although not always brought to a successful issue from the disparity of force, were even hailed with a delight bordering on extacy. Such is the force of professional feeling. They were on all occasions gallantly contested. The opportunities being, like "angels visits few, and far between," made them even the more appreciated. It is pleasant to think that amidst the "black art" of war, a chivalrous spirit exists amongst nations which are civilized; and that, whilst the excitement of deeds of valour, and the burst of uncontrolled feelings of patriotism animate the soul of those who are emulous of enrollment in the temple of Fame, the triumph of victory is happily tempered by humanity and generosity, and thus strips the stern reality of a mortal conflict, of its more savage attributes.

In severe and obstinate actions at sea, upon a large scale, opportunities for the display of chivalrous honour are sometimes afforded, which throw

a bright ray of exaltation around the ruin and havoc of the "terrible game". I cannot stop to select these*, but may briefly instance the landing of the wounded at Cadiz, after the sanguinary conflict off Cape Trafalgar, and the supply of fruit, &c., and the offer of the Spaniards to receive our own wounded seamen into their hospitals. These are the sunny gleams that burst through the lowering clouds of youthful warfare. Sometimes, too, in cutting-out, where the labour of execution embraced the hand-to-hand essays, traits of the same generous nature would occur. As an illustrative anecdote I will briefly advert to an incident which befel the Captain of a French privateer.

Whilst our ship was at anchor in Mansinella bay, in the bight formed between Cape François (Haytian) and Monte Christo, it was ascertained that several of the enemy's armed schooners and traders, were in the harbour of the latter place. For the purpose of bringing them out the boats were soon despatched. In one of these was the quartermaster, Kelvin, already spoken of. As the boat ran alongside of a small privateer, her crew, excepting the commander, leaped overboard, without attempting to defend her, the vessel being close to the shore. Our tar was the first upon her deck, and was met by the Frenchman, who fired a pistol at him, but fortunately without effect. He then stood still, as if doomed to meet his fate. The Briton, too, came to halt, and surveying the tall grim figure of his opponent for a second or two, exclaimed "Why, Croppo, that was very uncivil of you, yet I'll not take a dirty advantage of your helplessness, but down you must go!" and suiting the action to the words, dropped his cutlass and pistol, and "flooded" the astonished skipper—took off a smart green pea-jacket from his back, and deliberately put it on his own; then seizing his prisoner, carried him to the stern, and gently dropped him into the water. "There," waving his hand, "there, strike out—bon jour, and be d—d to you; take care of your cold shots next time." All this was performed in a few minutes. There were four or five other boats under Mids. Swymmer, Bucknor, Guthrie, &c., fully engaged; but there was little resistance in any case,—a lieutenant commanded.

I know that there are some few sea spirits who will not admit that Jack possesses either honor or gratitude; but, I imagine, the French skipper, who had his life spared him, when by the rules of war he had forfeited it, by wantonly essaying to deprive our tar of his, would have thought differently on this occasion. The affair certainly was a rough display of impulsive chivalry; but, it was just the sort of characteristic flash which we should expect from the "blue-jacket" class; and, I presume none will deny their claim to generosity. The diamond is a diamond still, although without polish.

The names above were those of old messmates,—they were dear to me, but, they have passed away from life; yet, often as some trifling and passing circumstance intervenes, the thoughts are reflected back, and their manly forms rise up before me, fresh as it were, amid those scenes,—distant in space and time,—when kindred hearts were light and joyous,

* A work expressly on this topic would act upon the mind of the youthful naval officer, with the same beneficial, and more, effect than Dibdin's Songs upon that of the rough tar. I offer the hint to Mr. Allen.

without a thought of that bar which, as now, would part the living from the dead. The man of stern inflexible nature, such as he "who wears a broad rotundity* of face," marvels at such impressions:—

" The lay that speaks of other times—
 A sorrowful delight!
 The melody of distant climes,
 The sound of waves by night.
 The wind, that with so many a tone,
 Some chord within can thrill—
 These may have language all their own,
 To him a mystery still!"

I never had, nor never shall have, a thorough understanding of the causes which operate to produce such stoicism in the human heart as the apathy alluded to; and I lost the only opportunity that presented itself during the whole course of my life, to hear a discussion, in a lecture delivered by a Surgeon, of the effects on human happiness, of sensibility, and of apathy. I was told that, though there were some stout upholders of the first, that the apathysts carried the day! As far, indeed, as the abstract philosophy of the matter can be explained, it seems probable the apathyst is exempt from moral pain, but his pleasures will all be animal, principally pertaining to stomach comforts. In fact, if he is in possession of no feeling, how can he be capable of intellectual or moral pleasures? This happiness, though unchangeable, is negative, because those exquisite feelings which arise from incidents calling into play the more refined sensibilities of softer hearts, have no place in his, and in nine cases out of ten, such animated clay, will be found to be "Goulus"†

During the short peace of Amiens, or rather truce, there was still a considerable naval force on the leeward station; retained, no doubt, from the precarious state of affairs in continental Europe.

Seven or eight ships of the line, and two or three frigates, during the period, were stationed off Navassa, a small island within sight of St. Domingo, and lying in the direct route to Jamaica. I came up in the Commodore's ship, (the old Bellerophon) and joined one of the frigates.

The duty here was rather monotonous, as may be supposed; but as the smaller ships were not kept in line, or order of sailing, but employed in overhauling and examining the strange vessels as they hove in sight, their share was more agreeable than that which fell to the lot of the two-deckers.

There was not much interchange of thought here, except occasionally by telegraph, and little visiting; the Captains, principally enjoying this change, and I think no one could begrudge them the privilege, for they stood more in need of communion with their fellows than any other grade. We were often amused at the sight of one of the most dashing officers of this class, "in full fig" on the poop of his huge ship, striding with measured step, across the deck, dressed in a gold-laced coat and cocked hat, and yellow leather breeches, and top boots!—a la Nimrod,

* The proper word is, I believe, "felicity," but, n'importe.

† I must refer the non "parlez vous" to Dr. Nugent for the meaning of this elegant term, the use of which will, perhaps, be excused on the occasion.

whilst the band was thundering out a martial tune. A hunting whip and a pair of spurs, and a horn would have set him off as the "beau ideal" of a sporting sea-captain. In the general estimate of character, the world apt to judge from external appearances, would have "laid him down" as an arrant coxcomb, fitter for the toilet than the gun battery. But be it known that he was a very "fire eater," and very few in modern times served their country to more advantage. I do not know what could have been the inducement for such an extravagant breach of the legitimate observance of a standing order. It certainly could not have been from motives of economy, as the whole costume was costly, and it was well known that the gallant officer was unacquainted with the practice. It probably originated in whim, a fancy which tickled the buoyant gaiety of his own spirit, and created a smile upon the countenance of all those who happened to catch a sight of the "rare-show." Whether the fashion thus set, was ever followed by any of his brother captains, I cannot say, but, I recollect a lieutenant commanding a small vessel, being routed over the side of the flag-ship for having, simply enough, presumed to appear in the presence of his Admiral, in a pair of "yellow tops:" and what was certainly shocking bad taste, hauled over loose blue trousers!

It is really surprising what an effect trifles will sometimes have on a community, the most insignificant thing imaginable often arousing curiosity, and arresting attention, when accidentally appearing out of place, and affording food for remark when the ideas have no settled purpose. We laugh at the story (a true one) of the negro enjoying with extacy, the sight of a mosquito settling and springing off and on alternately, the fiery, red nasal organ of his sleeping grog-loving Massa, and exclaiming,—“Good, I glad you burn you foot!” The effect was here enjoyed singly, there was no sympathizing titter, but the oddity of the contrast of the “horseish inexpressibles” and brilliant full dress, produced the “catching” smile upon hundreds; and in the absence of more important occupation for the brain, leather became the (extraordinary) topic of the King’s fleet!

Excuses are seldom wanting upon such an occasion as that of hovering around and around a given space and where a green spot lies handy, for breaking the tiresome sameness of the every day pursuit, by a visit to that green spot.

It was intimated that anchorage might some where be found near the bit of rock and sward, if tried for. This was accordingly done, and the result was a sand-bank which would afford a temporary resting place for some of the squadron. Some of the officers visited the islet round which so many circles had been described by the ships; but except guanoes and aquatic birds; a few bushes, rock samphire, and a coarse grass, there was nothing to engage attention.

(To be continued.)

REMARKS ON NOMINAL HORSE POWER.

IN the *Nautical Magazine* for November, page 784, an extract from the *Civil Engineers and Architects’ Journal* has been given, containing

an estimate of the probable consumption of coals, per voyage, across the Atlantic of the "Great Britain," (late Mammoth,) steamer, founded on the basis of the nominal horse-power of the engines, accompanied with remarks on the speed that may be expected, and an assertion that, the area of the grate surface is "*less than half the proper quantity.*"

It will be my endeavour to point out, that nominal horse-power is a most inaccurate basis for calculations of this nature, and that no reliance can be placed on estimates deduced from such data.

H.P. is a conventional expression which approximately represents the nett power exerted by a steam engine, only as long as engine manufacturers adhered to the limits introduced by Watt, of a load of $2\frac{1}{2}$ lb. per square inch, on the safety valves, and a light load on the piston moved by steam of full pressure throughout the stroke. It ceased to be of much value as soon as the safety-valve was loaded to from 5 to 8 lbs. per square inch, on board vessels, having what are still termed low pressure engines, inasmuch as they condense the steam; especially as engines are worked at the greatest possible load that the steam in the boiler can move. The rapidly increasing resistance of a vessel soon produces the full load on the piston.

Nominal horse-power, also, becomes an expression daily of less value as expansion of steam on the cylinder is brought into more extended use. The elements of its calculations are, *first*—the area of the cylinder in square inches; *second*—the space passed over by the piston, in feet per minute; sometimes the actual speed is taken, which seldom varies much from Watt's rule, of 220 feet per minute; in other cases 200 feet is used, and also the constant of 7 lbs. nett steam pressure is employed to suit all cases.

The nett pressure of 7 lb. of steam per square inch, obviously can move only a light load, less than was moved by Newcomen's engine in lifting water, and such steam can be supplied easily, and with much regularity, by means of the throttle-valve from $2\frac{1}{2}$ lbs. per square inch load on the safety-valve of the boiler. It is true that, $2\frac{1}{2}$ lb. load + $14\frac{3}{4}$ atmosphere, would give a pressure against a stoppage of the piston of $17\frac{1}{4}$ lbs. per square inch; but boilers of a moderate size could not, owing to irregularity of firing, guarantee a continued supply of steam of this pressure. An increased load is now often placed on the safety-valve of 5 or 6 lbs. per square inch, and this increase allows for some little boiler variation in the pressure of the steam, without affecting the working of the engine.

Under these circumstances the surplus steam pressure acting on the connecting rod, is often from 10 to 12 lbs. per square inch, and the engine is worked at from 40 to 60 per cent. above the nominal horse-power.

On the contrary, when expansion is used on a given cylinder the power exerted by the steam is reduced in a well-known ratio, subject to some slight interferences from clearance steam, and cooling; but the ratio of reduction of power is much less than the ratio of the reduction in the consumption of coal. Occasionally these sources of error—the increase of pressure from high steam, and the reduction of mean pressure from expansion, may correct each other. Such is their obvious tendency, but are we to trust to chance for a possible result, when a very simple

basis for the connection of the total power exerted by the steam on the cylinder, and the power due to the water expended, as steam, at full pressure in the cylinder, (the measure of the engine's consumption of coal,) offers itself to our notice.

This basis requires the pressure of the steam in the cylinder during the time the communication between it and the boiler is open, to be ascertained or assumed, and it also requires an addition to be made to the quantity of coal expended, in producing steam, for the engine, for blowing off, and other waste, attendant on the generation of such steam.

We should never forget that, the engine is a machine to use steam, and that a boiler only produces it, and this distinction becomes of more value in expansion engines, in which the power exerted by the steam on the cylinder, after the steam-valve is closed, is obtained without any expenditure of coal. In full-pressure engines the power of steam due to its pressure and space, is nearly a direct measure of the coal expended in boilers of equal merits as evaporating machines; especially, if the excentric employed in shutting the valves saves a few cubic feet of steam equivalent to the clearance spaces. In expansion engines the cubic feet of a known or assumed steam pressure expended, must be measured from the point at which the communication with the boiler is closed. Now, as the cubic feet of steam of a given pressure expended per hour are easily known, and if not known, given conditions may be assumed approximately; the quantity of water expended as steam equally becomes known, and the quantity of coal necessary for its evaporation also known. Estimates founded on these principles, are far more likely to give an approximation to truth, than deductions from the inaccurate data from which nominal horse-power is obtained.

Not having any great regard for science in decimals, I conceive I may safely increase the cylinder capacity by .62 of a foot, making it 254 cubic feet in the Great Britain's engines, and a foot for half throw; this error, and those due to clearance spaces, which I also propose to omit, as unknown to me, are both less than the probable errors of observations or assumption in the present case; and consequently they may be neglected without much injury to the resulting estimates.

The long average, and even the daily consumption under the same conditions are often at variance to a greater extent, I expect, than will prove to be the case with these calculations, whenever they are founded on data correctly taken.

Taking the capacity of the cylinder at 254 cubic feet, and 9120 cylinders of steam per hour, (from 19 strokes per minute, and 8 cylinders of steam per revolution,) we have 2,316,480 cubic feet of steam per hour; and supposing such steam to be expended at an absolute or total pressure equal to one atmosphere on the cylinder, as the volume of steam for 1 of water at that pressure is about 1700, we have $\frac{2\cdot316\cdot480}{1700}$

= 1362 cubic feet of water per hour expended in the cylinder exclusive of boiler waste.

If good boilers can, exclusive of waste evaporate 7 lbs. of salt water per 1 lb. of coal, (other suppositions are easily made,) then $\frac{1362 \times 7}{62.5}$

= 12160 lbs. of coal = to 5.428 tons of coal per hour, and hence
 130 tons per day, and this quantity becomes
 65 do. for steam cut off at half stroke,
 43½ do. do. do. at one-third stroke.

The horse-power due to the evaporation of 1362 cubic feet of water per hour must now be estimated.

Taking the atmosphere at 14.72 lbs. per square inch, we have 2129 lbs. per square foot × 1700 cubic feet from each cubic foot of water expended in the cylinder = 3,600,000 lbs. one foot high per hour, and = 60,000 lbs. per minute. A gross power capable of producing a nett power of 33,000 lbs. one foot high on the connecting rod per minute.

Hence exclusive of waste, a cubic foot of water expended as steam is equivalent to one horse-power per hour. We are now enabled to approximate to the power when the steam is used two or three times expansively.

h.p.	Value of Expansion.	h.p.	Coals in tons per day.	
1362		1362	130	Steam, full pressure.
$\frac{1362}{2}$	× 1.693	1151	65	Cut off half stroke.
$\frac{1362}{3}$	× 2.098	960	43½	Cut off one-third do.

In consequence of the assertion that the Great Britain's engines are only 1,000 horse-power, while their nominal horse-power, by the usual rule is obviously nearly 1,200, I have always concluded that these engines were intended to be worked expansively, which may be readily done to the greatest extent here calculated by four double acting cylinders driving one crank shaft, giving eight cylinders' action in one revolution; and, producing a great regularity of power, especially as the vessel itself acts as a regulator of power.

Under these circumstances it appears to me that, *less than one-half of the proper quantity* of grate surface may be amply sufficient for the Great Britain; and, I think, the word *usual* in lieu of *proper* would have been a less objectionable term, in the *Civil Engineers and Architects' Journal*. Enough has been adduced to raise a doubt of the value of the data employed by the writer in that journal, in the calculation of the probable coal consumption. I now propose to advert to the probable speed.

The large Atlantic steamers at present in use, are large steam ships. The Great Britain is an enormous steam boat, instead of her draught of water exceeding half her breadth, it will not quite amount to one-third of it, in fact she seems to be of the form that has been recommended by more than one of the correspondents in the *Nautical Magazine*. Consequently if the factor 1400 is correct for the common class

of Atlantic steamers, as shewn by experience, it will not be likely to prove correct under such different conditions.

The high velocities attained in the experimental trials of Cunard's Packets were either from vessels with a medium, or, even light load, which could give but little indication of the sea rate of speed of the loaded vessel; this seems to have been a mean $8\frac{1}{2}$ miles per hour; and these very circumstances tend to show the propriety of the system adopted by the parties by whom the Great Britain was designed.

If the screw is successful she will start as a moderately loaded vessel, and improve in speed as her coal is consumed, and her load is lessened.

The performance of her engines will be unaffected by waves, except so far as they cause a greater resistance, and her impelling power will never be almost unable to reach the water, a result that has occasionally happened to some Atlantic steamers at the end of their voyages,—advantages that may balance the assumed greater speed of paddle wheels in fine weather.

I would further remark that the quantity I have assumed as the consumption of coal in a full pressure engine, amounts to 10 lbs. per horse-power per nominal horse-power. We hear of 8 lbs. and even $6\frac{1}{2}$ lbs. per horse-power occasionally, but in these cases we may expect to find that the engines have been worked in some degree expansively; but this system cannot be carried out to its full extent with low pressure steam, except by the plan adopted in the Great Britain of a large amount of cylinder capacity in proportion to the boiler.

High pressure steam to produce the usual mean pressure by expansion, in a given cylinder, is a different question.

As regards the minor questions of the proper, or, rather usual size of the air pump and condensers, it is obvious the air pump might be reduced in proportion to the expansion, to extract the less amount of injection water and liberated air; yet in the only district in which expansion engines are in use, Watt's proportions nearly are preserved to condense steam of from 7 to 10 lbs. below atmospheric pressure. The condensers are stated to be nearly three times as large "as experience shows to be necessary," the tendency, however, of a large condenser is favorable to a rapid reduction of steam pressure on the opening of the eduction valve, and, under the assumed conditions of three times expansion, the steam at the end of the stroke will be of a pressure of 5 lbs., that is 9 or 10 lbs. under the atmosphere. By means of a condenser as large as the cylinder this pressure is reduced to about 3 lbs. at once, without any aid from injection water. Still, in engines with a slow stroke, the size of the condenser may be of less importance, but I should like to ascertain whether the practice of using small condensers has been occasioned by want of space in steamers, or, in consequence of experiments definitively proving their advantages.

In conclusion, I would advert to the stowage of 1000 tons of coal on board the Great Britain, which would give a consumption of 50 tons per day for 20 days, and it would afford a considerable allowance, in case I have taken the water evaporation too high per lb. of coal; and for my omitting to notice, the proportional increased fraction of engine resistance to the mean steam pressure, when reduced by expansion, which tends to prevent the practical advantages of expansion from actually reaching

the theoretical. I will further add, that the sketches of the Great Britain's boilers referred to, are at variance with my recollections of them.

It should also be remembered that, when the Great Britain was commenced, we had little or no experience of the larger class of iron vessels. Since that period the *Nemesis* ran against one of the outer rocks of Scilly at full speed; and the dents in the stem, and in one of the iron plates of the bow were repaired for less than £30. The *Nemesis* also encountered a gale of wind for three days off the Cape of Good Hope, without injury,—circumstances in favour of the views of the parties who recommended the plan of building the Great Britain of iron.

I have ventured to call the attention of your readers to conditions and principles, well known perhaps, but as essential to the formation of a correct opinion respecting steam-vessels, as the knowledge of the diameter and length of the guns of any class of ships of war is, in ascertaining the actual force of the vessel.

Your obedient servant,

Nov. 14th, 1842.

J. S. ENYS.

NAUTICAL OBSERVATION ON A VOYAGE TO THE GOLD COAST.

By Captain Midgley,

Liverpool Shipmasters' Association,

Old Hall Street, Dec. 16th 1842.

SIR.—The accompanying interesting notes were handed to me by Captain Midgley, for insertion in the Journal of this Association, into which they have been copied. And as he kindly placed them at my disposal, I forward them to you, as I know no better means of rendering them generally useful, than through your very valuable Magazine.

I have, &c.,

SAMUEL MOSS,

Master of the Rooms.

To the Editor of the Nautical Magazine.

THE extensive tract of sea between the meridian of 14° W. and 9° E., and the parallel of 9° N. and 3° S., is yet imperfectly known by the majority of navigators; being bordered by a range of coast, in a great measure peopled by an uncivilized and semi-barbarous race, who require peculiar address and management in the method of dealing with them for the produce of their country. I shall suppose that, a vessel bound to this coast* has got out of the channel, or, at least clear of Tuskar and the Smalls, in which case the master's mind will be comparatively at ease, to what it was when he had less sea-room in the narrows of the channel. But whilst the ship is in soundings she will be more or less exposed to a northerly, or N.N.E. indraught of tide or current, which sets nine hours out of every twelve, even at a consider-

* All vessels bound to the Gold Coast should be provided with the charts constructed from Capt. Vidal's Survey of it, and recently published by the Admiralty. We noticed these charts in p. 174, of our volume for 1841, and preceded that notice with Capt. Vidal's own account of the survey. With these charts no master of a vessel can plead ignorance of the coast.—Ed. N.M.

able distance to the westward of Scilly, and this indraught is liable to be augmented or retarded by the direction and force of the wind.

The stream called Rennell's Current, sometimes sets strongly to the N.N.W. and N.W., about the edge of channel soundings, at other times very weak, and there is occasionally a strong set to the eastward. But it is highly probable that, Rennell's Current will be found to prevail for some days after a long series of westerly gales, as these winds materially contribute to accelerate the velocity of the currents setting into the Bay of Biscay, and by keeping up the level of the water upon the iron-bound precipitous shore of the bay itself, forces that water to find an egress out of the bay to the northward and westward; and it is not improbable that the ebb tide of the English Channel may in some measure contribute to its westerly tendency.

To the southward of the 48th parallel it is very probable that, there will be found a south-east current, the velocity of which will gradually increase until the 40th or 38th parallel is attained, where I have generally found this current to get weaker, and vary more to the eastward. On the 11th of February, 1833, I threw a bottle* overboard, containing the vessel's position in lat. $41^{\circ} 50' N.$, and long. by chronometer $14^{\circ} 23' W.$, and this bottle was picked up in the entrance of the harbour of Vigo on the 1st of March following: it had consequently traversed 80 leagues in a true $E. \frac{1}{2} N.$ direction, or about fourteen miles per day.

I would strongly advise all mariners bound to the southward to pass to the westward of Madeira, if possible; as it may prevent their being entangled with the Canary Islands.

On the 29th of December, 1840, the ship "John Campbell," was in lat. $33^{\circ} N.$, and long. $19^{\circ} 24' W.$, about two degrees to the westward of Madeira, and with a light wind from S.S.E.; the ship about 2 P.M., got suddenly amongst some rollers. At first these rollers did not appear alarming, as the vessel on her gradual approach to them seemed to be only experiencing a gradually rising sea. But the rollers soon attained a considerable height, and set in regular ridges from the north-west quarter toppling in many places like a bore, and causing the vessel to labour and roll heavily to windward. In the evening there was an increasing breeze from the south-east, with cloudy overcast weather, and much vivid lightning in the north-west quarter. As the weather had been moderate for several days before, I can scarcely think these rollers could have been caused by wind, as they were very unlike the sea that marks the termination of gales of wind: they came in regular ridges, and sometimes topped in a considerable breaker. The ship was suddenly among them, sailed for twenty-one miles through them; the rollers rapidly increased, and as rapidly subsided. The sea was of a deep dark blue colour. No bottom at 70 fathoms; barometer steady at 30.20, and the temperature of the air 64° , and of the water 57° of Fahrenheit thermometer.

After much consideration of the subject, I must candidly confess my inability to assign any just cause or reason for this sudden, and to me unaccountable undulation of the surface water! but, perhaps, some such

* This bottle is No. 19 of our table, which will appear with a chart in an early number, showing the tracks of above a hundred of these travellers.—Ed. N.M.

occurrences may have an influence in contributing to the sudden rise of the water, which is occasionally experienced at Ascension, and, I believe, also, at some other elevated islands.

It was on the same passage out, and on the 3rd of January, 1841, that I passed through many clusters of the Gulf, or, Fucus Natans weed, *all* of which was very much decayed. The ship was then in lat. 28° 8' N., and long. by timekeepers 21° 46' W.; a position, I believe, much to the eastward of the generally assigned eastern limits of the Sargasso Sea, or portion of the North Atlantic, in which this weed is generally found. But as I shall presently have occasion to revert again to this subject, I will proceed to notice the winds and currents usually found in the neighbourhood of the west coast of Africa.

Among the Canary Islands, and in their vicinity, the N.N.E. and N.E. winds mostly prevail; and the general set of the currents between Madeira and these islands has a southerly and S.S.E. tendency. Indeed the whole surface of the ocean, from the 48th to the 30th parallel has a general tendency to flow to the eastward and south-east quarter; and the mariner will do well to guard against its treacherous and too often fatal influence.

Outward bound African vessels have of late, very generally, and very properly, run through the passage to the eastward of the Cape de Verd Isles, for by so doing they avoid a tract of sea which is notoriously subject to violent squalls, calms, and heavy rain. Vessels make this run in the general limits of the north-east trade wind, and I have myself, invariably found the current setting to the southward. I am aware that, I have the high authority of Mr. Finlayson of the Royal Navy, and of Commander Wilkes of the United States Exploring Expedition, against me in this assertion, both of these officers having found currents in this route setting to the north-east. I must add that, I have not tried the current by any actual experiments, other than the usual method of estimating it by the difference found by an attentive dead-reckoning and actual observation; and in this case it is of course very possible that errors creep into the reckoning, by inattention to the steerage, particularly in the night, as well as by an improper allowance for the magnetic variation, an inaccurate log-line, and other causes.

Vessels bound to the Coast of Africa in the wet season, or between May and September inclusive, need not be too anxious to make easting, for they will lose the N.E. trade wind very soon after passing the parallel of St. Jago, and after a short interval of calm, will fall in with the variable S.W. winds and their usual accompaniments of squalls, heavy rain, and close damp unsettled weather. In proportion as the vessel advances to the southward, she will find more settled weather, and probably be influenced by a current to the south-eastward; this is a branch of the great Guinea current, which I shall presently attempt to describe. The track I have just noticed, is perhaps the most luminous part of the Atlantic Ocean. In the wet season vessels should give St. Anne Shoals a large berth to the eastward, as the current: as well as the sea runs with great velocity into the bight of Cape Mount, and vessels which may unfortunately happen to fall in with the land to the northward of Sinou in the wet season, will find considerable difficulty in working to the southward.

The first influence of the Guinea current will be found in about 9°

30' N., and inshore of the 22nd meridian, and gradually verges from thence in a S.S.E. and S.E. direction, running with considerable velocity in a parallel direction to the trend of the land, and at least 50 leagues from it. On approaching the land the current will be found to increase in velocity, and requires constant and unremitting vigilance to prevent the vessel running to leeward of her destination. On the 18th of January 1841, in lat. 6° 48' N., and long. 14° 58' W., whilst in the influence of the Guinea current setting true S.E.b.E. at the rate of 30 miles in the 24 hours, at daylight in the morning, during a perfect calm I was surprised to see the vessel surrounded by sprigs of the Sargasso weed, and was still more surprised at its fresh and luxuriant appearance. One of the many sprigs brought on board contained two very lively little crabs, and I observed no marks of decay about any of the weed. I ordered a cast of the deep-sea lead, but found no bottom, at very nearly 100 fathoms. Sir Hans Sloane in his history of Jamaica, says, that this weed has been seen upon the Coast of Africa, but I am disposed notwithstanding to think that it is of rare occurrence, as I had four very intelligent natives of the Krou Coast of Africa on board, and they unanimously declared that they had never seen any Sargasso weed, or indeed any other weed similar to it, attached to any of the rocks, or floating upon the surface of the water near the coast.

From the shoal of St. Anne (which by-the-bye requires the exercise of considerable judgment and caution) the Guinea current has an easterly and E.N.E. tendency towards the bight or bay of Cape Mount, to the southward of this it sets about E.S.E. along the shore, and from Grand Sestros to Cape Palmas, it runs with a velocity of more than two miles an hour. It is this current which has set several vessels upon Coleys Rock, the Cape Shoal, and Rock Town Reef, in the neighbourhood of Cape Palmas, and these dangers can only be avoided in the night, by the constant and unremitting use of the lead, for by keeping in 38 fathoms, or, any *greater* depth of water, the vessel will drift in a fair way round the Cape, and be 3 miles clear to the southward of these dangerous reefs. On the meridian of Cape Palmas, the mean breadth of the easterly stream of current is fully 45 leagues, and it keeps this breadth throughout the whole of its easterly course, until it is lost in the Bight of Biafra. The inshore branch of this great stream, diverges to the northward and eastward at Cape St. Paul, and fills up the Bight of Benin, from whence it runs with increased velocity round the land of Formosa, and over the great Bank of Soundings, which extends from the mouth of the Nun River, to the high land of Cameroons. Between the meridians of 8½° W. and nearly 9½° E. a distance of more than 1000 miles, we are presented with the somewhat singular anomaly of two mighty streams of water, silently, yet certainly pursuing their course parallel to each other, but in directions diametrically opposite. I of course, here allude to the Equatorial current which sets to the westward, as I shall hereafter show, with considerable velocity. The mean Northern boundary of the Equatorial current is generally found about the Equator, or about 110 miles from the southern border of the opposite stream. In the tract of sea between these streams the current is variable, but has a general tendency to run to the northward, particularly abreast of the Bight of Benin.

It is a well-known fact that, during the wet season, or, from May to

October, the Guinea current almost invariably runs to the eastward with increased velocity. I can rationally account for its ingress and egress in the Bight of Benin; but the whole of this immense body of water appears to be confined in the Bight of Biafra, or, at least it has no known outlet, for throughout the whole of the Bight to the northward of Princes Island, the current in the wet season almost invariably sets to the north-east and E.N.E. with such force that vessels are frequently fourteen days in beating up from Bonny to Princes Island, a distance of only sixty leagues. I am aware that, Mr. Finlayson has asserted that, a strong current runs to the southward out of the Rio del Rey; but this current is not found to the southward of Fernando Po. On the contrary, the current upon the east coast of the Bight of Biafra generally runs strong to the northward, and I have been three days in tolerably smart vessels, and with a constant steady breeze in weathering the island. The only advantage I ever found in beating up through the eastern passage was derived from the smoothness of the water, and not from a southerly current. How then do the accumulated waters of the Bight of Biafra escape? Is there an undertow, or, is it the great reservoir which supplies the tides of the twenty-three large rivers in the bights, most of which are so many mouths of the Niger!

The Bank of Soundings along the Krou coast from Liberia to Cape Palmas, extends only seven or eight leagues from the land,* and on its extreme outer edge which is very abrupt, there is a depth of 55 to 62 fathoms, generally sandy bottom, or, sand and oaze. At only one mile to the westward of this depth there is no bottom at 90 fathoms, and the water continues of the deep-blue oceanic colour, even in 15 fathoms. On this part of the coast no vessel should shoal her water under 32 fathoms in the night; and in the neighbourhood of Cape Palmas, as before observed, not less than 38 fathoms. In this depth of water the sand on the beach will be distinctly seen, and the vessel, if in the early part of the day will be soon surrounded by canoes. A fire on the beach is a signal that the natives are desirous of trading. The natives of this part of the coast are of mild and gentle demeanour, and any number of them may be allowed to come on board the vessel without the slightest reservation, for they have no spirits in their possession to sell to the crew.

The Kroumen are in many respects an extraordinary race of people, and Capt Adams has justly remarked that, the tower of Babel might have been built upon the western shores of Africa, as a different language is spoken at every 10 or 12 miles; though these different languages are generally understood by the natives all along the coast. The Kroumen have a singular custom peculiar to themselves, which is a system of apprenticeship. A number of young men will attach themselves for a certain period to a headman. This headman has made one or more voyages to leeward to the Oil Rivers, before he can obtain a name, or be allowed to build a house, or to trade, and it is the duty of this headman to ship the boys off for the Oil Rivers on board of any vessel he can, and for this service the headman is entitled to the one month's advance always paid by the ship: he is also entitled to a certain

* The charts of Capt. Vidal to which we have alluded, will show this, and other extraordinary features of this Coast.—ED. N.M.

portion of the boy's wages on his return. When the boy has made two or three voyages and can speak English fluently, he becomes a head-man himself.

The language of the Kroumen is principally a combination of vowels, and from the peculiar nasal pronunciation can rarely be acquired by Europeans. The Krouman is generally found faithful in a strange country, but must not be trusted in his own.

In proportion as the vessel advances to the eastward, the natives will be found more barbarous and consequently more treacherous, and about Drowin and St. Andrews they were formerly a fierce, unruly, and sanguinary race, notorious for their treachery and repeated attacks upon vessels. I have had no intercourse with these people for the last seven or eight years, but am assured that their condition and manners is very much improved, and that small vessels may now trade there for ivory and Palm oil in perfect safety, by adopting only common precautions. The St. Andrews people have been repeatedly fired upon by the crews of different vessels, for various acts of theft and treachery, and it was formerly very unsafe to allow more than five or six of them on deck at once, as they generally came on board armed with a long knife, in the use of which they were very dexterous. Upon one occasion I very suddenly dispersed a multitude of them off the deck upon the very point of open warfare, by merely throwing about a dozen heads of leaf tobacco over the side for they all immediately jumped overboard after it. Upon another occasion, the plentiful distribution of boiling water amongst a crowd of them proved quite as efficacious. On board a French barque where two of the crew had been wounded by the knives of the natives, they were beaten off with empty glass bottles, a large quantity of which happened to be on deck at the time for trading with. Harsh as these measures may appear, they are surely more humane than the use of cutlasses and muskets.

The natives of Cape Lahou in many respects, resemble the Kroumen in their manners and disposition, and like them are almost amphibious.

Cape Lahou may be considered the western extremity of civilization on this part of the Coast of Africa, for the Gold Coast may be here said to commence.

The first Englishman who visited this part of the coast for the purpose of trade, was Captain John Lok in 1554, but it is very probable that this coast was known to the Portuguese at a much earlier period; for it is on record that they settled at Accra in 1492, and much about the same period or about the latter end of the 15th century, the Portuguese discovered Fernando Po.

The best gold upon the Coast of Africa is found in the neighbourhood of Grand Bassan, and Cape Appolonia. It is tolerably good at Dixcove, Cape Coast, and Anamaboo, and the Accra gold is generally considered of inferior quality; but little, if any, gold is found to the eastward of the River Volta.

From Ningo to Old Calabar River, an extent of coast of several hundred miles, there is not a single stone to be found that is as large as a walnut. And from the river Sherbro to Cameroons, an extent of 1500 miles of Sea coast, there are only four eminences which exceed the height of 300 feet, and these are the high lands of Capes Mount and Mesurado, and the Cooks Loaf and Devil's Hill near Wimmebah.

A very old authority, Governor Dalzeel, has truly said, that, from the River Sherbro to Benin, a tract of 1400 miles of sea coast, there is not one navigable river, bay, or harbour, into which a ship can enter. Nor is there one river or creek (the Volta and Lagos excepted) into which a sailing boat can advance 10 miles from the sea. Very few of the creeks will even admit a boat, and not one on the Gold Coast, except at Chama and Elmina: a small boat may row up Chama creek about two miles, and up Elmina creek about a quarter of a mile.

The shores are almost in every part difficult of access from the heavy surf which breaks upon the beach; it is scarcely possible to land any where but in a light canoe, and even in that way it is frequently impracticable for days together; in many parts besides, there is near the shore scarcely water enough for a canoe, and the breaking of the waves becomes there so impetuous that all communication between the shore and the shipping is frequently interrupted for three weeks together, and can seldom be effected with safety.*

A most extraordinary refraction prevails upon the whole line of this coast, which is very likely to mislead the mariner, and induce him to neglect the frequent use of the lead which is the only unerring guide, and sure safeguard all along it. Tornados are very prevalent along this coast from October to April or May, except during the season of the Harmattan or Easterly winds, which generally occur in January. They commence with a heavy dark cloud in the south-east quarter attended with awful lightning and thunder, and always give the mariner ample time to prepare to encounter their dreadful impetuosity. Every common squall from the south-east must not be taken for a tornado although they are called by that name. There are very seldom more than three or four tornados in a season, and when once experienced are not very liable to be afterwards mistaken. As a general rule it may be considered that as the arch of the rising squall is well defined, so in proportion will be the violence of the tornado.

The navigation of the Bight of Biafra presents no peculiar feature to the attention of the navigator, if I may except the strong north-east currents which almost invariably prevail in it, and every exertion should be made to cross the Equator, as soon as possible, for by so doing the ship will find much less current, and the winds will be generally more from the southward.

Many navigators have remarked that on standing to the westward between Princes and St. Thomas's, even when making a trifle of northing the north-east current has been found to diminish in strength as the vessel makes westing, Even as far to the southward as 3° S. there is very seldom any easting in the wind until passing the meridian 5° W. But the vessel will find a westerly set before reaching the meridian of Greenwich, and this set is carried by the Equatorial current, which running in a north-west and W.N.W. direction from the South Atlantic Ocean, sets with considerable velocity to the westward in the neighbourhood of the Equator until it strikes upon the shores of Guayana

* Richard Lander the late celebrated traveller, when he went to trace the source of the Niger, from Yaoorie to the sea, was thrown by the surf on the beach at Badagry, from a small canoe, into which he had entered from the boat of H.M.S. *Clinker*.

where its influence being considerably strengthened by the E.N.E. trade wind, it raises the level of the Mexican Sea, and finds an outlet through the Strait of Florida, where being opposed by the coast of Carolina, the Banks of the American Continent, and, perhaps, by a stream of current which is well known to set out of the Greenland Seas to the south-east, it assumes a more easterly direction until its force is gradually expended, but very little to the westward of the Azores.

From what I have just said, it will at once appear evident that the voyage of the mariner, will be accelerated or retarded according as his ship may be situated in one or the other of these currents, and that to a mean extent of about 30 to 36 miles a day.

Fernando Po is famous for the finest yams, and perhaps the purest water in the world. Princes Island possesses a very superior description of coffee; and St. Thomas is a very elevated island, which possesses excellent coffee and fruit. Annobon possesses abundance of stock, which can be best procured in exchange for old cast off clothing or slops.

The homeward passage from Africa may be made in two different tracks,—the one may be called the precarious, and the other the certain track. The precarious track is to run along the coast, and on giving Cape Palmas a berth of about 100 miles steer to the north-west towards the Cape de Verd Islands. This track owing to the prevalent calms, can only be pursued with advantage when the sun has northern declination, and then the mariner must be particularly careful he does not fall to the eastward of Cape Palmas, or into the Guinea current against which he will find it a very hard matter to work to windward. The certain route, at all times of the year, is to get into the Equatorial current as soon as possible, and aided by its powerful influence you will find the ship gain very fast to the westward; and, I think it advisable to cross the equator in from 20° to 21° west, near which meridian a current is very generally found setting to the northward, and from this position the homeward navigation is generally well understood.

Southerly and south-west winds are generally most prevalent between the trades, and these winds are strongest between May and August inclusive. In July particularly these winds blow in excessively violent squalls, and the heavy short sea which they occasion, added to the almost ceaseless rain which falls in these parallels renders the navigation in this track peculiarly annoying and unpleasant. On the 17th December 1836, when in lat. $9^{\circ} 31' N.$, and long. $24^{\circ} 18' W.$, about 326 miles due south of Fogo, when in the brig Caledonia of Glasgow, I fell in with a very extraordinary kind of weed, and which I have never but in one solitary instance ever before heard of. The instance I allude to was noticed by the talented Humboldt, who fell in with similar weed in the channel between Clara and Allegranza. The weed was of a brownish green, with thick, friable, circular leaves, indented at the edges, with stems about three inches long. The weed appeared tolerably fresh, with a gelatinous substance and very minute barnacles adhering to it. Humboldt brought similar weed from the bottom, in a depth of 30 fathoms, but when I fell in with this weed I found no bottom at 80 fathoms, and there was no perceptible current.

VOYAGE OF H. M. S. CORNWALLIS.

(Continued from p. 416, vol. for 1842.)

The Attack at Tsekee, on the 15th of March, 1842.

CANTO THE SECOND.

My last letter described in a summary way,
 Cornwallis's cruise from Hong-Kong to Tinghae,
 I now purpose to give you a bit of a spree,
 We had t'other day at the town of Tsekee.
 But first it is perfectly right you should know,
 The Chinese made a furious attack on Ningpo,
 Some six or eight thousand came on in the night,
 Burst in one of the gates, but were soon put to flight—
 By a little three pounder, well loaded with grape
 Fired right in amongst them, they were glad to escape ;
 But many remained in the streets till next day,
 Piled one above t'other like trusses of hay.
 They were beat at all points with terrible slaughter,
 Though they made an attack on the shipping by water,
 By sending down boats full of powder and wood,
 Which made a great blaze, but all to no good.
 The troops were embarked from the town of Ningpo,
 As soon as t'was settled which way we should go.
 In number twelve hundred, blue jackets and all,
 The Admiral's flag being carried by Hall
 In the Nemesis steamer, as also Sir Hugh,
 So a fight was intended we very well knew.
 Our squadron of ships, at least steamers I mean,
 Consisted of Phlegethon, Nemesis, Queen ;
 While the boats of the Columbine, Blonde, and Modeste
 Cornwallis, Sesostris, completed the rest.
 With these boats all in tow, up the river we flew,
 And managed to land all the soldiers by two.
 Off we started in column, our hearts full of glee,
 A capital road leading on to Tsekee.
 Behind which as we marched we could easily spy
 The tents of the enemy, perched up on high.
 On nearing the town some firing began,
 So ladders were planted, and up them we ran,
 Then round on the walls, at pretty good rate,
 But meeting with no one came out at the gate.
 The Chinese on the tops of two hills were now seen,
 A road leading between, through a sort of ravine,
 Here rushed "forty-ninth" with Sir Hugh at their head,
 The naval brigade by Sir William was led,
 And passing along at the foot of the walls,
 Were exposed to a pretty good pepper of balls,—
 From matchlocks and gingalls all worked in good style,
 From the tops of the hills with loud shouts all the while.
 Rockets, arrows, and balls thick as hail came across us,
 (We found a large store next day in the joss-house,)
 Our party was covered by rockets, (three-pounder,)
 As over the paddy fields now they did flounder.
 Here many poor fellows were laid on their back,
 The marines under Captain (now Major Uniacke).
 Close under some houses for a short time took shelter,
 Excepting two squads who went up helter-skelter,
 Under one of our officers, Elliot by name,
 (Poor Hambly was shot in the foot—so was lame).

With the Admiral up went Captains Richards and Watson,
 Bouchier, Whittingham, Tennant, and also his Cox'an.
 At the top of the hill they made a slight stand,
 When Hodgson received a deep cut in the hand,
 For a great big Chinese in the midst of the *Melee*
 Made a furious assault, but got stuck in the belly:
 The tide was now turned, down the hill they all ran,
 And those who delayed were shot to a man.
 So much for the left hill, let us look to the right
 Where a much larger force were soon put to flight—
 By "Eighteenth" "Twenty-sixth" and the Rifle Brigade,
 Whilst over their heads the artillery played.
 Colonel Knowles drove his rockets right into their camp
 So *that* mob was equally glad to decamp.
 And now there was seen a regular race,
 All the rest of the force having joined in the chase,
 While to make it more certain and settle it well,
 The steamers began to play on them with shell,
 Having found a canal up which they had run,
 And arrived just in time to partake in the fun.
 The face of the hills and beneath in the plains,
 Were strewed with Chinese, mostly shot through the brains.
 Each man who is shot of course down he goes,
 And the light of his match makes a blaze of his clothes.
 One can see at a glance all the wounded and killed,
 By the smoke which curls up from the grilling and grilled.
 A Chinese field of battle is terrible work,
 And oh! such a horrible smell of roast pork!
 Our men being now pretty tired of fight,
 Made their beds in the enemy's camp for the night.
 Caps, jackets, and matchlocks, lay scattered about,
 Peacocks' feathers, and swords, thrown away in the rout.
 Another large camp was not far off we learnt,
 (Before starting next day a large store house was burnt
 As also the tents, and some arms being found
 Near a Mandarins house, it was burnt to the ground.)
 A walk of six miles brought us up to a range
 Of high and steep hills, the sight was most strange
 To see soldiers and sailors, holding on by the roots
 Of the trees, climbing up like a parcel of goats.
 When we got to the top, the camp was deserted,
 So in vain as we found all our strength was exerted.
 In a grove of bamboos a large store house was fired,
 Then to Tseeke we marched all pretty well tired.
 The feast of St. Patrick, which happened next day,
 Sent the General back without further delay.
 Here ends my poor rhyme, which like a bad pun,
 "The worse it is; more better the fun."—T. B.

H.M.S. Cornwallis, Chusan, 1st April, 1842.

THE CHINESE are not at all addicted to water-drinking. They distil from rice certain liquors resembling our beer, wine, and whiskey. The grape though abundant, is not used for any such purpose. The universal national beverage is tea. This is drank in unstinted quantities by all classes of the people, from the self-styled "Son of Heaven," to the occupant of the meanest hovel or "saupan." So enormous is the consumption of tea by the natives, that Macartney is of opinion that if the whole foreign demand should by some accident suddenly cease, the price of the article would not be materially affected. Many of the wealthier natives are exceedingly fastidious in their taste, which they gratify by the use of teas obtained at prices that would startle us by their enormity. It is, however, only the very rich and the very luxurious who indulge habitually in such extravagance.

NAUTICAL NOTICES.

CHINESE NAVIGATION.

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 P.M. we grounded on a reef, going about three knots, in lat. $11^{\circ} 51' N.$, and long. $121^{\circ} 30' E.$, not mentioned by Horsburgh, or laid down in his charts; got the long-boat, and run the stream cable and anchor out in $4\frac{1}{2}$ 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-top-gallant 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. $121^{\circ} 30'$ till very near the Islands of Cravanes or Buffalo, 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. $11^{\circ} 40'$ and long. $121^{\circ} 40'$ 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 $4\frac{1}{2}$ or 5 fathoms on it, dangerous for large ships;—in lat. $10^{\circ} 5'$ and long. $121^{\circ} 47'$ 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. $1^{\circ} 54'$ and long. $119^{\circ} 8'$. 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. $1^{\circ} 40'$, and long. $119^{\circ} 15'$ with a reef all round; also a very extensive reef four miles south of them, where we struck.

The Bemeeze Islands, lat. $1^{\circ} 32'$, long. $118^{\circ} 56'$, with reefs and breakers all round them, and a shoal between them and Point Ranccoongan. On the Celebes side there is a reef off Cape Donda, about ten miles to the N.E., and one off Cape Temoc 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.

To Messrs. Dent and Co.

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. $0^{\circ} 25' N.$, and long. $130^{\circ} 44' E.$, 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. $7^{\circ} 9' S.$, and long. $118^{\circ} 51' E.$ The 'Southern Postillion' lies in lat. $6^{\circ} 58' S.$, long. $118^{\circ} 56' E.$ 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, $7^{\circ} 50'$ 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 Ampnannan, that a vessel had been lately lost on the 'Sandberge.' My longitudes were measured from Whampoa, $113^{\circ} 22' 30'' E.$, 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.

BUOYS IN CHERBOURG ROADS.—Two buoys were on the 15th of October, placed to mark the most dangerous points in the west passage to Cherbourg Roads. The first, which is painted black, and on the top is a small mast, is situated exactly at the north-west platform, called the Island Piles, in twenty-

five feet at low water. Large ships, when the tide is low, must pass the same to westward, at the distance of at least a quarter cable's length, in order to avoid touching the ground, which is very irregular at this spot.

The second, like the first, has a small mast and vane, but is painted red, and placed at the western extremity of the rock called La Truite, at the depth of twenty-three feet at low water; but the bottom of the sea being very irregular, from fifteen to twenty-two feet, large ships must, when the water is low, pass the same at a small distance westward.

The eastern extremity of this rock is about half a cable's length distant from the other extremity, on which only three feet six inches is found at low water; large ships, therefore, ought always to avoid this dangerous extremity, which is in the direction of Octiville, on the north angle of the large rock of Cherbourg; both extremities of the rock are united by a most rocky and irregular ground of ten to fifteen feet in depth.

Hydrographic-Office, Admiralty, Oct. 28th, 1842.

HARBOUR LIGHT OF ALICANTE.—A Fixed Light has been established on the Mole Head of Alicante at an elevation of 95 feet above the level of the sea, and may therefore be seen at the distance of 15 miles.

It is recommended, on making the light at night from the Southward, to bring it to bear North by compass, and on no account to the Eastward of that bearing, to clear a rocky shoal off the East end of Plane Island. On approaching it from the Eastward it should not be brought to bear westward of W.N.W. to avoid Cape Huertas. Vessels may anchor to the Southward of the Light in 5 to 8 fathoms.

Trinity-House, London, Dec. 6th, 1842.

LIGHT-HOUSE ON LUNDY ISLAND.—The mode by which the Light on Lundy Island has hitherto been exhibited, having undergone alteration with the object of augmenting the power of the Light, Notice thereof is hereby given, and Mariners are to observe that the revolving Light in the Upper Lantern will shew a Brilliant Light once in every Two Minutes.

The Fixed Light in the Lower Lantern at this Station has also been increased in power, and its range extended, so that it is now visible in a Westerly direction, from N. by W. to S.W. by Compass.

By Order, J. HERBERT, *Secretary.*

Hydrographic-Office, Admiralty, Dec. 8th, 1842.

HEYST LIGHT, West Flanders.—The Belgian Government has given notice that a Fixed Red Light has been established on the Sand Hills to the Northward of the town of Heyst, in lat. $51^{\circ} 20' 22''$ North, and long. $3^{\circ} 14' 7''$ East of Greenwich, and that it will appear on the 1st of January, 1843.

The light-house is 25 feet high, but the light is elevated 48 feet above the level of high water spring tides, and will be visible from seaward between the bearings of East round to W.b.S. by Compass.

The small fixed light at Blankenberg, in lat. $51^{\circ} 18' 55''$ North, and long. $3^{\circ} 7' 57''$ East, called the Fishermen's Light, will be shown from sunset to sun rise, from the first of January next.

Nevis Sept, 24, 1842.

BEACON AT NEVIS.—A lantern, with the burners, is hoisted nightly on the flagstaff at the Fort Point on this island; the light is kept burning from sunset to sunrise. To the eastward or land side the light is obscured, and it shows but imperfectly on the north and south sides, on either of which it cannot be seen more than seven or eight miles; to the westward it shows a good bright

light, plainly perceptible twelve or fourteen miles distant. Its elevation above the level of the sea is about 60 feet.

NEUSTADT LIGHT, Gulf of Lubeck.—A revolving light has just been established at the entrance of Neustadt Harbour, in the Gulf of Lubeck, which was to be lighted on the 1st of January. Further particulars will appear in our next.

PLUM ISLAND, Newburyport, Nov. 21, 1842.—The lights in the lighthouses on Plum Island, will be extinguished from this date, for the purpose of fitting new lanterns. When the work is completed, due notice will be given.

HENRY W. KINSMAN, *Collector.*

BEACON LIGHT, Sandy Hook.—A new beacon light, situated on Sandy Hook, eleven hundred feet to the eastward of the old Eastern Beacon, and in a direct easterly line or range with the Light-house and old Eastern Beacon, will be exhibited on the 10th of November next, and continued thereafter.

The light at the old Eastern Beacon will be extinguished, but the building will remain for a mark in daylight.

The new Western Beacon, on Sandy Hook, erected very nearly upon the side of the old Western Beacon, will be lighted also on the 10th of November, and continued thereafter. The old Western Beacon will be taken down and removed forthwith.

EDWARD CURTIS, *Collector and Superintendent of Light-houses.*
Collector's Office, New York, Nov. 2, 1842.

Edinburgh, Nov. 16, 1842.

LITTLE ROSS ISLAND LIGHTHOUSE.—The Commissioners of Northern Light-houses hereby give notice, that a lighthouse has been erected upon the summit of the Little Ross Island, in the stewartry of Kirkcudbright, the light of which will be exhibited on the night of the 1st day of January, 1843, and every night thereafter from sunset to sunrise.

The following is a specification of the position of the lighthouse, and the appearance of the light, by Mr. Stevenson, engineer:—

The Little Ross Island lies off the entrance of Kirkcudbright bay and harbour, in lat. $54^{\circ} 46' N.$ and long. $4^{\circ} 5' W.$

By compass the lighthouse bears from Burrow-head, in Wigtonshire, E., distant 12 miles; from the point of Ayre lighthouse, in the Isle of Man, N.E. $\frac{3}{4}$ E., distant 23 miles; from St. Bee's-head lighthouse, in Cumberland, N.N.W. $\frac{1}{4}$ N., distant 23 miles; from Abbey-head, Kirkcudbrightshire, W.N.W. distant $3\frac{1}{2}$ miles.

The Little Ross light will be known to mariners as a revolving light, producing a bright flash of light, of the natural appearance, once in every five seconds of time, or 12 flashes a minute.

The lantern, which is open from N.b.E. round to N.W.b.W. southerly, is elevated 175 feet above the level of the sea. In clear weather the flashes will be seen at the distance of six leagues, and at lesser distances according to the state of the atmosphere; and, in favourable circumstances, the light will not wholly disappear between the flashes at lesser distances.

And the Commissioners hereby further give notice, that, by virtue of a warrant from the Queen in Council, of date the 2nd day of November instant, the following tolls will be levied, in respect of this light, from all vessels navigating the Solway Frith to or from ports or places to the eastward of St. Bee's-head and the Mull of Galway—viz., for every vessel belonging to the United Kingdom of Great Britain and Ireland (the same not belonging to her Majesty

or being navigated wholly in ballast), and for every foreign vessel privileged as British (the same not being navigated wholly in ballast), the toll of one half-penny per ton of the burden of every such vessel; and for every foreign vessel, not so privileged, the toll of one penny per ton.

By order of the Commissioners of the Northern Lighthouses.

C. CUNINGHAM, } *Joint Secretaries.*
A. CUNINGHAM, }

? KINSALE, Dec. 12, 1842.—Mr. Scott, master of the brig Woodside, of Glasgow, (at present on shore inside the entrance of this harbour), wishes it to be stated, that in coming in he was completely misled by "Ginowrie's Book of Directions," wherein it is laid down that the channel is along the western shore, and recommends all masters of vessels coming in to keep close to that shore; whereas the contrary is the fact, the channel lying along the eastern shore, and very close into it. Mr. Scott wishes this circumstance reported, to prevent masters of other vessels being misled in the same manner.

The Woodside is still on shore, but as yet has received no damage. It is expected she will be got off next tide, or the tide after, as the tides are on the rise. Weather here very boisterous, with wind from S. to S.W., with heavy showers.

[We consider it our duty to reprint the foregoing from the *Shipping Gazette* of the 16th of Dec. with the view of assisting in pointing out the effect of errors in Sailing Directions, and warning seamen of the error alluded to. We have referred to the "Piloting Directions for the whole Coast around (query, of) Ireland, including St. Georges Channel, compiled by J. W. Norie, hydrographer," fifth edition, 1835, and find at p. 10, the "western" shore is recommended. Indeed the directions appear to be nearly a reprint of those published in 1828, p. 7. But in the more careful compilation of Laurie, we find the "eastern" channel recommended. The master of the Woodside has saved us the trouble of proving which is right.

GRENADA, Oct. 15, 1842.—The buoy painted white, and which was laid down about 260 feet from the N.W. edge of the sand and coral reef off Morne Rouge, has been carried away.

SWARTKLUBBENS BEACON LIGHT.—The Royal Swedish Administration of Marine, has notified that the alteration decreed on the 15th of April, respecting the Swartklubbens Beacon Light on the Aland Sea, from a coal fire into a reflecting lamplight, is now accomplished and in operation, and will continue to lighted at the time previously fixed upon.

Extract of a letter from Mr. J. Roallens, of the brig *Eagle*, to his owners, Richard Buck and Co. :—

"I omitted to inform you in my late letters of passing a rock above water, about four miles distant, on my passage from Hamburg to Newfoundland, on 29th of July. By a good observation the longitude at 8h. 21m. 14s. AM., was 28° 32' W., and by a Mer. Alt. lat. 47° 41' 22" N., the vessel making a true west course, and running by log five knots per hour until 11h., when abreast of it, bearing S.S.W. by compass, leaving it in lat. 47° 37' 22" N., and long. 28° 51' W. It formed in three distinct points; the highest to the westward, appeared to be about 80 feet high, the sea breaking violently over the lower part near the eastern extremity, but no appearance of shoal water round it. Was in sight of it about two hours, and should have gone nearer, but was prevented by the wind being to the southward; it was seen distinctly by the mate and crew."

PITCAIRN'S ISLAND.—A letter in the *Hampshire Telegraph* gives a brief account of a late visit to this island, by H.M. frigate *Curaçoa*. Most of the officers were enabled to land, and were received by its interesting inhabitants with that welcome which they are ever so ready to afford to those who have the opportunity of visiting them; indeed, the arrival of the *Curaçoa* was most opportune, for they had been labouring under a severe epidemic, which the kind exertions of the Surgeon, together with a supply of medicines presented to them by Captain Jones, tended much to alleviate. On the second day, they were presented with the stores sent them by her Majesty's Government, consisting of a supply of arms and ammunition, spades, iron kettles, &c., receiving, at the same time, an address from Captain Jones, in which, after giving them all the credit due for their hitherto exemplary conduct, he admonished them to continue in the same quiet and peaceable way, as any dereliction would withdraw from them the support of her Majesty's Government. They have increased in number to 114; the oldest person on the island being the wife of Christian, the chief of the mutineers, and one of those Otaheiteans, who sailed in the *Bounty* from Otaheite to Pitcairn's Island; she perfectly recollects the landing of Captain Cook at Otaheite.—*Athenæum*.

OWHYHEE.—The *Curaçoa* afterwards visited this island. It was here that Captain Cook lost his life, "and the only monument which marks the spot on which he fell, is the stump of an old cocoa-nut tree, with a sheet of copper nailed on it some years ago by H.M.S. *Imogene*. An old gray-headed native, who lived in a hut close to the spot, intimated to some of the officers that he was present at the tragical event, and actually went through a kind of pantomimic representation of the whole scene—the first attack with stones—the retreat of Cook to the boats—his death—the fear of the natives when the ship fired upon them, which he exemplified by falling down and creeping upon his belly behind the nearest bush, and then the roasting and eating of the body on a hill out of the reach of the shot. The representation was too perfect to admit of a doubt as to his having been an eye-witness, if not an actor in the business. A large party of the officers visited the famous volcano of Kiranea, situate about twenty miles from the anchorage, and deemed the largest, and in the most active state of any in the known world—the circumference of the crater being about thirteen or fourteen miles; and its depth a thousand feet below the level of the surrounding plain, from which it appears to have at once sunk perpendicularly down. They descended, with a guide, into the great crater, and after walking over some miles of its uneven surface, arrived at a lake of red hot burning lava, of at least three miles in circumference. They returned on the seventh day to the ship, highly gratified with the excursion, and deeming themselves amply repaid for all the inconveniences and severe toil they had encountered on their journey.

[We find the foregoing in the *Athenæum*. Our readers will recollect the visit of the *Imogene* under the command of Captain Bruce, and the interesting account which he gave of it, in our volume for 1838. Captain Bruce substituted the tablet here alluded to, for the weatherworn affair which he found, and left a suitable inscription on it, which with a sketch will be found in p. 658 of the volume alluded to.—ED. N.M.]

HARWICH.—A self-registering Tide-Gauge has recently been erected at this port, by H.M.S. *Shearwater*. Finding a difficulty in placing this machine so as to ensure its acting at all times of tide, Captain Washington applied to the Mayor and Corporation of the town, who readily granted permission, to set it up on board the Glatton breakwater, where it is now fixed.

This apparatus, which is intended to show the time and height of high and

low water, consists of an iron pipe 20 feet long and one wide; in this works a float, which as it rises and falls with the tide drives a rack, carrying a pencil to and fro horizontally along the top of a barrel or cylinder, covered with a sheet of paper, graduated to hours and feet; this cylinder again is connected by a wheel and pinion with a clock, which causes it to revolve once in 24 hours; the combined movements of the clock and float cause the pencil to describe on the paper the daily course of the tide; and it may by inspection be read off to half an inch of rise and fall, and to two minutes of time.

This simple, yet beautiful, machine is the invention of Mr. Mitchell, civil engineer of her Majesty's dock-yard at Sheerness, who erected one there in the year 1831; and a similar apparatus is at work in the other Government yards at Portsmouth, Plymouth, &c., as well as at the London docks, Liverpool, Bristol, and Dover.

Many of our readers are probably aware that the subject of tides has recently engaged the attention of Sir John Lubbock and Professor Whewell, both of whom have published valuable papers relative to them in the *Philosophical Transactions*; and one of the benefits to be anticipated from the erection of a tide-gauge at Harwich is, that it will furnish these scientific men with correct observations on the tides of the East Coast of England to enable them to work out their theory.

We may here notice that a few years ago Professor Whewell pointed out that about the middle of this part of the North Sea, half-way between Lowestoft and the Brielle, a spot would be found in which there was neither rise nor fall of tide. The Shearwater, in the course of her survey during the last summer, has been enabled to put this prediction to the test, and actually found upon three trials a rise and fall of only eighteen inches. The combination of favourable circumstances, and the care required to ascertain this small difference in a depth of 18 fathoms water, may be easily imagined.

The tide-gauge at Harwich, although it has been at work hardly a month, has already shown some points worthy of notice: one, for instance—that what is called the "Establishment of the Port" is 11h. 50m.; that is to say, this is the time of high water on the day of full and change of the moon, or the first high water after the moon has passed the meridian at twelve o'clock, and which takes place at night. The forenoon tide on this day occurs at 11h. 24m., and this is what is usually, but incorrectly, considered as the time of high water on the full and change days.

Another point that may be noted is, that the times of high water are subject to great inequality: at times 35 minutes only is the interval between the times of two successive high waters; at others this interval amounts to 70 minutes. This, which is termed the "semi-menstrual inequality," and depends on the declination of the moon, is already perceptible in the observations made at Harwich, but they are not yet sufficient in number to deduce from them the laws which govern it. The "diurnal inequality" of the tides, also, or the difference between the day and night tides, which all sailors must have remarked, will be faithfully registered by the tide-gauge. The low water at 3. P.M. on the 29th November was a remarkably low tide, the water having fallen out, although a neap tide, eighteen inches below the ordinary low water springs; a shingle spur, which has lately grown out to the eastward from Landguard Point, was laid bare for 200 yards.

TRIDENT.—We perceive that the General Steam Navigation Company's Steam Ship Trident, has been chartered by the West India Mail Company, to carry out the Mexican Mail of the 1st of January. Our readers will probably recollect that this Ship was selected to convey Her Majesty and Royal Consort on a recent occasion from Scotland.

PRESERVED POTATO.—A sample of the Preserved Potato of Messrs Edwards' which we have frequently recommended as Sea stock, has been submitted to
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our inspection since its return from one of the vessels of the Niger Expedition ; and does not appear to have suffered the least ill effects from climate or damp, during the voyage. Our opinion of this important article for the Mess Table remains unchanged.

WONDERS OF STEAM.—Two gentlemen left Brussels at three on Friday afternoon, and arrived in Liverpool at a quarter to seven p.m. on Saturday, a distance of upwards of 430 miles, in 27½ hours. The whole of the journey was performed by steam. The travellers left Brussels by the railway on Friday afternoon, arrived at Ostend in time for the packet, landed at Blackwall, proceeded from thence to London by the railway, and just caught the train from London to Liverpool as it was starting.—*Liverpool Times*.

FRENCH STEAMERS.

MY DEAR SIR.—I this evening observe in p. 850 of the *Nautical*, an account of the large French steamers building in France, copied from the *Railway Moniteur*.

I believe it to be very incorrect. I have just returned from visiting Brest, L'Orient, and Indret, and in February was at Cherbourg ; and in each place saw every thing building and doing, and have been over and over again the steamers and other vessels. I regret that I did not take down all their names. At Brest there are three,—the Canada, Christophe Columb, and Magellan, all of 450 horse power.

The Christophe Columb is built in a Dock, and is now very forward with her machinery. The Canada, also built in dock, and not so forward as the Christophe Columb, her machinery is on the wharf. The Magellan is built on slip, and is not yet ready for launching.

In these vessels a good deal of Larch is used in the upper beams, and in planking ; they are well built, all French oak, no African wood ; and will carry 10 or 12 guns, if required for war purposes. The cost of an engine of 450 horse-power made in France is 1800 francs per horse, therefore $450 \times 1800 = 810,000$ francs, or, £32,400 ; being something more than the same would be delivered for in English make, and not so well finished.

In this port the Vahny, an immense ship, 130 guns, is now very far advanced. I observed that her deck is fastening with *Galvanised* iron nails,—I saw an anchor and chain of this metal ; but there is a more curious vessel, the Psyche, a frigate of 20 guns, intended to carry all 80 lb. Paxham guns ; she is built extraordinarily strong, and is getting fast forward.

Improvements are constantly going on in the yard : the principal one is an extensive foundry and ateliers for equipping steam vessels.

I do not remember the vessels at Cherbourg beyond two, the names of which I forget ; you gave them as the Darien and Alloa, they are very similar to those at Brest, and of 450 horse-power also. An astonishing increase is making to this port and arsenal, and here also are most extensive foundries, &c. for steam machinery rising up.

At L'Orient are five large steamers—two of them steam-frigates of 540 horse power, of which one is recently launched, the other is in frame, and remarkably well put together, the diagonal timbers being 8 inches square ; and three transatlantic steamers, of which two were ready to launch last springs,—the third is now planking ; they are not working hard at them—their names are Carib, Cacique, and Eldorado. The machinery for one of the frigates is making at Indret.

The foundries and workshops here are in excellent condition, and port greatly improving. The workshops here, as elsewhere, are furnished from Manchester. Galvanised iron has gained much repute with the authorities in this port.

At Indret, four vessels of 220 horse-power and 12 guns, are building at this port, of which one is launched, and manœuvring at Quimboef. One is launched and getting her machinery fixed, and two still on the stocks. There is also a

royal yacht of 120 horse-power and 10 guns, in wet dock and nearly ready for sea ; her cabin is beautifully neat, her furniture not rough and gaudily carved as in some steamers.

The Government foundries and workshops are very large, and increasing rapidly to an immense extent, the place is quite a town, in one way or other about 300 workmen employed. I saw there the steam engine of 540 horse-power, making for the frigate at L'Orient ; two engines of 450, and others of 220. As in other places, the workshops are furnished from Manchester.

December 16th, 1842.

Yours,

D. L.

DREADNOUGHT.—*Report on the cases of Typhus Fever in the years 1841, and 1842, to 12th Nov.*—In the year 1841, 94 cases of typhus were admitted, of which 18 died, or 19·1 per cent. These admissions constituted 33 per cent, of all cases admitted. Of the 94 cases, 32 were from vessels belonging to the following ports, viz.—Alemouth, Grangemouth, Goole, Hartlepool, Hull, Newcastle, Shields, Stockton, Sunderland, and Whitehaven.

The whole number of patients admitted from these ports was about 415—consequently the number of typhus cases from this class of vessels amounted in the year to 7·7 per cent.

Up to the 12th Nov., 1842, 109 cases of typhus have been admitted, of which 15 have died, or 13·7 per cent. ; these cases have constituted 4·2 per cent. of all cases admitted in this year. Of the 109 cases, 48 were from vessels from the above ports ; the whole number of patients from which has amounted to 331 ; consequently the number of cases of typhus from this class of vessels, has been in this year, 14·5 per cent., or nearly double that of 1841.

This increase in the number of typhus cases in the present year would, however, appear to depend upon some general cause, and not upon one peculiar to the coal vessels, though it is to be remarked that, when the disease is generally more prevalent, it still retains its greater proportional frequency in that class of vessels. 62 per cent. of the typhus cases have been twenty years or under, of age, and the great majority has been apprentices or boys. It would thus appear—1st, that sailors employed in vessels of the above-named ports afford a greater proportional number of typhus cases to this hospital than is afforded by all other classes of seamen collectively. 2. That this greater frequency of the disease attaches itself more particularly to the boys and youths, and that it is a source of serious mortality at an age when death from disease is most rare.

With respect to the food, clothing, and exposure to weather of individuals employed in this class of vessels, there is no reason to suppose that any difference exists between them and other seamen. Exposure to wet and cold cannot be assumed as a cause of the increased liability to typhus, as the greater number of cases occur in the months of July, August, and September. It remains then only to consider the state of the forecables, in which these men are placed, in which perhaps the febrile source of the evil will be found to exist.

Typhus fever may be assumed to be an infectious disease, the poison of which requires a certain degree of concentration to produce its effect, except upon highly predisposed individuals. This concentration will necessarily occur in the absence of free ventilation, and by the accumulation of materials containing the poison—such as bedding, clothes, &c. ; and there is very little doubt but that, if more attention were paid to the cleanliness and ventilation of the forecables, inhabited by, and to the frequent exposure to the air of the bedding and clothes worn by, the men in these vessels, the disease might, to a great extent, be banished from them.

Numerous instances have occurred of cases of typhus being furnished from the same vessel to this hospital in succession, at different times—a circumstance strongly pointing out the fact, that the poison will remain attached to the same locality for an indefinite period, if proper means be not taken to eradicate it.

THE MERCHANT SERVICE.—The remarks of our correspondent the "Master of a British Merchant Ship," have not been lost on the press whatever effect they may produce elsewhere. We find the following in reference to them in the *Gateshead Observer*, of the 10th of December last :—

"Desirous on all occasions, to promote the interests, and to do justice to the real friends of the British shipowner, we felt much pleasure, last week, in calling attention to the gratifying Report of the South Shields Marine Board for the examination of candidates for the command of vessels in the merchant service. The names of the individuals composing that Board, afford ample assurance of its usefulness. We can, therefore, only again express our regret at the absence of some legislative enactment, by which an amount of protection might be extended to the whole mercantile marine of the kingdom, equal to that which is creditably afforded to its supporters by the establishment in South Shields.

"An article in the *Nautical Magazine* of this month, by the commander of a British merchantman, under the title of 'Nautical and Commercial Observations on Rio de Janeiro, Cape of Good Hope, New Zealand, and Valparaiso,' contains remarks in reference to the absence of legislative protection against the consequences of incompetency in commanders of vessels, which we cannot too strongly recommend to the perusal of the commercial public. We should have rejoiced, could we have expressed our belief that the statements we refer to were overcharged. We cannot do so. The *Shipping Gazette*, a few days ago, published a letter from Rio de Janeiro, fatally corroborative of the writer in the *Nautical Magazine*; and a considerable number of friends of ours, shipowners of old standing, and of extensive floating property, have assured us that the discreditable and ruinous circumstances which are commented on in the following extracts, are not, unfortunately exhibited alone on the coasts of South America.

The *Observer* then makes the following remarks on an extract which precedes them :—

"In sad corroboration of these remarks in the *Nautical Magazine*, we may quote the following letter (from a shipmaster to his owner in England,) which appeared in the *Shipping Gazette* of the 24th ult. :—

"Rio de Janeiro, Oct. 12th, 1842.

"Small vessels are all the demand here for coffee, and a decided preference is given to foreign vessels over the British. A prejudice exists against the British ships and crews. The reason assigned to me by several merchants is, that they have received strict orders from their correspondents not to ship coffee in British vessels, if foreigners can be obtained, as they report that the latter always deliver their cargoes in good order, while the former, from the bad condition and construction of the vessels, the drunkenness and carelessness of the masters and crews, deliver their cargoes in bad order.

"Be this as it may, I have found it acted upon to the letter since my arrival here; and as these objections to British ships and crews are kept no secret here, it might be useful were they as well known in Britain."

"The *Gazette* characterizes the opinion entertained in Rio of British vessels, as a prejudice; and we think our contemporary is right. The disrepute of the vessels is solely attributable to the degraded condition of their commanders? We believe that, on the whole, British shipping property is far superior, in character, to that of any other nation; but can we blame the merchants of South America, for preferring even less-qualified vessels, when aware that their property will be taken care of by more-qualified commanders? The finest that ever floated, is no better than a worthless hulk, if entrusted to a worthless officer. Improve the character of the latter, and British vessels would immediately resume that position in the carrying trade of the world, from which, if due care had been taken, they would never have been ejected."

The *Observer* is right, and the worthy officers, we are glad to see, are already wisely making a good beginning for their own sakes in showing up the "worthless" ones.

PILOTAGE AND LIGHT DUES.

We find the following in which there is much for important consideration, in the *Morning Chronicle* of the 23rd Dec. last:—We have reason to know, that considerable efforts are likely to be made in the course of the ensuing session, to obtain for our shipping interest some relief from the oppressive tax at present levied in the shape of pilotage and light dues. The question was brought before the House of Commons in 1840, and at the present moment, we have been assured, measures are taking, with a view to urge the government to bring forward a measure of practical relief. Opposed as we are to all unfair advantages enjoyed by one class of the community at the expense of all other classes, we are not the less anxious that every branch of industry should be freed from every unnecessary burden; and if there is one branch better entitled than any other to such an exemption, it certainly is the shipping interest, on whose continued prosperity the permanency of our national greatness may, in a great measure, be said to be dependent.

In 1835, a commission was appointed by his late Majesty King William IV., to enquire into the then existing laws for the regulation of pilotage, and to suggest such improvements and reductions as might be consistent with the efficient performance of the duties, and “with the paramount object of affording the best security to the shipping of these realms.” The commissioners were Lord Lowther, the Marquis of Bute, the late Sir Thomas M. Hardy, G. R. Robinson, Esq., chairman at Lloyd’s; Aaron Chapman, Esq., one of the Elder Brethren of the Trinity House; Captain Beaufort, of the Admiralty; and O. Wigram, Esq., an eminent shipowner.

These commissioners, in due time, made their report, which was dated the 25th of February, 1836, and contained a mass of evidence respecting the practice at British as well as at foreign ports. Among the alterations recommended by the commissioners, was one respecting steam navigation, to which they had found the existing regulations a serious discouragement and a heavy burden. They reported, that “looking to the fact, as stated in evidence before them, that the masters and mates of steam-vessels, from the constant and regular use of the ports between which they daily ply, are well acquainted with such ports; that it is customary not to permit any pilot to take charge of their vessels (although they may have one on board, and are obliged to pay the same as if he acted), because they consider that their own masters are better qualified than the regular pilots; that the charge also became very oppressive upon vessels which quit and enter a port so frequently as steam-vessels by their power and speed are enabled to do;” they therefore recommend “that all steam-vessels navigating between one port of the United Kingdom and another, and all steam-vessels navigating between a port of the United Kingdom and a foreign port, when the average time employed in such a voyage did not exceed four-and-twenty hours, and having actually on board a master, mate, or other competent person, who had passed an examination for the district—should be exempt from employing a pilot.”

A bill founded on the recommendations contained in this report was shortly afterwards brought into the House of Commons by the late Lord Sydenham (then Mr. P. Thomson), and Mr. Labouchere. The bill was read a first and second time, and went through a committee, but was eventually withdrawn, in consequence, probably, of the difficulty experienced at that time in carrying forward any measure of public utility, owing to the vexatious and harassing opposition against which the government of that day had continually to struggle. Since then no step has been taken to give effect to the recommendations of the commissioners, although, as we have already observed, the question was brought before the House of Commons in 1840, on the presentation of petitions from the General Association of Proprietors of Steam Shipping.

What the owners of steam-vessels require is, that when their own officers are fully competent to act as pilots, they may not be compelled to pay for services of which they stand in no need, the rapidity with which they are able

to make their voyages rendering the imposition peculiarly burdensome. The relief demanded is one that the legislature ought not to withhold, nor is there any reason why a similar indulgence should not be extended to sailing vessels, whenever the captain or mate of a sailing vessel has legally qualified himself to act as pilot on that particular line of coast along which he is in the habit of navigating.

The question of light dues is liable to the same remarks. In 1834, a select committee of the House of Commons was appointed to investigate the existing regulations, and many of our readers, no doubt, still remember some of the amusing discoveries made by that committee, amusing to the public at large, but anything rather than amusing to the shipowners, the unfortunate victims of the flagrant abuses brought to light in the course of the inquiry. Among the members on that committee were—Mr. Hume, Sir James Graham, Sir Thomas Troubridge, Sir Charles Adam, Mr. Poulett Thomson, Alderman Thomson, &c.

This committee recommended various changes, with a view to the relief of the shipping interest in general, and, like the pilotage commission, pointed out several grievances to which the owners of steam ships were particularly liable; on this point they expressed themselves in the report in the following words:—

“The light dues are now charged on steam vessels as on other vessels, and the attention of your committee has been directed to them. The present rates were made without reference to the peculiarities attendant on the navigation of that class of vessels, which appear to warrant a reduction of the dues.

“A vessel under sail is driven by winds and tides that lie in her course, and in tacking derives much benefit from the lights; but steamers move in straight lines, and perform much of their voyage in the day-time; they see few lights, and by the rapidity of their movements soon pass them. Besides the people who navigate them acquire from the frequency of their trips, such an intimate acquaintance with the coast, as renders lights of comparatively little use to them. Again,—steamers are obliged generally to sail at fixed times, full or not full, and the carrying tonnage of a steamer is not so capacious as that of another vessel, the best part of the hold being occupied by machinery.”

A bill founded on this report was brought in by the late government, and was eventually passed, but in this act (5 and 6 Will. IV., cap 79,) the recommendations relative to steam vessels were overlooked. The consequence has been, not only that steam vessels have not shared in the relief afforded by that act to other descriptions of shipping, but that advantage has even been taken of some of the clauses contained in that act to impose an additional taxation upon steam navigation. The whole of this question, however, as we have already said, is at present under the consideration of government, and will probably be brought under discussion in the House of Commons, early in the session.

THE LEVEL OF THE SEA AGAIN.

“Much ado about Nothing.”

MR. EDITOR.—In a periodical (Nov. 1842,) of some note, we find the following passage; “With reference to the ‘level of the sea,’ surveyors and maritime men have been in the habit of taking the surface of *low water* at spring tides to represent this level; but men of science have seen the propriety of assuming a mean between high and low water as a standard.

“As the height of coasts is generally computed with reference to the ‘level of the sea,’ it becomes important to determine what that level really is.”

From the wording of the above passage one would imagine that “surveyors” are not men of “science;” as, also, that “maritime men” (seamen generally) have no pretensions to science, of course nothing of the sort was meant, so let it pass.

The *savans*, I presume, are the "men of science," and may we not infer from the context that, they are alone competent to decide the question. But, granting their superiority in acquirement, will "assumption" settle the question alluded to above? It does not appear to be one of mere philosophy, but seems to be determinable by common sense, and very easy of solution.

If it were not a matter of indifference what standard is taken, it might appear that to measure the height of elevated land from an assumed one, "a mean between high and low water," would be about as wise as placing the base of a building upon quicksand.

The simplest question or enquiry to arrive at the truth is; Where would the level of the sea be, were there no tides upon the earth? If there were no tides, we may consistently believe that, where the surface of the sea is now found when it is low water at spring tides, would be that of the ocean throughout. Hence common sense has always considered this low water surface as the *true natural level* of the sea. It is such, because, however much it may rise *above*, it can never be *depressed below* dead-low water mark.

The question is so plain a one that a man without a particle of science in his cranium may resolve it, as soon as he is made to comprehend its meaning; and it really seems surprising that the "gifted" should be so long puzzled to arrive at a conclusion.

I have heard of a rough Jack Pilot, who declared his belief that, the "knowing ones" wouldn't give in, because his own craft knew all about the question years and years ago. "But no matter," said he, "they (the knowing ones) knew better (than that they avow) but dearly like to work in a *fog!*"

I have here argued on the abstract question—"which is the true level of the sea?" For though so considered, it is, perhaps, in reality of little consequence to the calculator, which height or mark be taken as a standard as long as he knows the rise of the tide and the exact time.

DAVID JONES.

CHINA.—Extracts of a letter from an officer on board H. E. I. C. Phlegethon steam vessel, dated Nankin, August 26th, 1842.

The longer I am in the Phlegethon, and the more I see of others, the more I like her. Her hull and engines are in as good order as when she left Liverpool; they *have not cost Government ten shillings* in repairs since we have been out. She steers well, and is as strong as we could wish for this work.

The wood casings of the iron beams are taken down, and the general opinion among the naval officers is that they look better. Hall will tell you, that in the *Nemesis* the rats hold nightly dances in his, and he has strong suspicions that one or two of the beams are turned either into a nursery or a school, from the squeaking that goes on.

The Driver and Vixen are here with the new engines; I do not think the engineers are very fond of them. The Pluto and Proserpine are both out, and in the river. We have the little Medusa from Bombay, and she is worth anything out here; that is the description of vessel wanted. She is well commanded, and is the Admiral's delight; does every thing well, and brought up 600 troops the other day. We have had nearly 1000 on our deck.

We have built a regular bridge-deck over the engines, on which stand the officers and the band. Hall is down getting bullocks for the squadron. We are lying quiet, having three-fourths of our men sick, some dangerously. For myself, I never enjoyed better health than I have since I have been in the river.

I open this again to tell you that the Commissioners have heard from the Emperor, who expresses great pleasure at our moderate terms, and desires them to be instantly complied with.

CHINESE TROPHIES.—The number of guns taken by the British forces at Woosung amounted to 172, mostly made of copper, and from 12 to 14 feet long. The value of the copper guns taken at Chinhae amounted to 10,000*l.*, having been sold for that sum at Calcutta. All the copper guns taken at Woosung, and 34 others, mostly 12 and 24-pounders, have been shipped for Calcutta, but it is not yet known how the proceeds will be applied, whether deposited in the chest that belongs to the consolidated fund, or awarded to the victorious soldiers and sailors, in the shape of prize-money. In addition to these, an immense quantity of iron guns have been destroyed, with other warlike instruments, from the three-pronged toasting-forks, as the Chinese spears are termed, to the formidable two-handed swords.

The surveying vessels attached to the British fleet proceeded up the branch of the river on which Woosung and Chinhae are situate, upwards of 40 miles above these important cities, until they were assured no other batteries or defences existed in that part of the interior. The country through which this branch of the river meanders is described as beautiful, and justly deserving its name of the Flowery Land. It is described as like running up the Thames, a well cultivated plain meeting the eye on both sides, having rice, corn, vegetables, and fruit in abundance. The river is admirably adapted for navigation, the surveying vessels having found 13 fathoms water at the highest part to which they had proceeded, and where no European had ever been before. On the banks of the river were observed neat-looking farmhouses in detached spots, apparently possessing every comfort, and the whole appearance of the land very different from the low swamps the British forces had met with in all the other parts of China visited by them. The weather had become suddenly dreadfully hot. Up to the 14th of June the heat ranged from 80 to 82 degrees in the shade, with cool breezes at night; but after that period it rose to 100 and 102 all day in the shade, and not a breath of wind at night. In some degree to compensate for this evil ice is to be had in plenty, the Chinese preserving it to send out in empty fishing-boats, which enables them to supply the inhabitants of large cities at a considerable distance inland with cargoes quite fresh, and of excellent quality. The ice is kept by the British for cooling the beer, and proves a great luxury.

THE CHAPELLE ROCK.—The following particulars relating to the Chapelle Rock will interest Seamen. The particulars concerning it in Purdy's Atlantic Memoir (eighth edition p. 430 and 431) appear to place the existence of this danger beyond a doubt.

Abstract from the Log of the Brig Grace Darling of Liverpool.—9th August 1842. At 1h. 30m. P.M. breakers seen close to the vessel, and a sunken rock observed distinctly and repeatedly above water in the hollow of the sea, which clashed together and broke much. Supposed the rock might be about four feet below the usual sea level. It was witnessed by the whole crew of the vessel, which passed within her own length to windward of it, then going about $7\frac{1}{2}$ knots. Supposed it to be the Chapelle Rock of 1786, its circumference appeared to be about 40 feet, it was of a sandy colour like freestone, and no weed appeared on it. All on board were much alarmed. Latitude *in* carried on from a good meridian observation $47^{\circ} 43' N.$, and longitude reduced from chronometric observations at 9h. 30m. A.M. and 3 P.M. $8^{\circ} 04' 30'' W.$ The chronometer was No. 2050 by Mr. Henry Frodsham, from whom her rate had been obtained only nine days before, and its accuracy subsequently confirmed by excellent distances of sun and moon on the 27th August, and again by making Deseada on the 5th September. So the existence of the rock in the assigned position may be relied on.

JAMES TASKER,
Master of the *Grace Darling*.

CHINESE INTELLIGENCE.

The following document is interesting, as showing the mode adopted by Sir H. Pottinger to point out to the Chinese their erroneous policy.

POTTINGER, Her Britannic Majesty's Plenipotentiary, &c., makes this clear exposition for the information of all the people of the country.

Under the canopy of heaven, and within the circumference of earth, many are the different countries; of the multitude of these, not one is there that is not ruled by the Supreme Heavenly Father, nor are there any that are not brethren of one family. Being then of one family, very plain it is that they should hold friendly and brotherly intercourse together, and not boast themselves one above another. But England coming from the utmost west, has held intercourse with China in this utmost east for more than two centuries past; and during this time the English have suffered ill-treatment from the Chinese officers, who, regarding themselves as powerful and us as weak, have thus dared to commit injustice. The English, unwilling to enter into contest with them, had borne such treatment for many years, till, in the year 1839, the Emperor of China, having determined to prohibit effectually the importation of opium, sent to a special commissioner, Tin Yseseu, to conduct the arrangements for that purpose; and that officer, finding himself unable to seize the actual offenders of each nation, in place of consulting and concerting measures with the several national officers residing in China (as it was his proper duty to have done), had the audacity forcibly to confine in Canton the English officer and people, at the same time threatening them with death. His object was, by extorting from them what opium there might be that year in China, to gain favour with his Emperor; and the English officer at Canton seeing this position of things, commanded the English merchants, in the name of their Sovereign, that they should deliver up for the ransom of themselves from this position of extreme danger, whatever opium they might had in the Chinese waters. Here is one great offence committed by the Chinese officers against the English.

The Sovereign of Great Britain, in consequence of this and numerous subsequent acts of injustice, appointed as her Envoys, the Admiral Elliot, and Elliot the Superintendent at Canton, to whom jointly full powers were given for the settlement of affairs with China. And having in consideration the many past acts of injustice of the Chinese officers, her Majesty directed the Admiral to take command of a combined naval and land force, and to quarter it at one of the islands of the Chinese coast; her instructions being, that if the Chinese Government were willing to admit its errors, and afford redress, a peaceful arrangement of affairs should be concluded; but otherwise, if justice and recompense were refused, that the standard of justice should be raised and its claims enforced by war. The Admiral, &c., hereupon proceeded to the Pieho, and there presented a letter from the Minister of Great Britain, which the Minister and Governor Keshen transmitted for the consideration of all the Ministers to Peking; after this Keshen wrote to the Admiral, stating that affairs which concerned Canton it was difficult to arrange so far off, and if the Admiral, &c., would proceed to Canton, it would not need long to arrange affairs there. The high English officers, still desiring peace, consented to this, and proceeded to Canton, where they met Keshen, and had frequent communications with him, both written and personal. Arrangements were not yet concluded, when the Ministers at Peking, men without truth or good faith, induced the Emperor to recall Keshen, and send instead a General Yihshan, to fight and war with the English; so that the English were actually compelled by these proceedings to take the Bocca Tigris, and the line of defences from thence upwards; and to bring Canton itself to submission, and to take from it a ransom for the punish-

ment of such ill-faith. In this ill-faith of the Chinese Ministers we have a second grand instance of offence against England.

The High Commissioner Yukien, and other High Officers, Generals, &c., in the several provinces, in repeated instances, when they have found our people cast by the weather on their coast, or induced by evil men on shore, have been dead to all good and honest feeling, dared to put the captives thus brought into their hands to a tyrannical and cruel death, and have deceitfully and falsely reported the cases to the Emperor, or published lying proclamations to the people, wherein they have invented tales of lengthened contest and seizures of vessels in battle with slaughter of many people. Thus falsely did Yukien declare last year the circumstances of the English occupation of Chusan; thus did the General Yishan pretend that he had destroyed many vessels; the Governor Yen-Petao, that he had, by force of arms, recovered Amoy; the Taotai on Formosa, when the shipwreck had cast men on that island, he had gained a victory over them in battle; and the General Yihking in May last, that he had destroyed many vessels and killed a multitude of men at Chusan, when not one vessel was injured, nor a single man killed. These multiplied false statements, misleading the Emperor and people, and hindering peaceful arrangements, are a third great cause of offence against the English.

With reference to trade, the English merchants used to carry their goods to many places, and buy from and sell to the people—wholly a benefit, and in no sense hurtful. But the officers at Canton, seeking to confine the profits to themselves, induced the Emperor, by false statements, to restrict trade to Canton alone, and permit 13 'Hong merchants' to conduct it, not even allowing intercourse with any but them and the linguists appointed by the Government. Thus did these officers gain the power of meddling in every matter, extorting as they pleased, and disguising every thing under false statements to the Emperor. This is the fourth great cause of offence.

There are besides many minor grievances that excite indignation and wrath, but that here need not be enumerated.

Because of these grievances the Plenipotentiary, &c., has been sent out by command of his Sovereign to demand redress and satisfaction. When these are obtained, peaceful arrangements may be made, and the former friendliness of intercourse may be renewed. But until then the High Officers in command here of the combined naval and land forces will continue, as commanded also by their Sovereign, to maintain the cause of justice, and to contend with all their power for the enforcements of such redress. When the Emperor shall appoint a High Officer with full powers to negotiate and conclude arrangements on his own responsibility, and not till then, will hostile operations be saved.

Now three principal things are required, for the redress and satisfaction above spoken—namely, compensation for losses and expenses; a friendly and becoming intercourse on terms of equality between officers of the two countries; and the cession of insular territory of commerce and for the residence of merchants, and as a security and guarantee against future renewal of offensive acts.

If these three things be acceded to, there will be no difficulty in the settlement of any minor points.

That the people may know our objects, and not be misled by the false representation of their officers to commit acts of hostility that would bring home to their own persons and families the horrors of war, the Plenipotentiary, &c., proclaims for general information this clear exposition.

Dated in Yang-tsze-keang, the 5th day of July, in the year 1842.

HENRY POTTINGER,

Her Majesty's Plenipotentiary.

(True Copy)

G. A. MALCOLM,

Secretary of Legation.

OFFICIAL DESPACHES.

SECRET DEPARTMENT.

Bombay Castle, Oct. 3rd, 1842.

The Hon. the Governor in Council is pleased to republish for general information the following general order issued at Simla, on the 23rd ult., by the Right Hon. the Governor General of India, directing the publication of a despatch from Vice-Admiral Sir W. Parker, KCB., Naval Commander-in-chief on the coast of China, enclosing copies of his Excellency's reports to the Admiralty of the successful operations of the combined forces in China, in the capture of Woosung, Paoushan, and Shanghai.

By order of the Hon. the Governor in Council,
J. P. WILLOUGHBY,
Secretary to Government.

General orders by the Right Hon. the Governor-General of India.

Simla, Sept. 23rd, 1842.

The Right Hon. the Governor-General of India has directed the publication of a despatch this day received from Vice-Admiral Sir W. Parker, KCB., Naval Commander-in-Chief on the coast of China, enclosing copies of his Excellency's reports to the Admiralty of the successful operations of the combined forces in China, in the capture of Woosung, Paoushan, and Shanghai.

By order of the Right Hon. the Governor-General of India.
T. M. MADDOCK,
Secretary to the Governor-General of India, &c.

From his Excellency Vice-Admiral Sir W. Parker, KCB., Commander-in-Chief, in China, to the Right Hon. Lord Ellenborough, Governor-General of India.

Cornwallis, at Woosung, June 26th, 1842.

MY LORD.—I have the honour to enclose, for your Lordship's information, copies of my despatches to the Secretary of the Admiralty, reporting the capture of Woosung, Paoushan, and Shanghai, on the 16th and 19th inst., with a total loss of not less than 400 guns, and a large quantity of arms and military stores, with comparatively small loss; and I beg to offer my congratulations to your Lordship on these events.

Sir H. Pottinger returned to the expedition on the 20th instant, and nearly the whole of the expected reinforcements of troops and ships of war have arrived in this quarter, with ample supplies of provisions and stores.

As I believe his Excellency Sir Hugh Gough sends your Lordship the copies of our late correspondence with Elepao, I do not trouble you with another set, and have only to add, that no time will be lost in advancing the expedition up the Yang-tze-Kiang in prosecution of further operations.

I have, &c.

W. PARKER, *Vice-Admiral.*

From his Excellency Vice-Admiral Sir W. Parker, KCB., Naval Commander-in-Chief, China, to the Secretary of the Admiralty, &c.

SIR.—I did myself the honour of apprizing the Lords Commissioners of the Admiralty on the 26th ult., from Chapoo, that his Excellency Lieutenant-

General Sir H. Gough and myself had it in contemplation to make our next descent at Woosung, situated at the entrance of a large river of that name, branching from the Yang-tsze-Kiang; and I have now the gratification of reporting to their Lordships, that after a severe cannonading yesterday from her Majesty's squadron and the steam-vessels of the Indian navy, under my command, and a spirited resistance on the part of the Chinese, the whole of their numerous and heavy batteries, defended by several thousand men, were carried with little comparative loss by the seamen and marines, and a practicable place for disembarking the troops having been thus secured, the combined forces under Sir H. Gough took possession of Paoushan, a city of the third class, at the northern extremity of the sea-line batteries, without further resistance.

In detailing these operations, I beg to inform their Lordships that, as soon as the guns, arms, and military stores of every description taken at Chapoo were effectually destroyed, not a moment was lost in re-embarking the troops.

The fleet sailed thence on the 28th of May, and on the following day reached the Rugged Islands, lying fourteen leagues distant to the eastward, where Commanders Kellett and Collinson had recently discovered a safe and extensive sound, conveniently situated as an anchorage for the expedition, pending the further examination of those officers, assisted by Lieutenant Maitland, of the *Algerine*, to ascertain a safe channel for the large ships into the Yang-tsze-Kiang; but it was not until the 4th inst. that they were able to rejoin us with a satisfactory report of their investigation.

The fleet proceeded to the northward on the following day; but from the strength of the tides, calms, fogs, and the necessity of anchoring during the nights, we did not arrive at the appointed rendezvous off the Amherst Rocks before the 8th, when the *Modeste*, with the *Nemesis* and *Phlegethon* steam-vessels, were immediately detached off Woosung, to intercept any communication with that place; and six of the small vessels were at the same time placed as beacons at the edge of the shoals on the north side of the channel leading into the Yang-tsze-Kiang. This highly important duty was executed most skilfully by Commanders Kellett and Collinson, as no landmarks are visible on the low banks of the river by which the dangers can be defined, and the *Ariadne* iron steam-vessel very narrowly escaped foundering, by striking on the point of a rock before unknown, near the position taken up by the *Algerine*. This rock is a wash at low water, and had not more than four or five feet on it at the time. The bottom of the steam-vessel was completely perforated, and the compartment which contains the engine instantaneously filled with water; but by prompt assistance from the squadron, and a sail being got under her bottom, the leak was sufficiently absorbed to enable her, with the assistance of the *Sesostris*, to reach Chusan, where I trust her damages will be made good in a few weeks.

The weather continued too thick for the ships again to break ground before the 13th, when I am happy to say the *Cornwallis*, conducted by Commander Kellett, and accompanied by the squadron, viz., the *Blonde*, *Columbine*, *Jupiter* troop-ship, *Phlegethon*, *Tenasserim*, *Medusa*, steam-vessels, and twelve transports, succeeded in reaching the anchorage off Woosung under sail, without a single accident, though running for a distance of 30 miles in water, which only exceeded by three feet the draught of the ship.

I found that Commander Watson, with Mr. Forster, the master of the *Modeste*, had been indefatigable since their arrival, in making observations and sounding the narrow channel, by which alone the Woosung river can be approached. The banks at the entrance were lined with strong batteries, the western side presenting for three miles an uninterrupted fortified embankment, mounting 134 guns, between the city of Paoushan and the village of Woosung. This village is bounded by a creek, on the opposite bank of which a semi-circular battery, mounting ten 24-pounders, was erected to flank the entrance of the river. A strong fort, mounting 21 guns, at the eastern entrance of the Woosung

completed the sea defence, making a total of 175 guns, which were all placed in judicious positions.

The distance between the last mentioned fort on the east side and the main battery on the west line is scarcely a mile, and the channel which runs between them on the west side in a curved direction is not more than 320 yards wide.

A close reconnoissance was made by Sir Hugh Gough and myself in the *Medusa* steam-vessel on the 14th; but we were unable to discover any spot where the troops could be landed, except under the guns of the ships; and I could not entertain a doubt of soon effecting the object, if they could be placed in good positions for cannonading the works.

Although the weather was unfavourable, every difficulty was overcome by the zeal and perseverance of Commanders Kellet and Collinson, assisted by the masters of her Majesty's ships—viz., the *Cornwallis*, Mr. J. Coaker; the *Blonde*, Mr. H. A. Thomas; the *Modeste*, Mr. J. T. Forster; the *Columbine*, Mr. R. G. Wills, who during the nights sounded and buoyed the channel with admirable accuracy. The *Medusa* was then advanced as near the batteries as we could venture to anchor her, supported by guard-boats, to prevent the Chinese removing the buoys, and by the vigilance of Lieutenant Hewitt, none of them were disturbed.

The *Sesostris* returned from Chusan on the 15th, and the wind being adverse for the ships taking up their positions under sail, I determined on placing them against the batteries by the aid of the steam-vessels, and the following morning being from the state of the weather and tide favourable for our purpose, they were lashed alongside her Majesty's ships at dawn of day, and at 6 o'clock the whole proceeded to the attack in the following order:—The *Blonde*, towed by the *Tenasserim*; the *Cornwallis*, towed by the *Sesostris*; the *Modeste*, towed by the *Nemesis*; the *Columbine*, towed by the *Phlegethon*; the *Clio*, towed by the *Pluto*; the *Algerine* to get in as far as possible under sail, the *Medusa* being reserved to meet any unexpected contingency.

The *Blonde* and *Cornwallis* were directed to anchor against the heaviest batteries at the entrance on the western side, and when placed, the sloops were to proceed higher up under the cover of their fire, to attack those adjoining the village of Woosung, and the flanking battery immediately opposite to it, which it was evident could be passed and enfiladed if the depth of water marked on the charts in our possession proved correct.

The *Blonde* was kept ahead of the *Cornwallis*, to be ready to support the sloops should they require it, the narrowness of the channel in which we were to anchor making it doubtful in that event whether there would be space for her to pass this ship.

Captain Bouchier led in with his accustomed gallantry and ability, closely followed by the *Cornwallis*, bearing my flag, under a heavy fire from the batteries on both sides, which we were obliged to approach. Commanders Kellett and Collinson handsomely volunteered their assistance as pilots; and about half-past 6 o'clock the two ships were anchored by the stern, in excellent positions, within 500 yards of the batteries, the sloops passing on successively to their stations.

The *Algerine* was obliged to bring up astern of the *Cornwallis*, and the *Sesostris*, after casting off from this ship, in proceeding to take a station to enfilade the fort on the eastern side, unfortunately took the ground, but in a position which enabled Commander Ormsby to render very essential service, of which he ably availed himself.

Before the *Tenasserim* could take up her assigned station the *North Star* was observed outside endeavouring to enter the channel. The former vessel was therefore despatched to tow her into position, and under the guidance of Commander Kellett she was placed in a good berth, ahead of the *Blonde*, in time to participate in our operation. The *Tenasserim* then attempted to close the eastern battery, with which the *Sesostris* and some of the larboard guns of the *Cornwallis* were engaged, but in doing so she likewise took the ground, although in a situation to render very effective service.

It is but justice to say, that the Chinese evinced much firmness at their guns, and kept up a smart fire for a considerable time, although it gradually slackened after the ships opened on them.

The gun practice of the squadron equalled the most sanguine expectations, and by 8 o'clock our opponents were all driven from their batteries, those opposite to the ships being reduced to a ruinous state. Large bodies of troops, however, were still observed from our mast-heads collected in different directions to oppose our landing, but they were at length dispersed by shells, which were thrown with excellent precision by the gunnery officers of the Cornwallis and Blonde, with the addition of some rockets from the former ship.

During the proceedings at the entrance of the river, the Modeste, Columbine, and Clio, led on with great spirit by Cammander Watson, and skillfully conducted by the steam-vessels respectively attached to them, gallantly and completely achieved the service assigned them. The Modeste pushed at once into the creek at the village of Woosung, while the Columbine and Clio approached the opposite flank of the semi-circular battery, which was immediately abandoned, and, the guns adjoining the village being soon silenced, the three commanders landed at the head of their men about 8 o'clock, and took possession of it, but not without some resistance from the Chinese troops in that quarter. On perceiving this movement, the main body of the seamen and marines, who were already in the boats, immediately disembarked opposite the Cornwallis and Blonde, under Captain Bouchier, supported by Captain P. Richards and Sir J. E. Home, and, forming a junction with Commander Watson's party, the whole line of the western batteries were completely in our hands.

The Chinese in the eastern battery, which also suffered considerably, retired shortly afterwards, when Commander Ormsby promptly landed with a party of men from the Sesostriis and Tenasserim, and destroyed the guns and works.

The smaller steam-vessels equally contributed to the success which attended Commander Watson's division, and when the Nemesis and Phlegethon were disengaged from the Modeste and Columbine, Lieutenants Hall and M'Cleverty proceeded with their usual activity in chase of 13 war-junks which had fired on them in their advance. These were totally destroyed, each mounting about three guns besides small arms, but the crews after sustaining much loss made their escape. Three small junks, newly constructed with paddle-wheels to work by hand, were also taken. In performing this service the Nemesis took the ground and remained for some hours on shore, but got off without injury; and I must not omit to notice the exertions of the Medusa and Pluto with similar approbation.

No time was lost in despatching the available steam-vessels for the troops, and before 1 o'clock I had the satisfaction of seeing the whole of the land forces disembarked, without accident, under their gallant General, opposite to the Cornwallis, and in the afternoon the combined forces entered Paoushan without resistance.

I now gladly acquit myself of a very gratifying part of my duty in bearing testimony to the gallantry and satisfactory conduct of the captains, commanders, officers, and men of all ranks in the Royal and Indian navy and Royal Marines under my command.

It would be almost invidious to particularize where all have displayed the most emulative spirit of enterprise and zeal, the whole being entitled to my unqualified commendation. But from the special position of my flag captain, I may be allowed, without prejudice to these sentiments, to express my acknowledgments for the very valuable assistance which I at all times derived from the unwearied exertions and good judgment of Captain P. Richards, and I may add that my secretary, Mr. B. Chimmo, and flag-lieutenant, C. E. Tennant, have invariably attended me on every occasion of service with most praiseworthy zeal.

I transmit herewith, for their Lordships' information, lists of the killed and wounded, the damages sustained in the respective ships, the names of the

officers attached to the landing parties on the 16th, and an account of the guns which have been taken.

It is impossible to state accurately either the force or loss of the Chinese, as they are quick in removing those who have suffered; but, from the number of bodies found in different directions, I cannot estimate their killed at less than 100, and a proportionate number of wounded; and, from various accounts, they must have had from 5,000 to 10,000 men for the defence of Woosung and Paoushan.

Many additional guns have fallen into our hands at and to the northward of the city; a considerable number of those taken are of copper, which we are now embarking in the ships of war and transports, and as soon as the destruction of the Chinese military stores is completed, the General and myself propose to advance on the city of Shanghae.

I have, &c.,

W. PARKER, *Vice-Admiral*.

From a return of the killed and wounded on board Her Majesty's ships and vessels, and those of the Indian navy in the attack on the batteries of Woosung, the 16th of June, it appears, that two only, both of the Blonde, were killed, and 25 in all wounded.

List of her Majesty's ships and those of the Indian Navy engaged in the operation against Woosung, on the 16th of June.

Cornwallis, Capt. Peter Richards.
 Blonde, Capt. T. Bourchier, *ca*.
 North Star, Capt. Sir J. E. Home, Bart.
 Modeste, Com. R. B. Watson.
 Columbine, Com. W. H. A. Moorhead.
 Clio, Com. E. N. Troubridge.
 Algerine, Lieut. W. H. Maitland.
 Jupiter, Mr. G. B. Hoffmeister, Master commanding.
 Sesostris, Capt. H. A. Ormsby, Indian navy.
 Pluto, Lieut. J. Tudor, *RN*.
 Phlegethon, Lieut. J. J. M'Cleverty, *RN*.
 Nemesis, Lieut. W. H. Hall, *RN*.
 Medusa, Lieut. W. H. Hewitt, Indian navy.
 Tenasserim, Mr. A. P. Wall, Acting-Master, *RN*.

(True copy)

W. PARKER, *Vice-Admiral*.

From his Excellency Vice-Admiral Sir W. Parker, Naval Commander-in-Chief, China, to the Secretary to the Admiralty, &c.

Cornwallis, off Woosung Harbour, June 24th, 1842.

SIR.—In anticipation of our advance on Shanghae, communicated in my letter of the 17th inst., I beg to acquaint you, for the information of my Lords Commissioners of the Admiralty, that the Phlegethon and Medusa, were despatched up the river on that day with Commander Kellet, to ascertain if any obstruction might be expected, either from the Chinese forces or want of water for the steam-vessels in their passage with the troops; but they returned in a few hours, having been stopped by two strong batteries on each side of the river, about six miles above Woosung, that on the left bank mounting 46, and on the opposite 14 guns; the latter opened a distant but ineffectual fire on the steam-vessels.

The Modeste, Columbine, and Clio, towed by the Nemesis, Phlegethon, and Pluto, were, therefore, immediately sent in advance, with directions to Com-

mander Watson to take up a position as near as possible to these batteries, without drawing their fire, until the expeditionary forces joined ; but to destroy the guns and stores in them, if the panic caused by the attack of the 16th should induce the Chinese to quit them without much resistance ; and I now transmit a copy of Commander Watson's report of his having taken possession of both these works without opposition.

The expeditionary forces were joined on the 16th by the *Dido*, with eight transports containing the 2d Madras Native Infantry and other reinforcements from India, and, the destruction of the guns and military stores at Paoushan and Woosung being completed, the troops were embarked on the morning of the 19th inst. in the *Tenasserim*, *Nemesis*, *Phlegethon*, and *Pluto*, which respectively took the *North Star*, *Modeste*, *Columbine*, and *Clio* in tow, and proceeded up the river, the marines of the squadron being put on board the *Medusa*, in which the General and his staff did me the honour to accompany me, together with Captains Bouchier, Richards, and Keppel, and a few boats from their respective ships to assist in landing the troops. A force of about 500 men, including some Horse Artillery, were also despatched by the General, by land, towards Shanghai, which is about 12 miles above Woosung.

With the exception of one or two narrow channels we found no difficulty in navigating this splendid river, and by half-past 1 o'clock had approached within sight of the city, when the *North Star*, which was leading, observed a range of batteries at the north end of it, which soon afterwards opened a distant fire without doing any mischief. The squadron were then directed by signal to cast off the steamers and engage, when the ships promptly shot in to close positions, and on the discharge of two well-directed broadsides from the *North Star* and *Modeste*, (by which four guns were dismantled,) and a few guns from the steam vessels, the Chinese fled with precipitation, and Capt. Bouchier immediately landed with the seamen and marines, and took possession of the batteries, on which 49 guns (17 of brass) were mounted, and a considerable quantity of arms of different descriptions, the whole of which, with the exception of the brass guns, were destroyed.

The troops disembarked in the city from the steam vessels nearly at the same time, when they were joined by the party that marched from Woosung, which had previously entered on the west side, but the mandarin authorities had fled, and the principal inhabitants were departing as fast as possible in every direction.

The *Columbine* and *Medusa* were sent to the southward of the city to endeavour to check this depopulation, but, although the river at Shanghai is not less than 650 yards wide, it was literally covered with junks and boats of all sizes, carrying off furniture and goods. The respectable inhabitants, however, who did remain, appeared to regard us with less apprehension than I had anywhere before seen, and they freely produced the supplies of provisions, &c., that were required. We were informed that the day before our arrival a serious affray had occurred between the inhabitants and a mandarin party, and several lives lost in consequence of the heavy exactions of the latter, for the avowed purpose of defending the place, and their hasty abandonment of it on our approach.

A large number of guns, arms, and other munitions of war, as well as an abundant store of rice, were found in the arsenal and magazine at Shanghai, and while the land forces were occupied in examining and destroying them, and the ships in getting off the brass guns, &c., feeling it very desirable to ascertain, as far as it was practicable, the navigable course of the river and other water communications of the interior, Capt. Bouchier and Com. Kellett proceeded on the 20th with the *Phlegethon* and *Medusa*, the barge, and some marines of the *Cornwallis*, and a boat of the *Columbine*, for 30 miles without interruption, when two batteries of five guns each were observed on the left bank, in the supposed vicinity of Sungkeang. They were, however, abandoned on the approach of the steam-vessels, and Lieutenant Wise, with the boats and Marines of the *Cornwallis*, landed and destroyed them without resistance, although a considerable body of troops had assembled within a short distance.

Capt. Bouchier's report of his progress up the river was so satisfactory, that, I determined to prosecute the examination still further, and accordingly proceeded, on the following day, with the addition of the *Nemesis*, and we succeeded in ascending 37 miles in a direct line, and 47 miles including the sinuosities of the river above Shanghai, where we were stopped by the shallowness of the water at the entrance of a large lagoon. But having spoken with some small junks loaded with coal, which left Suchanfu only on the preceding day, we satisfactorily ascertained that there is a water communication from the Woosung river with that rich and populous city, and that we had actually reached within 25 miles of it, with encouraging hopes that the small steamers might convey troops within a short distance of it, should it be desirable.

Commander Kellett's zeal on this service, and every other in which he is engaged, exceeds all praise; and I have the satisfaction of herewith transmitting, for their Lordships' information, a sketch, which he has drawn with much ability, of the coast of the Woosung, from its entrance as far as we have proceeded. It will convey to their Lordships the best idea of the locality in which we have been operating; and, I trust, prove a satisfactory addition to our present geographical knowledge of these parts.

The troops were all re-embarked at Shanghai early on the morning of the 23rd, when the squadron dropped down the river, and they were in the course of the afternoon transferred to their respective transports at the anchorage off Woosung.

The surveying vessels and light ships of the squadron will now proceed up the Yang-tse-Kiang, and their lordships may depend that no time will be lost in proceeding with the expeditionary forces in prosecution of further operations.

I have, &c.,

W. PARKER, *Vice-Admiral*.

P.S.—I enclose a list of guns taken and destroyed in the batteries between Woosung and Shanghai, in the arsenal and batteries at Shanghai, and above that city on the banks of the river.

(True copy)

W. PARKER, *Vice-Admiral*.

From Commander R. B. Watson, H.M.S. *Modeste*, to Vice-Admiral Sir W. Parker, x.c.b., Commander-in-Chief.

Modeste, Woosung River, June 18th, 1842.

SIR.—In pursuance of your Excellency's order of yesterday's date, I have placed the ships under my command (except the *Clfo*, which unfortunately got aground on her way up, and has not as yet been got afloat) out of gun-shot of the batteries.

Finding this morning that the batteries on the starboard and larboard sides above us had been deserted by the enemy, I dropped the *Modeste* nearer, and landed and took possession of them with the marines and small-arm men of the *Modeste* and *Columbine*.

I found the guns—viz., on the larboard side, 8 copper and 33 iron guns; on the starboard side, 8 copper and 6 iron guns, had been dismantled, tents destroyed, and the carriages most of them taken away. Above the batteries I found 8 war junks, all of which were burnt, except a small one, in which I hope this evening to have all the copper guns embarked.

I have also the honour to enclose to your Excellency a copy of Mr. Forster's remarks, who has been sounding about a mile above the batteries in our boats.

I have also to inform your Excellency, that the chop intrusted to me was forwarded to the city of Shanghai by a Chinaman, who undertook to deliver it there on the payment of a few dollars.

I have, &c., R. B. WATSON, *Commander*.

(True Copy)

W. PARKER, *Vice-Admiral*.

No less than 135 guns of different calibre were destroyed in the batteries between Woosung and Shanghai, at Shanghai itself, and above the town.

ENLARGED SERIES.—NO. 1.—VOL. FOR 1843.

I

Admiralty, Nov. 23rd, 1842.

Despatches have this day been received at this office from Vice-Admiral Sir W. Parker, *кзв.*, addressed to the Secretary of the Admiralty, of which the following are copies or extracts.

Cornwallis, off the city of Chin-kiang-foo, at the Entrance of the South Grand Canal in the Yang-tse-kiang, July 26th, 1842.

Sir.—It is with the greatest satisfaction that I announce to the Lords Commissioners of the Admiralty the safe arrival of the China expeditionary force off the island of Kinshan, at the entrance of the Grand Canal, in the Yang-tse-kiang, and that the city of Ching-kiang-foo was taken possession of by her Majesty's combined forces on the 21st inst., after vigorous assaults on three points, and a determined resistance by Tartar troops, who lined the walls for its defence on every part, comprising a circumference of four miles and a quarter.

The squadron and transports, amounting altogether to 73 sail, left Woosung on the 6th inst., ascending this noble river in five divisions, preceded by the surveying vessels, small steamers, sloops, and my flag-ship.

The intricate parts of the channel, delineated in Capt. Bethune's chart, having been previously buoyed by the surveying officers, the fleet succeeded in reaching the extent of that officer's valuable researches within two days and a half, and every subsequent difficulty has been most commendably overcome by the unremitting exertions of Commanders Kellett and Collinson, assisted by other surveying officers, and the masters of the squadron, supported by the sloops which were sent in advance.

It was not to be expected that a distance of 170 miles in a river, of which the dangers in the greater portion were altogether unknown, and with rapid tides, would be navigated without some mishaps, and I believe that every ship of the squadron, as well as many of the transports, have been on shore; but the bottom was everywhere of soft mud, and fortunately no damage resulted. We were favored with fine breezes and met with comparatively few impediments from shoals, and none (that deserve the term) from any of the Chinese works of defence in our progress to this anchorage.

At Fushan and Keang-yin, on the right bank, two batteries of 12 and 7 guns each were erected; but the guns were removed on our approach. At Seshan, however, about five leagues below the intersection of the Grand Canal, and where the river narrows considerably for some distance, the surveying vessels were fired at from three batteries mounting 20 guns, which were also discharged ineffectually at the advanced squadron, as they arrived off the spot three days afterwards; but they were abandoned on a few guns being opened on them by the *Modeste*, and the whole, together with the barracks and magazines were completely destroyed by a party of seamen and marines, which were landed for that purpose from the *Cornwallis* and advanced squadron, under Commander C. Richards of this ship.

The fleet was detained some days off Seshan by scant winds; and at this point we lost the advantage of any run of flood tide, the stream constantly setting down at a rate varying from two and a half to three and a half miles an hour, with a rise and fall of water averaging two feet.

On the 15th, Commander Kellett, in prosecuting his examination of the river with the *Phlegethon* and *Medusa*, was opposed at the entrance of the narrow channel between the island of Tscoushan and a commanding promontory on its south side by a battery of 12 guns, which were soon silenced by the steam-vessels, with much credit to Lieutenants M'Cleverty and Hewitt; and the same afternoon Sir Hugh Gough and myself proceeded with the *Vixen* and *Medusa* to reconnoitre the approaches to Chin-kiang, when we not only found the battery and adjoining village deserted, but passed on without the slightest opposition close to the suburbs of the city and above the island of Kinshan, carrying the whole way an ample depth of water.

On the 17th, Capt. Bouchier was despatched with the *Blonde*, *Modeste*,

Queen, and Nemesis, followed by the Dido, Calliope, Childers, Plover, and Starling, to blockade the entrances of the Grand Canal, and with the aid of the steamers he gained admirable positions for this object above Kinshan, by which it is estimated that the traffic of not less than 700 junks has been intercepted. A party was also landed from the Blonde, and destroyed the guns which had fired at the Phlegethon and Medusa.

On the 19th, the Cornwallis, towed by the Vixen, succeeded in reaching our present anchorage, when the island of Kinshan was immediately taken possession of by a small party of marines, but it is entirely covered with buildings of a religious character, and altogether too insignificant for military occupation. The wind in the course of the day veered to a more favourable point, and I had the satisfaction of being joined the same evening, and on the 20th, by the remainder of the fleet. The Jupiter, and some of the transports, however, got aground a few miles below us, which obliged me to detach the large steamers to their assistance.

The Grand Canal on the south side of the river runs through the suburbs of Chin-kiang, and no time was lost in making the preparatory arrangements for taking possession of that city. It was ascertained that a body of about 1,500 Chinese troops were posted in an entrenched camp, about a mile and a half to the south-west of the town, and on the hills beyond. The General, therefore, made his arrangements for landing the 1st and 3rd brigades of the army to the westward of the city, opposite the island of Kinshan; and the 2nd brigade at a commanding position to the eastward, within 700 yards of the north-east angle of the walls; and so little was resistance expected against such a combination of force, that it was not deemed necessary to add the seamen and marines from the squadron.

The disembarkation, which commenced on the 21st, at break of day, was judiciously conducted by Commander Richards, of the Cornwallis, covered by the Auckland, the small steam vessels, and armed boats, without opposition.

The 1st brigade, under Major-General Lord Saltoun, as soon as it was formed moved forward to attack the entrenched camp, which was gallantly carried about 9 o'clock, after a short resistance; the Chinese precipitately retiring over the hills.

Major-General Schoedde, with the second brigade, about the same time ascended the heights assigned him on the river side, and after discharging some rockets into the city, and supported by a well directed fire of shot and shells from the Auckland steam-vessel, he gallantly pushed forward under a smart fire of cannon, gingalls, and musketry from the walls, and entered that point of the city by escalade about 10 o'clock.

Capt. Grey of the Endymion, accompanied this brigade; Capt. Bouchier and other naval officers attached themselves to the forces which attacked on the land side, and I had the pleasure of accompanying my gallant friend Sir Hugh Gough during a great part of the operations of the day.

The city gates were all strongly barricaded, and as it was Sir H. Gough's intention to escalade the walls in the direction of the south-gate, some guns were advanced on a height to dislodge the troops, with which it was now observed the ramparts were lined. But the canal was found to run close under its walls, which rendered an assault at this point impracticable. It was therefore determined to blow open the west-gate with powder-bags, and enter the city by the bridge at that point as soon as the 3rd brigade, under Major-General Bartley (which was the last landed) could assemble.

During these proceedings the boats of the Blonde, in an anxious desire to land the artillery guns as near as possible to the west-gate, unfortunately advanced by the canal, under the city walls, which were much obscured by buildings before they were aware of the force to which they became exposed; and thus fell under a very severe fire, by which 16 men out of 24, which formed the crews of the Blonde's barge and flat boat, and two officers and eight men of the Madras Artillery were wounded; and it was only by great presence of

mind that Lieut. Crouch, of that ship, after receiving three wounds, succeeded in getting the men from those boats landed in the suburbs on the opposite side, and removed the other boats from a position in which it was impossible to use their guns.

Not a moment was lost in communicating this casualty to the flag-ship, when Capt. Richards, with excellent judgment and promptitude immediately landed with 200 marines at the entrance of the canal, where he was joined by a detachment of 300 of the 6th Madras Native Infantry, under Capt. Maclean of that corps, and pushed through the suburbs to the city walls, while the whole of the boats of the Cornwallis, with their guns, under the command of Lieut. Stoddart, advanced by the canal on his right flank. This little flotilla having joined the boats of the Blonde, took up an excellent position and opened their fire with good effect in checking that of the Chinese at the west gate.

Captain Richards had determined, if possible, to scale the walls, in the hope of forming a junction with General Shoedde's brigade in the city; and having fortunately discovered a heap of rubbish from which his ladders could reach the parapet (about 30 feet high) he was in the act of rearing them, when Commander Watson and Mr. Forster, master, with a boat's crew and a small escort of marines joined him from the Modeste, which was stationed some miles higher up the river.

Lieutenant Baker, of the Madras artillery, Commander Watson, Captain Richards, and a private marine of the Modeste, were the first who ascended. The two former were wounded, and the latter killed by the fire from the west-gate, in this intrepid achievement; the remainder of the gallant band, including part of the 6th Madras Native Infantry, happily followed, without further loss, thus effecting an important lodgment in the suburbs of the city, between the outer and inner west gates, where they shortly afterwards communicated with the advance of Major-General Shoedde's brigade.

About noon the arrangements for forcing the west outer gate being completed, it was most effectually blown in, when the third brigade, under Major-General Bartley, accompanied by the commander-in-chief of the forces, gallantly rushed in, sweeping all before them. The buildings above the gate, in which the Tartar troops had been posted, were at the same time completely enveloped in flames. The Tartars, however, within the city, were still unsubdued; and, having collected in a large body, the 18th and 49th regiments, in advancing by the ramparts, about half an hour after the explosion of the gate, were suddenly fired upon, and unfortunately sustained a severe loss of officers and men, although their opponents suffered in a tenfold degree.

The seamen and marines under Captain Richards were at this time halted for temporary rest, on another part of the ramparts, but immediately advanced in the direction of the firing; and in passing along a narrow street in the Tartar city, received a volley from a considerable body of those troops, who had posted themselves at a gateway, where they seemed inclined to make a determined stand. But on the advance of our men, and the discharge of a few rockets, they retired, leaving several men dead; and many others, who had the temerity to fire from the houses as our men passed along the streets, shared the same fate. In this movement I regret to say, that Lieut. Fitzjames, one seaman, and one marine of the Cornwallis were severely wounded.

The operations of this day were executed under a burning sun, with the thermometer above 90°, and the loss of life in consequence has been serious. In addition to those wounded or killed in action, I have to lament the loss of Brevet-Major Uniacke, an old and distinguished officer of the Royal Marines, and one private of the Plover, who died from the effect of the sun; and I fear the army did not lose less than 16 from the same cause.

The movements were so entirely military that I can but express my admiration of the energy and ability with which they were conducted by my gallant colleague, the general; and it is with renewed pleasure that I again report, the zeal and gallantry evinced by every officer and man of the Royal and

Indian Navy and Royal Marines under my command, which has been equally manifested in bringing the fleet up the river as in the subsequent operations on shore, in which they have been engaged.

I enclose a list of the ships present in the Yang-tse-Kiang, of the killed and wounded; and also of the names of the officers of the squadron, who were from circumstances most conspicuously engaged on the 21st.

It is unnecessary to speak further on the share which Capt. Richards and his companions had in the assault on the outworks of the city. They will, no doubt, be properly appreciated by their Lordships. Lieutenant Tennant, my flag Lieutenant, took a prominent part in the attack of the Tartar troops in the city.

Lieutenant Fitzjames (severely wounded), a highly deserving officer has already distinguished himself on different occasions.

Lieutenant Stoddart showed excellent judgment and good conduct in command of the flotilla of armed boats.

Lieutenant Crouch, of the Blonde, I have already noticed, and the steadiness of Messrs Jenkin and Lyon, midshipmen of that ship, who were in the advanced boats, is spoken of as highly creditable to them.

Captains Loch and Napier, R.N., who accompanied the expedition as volunteers, also participated in the active operations of the day.

The loss of the land forces, I fear, is not less than 19 killed, and 107 wounded in action, 3 missing, and 16 who died from the effects of the sun; that of the Chinese must be immense, as, independently of those who fell in action, incredible numbers of the Tartars (in some cases including whole families) have unhappily died by their own hands; their force within the city is supposed to have amounted to 3,000 or 4,000. 20 guns were mounted on the walls, which, with numerous gingalls, matchlocks, and other arms, and a considerable quantity of powder, have all been destroyed. About 50,000 dollars' worth of Sycee silver was also found in the Treasury, which has been embarked.

The troops intended for the operations higher up the river, will be re-embarked as soon as possible, and as the report of the navigation upwards is favourable, I trust the expeditious forces will soon renew operations at Nankin, if not arrested by overtures for peace from the Chinese Government, which may be consistent with the terms intimated by her Majesty's Government.

I have the honour to be, Sir,

Your most obedient humble servant,

W. PARKER, *Vice-Admiral*.

To the Secretary of the Admiralty.

Return of the killed and wounded in the squadron under the command of Vice-Admiral Sir William Parker, K.C.B., at the attack on the city of Chin-Kiang-Foo, on the 21st of July, 1842.

Cornwallis—Brevet-Major James Uniacke, Royal Marines, killed, who died from the effects of the sun and fatigue; Lieut. James Fitzjames, badly wounded; 1 seaman dangerously; private marine slightly.

Blonde—Wounded; Lieut. Edward Crouch, severely; Mr Henry T. Lyon, midshipman, slightly; 3 seamen dangerously; 6 seamen severely; 5 seamen slightly.

Modeste—Killed 1 private marine. Wounded, Commander R. L. Watson, slightly, 1 private marine slightly.

Plover—1 private marine, killed.

List of Her Majesty's ships and vessels, and those of the Indian Navy, in the Yang-tse-Kiang, on the 21st of July, 1842.

Cornwallis—Capt. P. Richards, off Chin-kiang-foo.

Endymion—Capt. Hon. F. W. Grey, off Chin-kiang-foo.
 Belleisle—Capt. J. Kingcome, ditto.
 Vixen, steam-vessel—Com. H. Boyes, ditto.
 Apollo—Com. C. Frederick, ditto.
 Rattlesnake—J. Sprent, Master-commanding, ditto.
 Jupiter—G. B. Hoffmeister, Master-commanding, ditto.
 Blonde—Capt. T. Bouchier, CB., off entrance of Grand Canal, three miles above Kinshan.
 North Star—Capt. Sir J. E. Home, Bart., blockading the river of Woosung.
 Dido—Capt. Hon. H. Keppel, off Eching, 14 miles above Kinshan.
 Calliope—Capt. A. L. Kuper, off Quatchoo, at the northern entrance of the Grand Canal.
 Childers—Com. E. Halsted, 6 miles below Dido.
 Starling—Com. H. Kellett, within 7 miles of Nankin.
 Modeste—Com. R. B. Watson, blockading an entrance to the Grand Canal on the south side.
 Columbine—Com. W. H. A. Morshead, blockading the river Lewha.
 Plover—Com. R. Collinson, within 7 miles of Nankin.
 Clio—Com. E. Troubridge, blockading the Muntok river.
 Algerine—W. H. Maitland, Lieut.-commanding, off the Amherst Rocks.

The Hon. Company's steam-vessels.

Auckland—Com. R. Ethersey, RN., off Chin-kiang-foo.
 Sesostris—Com. H. A. Ormsby, RN., ditto.
 Pluto—Lieut. J. Tudor, RN., ditto.
 Phlegethon—Lieut. J. J. M'Cleverty, RN., ditto.
 Medusa—Lieut. H. H. Hewitt, RN., ditto.
 Queen—W. Warden, Acting-Master, RN., ditto.
 Tenasserim—A. P. Wall, Acting Master, RN., ditto.
 Proserpine—Com. J. J. Hough, RN., blockading an entrance to Grand Canal south side.
 Nemesis—Lieut. W. H. Hall, RN., with Dido at Etching, a north entrance of Grand Canal.

List of Officers belonging to the Squadron, under the command of Vice-Admiral Sir W. Parker, KCB., Commander-in-Chief, employed in the assault, by the seamen and marines on the outworks of the city of Chin-kiang-foo, on the 21st of July, 1842.

Her Majesty's ship Cornwallis.

Capt. P. Richards, Lieut. J. FitzJames, Brevet-Major J. Uniacke, RM., Capt. F. S. Hamilton, RM., First-Lieuts. H. Timpson and F. J. White, RM., Mr. S. Stanley, and Mr. A. Little, MD., Assistant-Surgeons, and Mr. W. Bowden, Volunteer 1st. Class, in the assault near the west-gate, and attack of the Tartar troops within the city.

Commander C. Richards with Lieut-General Sir H. Gough.
 Lieut. J. Stoddart, commanding the boats covering the assault.
 Messrs. H. Phelps, C. R. Jackson, H. Hollinworth, and J. J. Palmer, Mates, in the boats covering the assault.

Her Majesty's ship Blonde.

Lieut. E. Crouch, employed in barge.
 Hon. O. W. Lambert, Midshipman, employed in pinnace.
 Mr. R. Jenkins, Midshipman, employed in flat boat.
 Mr. H. T. Lyon, Midshipman, employed in first cutter.

Her Majesty's sloop Modeste.

Commander R. B. Watson, and Mr. J. Forster, Master.

With Vice-Admiral Sir W. Parker.

Lieutenant C. Tennant, Flag-Lieutenant, and Mr. G. Hodgson, Mate of the Cornwallis.

Cornwallis, off Nankin, Aug. 30th, 1842.

SIR.—I transmit herewith the copy of a letter which I yesterday received from Her Majesty's Plenipotentiary, and of an order which I have in consequence issued for the entire discontinuance of any interruption to the Chinese trade, and the renewal of friendly intercourse with them.

I have, &c.,

W. PARKER, *Vice-Admiral.*

To the Secretary of the Admiralty.

To their Excellencies Vice-Admiral Sir W. Parker, KCB., and Lieutenant-General Sir H. Gough, KCB.

Steam-frigate Queen, off Nankin, Aug. 29th, 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.

I have, &c.,

HENRY POTTINGER,
Her Majesty's Plenipotentiary.

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. 29th, 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.*

(See treaty in p. 882, of our last volume.)

DECISIONS IN THE ADMIRALTY COURT.

(*From the Shipping Gazette.*)

THE ANN.—*Salvage*—This was a suit for salvage remuneration for services rendered to this ship by H.M. steam-vessel Pluto, when aground on Rough

Point, at the entrance of the river Bonny, on the coast of Africa, in the month of April, 1841.—The court awarded 250l.

THE DOWTHORPE.—*Pilotage*—On the motion of Dr. Addams, the court decreed a perishable monition against the ship for pilotage. Several other actions were entered against the vessel, and the court directed the proceeds of the ship and freight to be brought into the registry, or bail to be given to abide its ultimate decision as to the claims of the respective litigants.

THE ENTERPRISE.—An action having been entered against this vessel by a bondholder, the court granted the fourth default, signed the *primum decretum*, and decreed a perishable monition.

THE EMERALD.—*Bottomry*—This was a suit for a bottomry bond. The court pursued the same course as in the last case.

THE GAZELLE.—*Wages*—Two actions have been entered against this ship— one for a bottomry bond, the other for seamen's wages. On the motion of Dr. Haggard, the court pronounced for the bond, and decreed its payment when the proceeds of the ship were brought into the registry, the seamen's wages being first deducted.

THE GLASGOW.—*Salvage*—This was a suit for salvage services rendered to this vessel by several persons when on the Opgang Rock, Whitby. A tender had been made of 30l., which the court decreed sufficient, and therefore decreed that sum, but ordered each party to pay their own costs.

THE MARY.—*Salvage*—This was a suit for salvage services rendered to this vessel off the Island of Java, on the 29th December, 1839. The court awarded 30l.

THE NEW HOLLAND.—*Bottomry*—Dr. Robinson moved the court to decree the sum due on a bottomry bond when the proceeds were brought into the registry, in another action entered against the vessel to recover seamen's wages. The court granted the prayer.

THE PLYM.—Dr. Addams moved the court to dismiss his parties from this cause, Mr Barnacle not having prosecuted his suit. The registrar read a letter from Mr. Barnacle, in which he alleged that illness had prevented him from complying with the previous orders of the court, and begged that the court would grant him further time. The court allowed the matter to stand over till the next court-day.

THE SALIMA.—*Wages*—On our last session the court decreed a perishable monition against this vessel in a suit for subtraction of wages. Dr. Addams now prayed a commission of sale.

The Court : Is it usual, Mr. Registrar, for affidavits as to the perishable state of the ship to be sworn by persons not at all accustomed to shipping ?

The Registrar ; That is not the usual course.

The Court : I do not think that it ought to be ; but I observe that one of the persons who has sworn as to the condition of the Salima is an attorney's clerk.

There is no reason in this case to object to the motion, because it is clear from all the circumstances that injury would arise if she were not sold. But let it be understood that in future affidavits as to the state of the ship must be made by persons competent to form an opinion.

THE SOPHIE.—Wages—Originally arrested in an action for necessary supplies afterwards sold, and proceeds brought into the registry. Two actions were entered by seamen for wages due to them, which actions were subsequently consolidated. The court was prayed to pronounce for the wages due, and to decree them to be paid out of the balance in court. Dr. Lushington observed that, in this case the affidavits were not sworn on commission. The seamen were foreigners, and therefore they could not easily be obtained for the purpose of making new affidavits. He would, therefore, grant the motion, but it might be distinctly understood that he could not undertake to make a permanent alteration in the rules of the court without further consideration. The ancient practice must be observed for the present, and this case must not be drawn into a precedent.

THE TYNEWARD.—Bottomry—The court decreed the sale of this ship in a cause of bottomry.

THE TYNEWOLD.—Bottomry—This was a motion praying the court to grant the fourth default, sign the *primum decretum*, and decree a perishable monition in a cause of bottomry. The court complied with the prayer.

THE VICTORIA.—Salvage—In this case an action was brought by the commander and officers of H.M.S. Pilot, to recover remuneration for salvage services rendered to this vessel off Vera Cruz, on the 28th October. The court awarded 150l.

THE WILHELMINE.—Salvage claims—An attachment issued against Mr. Robinson, the registered owner of the steamer Robert Burns, for the costs incurred in an action brought by her against the Wilhelmine for alleged salvage services. An affidavit was brought in by Mr. Robinson, in which he swore that he gave no instructions whatever for the commencement of the action. The court dismissed Mr. Robinson and gave him his costs.

ERRATA IN THE SECOND EDITION OF THE PRACTICE OF NAVIGATION,
By Lieut. Raper, R.N., Just Published.

- Page. 178, note, *alter gregale to grecale*, and N.W to N.E.
 179, No. 482, Ex. 1st. col. *alter MEAN TIME to RED. SID. TIME.*
 292, Ex. 3, *alter var. 23.5 N. to 23.5 W.*
 328, No. 854 *alter proper track, to proper tack.*
 352, note, line 3 *let the word "unless" follow Chronometer.*
 478, col. (37) line 6, *alter long. 66° 3' to 66° 31'.*
 493, In a very few copies, from 2h. 25m. to 2h. 29m. the index 1, should be 0. and at 7h. 4m., 5309 should be 5310.
 494, In a very few copies, at 16h. 41m. 1679 should be 1579, at 17h. 29m. *alter 1370 to 1376.*

ENLARGED SERIES.—NO. 1.—VOL. FOR 1843.

K

TABLE LXVII.

For reducing Zante feet to English feet, and English feet to Zante feet.

1 Zante foot = 0.87736367 English foot.
 1 English foot = 1.13977810 Zante foot.

Zante or English feet.	English feet, and Dec. parts	Zante feet, and Dec. parts.	Zante or English feet.	English feet, and Dec. parts.	Zante feet, and Dec. parts	Zante or English feet.	English feet, and Dec. parts.	Zante feet, and Dec. parts.
1	0.877	1.140	40	35.095	45.591	79	69.312	90.043
2	1.755	2.280	41	35.972	46.731	80	70.189	91.182
3	2.632	3.419	42	36.849	47.871	81	71.066	92.322
4	3.509	4.559	43	37.727	49.010	82	71.944	93.462
5	4.387	5.699	44	38.604	50.150	83	72.821	94.601
6	5.264	6.836	45	39.481	51.290	84	73.699	95.741
7	6.142	7.978	46	40.359	52.430	85	74.576	96.881
8	7.019	9.118	47	41.236	53.570	86	75.453	98.021
9	7.896	10.258	48	42.113	54.709	87	76.331	99.161
10	8.774	11.398	49	42.991	55.849	88	77.208	100.300
11	9.651	12.538	50	43.868	56.989	89	78.085	101.440
12	10.528	13.677	51	44.746	58.129	90	78.963	102.580
13	11.406	14.817	52	45.623	59.268	91	79.840	103.720
14	12.283	15.957	53	46.500	60.408	92	80.717	104.860
15	13.160	17.097	54	47.378	61.548	93	81.595	105.999
16	14.038	18.236	55	48.255	62.688	94	82.472	107.139
17	14.915	19.376	56	49.132	63.828	95	83.350	108.279
18	15.793	20.516	57	50.010	64.967	96	84.227	109.419
19	16.670	21.656	58	50.887	66.107	97	85.104	110.558
20	17.547	22.796	59	51.764	67.247	98	85.982	111.698
21	18.425	23.935	60	52.642	68.387	99	86.859	112.838
22	19.302	25.075	61	53.519	69.526	100	87.730	113.978
23	20.180	26.215	62	54.397	70.666	150	131.604	170.967
24	21.057	27.355	63	55.274	71.806	200	175.473	227.956
25	21.934	28.494	64	56.151	72.946	250	219.341	284.945
26	22.811	29.634	65	57.029	74.086	300	263.209	341.933
27	23.689	30.774	66	57.906	75.225	350	307.071	398.922
28	24.566	31.914	67	58.783	76.365	400	350.945	455.911
29	25.444	33.054	68	59.661	77.505	450	394.814	512.900
30	26.321	34.193	69	60.538	78.645	500	438.682	569.889
31	27.198	35.333	70	61.415	79.784	550	482.550	626.878
32	28.076	36.373	71	62.293	80.924	600	526.418	683.867
33	28.953	37.461	72	63.170	82.064	650	570.286	740.856
34	29.830	38.752	73	64.047	83.204	700	614.155	797.845
35	30.708	39.892	74	64.925	84.344	750	658.023	854.834
36	31.585	41.032	75	65.802	85.483	800	701.891	911.822
37	33.462	42.172	76	66.680	86.623	850	745.759	968.811
38	33.340	43.312	77	67.557	87.763	900	789.627	1025.800
39	34.217	44.451	78	68.434	88.903	1000	877.364	1139.778

H.M.S. FORMIDABLE.—By a letter from Barcelona, dated December 2nd we have the following particulars of saving the above fine man-of-war. At a quarter before 8 o'clock on the night of the 29th, going four knots, the ship struck the ground heavily (it appears 14 miles to the westward of Barcelona). A boat was immediately despatched to Barcelona for assistance, and at daylight a French steam-vessel, many boats, and small craft, came to assist. The stream had been got out, and the steamer carried out a bower. During the day, the 30th, two other steamers arrived from the westward, a French, and a Spanish; and at 5 o'clock the Rodney, much to our joy and comfort, arrived, and anchored a mile from the Formidable, then in four feet less water than she drew. The Rodney sent two cables on end, and the Formidable two to meet them, and both ships hove together. The water was started and pumped out, all the lower deck guns thrown overboard, with three of the main, and a quantity of shot, and at a quarter before 12 o'clock on the night of the 30th she was hove off, having been 28 hours ashore. The bottom was a soft clear sand, but, being near the breakers, some heavy rollers occasionally coming in made the ship thump heavily. The weather was fortunately very fine; the rudder went soon after grounding. The ship was dragged, by main strength, at least half a mile, judging from the buoy of the rudder, and the first gun thrown overboard. The ships' company, during the whole time worked well, and their conduct is said to be beyond praise. The ship was towed to Barcelona, from which she has proceeded to Port Mahon. Damage sustained (from the report of an excellent diver):—The false keel is gone in many places, from 10 to 12 feet in one place; the forefoot gone; the rudder gone; main keel damaged in places; two leaks forward; a small leak in the bread-room; she makes eight inches of water per hour; between the main and mizen masts she hung and thumped heavily. The Cyclops, steam-frigate, had arrived, and had been sent to try and recover the rudder and guns. The Belvidera arrived at Barcelona on the 2nd instant.

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OBSERVATIONS MADE WITH CAPT. BECHER'S HORIZON.

*Royal Naval College, Dec. 22nd, 1842.*

DEAR SIR.—I feel great pleasure in sending you the enclosed observations for finding the latitude, made by some of the young officers at this establishment with your Artificial Horizon. You will see that nearly every result is within a minute or two of the truth.

I am, &c.,

H. W. JEANS.

MERIDIAN ALTITUDES.

|           | Obs. Alt. ☉ LL | Lat.     | Observer.     |
|-----------|----------------|----------|---------------|
| Aug. 27th | 48 51 0        | 50 46 46 | Mr. Craufurd. |
| " 18th    | 51 50 50       | 50 48 27 | " Burrows.    |

ALTITUDES NEAR MERIDIAN.

|                          |          |          |             |
|--------------------------|----------|----------|-------------|
| Aug. 26th 11h. 36m. A.M. | 48 19 9  | 50 49 40 | " Craufurd. |
| " 27th 11 35 "           | 48 26 44 | 50 49 28 | " Craufurd. |
| " 27th 11 26 "           | 48 8 51  | 50 48 40 | " Craufurd. |
| Sep. 13th 11 12 "        | 41 46 43 | 50 44 22 | " Barnard.  |
| Aug. 17th 11 57 "        | 52 11 40 | 50 47 30 | " Key.      |
| " 17th 0 4 P.M.          | 52 11 46 | 50 48 46 | " Key.      |
| " 17th 0 1 "             | 52 11 53 | 50 46 33 | " Burns.    |

The Latitude of the place is 50° 48' N.

H. W. JEANS.

## AVERAGE STEAM PASSAGES.

| FROM.         | TO                                                  | DAYS.  | HOURS.   |
|---------------|-----------------------------------------------------|--------|----------|
| London . .    | Rotterdam . . . . .                                 | 1      | —        |
| “             | Amsterdam round the Texel<br>and through Zuyder Zee | 1      | 9 to 12  |
| “             | Hamburgh . . . . .                                  | 2      | 2 to 12  |
| “             | Ostend . . . . .                                    | —      | 18 to 24 |
| “             | Dunkirk . . . . .                                   | —      | 10 to 12 |
| “             | Calais . . . . .                                    | —      | 10 to 12 |
| Harwich . .   | St. Petersburg . . . . .                            | 6 to 8 | —        |
| Hull . . . .  | Rotterdam . . . . .                                 | —      | 24 to 30 |
| Dunkirk . .   | Rotterdam . . . . .                                 | —      | 14       |
| Margate . .   | Calais . . . . .                                    | —      | 8        |
| Ramsgate . .  | Do. . . . .                                         | —      | 8        |
| Dover . . . . | Do. . . . .                                         | —      | 2½       |
| Brighton . .  | Havre . . . . .                                     | —      | 18 to 20 |
| “             | Dieppe . . . . .                                    | —      | 14 to 16 |
| Havre . . . . | Dunkirk and Rotterdam . . . . .                     | —      | —        |
| “             | Hamburgh . . . . .                                  | 2      | 2 to 12  |

## THE VARIATION OF THE COMPASS.

(Continued from p. 783.)

Royal Observatory, Greenwich, Dec. 23, 1842,  
Magnetical and Meteorological Department.

MEAN MAGNETIC DECLINATION FOR SEPTEMBER 1842—23° 14' 11".

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

## NEW BOOKS.

THE NAVAL CLUB; or, *Reminiscences of Service*.—By M. H. Barker, Esq., “the Old Sailor,” 3 vols.—Colburn.

We doubt not Mr. Barker's propensity for “spinning yarns;” his “twist” that way, be it inherited from whom it may is a very happy one; no one can work one up better than he can in the Nautical line. Of course the Naval Club relate the wonders of the Sea, and more wonders besides which as “every one in it, gives some account of himself, his life, character, and behaviour” will bear telling twice over, without failing to interest the generality of readers.

NARRATIVE OF THE EXPEDITION TO CHINA from the commencement of the War to the present period.—By Commander J. E. Bingham, R.N. 2 vols.—Colburn.

For “the present period” the reader must not assume that the termination of the Chinese war is meant; but simply the attack on Tsekee, and hence such a title appearing without date will always be ambiguous. The remainder of the war, will however afford ample matter for a supplementary volume; for although short, the brilliant successes which have resulted from it, and the extraordinary effects which must follow it, are more than sufficient to fill another volume like the two before us. We are glad to see a Naval Officer committing to paper historical records of events passing before him, in which he is himself more than a mere spectator, and particularly such events as the Chinese war afforded, and we congratulate Captain Bingham on producing an amusing and

interesting historical narrative; albeit there are certain expressions here and there (such as "bolting", &c.) which even a *thorough* knowledge of the English language will not justify in print. These are, however, the first errors of juvenile authorship, and will wear off. The work is an important one and must find its way into all libraries, even in the present edition. In the next we recommend attention to the hints we have given.

### ADMIRALTY ORDER.

Admiralty, Oct. 26th, 1842.

As in many instances Medical officers of her Majesty's ships and vessels have omitted to insert in the heading of their Nosological Returns, the date and name of the ship, and have also transmitted the said Returns for periods not in accordance with their Instructions, which require that they should be transmitted from the Foreign stations every three months, viz. to 31st. March, 30th. June, 30th. September, and 31st. December; and from Ships on the Home stations monthly, ending the last day of each calendar month; and as these irregular-

ities make it impossible to ascertain the number of sick in any given quarter, or year, the Medical officers of her Majesty's ships and vessels are hereby required to attend particularly to the above points in future, observing that although their first Returns may not commence with the Quarter on the Foreign station, or the Month on the Home station, they are to close and transmit them at the end of the said Quarter, or Calendar month, as above mentioned.

By Command of their Lordships,  
SIDNEY HERBERT.

### PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

#### PROMOTIONS.

ADMIRALTY, Dec. 23.—The following Promotions have taken place in consequence of the recent termination of the war in China.—

*Commanders to be Captains.*—H. Boyes, C. Frederick, C. Richards, H. Kellett, R. B. Watson, W. H. A. Morshead, R. Collinson, E. N. Troubridge.

*Lieutenants to be Commanders.*—R. B. Crawford, C. Wise, G. Skipworth, J. G. Harrison, C. Starmer, J. Fitzjames, H. C. Hawkins, J. Stoddart, P. A. Helpman, and J. Tudor and J. J. M'Cleverty, of the Hon. East India Company.

*Mates to be Lieutenants.*—H. Clarke, E. W. Vansittart, A. R. Henry, H. F. N. Rolfe, A. P. Green, H. S. Hillyar, H. Phelps, A. Anderson, G. H. Hodgson, N. Vansittart, C. K. Jackson, and A. T. Freese and E. L. Strangways, the Hon. East India Company.

In addition to the above Promotions, orders have been transmitted to Vice-Admiral Sir W. Parker, the Commander-in-Chief, to report, for promotion, the names of the Senior Lieutenants and Senior Mates of ships engaged; the services of which ships shall, in his opinion, entitle them to such reward, and who shall not be included in the foregoing list.

#### APPOINTMENTS.

*COMMANDERS*—G. G. Macdonald 1841, to *Dublin*—C. G. Robinson (1838) to *Gleaner*.

*LIEUTENANTS*—T. W. Sidney (1842) to *Styx*—B. Alpin (1841) to command *Acheron*—Goldsmith to *Warspite*—E. Slade (1841) and E. J. Bedford (1838) to *Gleaner*—A. C. Murray (1841) to *Spileful*—H. A. Story (1839) to *Gorgon*.

*MASTERS*—W. Mills (1841) to *Spiteful*—J. W. Symonds (act.) to *Gleaner*—E. Petley (act.) to *Styx*.

*MATES*—H. J. A. F. Maddock to *Warspite*—F. Willoughby and W. C. Marshall to *Gorgon*—G. T. S. Winthrop to *Agincourt*—A. Luckraft to *Frolic*—E. Marshall to *Caledonia*.

*SECOND-MASTERS*—A. L. Halloran to *Acheron*—R. Saunders to *Gorgon*—R. Walker to *Gleaner*—A. Betts to *Cleopatra*—R. Dean to *Belvedera*.

*MASTERS' ASSISTANTS*—N. J. Soane to *Megara*—T. Spicer to *Samarang*—M. Richards to *Warspite*.

*ASSISTANT-SURGEONS*—A. Euston to *Acheron*—T. R. Pickthorn to *Warspite*—G. St. G. Bowen to *Minden*—L. Martin, m.d., (add.) to *Madagascar*.

*MIDSHIPMEN*—P. Saumarez to *Frolic* J. P. C. Owen to *Warspite*.

*VOLUNTEERS 1st Class*—A. D. Mercer to *Tweed*—A. W. Bedford to *Saumarez*—S. L. J. Peile to *Samarang*.

*PURSER*—W. B. V. Farror to *Spileful*.

CLERKS—W. H. Bateman (in charge) to *Acheron*—W. Thomas (in charge) to *Gleamer*—S. Watson to *Samarang*—J. K. Down (assist.) to *Pique*.

## COAST GUARD.

Appointment—Lient. W. Pinhorn to Howstrand.

## MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

## AT HOME.

CAMBRIDGE, 78, Capt. E. Barnard, Dec. 10, arr. at Portsmouth from Gibraltar, bringing marbles for British Museum.

CURACOA, 24, Capt. J. Jones, Nov. 16, arr. at Portsmouth with 1,700,000 dollars. Paid off.

DEE, (st. v.) Nov. 9, at Falmouth on way to West Indies.

HYACINTH, 18, Com. G. Goldsmith, Nov. 15, sailed for Chatham to be paid off.

PIQUE, 36, Capt. Hon. M. Stopford, Dec. 6, left Portsmouth for West Indies.

RESISTANCE, 42, (tr. sh.) Nov. 28, sailed from Portsmouth for Mediterranean.

Southampton, 50, Capt. Ogle, Nov. 15, sailed for Sheerness to be paid off.

THUNDERBOLT, (st. v.) commissioned at Portsmouth Nov. 30, by Com. G. N. Broke, Dec. 9, sailed for the westward.

THUNDERER, 84, Capt. Pring, Dec. 9, left Deal for Plymouth, 11th arrived.

WARSPITE, 50, Capt. Lord John Hay, Dec. 6, arr. at Portsmouth from Gibraltar, 17th sailed for Bermuda.

WASP, 16, Com. A. Drew, Dec. 2, arr. at Portsmouth from Sheerness, 8th sailed for West Indies

WILBERFORCE, Lient. Webb, Dec. 7th, paid off at Woolwich.

PORTSMOUTH.—*At Spithead*—Bellona. *In Harbour*—St. Vincent, Victory, Excellent, Royal George yacht, Cambridge, Samarang, Thunderbolt, Frolic, Nautilus, Alban.

PLYMOUTH.—*In Harbour*—Caledonia, San Josef, Confidence, and Diligence.—*In the Sound*—Thunderer.

## ABROAD.

AGINCOURT, 72, Capt. W. H. Bruce, Sept. 1, arr. at Anger.

ALECTO, (st. v.) Lient.-com. W. Ho-season, Nov. 12, at Malta from Ionian Isles.

ANDROMACHE, 26, Capt. R. L. Baynes, cb, Sept. 2, left the Mauritius for England.

ARROW, 10, Com. W. Robinson, Aug.

29, left the Cape of Good Hope, for the Mauritius, Oct. 3 at St. Helena, 20th sailed for Cape.

BASILISK, 6, Lient. J. C. Gill, Aug. 31, at Callao.

BELVIDERA, 38, Capt. Hon. G. Grey, Nov. 15, arr. at Genoa from Leghorn.

BITTERN, Com. H. Carey, Oct. 10, arr. at the Cape from England.

CARYSPORT, 26, Capt. Lord G. Paulet, Aug. 13, left Valparaiso for Gulf of California.

CHAMPION, 16, Com. R. Byron, Aug. 28, left Callao for Valparaiso.

CLEOPATRA 26, Capt. Wyvill, Sept. 5th, arr. at Rio Janeiro.

COCKATRICE, Lient. J. Oakham, July 8th, at Rio Janeiro.

CURLEW, 10, Lient. Com.

Aug 27, at Rio from a cruise.

CYCLOPS, (st. v.) Capt. H. T. Austen, Nov. 29, at Malta.

DAPHNE, 20, Capt. J. J. Onslow, Oct. 9, arr. at Madeira, 12th sailed for Rio.

DOLPHIN, 3, Nov. 29, paid off at Portsmouth.

DRUID, 44, Capt. Robson, Oct. 27, arr. at Bombay.

DUBLIN, 50, Capt. T. T. Tucker, 27th Aug., at Callao from Valparaiso.

ELECTRA, 18, Com Darley, Oct. 7, arr. at Port au Prince from Jamaica.

FANTOME, 16, Com. E. H. Butterfield, Sept. 1, at Rio from a cruise.

FAWN, Lient. Com. J. Foote, Sept. 28, left Cape of Good Hope, for Port Natal.

FORMIDABLE, Capt. Sir C. Sullivan, Dec. 1, went ashore near Barcelona towed off by two French steamers.

GREYSER, (st. v.) Com. Carpenter, 25th Nov. arr. at Malta, 30th sailed for Ionian Isles and Greece.

GROWLER, Com. C. H. M. Buckle, Oct. 3, at Bahia, 8th sailed for Rio.

INCONSTANT, Nov. 7, left Beyrout for Jaffa.

IRIS, 28, Capt. A. Nourse, Sept. 5, arr. at St. Helena from Ascension, 2th sailed for the Coast of Africa.

LOCUST, (st. v.) Lient. Com. J. Lunn, Dec. 9, arr. at Plymouth with Major Malcolm, bearer of the Chinese Treaty.

MADAGASCAR, 44, Capt. J. Foot's, Oct. 3, left St. Helena for Ascension.

MAGICIENNE, 24, Capt. Warren, Oct. 19, at Vourla.

MALABAR, 74, Capt. Sir G. Sartorius, Oct. 9, left Rio for Piver Plate.

MEDEA, (st. v.) Com. F. Warden, Nov. 13, at Malta from Alexandria.

PANTALON, Lieut. Lapidge, Sept. 2, arr. at Bathurst River Gambia.

ORRESTES, Com. H. T. S. Carnegie, 11, Nov. at Madeira, 15, proceeded to West Indies.

PHILOMEL, 10, Com. J. Sullivan, 29, Sept. arr. at Monte Video from Rio.

POLYPHEMUS, Lieut. J. Evans, Nov. 28, at Malta from Gibraltar.

RAPID, 16, Lieut. Earle Oct. 20, arr. at St. Helena.

RODNEY, Capt. R. Maunsell, Dec. 1, at Barcelona.

ROVER, Com. Keele, Oct. 21, arr. at Quebec from Halifax

SALAMANDER, (st. v.) Com. A. Hammond, Oct. 11, arr. at Madeira 12, sailed for Rio.

SATELLITE, Com. Gambier, Sept. 5, at Rio, Oct. 29, sailed for Valparaiso.

SAVAGE, 10, Lieut. J. H. Bowker, 1, Dec. at Gibraltar.

SIREN, 16 Com. W. Smith, Sept. 24, arr. at Madras and sailed for Maulmein.

STROMBOLI, Com. Louis, Oct. 17, at Constantinople.

TALBOT, 26, Capt. Sir T. Thomson, Aug. 29, arr. at Rio.

VESUVIUS, Lieut.-Com. Ommanney, 7, Nov. left Beyrout for Jaffa.

VIPER, 6, Lieut. J. Curtis, Aug. 25, left Rio for Monte Video.

WINCHESTER, 30, Capt. C. Eden, 1, Sept. arr. at Cape Good Hope.

## BIRTHS, MARRIAGES, AND DEATHS.

### Births.

On the 7th Dec., at Yoxford, Suffolk, the wife of Mr. Owen, Purser, R.N. of a daughter.

### Marriages.

At Kingston Church, on the 22nd Nov., Captain T. Mitchell, R.N., son of Major Mitchell, R.M., to Caroline, daughter of the late T. W. Pink, Esq., of Portsea.

On the 17th Nov at Hore Church, Lieut. E. Baugh, R.N., to Mary eldest daughter of the late C. S. Minshaw Esq., of Foot's Cray, Kent.

On the 9th at St. Hilliers, Jersey, J. S. Taylor, Esq., Master of her Majesty's steam surveying vessel Rocket, to Madelon Eliza, eldest daughter of Lieut. Ranwell, R.N., of that Island.

J. Miller, Esq., M.D., surgeon, of the 66th Regiment, to Ellen Mary, only daughter of J. Williams, Esq., surgeon, R.N., of Southsea.

### Deaths.

On the 22nd of Dec. in Grove Road, Admiral Sir John Lindford, KCB., aged about 86 years, 65 of which he had been a commissioned officer in the navy, and served as first lieutenant in the Nimrod of 98 guns, in the battle of the 12th of April, 1782, that ship being Lord Rodney's second astern on that day.

At Plymouth, on the 23rd Nov., the lady of Captain A. B. Branch, R.N., aged 49.

At Oldtown, county of Cork, on the 13th of Dec., Vice-Admiral Evans, after a long illness.

On the 14th., Nov., at Montrose, Capt. T. Foulerton, R.N.

On 24th Nov. at Dumfermline, Capt. Nathaniel Mitchell, R.N., second son of the late Admiral Sir Andrew Mitchell, K.B.,

On 22d Nov. at Antigua, of malignant yellow fever, Lieut. Harvey, 1836, of the Tweed, in his 29th year, second son of Mr. Harvey, and grandson of the late Admiral Sir H. Harvey, K.C.B., of Walmer, Kent.

At Devonport, on the 20th, Mrs. Rich, the lady of Capt. Rich, R.N.

On the 4th, at Newington, T. Wood man, Esq., purser, R.N., aged 72.

At Deptford, Commander Bush, R.N., (1828).

At Deptford, Lieut. E. Young, R.N., (1836).

In command of her Majesty's troopship Sapphire, in India, Mr. G. Cole, Master. R.N.

Of the yellow fever, on board H.M.S. Volage, W. Blannerhasset de Courcy, third son of Capt. de Courcy, R.N.

At Athens, on board H.M.S. Scout, on the 30th of October, of dysentery, after a few days' illness, Mathewson Corry, Esq., surgeon of that ship.



## EXAMINATION AT THE ROYAL NAVAL COLLEGE.

On Wednesday, the 21st Dec. the half-yearly examination of the students at the Royal Naval College was concluded. The grand contest was between two young and most talented officers, who had each gained the gold medal when pupils at the Royal Naval College.—Mr. H. A. C. Key, son of C Key, Esq. the distinguished surgeon of Guy's Hospital, and surgeon to H. R. Highness Prince Albert, and Mr. H. Burrows, son of General Burrows, now resident at Anglesey, near Gosport. Much interest was excited, as they were both acknowledged to be very far in advance of the other candidates, and they were alone pitted together in the arena of Mathematical science. Mr. Key, was the fortunate competitor, and gained a glorious victory over one who was worthy of competing with him, and whom he will feel proud in having outstripped in the fair field of competition. These young officers were the only gentlemen who had gained the gold medal who were not promoted to the rank of Lieutenant; and it is singular that, notwithstanding the great prejudice against the late Naval College, no one was found this year capable of competing with two of her sons. Mr. H. Burrows, was distinguished as a volunteer in the boats of the Andromache, against the pirates in the Straits of Malacca; and was mate of the Edinburgh, with Captain Henderson, at the bombardment of St. Jean D'Acree, and in the operations on the coast of Syria. Mr. Key received his promotion the next day.

## 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, 1842.

| Month | Day | Barometer               |         | Fahr. Thermometer |      |      |     | WIND.    |      |        |     | WEATHER.   |           |  |
|-------|-----|-------------------------|---------|-------------------|------|------|-----|----------|------|--------|-----|------------|-----------|--|
|       |     | In Inches and Decimals. |         | In the Shade.     |      |      |     | Quarter, |      | Stren. |     | AM.        | PM.       |  |
|       |     | 9 A.M.                  | 3 P.M.  | 9 AM              | 3 PM | Min. | Max | A.M.     | P.M. | AM     | PM. |            |           |  |
|       |     | In Dec.                 | In Dec. | o                 | o    | o    | o   |          |      |        |     |            |           |  |
| 21    | M.  | 29.76                   | 29.83   | 37                | 42   | 36   | 43  | N        | NE   | 2      | 3   | bc         | bcm       |  |
| 22    | Tu. | 29.50                   | 29.30   | 36                | 36   | 35   | 37  | SE       | E    | 3      | 3   | ors (2)    | ors (3)   |  |
| 23    | W.  | 29.48                   | 29.44   | 35                | 42   | 33   | 43  | SW       | SW   | 2      | 3   | bc         | bcp (3 4) |  |
| 24    | Th. | 28.91                   | 28.92   | 43                | 45   | 41   | 46  | SW       | SW   | 4      | 6   | bc         | qber (4)  |  |
| 25    | F.  | 28.92                   | 28.88   | 42                | 44   | 40   | 45  | SW       | SW   | 6      | 6   | qbcp(1)(2) | qbcp (3)  |  |
| 26    | S.  | 29.06                   | 29.20   | 40                | 44   | 38   | 46  | SW       | SW   | 4      | 4   | bc         | bc        |  |
| 27    | Su. | 29.36                   | 29.34   | 40                | 43   | 36   | 44  | SE       | SE   | 2      | 2   | bcp (2)    | or (4)    |  |
| 28    | M.  | 28.98                   | 28.94   | 48                | 52   | 44   | 54  | S        | S    | 4      | 4   | bcr (1)    | bc        |  |
| 29    | Tu. | 29.52                   | 29.56   | 43                | 46   | 40   | 48  | S        | S    | 2      | 3   | b          | bc        |  |
| 30    | W.  | 29.61                   | 29.86   | 43                | 45   | 42   | 46  | SW       | W    | 2      | 2   | bcd 1)     | b         |  |
| 1     | Th. | 30.06                   | 30.03   | 46                | 51   | 39   | 53  | SW       | S    | 2      | 5   | od 1)      | qo        |  |
| 2     | F.  | 30.08                   | 30.11   | 52                | 53   | 51   | 56  | SW       | S    | 6      | 5   | qo         | qbc       |  |
| 3     | S.  | 30.22                   | 30.30   | 43                | 51   | 41   | 53  | S        | SW   | 3      | 2   | b          | bc        |  |
| 4     | Su. | 30.45                   | 30.40   | 46                | 51   | 44   | 52  | SE       | SW   | 1      | 3   | o          | bc        |  |
| 5     | M.  | 30.35                   | 30.30   | 44                | 47   | 43   | 49  | SW       | SW   | 2      | 2   | bc         | o         |  |
| 6     | Tu. | 30.25                   | 30.21   | 39                | 40   | 37   | 41  | SE       | SW   | 2      | 1   | of         | ofg       |  |
| 7     | W.  | 30.32                   | 30.32   | 38                | 38   | 37   | 39  | SW       | S    | 1      | 1   | o          | o         |  |
| 8     | Th. | 30.41                   | 30.40   | 37                | 37   | 35   | 38  | NE       | W    | 1      | 1   | of         | of        |  |
| 9     | F.  | 30.38                   | 30.36   | 38                | 42   | 33   | 43  | E        | E    | 1      | 1   | o          | o         |  |
| 10    | S.  | 30.24                   | 30.22   | 36                | 37   | 34   | 38  | SE       | S    | 2      | 2   | bcm        | o         |  |
| 11    | Su. | 30.04                   | 29.96   | 38                | 42   | 36   | 43  | E        | SE   | 2      | 3   | o          | bc        |  |
| 12    | M.  | 29.83                   | 29.90   | 49                | 54   | 41   | 56  | S        | SW   | 6      | 4   | qor (1)    | o         |  |
| 13    | Tu. | 30.06                   | 30.08   | 51                | 55   | 50   | 58  | SW       | S    | 2      | 2   | b          | b         |  |
| 14    | W.  | 30.14                   | 30.16   | 48                | 53   | 46   | 56  | S        | S    | 2      | 1   | bc         | b         |  |
| 15    | Th. | 30.14                   | 30.18   | 43                | 52   | 41   | 54  | S        | S    | 1      | 1   | bc         | b         |  |
| 16    | F.  | 30.08                   | 30.04   | 48                | 53   | 45   | 55  | S        | SW   | 3      | 5   | bc         | o         |  |
| 17    | S.  | 29.95                   | 30.11   | 50                | 46   | 45   | 52  | SW       | W    | 2      | 2   | bcd 1)     | b         |  |
| 18    | Su. | 30.25                   | 30.33   | 38                | 44   | 36   | 45  | W        | W    | 2      | 3   | b          | b         |  |
| 19    | M.  | 30.40                   | 30.50   | 38                | 42   | 37   | 43  | SW       | W    | 2      | 3   | bf         | bcm       |  |
| 20    | Tu. | 30.40                   | 30.39   | 44                | 49   | 39   | 50  | SW       | W    | 3      | 3   | od (2)     | og        |  |

NOVEMBER.—Mean height of barometer=29.707 inches; mean temperature=42.5 degrees; depth of rain fallen=4.73 inches.

By Royal Letters Patent.



**EDWARDS' PRESERVED POTATO**

**IMPORTANT TO THE MESS TABLE.**

The Patentees request the particular attention of the Royal Navy, the Mercantile Marine, Voyagers, and the public in general to the following statement.

The keeping qualities of the Patent Preserved Potato, in every variety of climate having now been fully tested and approved of, and its desirableness as a fresh vegetable generally acknowledged and appreciated during long voyages to distant parts of the world, its merits are established as an excellent and invaluable article of food, unequalled in cheapness and portability, and defying the effects of time in any climate to injure its inherent nutritious quality and flavor.

A quarter of a pound of the concentrated vegetable, by merely pouring over it a little *boiling* water, is at once converted into more than one pound of mashed potato, and that of a quality and flavour superior to, and more nutritious than, the best potato in its natural state, its being cooked in a few minutes, and no fire heat required, a great saving of time and fuel is effected by its use.

These great advantages, combined with the high opinions expressed in the certificates of Professors Brande, Daniell, Ure, Dr. Paris, &c., which are a guarantee as to its wholesomeness, are amply confirmed by the numerous testimonials the Patentees have received from all quarters of the globe, as also by special reports made to the Government and the Hon. East India Company, approving of it in the highest terms. Its practical utility is not confined to the mere production of an excellent dish of vegetable food; for, by the Preserved Potato being mixed with flour and *well boiled*, it produces without suet or eggs, a light and wholesome pudding; also, in bread making, pastry, soups, and a variety of other useful combinations it is alike valuable, while its great economy, portability, and facility of cooking, render it peculiarly suitable to the hurried meal of the temper-driven mariner, the soldier on his march, or the emigrant on his voyage; in fact, all classes of persons in all situations and times, either at sea or on shore, may obtain in a few seconds a ready dish of excellent relishing food from the Patent Preserved Potato.

In addition to these advantages, the cost of the Patent Preserved Potato will be less than that of any other description of food; the Patentees, under the conviction of its extensive use, having determined to offer it to the public at a price (*delivered in London*) which does not exceed **ONE PENNY PER POUND** as the cooked Vegetable.

*Among the numerous Testimonials, &c. in possession of the Patentees are the following:—*

**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 demulcent antiscorbatic 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, sago, or arrow root.*

July 30th, 1842. (Signed) **ANDREW URE, M.D., F.R.S., &c.**

Letter from Capt. Trotter, commander of 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 too sea, I should be obliged, therefore, by your letter Messrs. 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.**

Report from Mr. Welsh, surgeon of the "Northumberland," conveying troops, Sept., 1841. In compliance with the desire of the Hon. Court of Directors of the East India Company.

I have the honour to report on the effects of a quantity of Edwards' Preserved Potato, sent on board the Northumberland for the use of the troops on their passage to Madras. The Preserved Potato has been served out to the men twice a week for the last ten weeks, at the rate of 2½ lbs. of the Preserved Potato to 6½ pints of water, the allowance for a mess of six men; this was found quite sufficient, and the men have enjoyed it as much as the fresh vegetable. I followed up the directions of the patentees with the first messes served out, allowing 3 lb. of the Preserved Potato to 6 pints of boiling water, I found this rather more than the men consumed, and the quantity of water too little to make the vegetable of the consistence of mashed potato. I substituted the following proportions, which made a much more consistent dish, and sufficient for six men, 2½ lbs. of the Preserved Potato, and 6½ pints of boiling water poured over it; the vessel used was the mess bowl, covered with a platter, and allowed to stand for twelve minutes, when the mashed potato was produced superior to what was made from the fresh vegetable on board.

This Preserved Potato has kept of the same quality throughout the passage, and I feel confident if protected from damp it may be kept for any length of time without change. I consider Edwards' Preserved Potato a very valuable addition to the scale of victuals for the men, as it is equal in nutritious properties to the fresh vegetable, and as the men enjoy it as much, it must assist in keeping them in health. JAMES WELSH, Surgeon.

Gentlemen.—I feel a pleasure in beinable to forward the favorable result of your Patent Potato, for the benefit of Shipmasters and passengers going long voyages, as an invaluable article of diet at sea or on shore, where the real potato cannot be obtained, during my voyage from London to the Mauritius and Bombay, I made use of your potato upon a very limited scale, and on my voyage homewards, (having a long passage) slight symptoms of scurvy amongst the crew appeared, I immediately gave them your potato, three times a week, and I am happy to say the result was most favourable, without the use of Medicine.

I arrived in the port of London with a healthy crew, not having a man off duty with sickness, during eleven months, and I owe the greatest praise, to your Patent Potato, and I can recommend them as the most economical article of food as possibly can be obtained; and at the same time affording an excellent dish, after being a voyage to India, not losing its quality, and only requiring ordinary precaution of being kept dry; and occupying a very small space.—GEORGE CLARK, Commander of the "Vigilant," dated July 1842.

Gentlemen.—Having just returned from Sydney and experienced the merits of your Preserved Potato, during the voyage out and home, I feel bound to record herewith the gratification this valuable Vegetable afforded to myself and passengers, from its having kept uninjured by change of climate, &c.

I can safely state that the Preserved Potato is much cheaper, as well as a much better Vegetable as Stores, than any other article, and have pleasure in giving it the highest recommendation.—W. H. GOODWIN, Commander of the "Florentia," dated Aug. 10th.

Extract of Letter from Capt. W. Allen, RN., of H.M.S. Wilberforce, Niger Expedition.

Gentlemen.—I am happy to be able to give you my testimony in favour of the Preserved Potato, which I found to be quite as good as the fresh Vegetable, after having been on board H.M. steam-vessel Wilberforce more than a year, at least that which was packed in tin, I had some in barrels, which, owing to the excessive dampness of the Coast of Africa, and perhaps, to carelessness in the exposure, had lost its colour, &c., though possibly its nutritious qualities, remained in a great degree, I would strongly recommend it to be always taken in Metal cases, as the most economical way.

For Ships' crews, I think that the Preserved Potato would be found of great service, as part substitute for bread, it being usually the practice of the men, not to take up the whole of their allowance, and to exchange it for Vegetables, in harbour, they would thus have the means, if they choose, of obtaining a good Vegetable at sea.

I hope your excellent invention will receive extensive patronage, as you have enabled the longest Voyager to have a supply of potatoes, at all times, and in all climates.

(Signed) WILLIAM ALLEN.

MEMO.—Two cases of the Preserved Potato that were taken out per H.M. Steam-vessel Wilberforce are now in the possession of the Patentees, and the quality of the potato is the same as when shipped April, 1841, for the Niger Expedition.

Gentlemen.—I have much pleasure in informing you, that I tried your Patent Preserved Potato during my passage from England to Madras, and it was the universal opinion of myself and passengers, that it was a most excellent substitute for potatoes.

Signed J. HAMILTON, Commander of the "Anna Robertson" Madras, July 20th 1842.

Herewith are the signatures of my passengers to the above.—A. F. BRUCE, Madras civil Service; M. H. BRUCE, M. GILLESPIE, F. WARNER, W. H. WARNER, Lieut. WARNER, Bengal Artillery; H. ROSS, Lieut.-col. Madras Army; H. P. HILL, Lieut. do. T. V. MOORE, Lieut. do. J. W. ARNOLD, W. M. HAWDEN, Surgeon, G. T. MIGLE, J. ROSS, Bengal Army; H. READ, E. J. HARDY, D. SANDERSON.

FOR CASE, packed in Metal cases, and not less than one cwt. supplied.

Samples and particulars to be had of the Patentees, EDWARDS, BROTHERS, & Co. 1, BISHOPSGATE STREET, corner of Leadenhall Street, London; and of their agents at Liverpool, Bristol, Portsmouth, Devonport, and other sea-port towns.

NOTES ON CHINESE NAVIGATION.—By Commander G. Goldsmith, R.N.,  
of H.M.S. *Hyacinth*.

*Hong-Kong*.—The best anchorage during the typhoon season, from July to October, is about three-quarters of a mile from the shore, in from  $5\frac{1}{2}$  to 7 fathoms water, stiff mud, opposite to the Commissariat at the east end of the town on the Couloon shore, bringing the point on which lately stood Fort Victoria, to shut in the Lyee-Moon passage, and bear about E.b.N.  $\frac{1}{4}$  N. In this position H.M.S. *Druid* rode out the typhoon of July 21st and 26th, 1841, and was better sheltered than any other ship at the anchorage.

*Capsing-Moon*.\*—Between Lantao Island and the main, has two passages formed by the small island Mahwan. The southern is more direct, but narrower, and subject to stronger tides and eddies than the other; it is safe with a commanding breeze at east or west, which blowing directly through, is less liable to be influenced by the high land, which in both passages makes the wind too baffling to be depended on when it is scant. The other passage north of Mahwan is the most frequented; it is much wider, but has strong and irregular currents, which even at the neaps run strong; the ebb sets to the eastward, in the direction of the land, inclining towards the main. Care should, therefore, be taken to keep, if possible, in mid-channel, for the water in both passages is too deep to bring up in time, if necessary.

*Lyee-Moon*.—Between the east end of Hong-kong and the main, is equally hazardous, except with a good leading wind: the water is deep close to the rocks, and the eddies are as rapid and irregular as in the *Capsing-Moon*. Having passed the narrows going out, there is good anchorage in the channel between Tamtoo and Hong-Kong in 9 fathoms, about three-quarters of a mile from the latter; outer part of the islet at the entrance south-east.

*Amoy, New Channel*.—The channel lately surveyed by Captain Kellert between the third and fourth islands at the entrance, north-east of the old English Channel, is to be preferred, as it takes a ship clearer of the *Saw-Chat*, a dangerous half-tide rock, which is much in the way of the old passage. It may be known as you run in, by an island rather larger than the others, having a ruined fort on it, which must be passed on the starboard hand, leaving the three small islands on the larboard. The passage is narrower than the old one, but clear of all dangers, and has nothing less than 12 fathoms water.

The best and safest anchorage during the north-east monsoon, from October to May, is inside the island of Kolongsoo, with Pelican rock (nearly awash at high-water spring tides,) off a ruined joss-house at the landing place, bearing S.b.E.  $\frac{1}{4}$  E., northernmost of the rocks off the north end of the island E.  $\frac{1}{4}$  N. in 7 fathoms water, about three-quarters of a mile from the landing place: the bottom is mud, with patches of rock, and it is best to moor with an open hawse to the north-east.

Another anchorage is to the south-west of Pelican rock, with the joss-house E.N.E.; Round Island north-west in 12 fathoms, stiff mud.

\* The term "Moon," properly "Mun," signifies a "Pass." The former spelling is adopted by Horsburgh to preserve the pronunciation.

With this latter anchorage the south end of Kolongsoo will be just open of the entrance of English Channel. To run in here, a ship must pass round the south end of Kolongsoo, giving it a berth of at least half a mile, to avoid some isolated rocks that lie off it, covered at high-water. The passage between the town of Amoy and the island, is too full of rocks to be attempted by a stranger.

Outside Kolongsoo for a summer anchorage, from May to October, is to be preferred, because it is much cooler, and bad weather at that season of the year is not generally to be expected.

*Formosa Channel* in October, 1841.—Should a ship in beating through this channel against the north-east monsoon, meet with very heavy weather, I recommend a good anchorage in a bay under the lee of an island near the southernmost of the two groups marked Three Chimnies on Mr. Blaxland's chart of 1827. It is in lat.  $25^{\circ} 10' N.$ , and long.  $119^{\circ} 26' 48'' E.$ ; Ockseu Island bore  $S. \frac{1}{4} W.$ , twelve or fourteen miles. Extreme of the island (under which we were at anchor,) from N.b.W. to E.b.S., good holding ground in 6 fathoms.

Off the eastern end of the island are two small rocky islets, with a reef stretching from them to the south-east, three or four miles, on which the sea broke heavily; the western extreme of the island and bay is also rocky. There are several islands to the westward, between it and the main, but they are all very imperfectly laid down on Mr. Blaxland's chart, and even the coast-line is several miles too far to the eastward. I found the currents generally set in the direction of the wind, their velocity according to its strength, from eighteen to thirty miles a day; this was at the latter end of October, when the monsoon was fairly set in. In May when it was faint, and on the change, their direction was more uncertain.

If the coast were better known, advantage might be gained by working up close in shore, and not stretching out to mid-channel, where the current runs so strong. There are, doubtless, many good anchorages. We found the wind incline more from the land to the northward, occasionally at night.

*Ockseu*.—Bearing W.S.W. makes as two islands at the distance of twelve or fourteen miles; the westernmost rather round and moderately high; the easternmost low and jagged like a reef of rocks, some higher than the others, apparently detached, resembling junks.

When clear of Formosa, I found the monsoon incline more to the eastward, (Oct. 28th,) and from thence to Patahecock, and the Chusan group, had less difficulties to contend with. Here the currents took a westerly and W.S.W. direction twelve or fourteen miles a day. Unless bound to Amoy, the passage to Chusan can be made much quicker, and with less wear and tear, by standing well out to the eastward clear of Formosa. In this manner at any time of the monsoon, it can be accomplished in eighteen or twenty days from Hong-Kong.

Amongst the Chusan islands the north-east wind shifts to north and north-west; the tides and currents are most rapid and irregular. The gales give little warning, and the barometer is not much of a guide, except in case of a typhoon; in those of July 1841, it fell from 29.80 to 28.60. The average range last winter at Chusan and Chinghae, was 30.32 inches; and it rose generally with the north-west gales.

The thermometer was lowest at Chusan at 18° Fahrenheit.

*North-east Monsoon*, its commencement and termination.—Commenced at Hong-Kong in 1840 about the beginning of October, and in 1841 about the middle of September. I had much difficulty in beating up to Chusan in October and November through the Formosa channel. In May (the first week) 1842 the north-east monsoon was nearly at an end and very light.

*China Sea*.—Working down the China Sea in June, the early part of south-west monsoon, made Triton Bank the southernmost of the Paracels, on the seventh day from Macao. It is a very low white sand, and not visible from the deck more than five miles. We tacked from it when it bore W.  $\frac{1}{2}$  N. half a mile. A reef extended off its south and north ends about half a mile; by the colour of the water it was steep close to. A hut was on it, and a junk at anchor under its lee, on the opposite side to that on which we approached it. A current had set the ship about north-west fourteen miles since yesterday.

When in the latitude of fourteen or twelve north I should think it advisable to keep towards the coast of Cochin-China, to take advantage of the north-west squalls, which come off about once in the twenty-four hours at uncertain times, but give plenty of warning. They blow strong, and last generally an hour, sometimes four or five or eight, they are met with all along this coast, as far as the Straits of Singapore. In one of these squalls we made eighty miles southing.

*Prince of Wales Bank*.—Passed over its northern part, saw the coral rocks very plain, had irregular soundings, the least 6  $\frac{1}{2}$  fathoms.

*Islands of North Natunas*.—Were seen from masthead 35' distant.

*Anambas*.—Appear to consist of several more islands than appear on the chart. One of them has a very remarkable high peak. We tacked from them when they bore south-west four miles.

*Pulo Domar*.—Is a high rock, steep to, with deep water all round it. We found the current setting so strong to the northward that it took us more than twelve hours to work round it. The small islands on the chart between it, the *Middle Anambas*, and *Saddle Island* do not exist. (See Horsburgh's Chart of 1821 corrected to 1833.)

*Saddle Island*.—Is to the eastward of its position on the chart: it has discoloured water off its north-east end three-quarters of a mile. We passed about one mile and a half to the westward of it, and had regular soundings in 33 and 35 fathoms, sand and shells. By observations we made its lat. 2° 24' N., and long. 105° 54' E.: the Saddle is not seen from the north-west, but only when the island is brought to bear to the northward of east.

*Pulo Brava*.—Bearing W.b.S. makes in two high hummocks like separate islands. Current sets strong past it, in a N.b.W. direction towards the Gulf of Siam.

Appearance of the main land as we stood in after weathering Pulo Aor and Pulo Tingy, is rather low near the sea, and covered with trees, a high table mountain some distance in land W.  $\frac{1}{2}$  S., lat. 1° 49' N. Soundings as we approached decreased regularly 18 to 7  $\frac{1}{2}$  fathoms. Current, when at anchor in 8 fathoms, ran to the northward one mile and a half an hour.

*General Remarks*.—The weather we experienced, upon an average

was moderate, seldom blowing more than a treble-reefed topsail breeze, prevailing chiefly from S.S.W.; but the current was almost always against us, at the rate of from eighteen to thirty-four miles a day, increasing in velocity as we approached the narrow part of the sea, between the Malay peninsula and the Natunas and Anambas. Under the lee of these islands, (or to the northward of them,) we found the direction of the current change from north-east to east. I would recommend keeping under their lee, until in the latitude of the Anambas; then stretch across to the main, where there is anchorage all along, which is not the case amongst the islands, for they are very imperfectly known. H.M.S. Hyacinth arrived at Sincapore on the 3rd of July, thirty-three days after her departure from Macao.

#### *Sincapore to Anjer through Banca Straits.*

The south-west monsoon from Sincapore to Banca was light and variable, chiefly from the southward, inclining to the S.S.E. through the Straits of Banca, and gradually losing itself in the E.S.E. trade that blows directly through the Java Sea. The currents as far south as Pulo Taya, ran to the northward sixteen or eighteen miles a day, and near the Ilchester Shoals off the south-east end of Lingin, they run twenty-five. To the southward of Pulo Taya they were variable and uncertain, sometimes south. In the Straits of Banca there are tides, but so irregular in their direction, that we could not succeed in taking advantage of them.

*Sumatra.*—Is low, and covered with thick jungle. We found no land wind off the island at night; the water shoals very gradually towards it until 4 fathoms which are on the edge of a mud flat, that runs along it, and in some places a mile off from the shore.

*Banca.*—Monopin Hill is round and high, and easily distinguished at the distance of 30 miles. Horsburgh's chart and directions are excellent, but we found 11 fathoms between Frederic Hendric rocks, and Cape Batacarano, where 8 are marked on the chart. The Carang Timbaga rocks off Second Point, are above water and show in three patches a few feet above the surface; they are about two miles from the Banca shore, and have apparently a clear channel between.

In working up from Point Lalary to the First Point, we passed over a narrow patch of shoal having only 5½ fathoms on it; we were off it before a second cast could be got, and anchored immediately in 10½ fathoms, with the following bearings; Lalary Point N. 26° W., First Point S 20° E., False Point S. 27° W., highest peak of Parmasang (Banca) N. 5° W. The shoal to the E.N.E. a quarter of a mile. Current or tide W.N.W. 1½ knot per hour. This shoal is not laid down in the charts.

There is good anchorage throughout the Straits of Banca.

#### *Java Sea.*

*Lucepara Passage, July 17th.*—We stood through it with an easterly wind: shoaled the water on two occasions to 3 fathoms; but as we bordered on the main (the safest side) we deepened immediately by hauling a little to the eastward.

After clearing these shoals a course should *not* be shaped to the southward of S.b.E. for it is particularly necessary to guard against a strong set to the westward which in twelve hours after a run of seventy miles, carried us about sixteen miles to leeward, and into 4 fathoms water; the main land at that time being just visible from the deck, about ten miles distant. We tacked off and got clear; but from this I should say that no ship ought to shoal the water less than seven or eight fathoms.

*Brother Islands.*—Should not be brought to bear to the westward of S.W.b.W. to avoid the Browers shoals. We passed them close on the western side, and steered S.b.W. a good course for Thwart-the-Way. Anchored with the keedge in 35 fathoms between the Button and Cape St. Nicholas, tide or current running E.N.E. one mile and a half per hour.

*Anjer Roads.*—Anchoring marks, Cap N. 19° E., centre of Thwart-the-Way N. 34° W., off the pier-head half a mile in 10 fathoms water, mud. We could get no bullocks, but there are plenty of sheep, pigs, poultry, with fruit and vegetables in abundance. Water is sent off by the Dutch Resident in his own boats and casks, for which we paid one dollar and a half per ton. Sheep are two dollars a head, and their average weight is 15 lbs.

On the next day of our arrival, a large ship attempted to get through the Straits to the north-east; she had a light fair wind, but the current was too strong for her, and was running directly opposite to what we had it the day before, *i.e.* about W.S.W. Weather squally with thunder and lightning.

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#### HINTS FOR PROCEEDING DOWN THE SOUTH-WEST COAST OF AFRICA.

THE great difficulty is to get to the southward along shore, the current generally setting from  $\frac{1}{2}$  to 3 knots from the southward per hour; but it is often found to change and set to the southward at the same rate on new and full moon, and lasting from two to three days; sometimes, but very rarely until the quarter.

Going to the southward in a sailing vessel, I should recommend the commanders to keep working down at a distance of from 80 to 100 miles from the shore, never less: standing off to a distance of 150 to 200 miles, until it be possible to fetch to windward, or to southward of the place of destination. At the distance above-mentioned a strong current is often found setting to the southward, and the winds are always commanding, *i.e.* of sufficient strength to ensure beating down with a slant in a short time: whilst on the contrary, near the shore, land and sea breezes, with calms between, and calms for a day or two often prevail, which makes beating down in-shore very tedious, it being absolutely necessary to anchor during the calms and northerly currents, and also when the wind blows directly along shore with a northerly current, over which it is impossible for the generality of sailing vessels to beat without a slant.

To the commander of a weatherly steam-vessel I should recommend



the off-shore passage; but to him of a leewardly steam-vessel I should strongly recommend the in-shore passage.

Rollers set in very heavy from Cabenda Point to near the red hills at the entrance of the Congo, and should be avoided, as they often break very heavy from  $1\frac{1}{2}$  to  $2\frac{1}{2}$  or 3 miles from shore in 10 or 12 fathoms water. (The "Wolverine," with a moderate breeze had some difficulty in getting off shore from the effect of the rollers.)

To cross the stream of the Congo, which runs to the north-west at the rate of from three to seven miles an hour, according as it may be a rainy or dry season, or neaps or spring tides, I should strongly recommend every commander making the in-shore passage, to go up the Congo on the north shore, about twelve or fifteen miles, before he crosses over to the south shore, if the wind be light or calm; but if the breeze be strong, (sea,) he may steer diagonally up or across the river, under all the sail he can carry, and he will easily fetch, if necessary, below Cape Padron.

Proceeding from Cape Padron it is advisable not to go inside 6 fathoms, there being one or two very shoal spots between that and Ambriz to Angola or St. Paul de Sevando,—not inside of 10 fathoms.

Wood and water (good) may be obtained at Mayamba, Soango, Cabenda, and Ponta da Linha, about thirty-five miles up the Congo on the north bank.

*St. John River.*—In going into this river in a boat, I would bring the west point of the river to bear N.N.E. per compass, about  $1\frac{1}{2}$  mile off shore, then steer N.E. by compass, or N.E.b.E.; or, bring the east point of the river to bear about N.E.b.E., and continue so until you open the river clear, when I would steer the direct course of the river, about north by compass, making due allowance for tide, which on or near the bar with the ebb sets out about S.S.E.; the flood in the opposite direction varying slightly in its direction as the force of the tide alters.

Mr. Roberts adds:—When going in there is generally so much swell it is probable the compass will vibrate too much. In that case pull in, keeping the east point of the river a little open on the port bow, until you get sufficiently near to see the river quite open, then steer in the direction of the river, attending to the set of the tide, whether ebb or flood. It is advisable that boats should go in at last of flood, at high water, or, first of ebb, but at no other time during the spring tides. During neaps vessels cannot be brought out except at the top of high water, and it is seldom attempted. In the entrance of the Nun there are two bars, to cross which the same precaution must be taken as on entering the St. Johns or Brass.

W. TUCKER.

[Captain Tucker's letter on the Congo, as well as some further remarks on it by Captain Butterfield, will be found in our last volume.—Ed. N.M.]

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HONDURAS.—*Omoa and the coast westward.*—By Mr. G. B. Lawrence.

As much valuable mahogany is at present cut on the Southern river of British Honduras, and grants have been lately made by the Central

American government to the merchants at Belize, for cutting on those in the State of Honduras; this part of the coast is frequently visited by our shipping.

All vessels intending to load with mahogany from British Honduras, call at Belize to enter at the custom-house, and there having taken a pilot proceed to the mouths of the rivers on which the wood is cut, where the consignee has a cargo ready waiting for shipment. Should their destination be to the rivers in the State of Honduras, he then has to enter them, also at the custom-house at Omoa; and having loaded, clear out again there, and return to Belize before their final departure for England.

Such being the case, vessels proceeding to this part of the coast from Belize, generally prefer the channel between the main and the Cays. They sometimes come outside if bound for Omoa, but very seldom.

Lient. Smith having surveyed the channel referred to; I shall confine myself to making the coast from the eastward. First

*Making Omoa from to Windward.*

Vessels coming from the north-east or eastward should be careful to make the land well to the eastward, to guard against Glovers Reef, about which the currents set in various directions. In thick dirty weather it would be advisable to make the western part of Rattan or the Island of Utila, and then shape a course a little to the northward of Point Cabello; the high mountains to the southward of Omoa being scarcely perceptible during the season of the rains, from October to March.

The Saddle Hill in lat.  $15^{\circ} 45' 0''$  N., long.  $79^{\circ} 57' 54''$ , a remarkable hill, to the south-east of Omoa, is, I think, the best mark for making the harbour as it is generally visible, being of a moderate elevation (1760 feet) and not far inland.

In the dry season, from April to September or October, Omoa and Montagua Peaks are generally clear in the mornings, these from their great elevation and prominent features will assist materially in denoting the ship's place, as the mountains to the eastward Omoa are much lower than those to the westward.\*

Not having extended the survey to the eastward of Omoa, as far as Point Cabello, I am unable to say whether any dangers exist between those places; but I imagine the only thing to be guarded against is a bank commencing at the point forming the harbour, and extending at its greatest distance from the shore, about two miles, off seven remarkable red cliffs, that may be easily distinguished at the distance of four or five miles from a ship's deck, bearing when in one with the Saddle Hill before mentioned S.  $37^{\circ}$  E. (mag.), distant from the entrance of Omoa  $3\frac{1}{2}$  miles.

With these two remarkable land-marks in one, and at the distance of 3 or  $3\frac{1}{2}$  miles off shore, the entrance of Omoa harbour will be seen bearing S.S.W.  $\frac{1}{2}$  W., (mag.) forming a low prominent point. As the current generally sets strong in shore to the eastward, at the rate of 1 or  $1\frac{1}{2}$  knots per hour, it will be advisable to close it gradually, steering

\* The height of all the mountains will be found marked on the chart.

about south-west until you observe the castle of San Fernando, which is very remarkable from its large dimensions, open of the point, now making out low and sandy, and for which you may at once haul in.

The particular plan of the harbour had now better be consulted, which will show clearer than any description the nature of the anchorage.

*Directions, &c., for Omoa Harbour.*

To small vessels drawing 11 feet water, it affords excellent shelter from all winds, and at times for others of a greater draught, as the bar at the entrance undergoes considerable changes both in formation and depth by north-westerly gales.

A few months before we surveyed it (July 1841,) the bridge of sand running from the main to the point, did not exist, and vessels drawing 18 feet water could enter the harbour or Caldera, as mentioned in the West India Directory, vol. 1, p. 194.

Vessels might with safety ride out a norther close under the sandy point, as the holding ground is good, and these gales, I am informed, generally haul round to the north-east. You must in this case drop your anchor close up to the point, within 30 or 40 fathoms of the shore; but as I have before observed the plan will better explain.

The castle of San Fernando is a regular fortification, capable of sustaining a siege, it having, I was informed, wells within the walls, bomb proof casements, &c., evidently in the best of order, when in possession of the Spaniards; but now, from old age and want of attention in a state of decay. Its general shape is that of an equilateral triangle, having one of its sides resting on the beach and commanding the anchorage. The guns of heavy calibre, brass 24 and 32-pounders, 10 or 12 in number, mounted "en barbette" on the bomb proof casements at an elevation of 40° above the level of the sea, range the whole length of the work, which convexes towards the anchorage forming an arch, the radius of which terminates at the apex of the triangle on the land side, which is also strengthened by angles flanking either of the remaining sides.

The fortress is also defended from the country by a wall 15 feet high extending nearly round it. The gateway which is covered, and very strong is situated on its south-east side.

On its southern angle is a fixed light, the centre lamp 60 feet above the level of the sea, is in lat. 15° 47' 00", long 88° 03' 03": at present this is much neglected, in fact lit but seldom, and then only visible from the anchorage.

This fortress although strong on the sea side, is, I should think, in a military point of view, weak on the land, as the hill over the town commands it, which I fancy could be easily occupied by the enemy, who could effect a landing either to the westward or eastward of the harbour, and advance without the slightest annoyance from the guns of the castle. In fact it would appear that the Spaniards only contemplated an attack from the sea when they fortified this place.

The town of Omoa is at present little better than a large village, consisting principally of huts. From one of the most respectable of its inhabitants I was furnished with the following information:—

The town contains about 500 inhabitants, chiefly Mulattoes; 30 half clothed, ill organized soldiers form the garrison. The principal public officers are the commandant and the collector of customs. Its exports are indigo, sarsaparilla, hides, and silver in its pure state; the former of these articles which comes from the State of San Salvador, is sent to the English market, together with the silver found in this part of the Republic, which is exceedingly beautiful, and is sold at the rate of 18 dollars per lb. To the Havana and America are sent the hides and sarsaparilla, the latter of which abounds all over the country but more especially about the sea coast.

Cotton goods and all kinds of apparel are imported from Belize; no less than 3000 bales come to this port annually for the consumption of the states of Honduras and San Salvador.

The principal source of the revenue is derived from the duties on tobacco, spirituous liquors, stamped papers, and harbour dues. The duties on the shipping alone at this port, amount to upwards of 40,000 dollars per annum. Were they however properly collected they would amount to 100,000. A duty of 20 per cent is levied on all goods imported.

In the interior sugar and coffee are cultivated, but in sufficient quantities only for their own consumption, as the expenses for the freight of mules totally prohibits its being brought to the sea coast for exportation.

Cattle of all kinds are abundant, the Belize market being supplied with them from hence. Beef we purchased here at the rate of two-pence per lb. The roads to the interior are very bad. Tequicigalpa is the principal town of this state, containing about 8000 inhabitants. Comayagua is the next of importance, being the seat of Government, having about 2000.

Wood and water may be procured at a short distance from the river's mouth.

April, May, and June, are considered to be very dry months; the rainy season commences in October, and does not end till the latter end of March; during the first four months of this time it rains almost without cessation.

Intermittent fever is here most common, but by no means dangerous.

*Remarks on the coast to the westward of Omoa.*

By references to the chart all the dangers of importance will be seen exhibited at one view: the principal of these are, the shoal of two feet lying between the Snake and North Seal Cays, and the rocky knowls of fourteen feet to the south-east of Observation Seal, these being very small, make them the more to be dreaded, especially so as the eye cannot detect their existence.

It would be useless, in fact impossible to say anything of those between the Rivers Temash and Rio Grande; reference must be had to the General Chart, on which the prominent hills and points are laid down, to enable the ship's position to be at any time determined by cross bearings or angles.

The coast from the light to the south-west of Omoa to Cape Three Points, is of an uniform height, the top of the trees being about 200

feet above the level of the sea. The beach which is low and sandy, is lined with numerous cocoa-nut trees, particularly at a short distance to the eastward of the Cape.

Of the three rivers which discharge their waters between these places, the Montagua is the most considerable, taking its rise about twelve leagues to the westward of the city of Guatemala. The first village of importance on its banks is Gualan situated from the sea an average voyage of fourteen days for "bongas." These large barges have much difficulty in ascending the river during the dry season, owing to the numerous shoals and rapids that infest its bed. The first of the latter, on which there is only three or four feet water, is met with at the junction of the Rio Nuevo forty miles from the bar.

Between the San Francisco and Hospital Bight a communication has been formed for canoes by means of a small canal cut through the low swampy land, to enable the mahogany-cutters to receive supplies by this route, when the heavy surf renders landing impracticable at the river's mouth. On one occasion a brig loaded in this bight, the logs having been towed through this channel from the river.

The holding ground off the mouths of those rivers is very good, being soft olive mud. A heavy swell generally sets in on this shore, but except in the season of the "Norths," from October to February or March, no fear of anchoring need be apprehended.

The current invariably sets between this shore and the Seal Cays to the south-east, at the rate of from 1 to  $1\frac{1}{2}$  knots per hour, its acceleration being influenced by the rains. In the bight between Cocoelee Point, and the Rio Grande it is affected by the winds as well as the rains; we generally found it setting to the north-east 1 knot, with the ordinary light sea-breezes from the eastward. There is also a slight rise and fall of about one foot, also influenced by the wind, generally highest in the evenings.

The prevailing winds on this coast are the periodical land and sea breezes. The latter usually sets in about 10 A.M., and continues sometimes until late at night, but is governed by circumstances, as during some months we found it very light, particularly so in September, when it seldom blew home to the coast.

Thunder and lightning of the worst description are constant visitors every night during the rainy season.

The Norths on the coast seldom extend to the southward of Point Placentia. During the period of their visit the wind in the bight invariably blows off the land from the south-west, attended with the appearance and strength of a Norther. The Mountain of Trepong, south of the Dulce, being free of clouds is considered a sure indication of these winds. They may be looked for at the latter end of October or beginning of November. The barometer would appear to be much influenced by these winds; ours on one occasion fell suddenly from 29.94 to 29.80, and the thermometer down to 73°. The average temperature during the summer months being 85°.

Of the rivers in this bight the Sarstoon which is the largest and deepest, has six feet water on its bar, and is the Southern boundary of British Honduras. They all resemble each other in appearance, their banks being low and swampy, lined with impenetrable mangrove

bushes. Mahogany is cut at the distance of a journey of three or four days from their mouths, probably forty or fifty miles inland. The average height of the land from Sarstoon Hill southward is 150 feet.

Two or three hundred Caribs have formed a settlement at Punta Gorda whose only occupation is raising stock for their own consumption, and at times visiting Belize with plantains, cocoa, &c., which they exchange for wearing apparel and other little necessaries; these people are very inoffensive and much attached to the colonists. They hold the tenure of the land by sufferance.

In the bight between Cape Three Points and the Rio Dulce the Ox Shoal is the only danger to be avoided, its limits will be seen on the chart.

The hospital bight affords excellent anchorage for vessels drawing 12 or 13 feet water; the least on its bar being 14. Its shores are very swampy, and lined with mangrove bushes, rendering it, as the name implies, a most unhealthy place.

St. Thomas bight forms a very safe and commodious harbour for large vessels, and is the best place on the whole coast for watering. By keeping midway between the two shores on entering, you will avoid the banks extending off the points on either side. A fresh water creek at the foot of the mountains on its western shore is the watering place, off which you may anchor, at the distance of one cable in 3 fathoms; and large boats may pull up to the head of it, and fill their casks with the greatest ease; the water is excellent.

About one hundred Central American fishermen live at the mouth of the Rio Dulce; the least water on the bar of which is six feet. A few huts are also to be met with between this and Punta Palma.

The above mentioned river and gulf was surveyed by Captain Owen, in June 1834.



FERNANDO PO AND AFRICAN ISLANDS.—*From Remarks of Commander Fishbourne, H.M. steam-vessel Alban.*

HAVING embarked Captain Trotter in the Warree, we parted company for Rollas, where we obtained wood; and touching at Isle Prince, steered for Fernando Po, where we arrived on the 3rd of Dec., 1841.

The anchorage of Clarence Cove, the principal anchorage of Fernando Po, situated on the north side of the island, is very good, though the depth is from 10 to 15 fathoms; indeed, it is so abundantly sheltered that considerable facility is afforded to vessels loading or unloading, while the perfect tranquility and smoothness of the water, and the rise of seven feet admit of vessels being beached for repairs, without danger. At present a fire is kept up by the Company's servants during the early part of the night, and being at the height of 100 feet, above the level of the sea, it may be seen at a considerable distance. By bringing this on a S.b.E. (true) bearing, and Point William, one mile, or a mile and a half distant, fair anchorage, and a good position for entering will be found. It must be borne in mind, that the

current runs to the east and north-east generally, one mile to a mile and a half per hour; and due allowance must be made for this in steering either for the settlement by day or the light by night, depending on the preceding winds. Change in the bearings would give notice of this, and they should be attended to strictly.

The water is good, and may be obtained in any quantity without difficulty. Wood is plentiful, and of very superior quality, quite equal to the mangrove, 340 inches per horse-power per hour, being sufficient to keep steam with our engines working expansively at half-stroke, yet still an efficient fuel. We paid six shillings and sixpence for 100 pieces, containing about 33 cubic feet; but were a contract entered into for a large quantity, it might be obtained at a much more reasonable price.

The landing-place is convenient at a wooden pier which has been built at the expense of the West African Company, and extending out to a depth of water that admits of vessels of seven or eight feet draught to go alongside.

The ascent to the Plateau upon which the town stands being about 100 feet and the road ill made, occasions much difficulty in the transfer of goods to the town, but this objection might be materially removed and without much expense. There is a strip of land at and on either side of the landing place (from which the cliffs rise nearly perpendicular), now partly occupied by miserable coal and store sheds, but of sufficient width and generally adapted for good store room.

Fresh meat may be had, but is dear, being 9d. per lb., and for the most part imported from the main land.

Vegetables, strange to say, were by no means abundant, yams being the only kind to be obtained for the ship's company; yet is the fertility of the island such as to produce any tropical fruit or vegetables that have hitherto been tried, such as the following fruits, oranges, limes, pine-apples, guavas, plantains, soursops, papaws, cacaos; and vegetables—yams, sweet potatoes, arrow-root, ginger, cassava, manioc, indian corn, shalots, and sugar-canes; coffee, cotton, and tobacco, I am told have been produced also.

The town called Clarence Town is situated on a Plateau, 100 feet at least above the level of the sea, and receives much of the prevailing wind south-west; but as this passes over a portion of land not yet quite clear, its salubrious effect is much diminished, as it must be surcharged with vapours. The houses are built of wood, seldom of more than one story, regular and cleanly, even taste is perceptible in their little arrangements, and a measure of comfort which implies circumstances far removed from want. This is more remarkable as the Company, enforcing a monopoly, have placed prices upon their goods in which it might have been supposed the little all of the poor people would have been sunk, for the merest necessities of life, excluding the poor Boobees\* (natives) from little more than rum, tobacco, and powder, their first wants as the price of their labour. Unhappily these first wants are mere temporary gratifications, hence are they induced with difficulty

\* The term "Boobees" (accented on the last Syllable) has been applied as a general name to the natives, simply from being their common word of salutation on meeting our people; the word Boobee being used by them in the same way as we would say "How do you do."

to do that which to them is painful, *i.e.*, to work: the price they receive for their fruit or fowls is likewise so small, that they have not only little inducement to exertion in seeking some of the comforts of civilized life, but are sunk into deeper degradation by spirits being made the purchasing medium with which they are paid the price of their labour, the price of their goods, and even the price of their wives, were they bad enough to sell them. Some women appear to have sold themselves, as the punishment now awarded for infidelity is the loss of one or both hands at the wrist according to the turpitude or frequency of the crime in the individual. This severity it would appear has checked the evil, as but one was seen so mutilated. Being thus incapacitated from the household and other duties (extensive in this country) performed by woman, she becomes rather a burden to her husband, from which it may be inferred that the aforementioned law is the enactment of the community, rather than the result of the aggrieved party's angry feelings.

The Boobees are rather below the middle stature, but well proportioned and athletic, though awkward in their gait. They seem inoffensive and intelligent, but indolent. The general contour of the face is no less European than Negro, the forehead rectangular, though neither broad nor prominent; the eyes sharp, sometimes piercing; hair woolly, skin rather of the Mulatto, but smeared to an extent that alters the apparent hue; the hair is smeared with a pomade of brick clay and oil with which it hangs down not unlike the leaded mane of a horse. They display ingenuity and even taste in the arrangement of their head, and waist ornaments, the chiefs having hats and feathers, and a pair of horns in front.

The females seldom wear more than the waist covering, and a few beads or shells. Continuous labour seems quite unknown amongst them, and they are with difficulty induced to work; when they do work all the inhabitants of the village repair to the place appointed, where they continue till it is completed, the women singing all the time. When it is performed they return to their village to indulge in the fruits of their labour, which unhappily are for the most part debasing. These people worship a spirit which is said to dwell in a grove consecrated by him, and held sacred by them, none being permitted to enter, nor to cut or disfigure the trees of which it is composed. With the capabilities of these people much might easily be done to ameliorate their temporal condition, while it is to be lamented that no Missionaries have been amongst them hitherto, to "declare to them that God whom they so ignorantly worship," particularly as they have reaped little or no benefit from their intercourse with white men. Yet is there something in the white man which wins these poor untutored Indians, and makes them not only curious but anxious to know something of the white man's God.

The colony is governed by an Agent for the West African Company, who to say the least of them, (for there have been several,) have not succeeded in conciliating the inhabitants of Clarence Town, much discontent prevailing amongst them, and this in some cases not without reason. Two men came to me, claiming protection and desiring that their wives should be recognized as British subjects, stating that if not so recognized, the Company's agent would deliver them up to the chief on the main land whose slaves they had been. Although the propriety



of their running away may be questioned by some, the propriety of an Englishman making them slaves again can be argued by none. On enquiry, Mr. Scott admitted to me, that, acting under the orders of a former agent, he had carried some over to the main land, and delivered them up to their original owners. Mr. White, the present agent, assured me, and I am convinced with truth, that he had not, nor would, interfere with any so circumstanced.

The people brought to this place by orders of our Government from Sierra Leone complain (I cannot say how justly) that the privileges granted them on the cession of the colony by the government have been violated. Many of them appear to be respectable, industrious, and moral, and some even religious; generally it is I fear but a name; yet do they form an attentive congregation, and though concubinage is found to the extent of nine in every ten couple, this would appear to arise from there having been no missionary amongst them until within a recent period. Some were married, and a great many baptized, by Mr. Müller, chaplain, and these chosen out of a still greater number whose entire ignorance, (or in the case of children of that of their parents,) induced him to defer administering this ordinance. These cases though they do not argue a knowledge of what is right, shews a disposition to do what is thought to be right by those who know better than themselves, and affords great hope for the success of missionary labour amongst them. There are two Baptist Missionaries now at Fernando Po, who, but for their sectarian spirit, would be the means of doing much good.

The fall of water in Hay and Horton brooks, the former quite close to the town, is fully equal to turning mills for sugar, corn, and wood, and the ground so well adapted that little expense would attend the preparing sites, &c., for building and regulating the supply of water. Though this place is so near the Bonny, Calebar, and Cameroons, few vessels touch here, nearly all going to George Bay, where there is a settlement of Kroumen who sadly maltreat the natives, and even supply the shipping with yams, at their expense, or only give them nominal value.

On leaving Clarence Cove for Isle Prince, or the south, you are recommended to steer to the eastward, leaving the islands on the west of you, but without sufficient reason. Although you avoid the current, you have to run to leeward a greater distance than the current could have carried you, and all which distance is to be made good against the current. If you are bound out of the bight or to any of the islands, in steering for north-west bay, I. Prince, where we were bound to, allowance must be made for the easterly set of the current. A sailing vessel making it to the southward of E.S.E. had better stand on all night, or till she could weather the Island, thus passing to the southward of it; but should not, except under most favourable circumstances, pass between the Dutchman's Cap and I. Prince as the winds there are baffling, and currents variable. In this way she may arrive early on the following day. I have known a vessel to have been three days beating up on the north side, which will surely obtain if the master or captain is timid, as he will lose at night his daylight labour. The south side of the bay is to be avoided, as the ground is foul, till you get into 14 fathoms, where

there is good anchorage, freest from rain, but at a long and inconvenient distance from the watering place. Vessels may go into 8 fathoms without apprehension, bringing Madame Ferreira's house to bear about east (true).

This lady is of considerable notoriety amongst the African squadron for her hospitality, and her house is easily distinguished standing on a hill, and, being the only one of any size. She supplies the squadron with fire wood at two dollars the 100 pieces, two feet long by four and a half inches square, and as she thus clears the ground, plants it with sugar canes. She has lately erected sugar and timber mills to be driven by water, at an expense of 10,000 dollars, and though these, and all her supplies are from France, the Local Junta are jealous of her English intimacy, and will I fear prevent her realizing the benefits which her enterprize deserves.

The water here is excellent and easily obtained in any quantity. The wood is plentiful, but the dark coloured of great specific gravity is entirely to be preferred. Beef may be obtained at Port Antonio, or from Madame Ferreira; at times pigs and poultry, but not in quantity. Guavas, soursops, papaus, limes, oranges, bananas, pines, and cocoa-nuts are to be had here; but yams and sweet potatoes, are very scarce; coffee is plentiful and of excellent quality five-pence per pound: cacao-bean is good and cheap here. The island is governed by a Local Junta, of which the Captain-General of the Portuguese possessions here, is president, who now mostly resides in Isle Prince.

In steering for Isle St. Thomas we found much less easterly set, than further to the north, and on arriving at St. Anna de Chaves found it to be very shoal as if filling up. Wood and water were very scarce. We failed in obtaining stock of which they said there was plenty, but to be had only by sending into the country. The extreme wretchedness of the town offered too little confirmation of this to induce us to stop and make the experiment. Some remains still appear of the short lived wealth and questionable prosperity during the palmy days of kidnapping. Although the soil is so rich we could obtain but a few miserable vegetables, that were not worth carrying. Sugar and coffee were exported to a tolerable extent formerly, but the planter has emigrated to the Brazils.

The anchorage between Isles de Rollas and St. Thomas in 6 fathoms, where we next stopped, is well sheltered, and convenient for wooding; but water can alone be got from I. St. Thomas opposite, and there in any quantity and very good. We obtained a small supply of pigs, poultry, turtle, and fish every day. The officers succeeded in shooting a considerable number of wood pigeons and doves, which proved a grateful addition to the sick men's mess.

The bay opposite, in St. Thomas, is far from being a desirable anchorage; even a steamer without coal will find a difficulty in coming out at times, green wood giving a very insufficient quantity of steam to make head against the cross sea and south-west wind, which generally prevails here. Failing to obtain any sufficient quantity of stock here, we proceeded to Anno Bon, where, with old clothes and some cloth, we supplied ourselves amply.

We obtained also some water and wood of an indifferent quality near

the town, but better is to be had at the other end of the island. Sheep, goats, pigs, and fowls are plentiful, as also fruit; yet nothing is to be had but in barter for clothes, these articles being the current coin of the realm. The king being elected yearly, presents are looked for confidently, as custom and harbour dues.

This island has great capabilities, and presents some very beautiful scenery, even to the lake itself, which is so singularly situated on the summit of the island, being surmounted by peaks.

The people are very suspicious, doubtless from being deceived frequently by the slave vessels, who have gone to the extent of kidnapping some of them.

Although we started from this island under sail with steam, we did not continue so long, as the vessel fell much to leeward in consequence of her flat bottom. We stood to the south-west under steam only until we reached  $7^{\circ} 30' S$ . Having too little power to contend with a trade and sea, and having very little coal, and that of inferior quality, I deemed it prudent to make my southing while I could. This course is by no means to be recommended, but, I was apprehensive, having so many sick and convalescent on board. Vessels bound either to the southward or westward should stand to the westward whenever they can make a west course, true, by which means they will get soon out of the easterly current, the wind will draw to the southward, and enable them to make their southing; and if they are bound to the westward, they should not go far to the south of the line, the westerly current being strongest near it,  $3^{\circ} S$ . being the furthest they should go. But in all cases it should be borne in mind that the south-east trades are more easterly when the sun is in high south declination, and southerly when in high north declination; and also that they extend nearer to the line as the sun gets north declination.

We lost the westerly current in lat.  $3^{\circ} 30' S$ , long.  $3^{\circ} 30' E$ .; and I doubt not, but that, had we been further to the westward, should have lost it in  $2^{\circ} S$ . this time of the year.

While exercising at quarters our binnacle-compass was unshipped by the concussion from the adjacent gun. The liability to such an accident is a serious objection to the description of card we had in use, it was a scale card or index, having two parallel needles vibrating vertically through it, the whole borne by gimbles. The idea was, that by this arrangement it would be less affected by the vibratory motion of the ship. On substituting for this card one of ordinary construction we discovered by an azimuth that it had  $5^{\circ}$  less of westerly variation, and altered course in consequence. The morning's azimuth gave the variation of the former. In each case, the ship's head was brought to the due course N.W.b.W.  $\frac{1}{2}$  W. By thus attending to our compass errors, and having an excellent rate to our chronometer, we were enabled to make the land directly ahead, and the distance not erring more than two or three miles by measurement with patent log.

We shall conclude the foregoing remarks in our next, and may here add Commander W. B. Oliver's observations, the officer whose judicious directions for making the passage from the Bights to Sierra Leone, we gave in our last volume.

*Fernando Po.*—Is well known and surveyed; but the climate is

generally considered as much more unhealthy, than we found it. It is decidedly superior to that of Sierra Leone, and were the establishments transferred from thence to Fernando Po, no doubt a sufficient portion of land might in ten years be cleared, and cultivated, to render it the most healthy spot on the western coast of Africa. But in clearing and cultivating, Europeans must not be employed, or they would doubtless, as formerly, all fall a sacrifice; but Kroumen, and liberated Africans, under the immediate superintendence of intelligent men of their own race. Splendid timber of various descriptions, may be cut at no distance from the shore, which abounds with safe coves for loading.

*Man-of-War Bay, Isle St. Thomas.*—The best anchorage in this bay is with the centre of Cabrita Isle S.E.  $\frac{1}{2}$  S. Fernadilla House S.W.  $\frac{1}{2}$  W. and N.W. Point W.  $\frac{1}{2}$  N. where you get 15 fathoms dark muddy sand. This bay is open to tornadoes, but the anchorage better than at Anno Bon, and the stock in every respect superior, the goats, pigs, fowls, and fruit, being the finest on the coast. They are not to be obtained for money; but in exchange for clothes, and Manchester goods or cutlery, and to be had in plenty and very cheap. The natives, are active, shrewd, and friendly. Good water may be obtained from a stream near the house.

*Anchorage of Anno Bon.*—Open the low rocky point to the westward of Pyramid Rock, with the east end of the Church, (the eastern building detached from the village,) you may then by keeping Pyramid Rock on with a high rock over it, resembling a fort, steer in on that line, and carry sandy bottom from 19 to 3 $\frac{1}{2}$  fathoms within two cable's length of the beach, when Islet Point will bear W  $\frac{1}{2}$  N., and Pyramid Rock S.E.b.S., and Turtle Island S.E.b.E. Stock can only be obtained in exchange for goods, not money, and is of an inferior description. The canoes being small and crazy, are never dry, the bananas, plantains, &c., are consequently injured by salt water, which prevents their keeping; the oranges so extolled in the Directories are not eatable. The natives, dirty, indolent, and troublesome, so much so that purchases of stock cannot be made on shore.

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NOTICES OF JAPAN.—No. X.

(Continued from p. 844, vol. for 1842.)

MARRIAGE is contracted early; but as a mes-alliance is held to be utterly disgraceful, persons even of the middle classes of society are not unfrequently reduced to the necessity of espousing, like princes, those whom they have never seen. Thus the treasurer of Nagasaki, whose rank is not so high as to require the detention of his family at Yedo, has no precise equal in the place; consequently, his children cannot ally themselves with the young people in the town, their acquaintance and associates, but he must procure them wives and husbands out of the families of men of his own rank in distant cities or provinces.

ENLARGED SERIES.—NO. 2.—VOL. FOR 1843.

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When no such obstacle prevents "the course of true love from running smooth," and a youth has fixed his affections upon a maiden of suitable condition, he declares his passion by affixing a branch of a certain shrub (the *Celastrus alatus*) to the house of the damsel's parents. If the branch be neglected, the suit is rejected; if it be accepted, so is the lover; and if the young lady wishes to express reciprocal tenderness, she forthwith blackens her teeth; but must not pluck out her eyebrows until the wedding shall have been actually celebrated. When the branch is accepted in the one case, or the parents have agreed to unite their children in the other, a certain number of male friends of the bridegroom, and as many female friends of the bride, are appointed as marriage-brokers. These persons discuss and arrange the terms of the marriage contract; and when they have agreed upon these, they carefully select two auspicious days; the first for an interview between the affianced pair, the second for the wedding.

At this stage of the proceedings, the bridegroom sends presents, as costly as his means will allow, to the bride; which she immediately offers to her parents in acknowledgment of their kindness in her infancy, and of the pains bestowed upon her education. Thus, although a Japanese lady is not subjected to the usual oriental degradation of being purchased of her father by her husband, a handsome daughter is still considered as rather an addition than otherwise to the fortune of the family. The bride is not, however, transferred quite empty-handed to her future home. Besides sending a few trifles to the bridegroom, in return for his magnificent gifts, the parents of the bride, after ceremoniously burning their daughter's childish toys, in token of her change of condition, provide her a handsome trousseau, and bestow upon her many articles of household furniture—if the "many" can apply to articles of furniture, where the handsomely-matted floor answers the purpose of chairs, tables, sofas, and bedsteads. Those given on the occasion in question always include a spinning-wheel, a loom, and the culinary implements requisite in a Japanese kitchen. The whole of this bridal equipment is conveyed in great state to the bridegroom's house on the wedding-day, and there exhibited.

With respect to the marriage-rites, some little difficulty is created by Titsingh's intimation, that no religious solemnization takes place; but it is easy to conceive that, in such a country as Japan especially, a foreigner, even the head of the factory, should have been often invited to the formal ceremonies with which the bride is installed in her new home, without ever witnessing, or even hearing of, the earlier religious celebration. In fact, Meylan distinctly states, that marriage, although a mere civil contract, is consecrated by a priest. Fischer adds, that it must be registered in the temple to which the young couple belongs; and from the Swedish traveller of the last century, Thunberg, we have a description of the religious solemnity. This appears to consist in the prayers and benedictions of the priests, accompanied by a formal kindling of bridal torches, the bride's from the altar, the bridegroom's from her's; after which, the pair are pronounced man and wife.

But the business of the day by no means terminates with this declaration. The bride is attired in white to typify her purity, and covered from head to foot with a white veil. This veil is her destined shroud,

which is assumed at the moment of exchanging a paternal for a conjugal home, in token that the bride is thenceforward dead to her own family, belonging wholly to the husband to whom she is about to be delivered up. In this garb she is seated in a palanquin of the higher class, and carried forth, escorted by the marriage-brokers, by her family, and by the friends bidden to the wedding-feast; the men all in their dresses of ceremony, the women in their gayest, gold-bordered robes. The procession parades through the greater part of the town, affording an exceedingly pretty spectacle.

Upon reaching the bridegroom's house, the bride, still in her future shroud, is accompanied by two playfellows of her girlhood into the state room, where, in the post of honour, sits the bridegroom, with his parents and nearest relations. In the centre of the apartment stands a beautifully-wrought table, with miniature representations of a fir tree, a plum tree in blossom, a crane and a tortoise, the emblems, respectively of man's strength, woman's beauty, and of long and happy life. Upon another table stand all the apparatus for drinking saké. Beside this last table the bride takes her stand; and now begins a pouring out, presenting, and drinking of saké, amidst formalities, numerous and minute beyond description or conception, in which the bridesmaids, as they may be called, under the titles, for the nonce, of male and female butterflies, bear an important part, which must require many a school-rehearsal to perfect. This drinking finished in due form, the ceremonial is completed. The wedding guests now appear, and the evening is spent in eating, and drinking saké. The wedding feast is, however, said usually to consist of very simple fare, in honour of the frugality and simplicity of the early Japanese, which many of the customs still prevalent are designed to commemorate. Three days afterwards the bride and bridegroom pay their respects to the lady's family, and the wedding forms are over.

In addition to what is said concerning marriage ceremonies, we will merely add what one of our informants, himself a common labourer, told us what he did when he became a Benedict. The marriage was settled by a go-between, and the pledge-presents sent to the lady's house a month beforehand, and on the lucky day the lady came, accompanied by the marriage-broker, her parents, and other friends, to his father's house. The crowning ceremony, which made her his own, consisted in his taking a goblet of saké and drinking it with her, joined afterwards by the go-between and their parents. The feast, with music, &c., then followed. There were in this case no priests; and that their services are not required, we are also led to think, apart from all that we can learn, besides the testimony of Titsingh, from the resemblance which many parts of the ceremony bear to what is customary among the Chinese, who never employ priests. The marriage presents, in this case, consisting of wine and dried fish, garments, &c., were valued at about ten dollars. The wife blackens her teeth with a preparation of powdered charcoal and some metallic salt; the operation requires to be performed about once in three or four days. We are told that it is a general custom for a female, who has reached the age of 25 or thereabouts *i.e.* beyond a certain age, without being married, to blacken her

teeth, and shave her eyebrows, to take away the reproach of her single state.

Whether the house in which the young wife is domiciliated be her husband's, or his father's if yet living, depends upon whether that father has or has not been yet induced, by the vexations, burdens, and restrictions attached to the condition of the head of a family, to resign that dignity to his son. These annoyances, increasing with the rank of the parties, are said to be such, that almost every father in Japan, of the higher orders at least, looks impatiently for the day when he shall have a son of age to take his place, he himself, together with his wife and younger children, becoming thenceforward dependents upon that son. And among such a whole nation of Lear's, we are assured that no Regans and Gonerils, of either sex, have ever been known to disgrace human nature.

The life of Japanese ladies and gentlemen, however the latter may be thus harassed, is little disturbed by business; even governmental offices, from the number of occupants, give little to do; their time is therefore pretty much divided between the duties of ceremonious politeness and amusement. Amongst the former may be reckoned correspondence, chiefly in notes, and the making of presents, both which are constantly going on; the last regulated by laws as immutable as are all those governing life in Japan. There are specific occasions upon which the nature of the gifts to be interchanged is invariably fixed; upon others, this is left to the choice of the donor, save and except that a superior must always bestow objects of utility upon an inferior, who must, in return, offer rarities and useless prettinesses. Between equals, the value of the gift is immaterial; a couple of quires of paper, or a dozen of eggs, are a very sufficient present, so they be arranged in a beautiful box, tied with silk cord, placed upon a handsome tray, and accompanied with a knot of coloured paper, emblematic of luck. They must, indeed, be likewise accompanied, as must every present of the least or the greatest value, with a slice of dried fish of the coarsest description. This same coarse fish is, moreover, an indispensable dish at the most sumptuous banquets; and though no one is expected to eat it, is thus constantly brought under notice, in commemoration of the frugality of the early Japanese, whose chief food it constituted. Upon one festival day, every body presents a cake to all their friends and acquaintance.

Social intercourse among the Japanese seems at first sight to be entirely governed by ceremony. Two gentlemen, meeting in the street must bow low, remain for some instants in their bowing attitude, and part with a similar bow, from which they must not straighten themselves so long as, by looking back, they can see each other. In a morning call, the visiter and the visited begin by sitting down on their heels facing each other; then, placing their hands on the ground, they simultaneously bow down their heads, as close as possible to their knees. Next follow verbal compliments, answered on either side, by a muttered, "He, he, he!" then pipes and tea are brought in, and it is not till all this is duly performed, that anything in the nature of conversation may be attempted. The ceremony of a morning call ends by serving

up, on a sheet of white paper, confectionary or other dainties, to be eaten with chop-sticks. What he cannot eat, the visiter carefully folds up in paper, and deposits in his pocket-sleeve. This practice of carrying away what is not eaten is so established a rule of Japanese good breeding, that, at grand dinners, the guests are expected to bring servants, with baskets, properly arranged for receiving the remnants of the feast.

These remnants are said to be carried away, not to be eaten, but to be dispensed to beggars. At formal feasts, females do not compose part of the company, but in families and private circles they eat with the men; there may, however, be exceptions to the first remark in certain instances. When a large party is assembled, the guests are arranged in two long opposite rows, sitting on their feet, each one having a small table before him, on which the dishes are arranged, accompanied in some cases with a smaller side-table. The servants, usually youths, move up and down between the guests. The dishes are arranged on the table in a quincunx, one of which is filled with rice, one with fish and vegetables preserved in soy, another in pickles, a fourth with cooked fish, &c.; the number of fish eaten, and the various modes of cooking and preserving them practiced in Japan, is probably unequalled in any other country. Rabbits, pork, venison, and other flesh is eaten, but not to much extent. As in China, a bowl of rice is served up at the conclusion of the feast, preceded by comfits fancifully contrived to deceive and surprise the guest. At the *hozhe*, or feast given at the expiration of the period of mourning, nothing having life is eaten, nor is *saké* drunken, but at all other entertainments they are indispensable. The host sits at the foot of the room near the door to do honour to the arriving and departing guests. Healths are drank in small cups, but the etiquette varies; one mode is after drinking to send the empty cup to the friend, who refills and drinks too. Water forms no part of a feast, tea and *saké* being the only beverages.

(*To be continued.*)

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NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.  
*Port Royal and its Associations.*

(Continued from p. 20.)

I AM surprised that the cocoa-nut has never been planted upon this solitary spot\*, merely as an ornament; for although situated in the direct aqueous high-way, it is bold to, and there are no outlying dangers, at least to any extent, to require more than ordinary caution in the passer-by. Its elevation above the sea-level is greater than it appears to be when seen at a distance; it is said to be 300 feet in height, and may be seen on a clear day twenty-one miles off from the deck of a line-of-battle-ship. I never heard of a vessel having been wrecked upon it, whilst

\* Navassa.



on the *Morant* cays, a little further to leeward, many have struck, and more have just cleared them,—some, even men-of-war,—have been wrecked. The light-house erecting on the east end of Jamaica, will, probably, go far to remedy those accidents, which appear to have taken place from the variation of the currents. There will still, however, be danger in working up from Port Royal, as the cays lie thirty miles from the site of the light-house.

In the frigate I had often an opportunity, in running alongshore from Cape Donna Maria to Tiburon, of seeing the features of this end of the fine island of St. Domingo, unquestionably the most valuable and beautiful of the west. These were very much diversified, and the nearer we approached the latter bold and rounded promontory, the less fertile the land appeared to be. But we must not always take our estimate of the fertility or barrenness of a country, especially within the tropics from eye-sight, whilst at a distance of five or six miles; for where there are considerable elevations, and corresponding depressions, it is well known to seamen that, the shade\* which the former throws over the more level spaces, often completely hides their verdure, and gives the scene a sombre and sterile appearance. Stationary clouds, too, often throw a shade over the land, giving to it a dark and uninviting aspect. We often ran close in-shore from Cape Rosa towards Tiburon, which never failed of affording gratification to all on board; every eye being directed towards the shore, and feasting upon the various and varying objects and changes of the scenery as the gallant bark slid noiselessly along.

Among the mids there were two or three who possessed the art of drawing, and by these there was scarcely a feature of the coast that was not delineated: one of these youths, W. H. S., not only drew in his book a coloured sketch of the land, abreast of which the ship was at noon, every day, but the ship with the sail she was under at the time, executed with care, and in beautiful style; and the journal of remarks written with the nicest attention; he was altogether an accomplished and gentlemanly young man; a good seaman, and a most gallant officer. He was subsequently promoted for his bravery, and was unfortunately drowned. The perfection to which he had attained emulated me, and I attempted to follow the good example, but could not persevere in it, as I found on other occasions too little time to admit of my pursuing the plan; nevertheless, in a sketch-book, I entered a rough outline of almost every head-land that came in sight, and remarkable object which presented itself to my view.

I recollect that the appearance of the land about Petit Reviere was so pleasing as always to call forth our mutual praise; it possessed all those agreeable and attractive objects, which in tropical scenery afford such delight to the eye, even to those who do not study the picturesque and beautiful in nature. Here was the red cliffy projection clothed at its top with dark green sward; then, the retiring inlet of light azure-coloured water, contrasting with the dark-blue sea without, showing clearly the line of soundings; then, in the front lay scattered huts, and

\* Nevis,—perhaps, the most highly cultivated and verdant isle of the Caribbean Sea, from the overshadowing canopy of clouds which often envelopes its summit, sometimes assumes a very sterile appearance.

tasty jalousied dwellings, shaded by the varied foliage of fruit trees, o'er-topped by the lofty cocoa-nut, waving gracefully in the breeze;—the long slope of carefully cultivated grounds,—fields of canes of the brightest green, and patches of the yellow tufted maize; the whole backed by hills which rise in succession to a great height. Poor S— was always delighted with this view; I obtained a copy from him, which, with one or two others he had given me, I, many years afterwards, sent to his widowed mother, addressed, for obvious reasons, to her son-in-law, Captain A— of the army, and these I believe, were the only relics of her noble son, which chance had revealed to her sorrowing eyes. He was an only son, and his untimely death hastened that of his worthy father, and ultimately broke the heart of his mother,— a lady highly accomplished and possessing considerable talents.

It was seldom we chased beyond the west extreme of the Island Point des Iros, which is a gently sloping promontory with a rounded head clothed with trees, and cliffy at the base; it may be known by a small island to the north-westward of it, called Pierre Joseph, or Josen. But the most remarkable features of the coast hereabouts are the two detached mountains aback of L'Anse de Nautt; one, rising immediately aback of the town, is cone shaped, with a depression in the centre of its summit; it bears E. b. N.  $\frac{1}{2}$  N magnetic, from the anchorage. The other is a still more remarkable elevation, forming a saddle mount,— Mont Silla and bearing E.  $\frac{1}{2}$  S.

The northernmost point of the bay is also very remarkable, from presenting, almost exactly, the same appearance on either side. It is a cliffy umber coloured point, which after attaining a certain elevation, falls back still inclining upwards; and from the apex declines precipitately, nearly down to the water. In the depression, the trees, which commence on the crown, and run all the way down, have by some means\* or other, formed an arch, entirely devoid of leaves, the trunks only being visible, and through this the light appears. I do not recollect to have met with a projection any where, preserving such an exact resemblance in all particulars on both its sides.

Having been early led to the practice of sketching coast scenery, and found how practically useful it was, I may be excused for adding a few words on the subject, for the benefit of the young navigator, who will find it to his advantage to cultivate the talent, it being not only conducive to his own immediate happiness by affording him a rational, refined, and very delightful study and pastime, but may be of much utility to his profession. He will also find it to be a very good introduction for him, to the notice of a scientific superior. And although the enjoyment of its practice will be all his own, it is not altogether a selfish pursuit, as it affords to the eyes of others, and consequently to their minds, a pleasure nearly equal in effect to that of music to the ear of a listener; indeed even more than that, for, it magically as it were, brings present, objects that may be thousands of miles distant, and of which but an imperfect idea can be formed by mere description. Besides in

\* I imagine this to arise from moisture, and a greater depth of soil, from which the trees grow more vigorously and shoot upwards, leaving the trunks bare, and throwing out more branches above. The arched shape observed is probably accidental.

after life when his practical energies are subdued, and he retires from the cares and bustle of active employment, the collection which his industrious pencil has gathered through a series of years, will be turned over with secret satisfaction, bringing its own reward, the testimony of approbation and innocent delight exhibited by, perhaps, the children of his own warm affection, who are almost sure to imbibe the same attachment for copying the beautiful objects of the creation, which the example of him they love has set them. From these advantages, and they are worthy every youth's consideration, I emphatically say, "happy is he who gains them."

My own sketches have in a long run of years not unfrequently been of use in at once determining a ship's exact position: and I have no doubt many instances might be collected to prove the utility of such drawings. One instance which has recently been communicated to me by a Naval Captain is worth relating, as it shows by what a slender thread, as it were, the safety of a ship is often held, in those seas where all objects are subject to be obscured by mist or fog, and by which the judgment and science of the directors are paralyzed. In going up the Baltic, when a lieutenant, the officer alluded to, amused himself in sketching a remarkable head-land with a castle on its summit, and near which vessels in their ingress and egress are obliged to pass. On the ship's return late in the season, the weather for several days proved foggy, so that there was no possibility of ascertaining her exact position with confident certainty, from the reckoning. A considerable degree of anxiety, as may be supposed, prevailed, as it had now become necessary that the ship's place should be known, in order, as her exit was drawing nigh, to shape a proper course so as to avoid intervening dangers. In this state of uncertainty the fog for a short interval became less dense, the land appeared close to, but only for a minute or so, but, from peculiar marks, the officer who had taken the sketch, and made a comparison, confidently pronounced the land to be the same head and castle he had drawn when going up. A course was shaped accordingly, and the ship successfully completed her voyage, thus proving the correctness of the officer, and the value of his sketch, for without it they could not have decided clear of all doubt.

Every body knows the great value which our celebrated circumnavigator Captain Cook entertained of the sketches of coast scenery; indeed their usefulness must be so apparent that I think there are few seamen who could entertain a different opinion. I should strongly recommend to all nautical draughtsmen to tint in the colour of the cliffs, or rocks, of the head-land drawn, as near the shade of the original as possible, and immediately after the sketch is taken. The reason for this is that, on many coasts the colour of the cliffs vary, whilst some of the head-lands, at no great distance apart, bear a striking resemblance to each other, but possess certain distinctions, which unless attended to and noted at the time the sketch is made, the neglect may prove the cause of error. Indeed in some instances coasts of Nova Scotia,\* and the English Channel, we find that from a certain point, the cliffs on

\* To the eastward of the entrance to Halifax harbour the cliffs are red; whilst to the westward they are white.

either hand are of a different colour, preserving the distinction along a considerable extent of coast.

In hazy weather it may happen that a head-land can only be known from its colour, or certain marks which are peculiar to it. Upon the Coast of the English Channel these minute particulars are necessary to be attended to; as also the dip of the strata, and the seams or interstices of the layers. The front of two chalk cliffs, for example, may present a very similar outline when seen through the medium of a haze as a vessel passes rapidly by; but one of these may be entirely clear of any sort of verdure, whilst the other upon inspection with a telescope will show a line or a patch, here and there, of green, from the circumstance of seeds of grass or small shrubs having found a resting place in the interstices of the cliff; and by this distinction be readily distinguished the one from the other. The disposition of layers of flints in chalk cliffs sometimes affords distinctive marks. In running up channel, during thick weather, strangers are often at a loss to know whether they are to the eastward or westward of Dover; but there are certain distinctions in the cliffs on either side of that place which afford the pilots the necessary information in hazy or misty weather; and which it is desirable all seamen should know: to the westward of Dover the cliffs present a smooth white surface, with small patches of dark grass; whilst to the eastward they are marked with vertical strata of flint.

In standing towards a coast, whilst yet at a distance, the mountain peaks often afford good marks to the navigator for determining his position, if he happens to be possessed of drawings of the land. It has often occurred that, a ship standing in during the night upon a course which is expected to place her off a particular point, or harbour, by the morning, finds herself some leagues to the right or to the left of the position she had designed to hit, from the intervention of a current. Supposing, as often happens, she is an entire stranger to the coast, and unprovided with sketches of the remarkable objects upon it, she would be constrained to wait for the arrival of noon, to clear up the doubt respecting her real position, and to regulate her movement for obtaining the object desired. For, instructions are frequently so vague, and sometimes erroneous that they serve rather to perplex than direct; whereas a sketch faithfully delineated, with the bearing and distance given, could not possibly mislead.

I have dwelt thus long on the subject, at the risk of being thought tedious, because I have known the sketches of coast scenery thought lightly of by some seamen, who place all their faith upon the chart and book of instructions.

The monotonous duty of keeping watch around, if not over, the well known Navassa (Navazo, a pool; or Navajo, a level piece of ground;) was not destined to be immutable as some began to think, through weariness of the everlasting evolution of wheeling round and round the solitary spot, morning, noon, and night, as if spell bound. During the bright sunshine, and the vigour of the tropic wind, occupation served to spirit up the flagging thoughts of the night, but they would sink again as the dusky shade of eve drew on, leaving the mind dull as the rocky circumscribed object itself—for :

“ Lonely that hour when soft and calm,  
On waves of peace and airs of balm,  
Like Empress in her diamond car,  
Comes in the east, the eve's bright star.  
Lonely to watch the blue wave pour  
Its sprays of silver on that shore.”

But it was want of change that rendered it so; for the nights are almost continually fine, and when the moon shows a full face, so remarkably light, that you are able to read or sketch, and see distant objects with plainness. The time at last drew near when the more active duties would be required. We had quitted the squadron a few weeks before it broke up, and were stationed on the north side of Jamaica when the Hunter, brig, Captain Inglefield (now a Rear-Admiral and c.b.) arrived out from England with despatches announcing the renewal of war. The ships of war were immediately despatched to blockade the principal ports of the Island of St. Domingo, in which there were several French vessels of war; among these, two or three of the line, and many merchantmen. Whilst we lay at Montego Bay, it was reported, and it was subsequently found to be true, that a large forty-gun French frigate—the Captain of which was son to the unfortunate commanding officer who had been killed when one frigate, then French had been captured, purposely ran down close in shore with the expectation of meeting and engaging us, he having obtained a description of the manner in which our ship was painted—black, with two red streaks—and her then station. Unfortunately it so happened that she passed us during the night, and we heard nothing of the circumstance for some time after, when it was reported by a neutral which she had boarded to windward of the island. She was pursued into the Florida Channel, but having a “long leg” she ran clear of her pursuer. If I recollect right, her name was the “Semillant.”

It was rather provoking to be kept on the north side station during the first onset, when actions were to be fought, and prizes taken, but there was no help for it; some ships were requisite here, and it so happened that we were sent there just before the accounts of war arrived. The station, however, was in other respects a very agreeable one, as the hospitality of the inhabitants, who were enthusiastic admirers of the “Blue Jackets,” knew no bounds; and as far, therefore, as shore engagements could compensate for the absence of more legitimate pastime, we certainly had little to complain of. Every where we were received with a hearty welcome, and often attended the Balls, thus exchanging our drowsy “minuets” with dame Navaza for the lively country dance of Montego Bay. That place, Lucea, and Port Antonio, were the harbours we frequented; but our boats were often sent into Falmouth, and the other ports to the eastward to impress men from the Merchant Ships. In this disagreeable duty we had sometimes occasion to push into the outskirts in pursuit of the fugitives; sometimes successful, at other times, after much fatigue, without obtaining our object. It was assuredly a most onerous duty, and deplorable necessity, and could not be pursued by any officer of proper feeling without repugnance. The effect on the minds of the different seamen, who were thus subjected to be hunted like the wild animals of the chase was various, according to

their age, and the length of time they had been to sea, as well as from their individual dispositions. The old men-of-war's men, would generally take little care to conceal themselves, because they knew from experience how difficult, if not impossible, it would be to escape in running the gauntlet hence to Old England. If they succeeded in evading detection at this time, they were almost sure of being caught at another period; and in the mean time their minds were kept in a constant state of agitation and excitement: many of these entered at once, and could at any time afterwards be trusted. It was different with the younger men who had never served in a ship of war; they had imbibed such a dread of the public service, from the reports of the severity of the discipline, and the rigid confinement exacted, that the majority of them would peril life in attempts to escape; and would flee from the pursuit of the press-gang, as a hare from the hounds! The second mates of the ships, who were extremely useful to the masters, being generally placed in charge of the long boat, or chaloup, for the purpose of collecting the hogsheads of sugar from the estates along shore, were usually sent off to some place of concealment in the country, if they happened to be in harbour when the press boats arrived; many of these youths, however, were caught, and in some instances it turned out to their advantage; but the prospects of others were blighted. As midshipmen and master's mates, were comparatively, to the calls of the service at this time, scarce, the most respectable and best informed among these young men, were placed on the quarter-deck.

I recollect rather an unusual circumstance which occurred at Fal-mouth with respect to a youth who was the second mate of one of the ships. His father had formerly been the Captain of a West-Indiaman; but had retired on his fortune, and was at the time residing upon his estate called Lilliput, in the vicinity. He was represented as an austere and passionate man; and it so happened that his son had done something which displeased him greatly, at the time our boats entered the harbour. The old gentleman, in the moment of irritation, conducted our officer to the place where his son was concealed; he was captured and conducted to the frigate outside. The Captain on learning the particulars, placed him at once upon the quarter-deck. He was a well educated and gentlemanly young man, and was afterwards badly wounded in the face whilst in action. After serving his time, and finding that there was little prospect of promotion, he applied to Admiral Rowley, (who was then Commander-in-chief) for his discharge. The Admiral after due enquiry, gave him a death vacancy. He was the individual who swam on shore with a line in his mouth, when the "Meleager" frigate was lost off Old Harbour, and was thus the means of saving the crew. His conduct on this occasion was highly spoken of at the time. He died since the peace.

The "Racoon" brig, Captain Austin Bissel was on this station with us; the present Sir J. A. Gordon, was her first lieutenant at the time; and he was then held up as a pattern to all lieutenants of what could be effected on shipboard by kindness of heart, and a conciliatory disposition, in furtherance of discipline, and the ensuring of good conduct in subordinates. This gallant officer has been consistent throughout his long, brilliant, and meritorious career, in his conduct, and will descend

to his grave with the heart-felt consolation that by harsh and uncourteous behaviour, he has never caused a pang in the breast of any of those who had the honour to serve with, or under him. What a comforting reflection this, in the hour of departure! Perhaps the eulogy will not be overstrained if I pronounce that he has not an equal in these respects throughout the service. At all events the general feeling, and the emphatic words of the late admirable Sir Murray Maxwell "He lives in all our hearts," would imply as much. Conduct like his makes it appear sufficiently plain to the understanding of every unprejudiced person, that, the mode generally pursued by officers in the navy to ensure discipline and subordination is based upon erroneous principles. And I am quite sure, from having been a careful observer of men and manners, as of facts illustrative, that, a superior who treats an inferior officer possessing the rights of gentility, otherwise than with the practice and in the spirit of the gentleman, goes the readiest way to work, as has been occasionally exemplified, to rob himself of that respect which his station demands, but cannot command without a reciprocity of action, and to create insubordination. Happy for the service, and for society in general, if all those who are placed in the station of gentlemen, would act up to what they profess to be; and never to forget two essential points in morality which should be ever present to the mind:—that others have hearts to feel, and minds to suffer, as well as themselves, and most particularly that, station does not place a man beyond the pale of humanity. These two golden rules will carry an individual through his professional life, from volunteer to the flag, with a degree of satisfaction unattainable by other means, because upon these two elements of thought, hinge all other principles of morality, either nautical or pertaining to terra-firma.

The several gallant actions fought by the "Raccoon" are well known to most naval men, and are recorded in the Naval Annals, it will therefore be unnecessary for me to go over these or others which are familiar; but I shall by and by relate a few affairs, which seem to be forgotten among more brilliant deeds.

*(To be continued.)*

#### THE EIGHT STONES.

[The *vigia*, called the Eight Stones, has long occupied a position in our charts, handed down to us from the "Old English Pilot," published by Mount and Page, on Tower Hill, above a century ago. The little chart in our volume for 1837, p. 457, will show the pains which have been taken within the last few years to verify its existence, and exact position, but without success. We annex the following letter concerning it addressed by the Captain of the Portuguese Royal Engineers, to Capt. Vidal, of H.M.S. *Styx*, who was directed last summer to make all possible enquiries of the authorities at Madeira respecting this danger. From this it will be seen that, nothing is known of it, and the Falcon Rock may possibly itself have been the origin of it, or it may have subsided into the ocean, as the *Sabrina* and the island north of *Terceira*, mentioned in our volume for 1841, p. 759, have done. Connected in some measure with the subject, it may not be unimportant to point attention to the extraordinary uneasi-

ness of the sea, about a degree and a half west of its supposed position, alluded to by Capt. Midgley, in our last number, and in the letter from a correspondent, among our nautical notices. We shall leave these for the comments of our readers, in the hope that their attention may be attracted to them when in their vicinity.]

*Engineers' Department, Madeira,*  
17th November, 1842.

SIR.—In consequence of your enquiries, and the reference made to me by the Governor, for information respecting the “Eight Stones” marked in all the maps of Europe as existing in the neighbourhood of this Island or Porto Santo, I with great pleasure availed myself of your kind offer, to accompany you to that Island, where I might examine any Archives, or collect any oral or traditional evidence that might there exist, in regard to those rocks, before I finally answered your enquiries. And I have now to acquaint you, what indeed you had an opportunity of ascertaining through your own knowledge of the language, that no other information regarding them exists at that island than a traditional statement, which is repeated by all the oldest inhabitants, that at a former and very distant period a large ship had been lost on the northwest Baxio, or extensive shoal, or fishing bank, now marked on your charts as the Falcon Rock. But old persons who live on the heights of Porto Santo, from whence the sea still at times is seen to break with great fury on the Baxio, state that the sea in this respect is by no means what it was formerly, when the rocks they say often appeared; leaving thus, the almost inevitable conclusion, that they have wasted away with the constant working of the sea, and looking at the formation of some of the other small volcanic islands or rocks which surround the larger one of Porto Santo, having all a limestone base, it is easy to see that the Basalt columns which resist the sea all stand on a red or brick-coloured Tufa, which the sea in time eats away; and the Basalt columns being consequently undermined, fall down and lie prostrate, as you must have observed, at the bottom of every high cliff, where many, very many of these Basaltic columns with their bases of red Tufa decomposed or washed away, are still hanging almost in air ready to fall as they daily do. And it may reasonably be supposed from the tradition of the lost ship, as well as the assertion of the old inhabitants, that this rock, or the troubled sea upon it, was formerly far more apparent and awful than at the present time, and that the pinnacle of this extensive Baxio, composed as it most probably was of Basalt rocks, has like others of the same nature, been undermined and fallen into deeper water, the shoal in its extent affording now from 5 to 50 fathoms on it.

If, therefore, the shoal now called in your charts be not the Falcon Rocks, it is certain that we have no other information of any rocks surrounding these islands which could in any manner answer or meet the description of them.

In regard to the Archives of these islands there are none in my department that can afford any information regarding this matter, and those very numerous ones in the civil departments are so deranged from the changes that have lately taken place, that it would require a long time to arrange and examine them. I have to suggest however, that if



any information exist regarding these rocks, it is more likely to be found in the department of the Marine at Lisbon than elsewhere.

I have, &c.,

ANTONIO PEDRO DE AREVEDO,  
*Captain Royal Engineers.*

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THE MERCHANT SERVICE.—*By an Old Voyager.*—No. I.

IN the by-gone days of the Lancasters, the Hawkins, the Corams,* and other names of note of the 17th century, associated with foreign trade, voyages of discovery, and maritime enterprise, the situation of "Skipper" was held in no small degree of estimation. Subsequently however, when our foreign traffic became widely spread, in a great measure through the instrumentality of such worthies, and the individuals filling the responsible station of Master, necessarily increased in numbers to an extraordinary degree; by some means or other, which we shall not stop to enquire about, the éclat which had attended it seems to have gradually subsided.

There is some reason for believing that the "Star" of the order is again on the "ascendant"; and that the pages of the *Nautical* are working a wholesome reformation in the Merchant Service.† Since the general circulation of this truly national and important work, which I trust I may be permitted to say without flattery, is so creditable to the talents, the firmness, and the impartiality of its respected Editor, many of the intelligent individuals who command Merchant ships are beginning to feel that, their position in society, with reference to the other classes, is justly one of which they ought to be proud, and not as some have hitherto imagined it to be, wanting in respectability. These gentlemen rightly considering that the incorrect behaviour, or intemperate habits of some of the members, should not be allowed by those of different feelings and conduct, to cast a baneful shadow over the whole, are by their examples, precepts and admonitions, wisely endeavouring to effect a regeneration, for the desirable purpose of sustaining the praiseworthy character of their profession. That their efforts may be crowned with complete success must be the ardent hope of every lover of his country; for the consummation has a bearing upon its credit.

If, in the scale of gradation of general society, the importance of any man's station be measured by its utility, then, assuredly, that of a shipmaster will not be ranked as the least worthy of estimation among

* It is stated of this fine old seaman that, the feeling which sustained him, was, benevolence of the purest and most disinterested character. He was the projector of the Foundling Hospital; and he was so immersed in the charities of life that, he died very poor, in the 84th. year of his age. But he left a hallowed name behind which may at this day be read in some of the streets of the metropolis.

† It is with great satisfaction, that we can adduce many papers of great interest in our pages contributed by the Captains themselves in support of this observation. And we assure them that such is our wish to see them preserve their proper station, that although we have Hydrographical remarks to our hand from other sources, far more than sufficient for our purpose, they shall always receive that share of our attention to which they are entitled.—ED. N.M.

those which, when properly upheld, bring credit to the holder and benefit to the State. But it should be ever remembered that, whilst a station may throw a certain radiance around the possessor, it is the *man* who must *dignify* the station, or dishonour follows.

One of the strongest incentives to propriety of conduct in the Captain of a ship, whose mind is rightly directed, more especially when abroad among foreigners, is the privilege of sailing under the national ensign,—that glorious flag which has

“Brav’d a thousand years,
The battle and the breeze.”

For it is not only a proud emblem of our martial superiority, but in the uttermost part of the earth proclaims our commercial greatness, is the representative of the majesty of the most puissant nation of ancient or modern history, and is a passport to respect throughout the civilized world!

It will be both gratifying to Englishmen, and respectful to the writer, to record here the sentiments of an American traveller on the subject. He says: “not a port have I visited since I left America wherein I did not see the flag of England. It was the first flag I saw on entering the waters of France; it was the only one floating in the ancient harbour of Rome at *Civita Vecchia*. Again I saw it in the deserted harbour of the *Piræus*, where once rode the fleet of Themistocles. I first saw the dome and minarets of Constantinople from beneath a cloud of cannon smoke that issued from British line-of-battle ships, saluting the Mahomedan ally of Britain. The first object that met my eye, on scaling the summit of the pyramid, was, the Cross of St. George, which some English traveller had planted there. Beyond the Cataracts, on the borders of the Deserts of Nubia, the only sign of civilization that I saw, was the English flag flying from the mast of a traveller’s boat. Here, in the extreme verge of civilization, I stood before the emblem of the universal presence of that nation; and in the lawless regions it gave me a pleasing sense of security to find myself so near a representation of that power beneath whose *Ægis* is a protection for the most humble fugitive from every description of violence and oppression.”

This is a noble tribute paid by our trans-atlantic brother; but the “meteor-flag” has waved in the breeze farther than our worthy traveller’s ken; it has floated over the north-west magnetic pole of the world! the *ne plus ultra* of the boreal region, trodden by civilized man. It has passed the “rubicon” of the antarctic zone; flapped in the long-day beams of the Austral glacial sea, and reflected the fiery glare of great *Hecla’s* antipodal rival, the giant *Erebus!* And in some part or other, of this great sphere, waves constantly in the sun-shine of day! May it never be dishonoured!

The captain of a trading vessel from his pursuit, and the line of conduct he may follow, becomes (or ought to become) one of the most useful members of the community, and consequently of his country. This, indeed, is something to be proud of. But he should always bear in mind that he has duties to perform, irrespective of that which constitutes him a good subject,—duties towards his fellow beings, endowed like himself with passions and feelings, and therefore liable to error

and who are dependent in a great measure upon his will. Now, if these duties are discharged as they should be, with attentive solicitude, they will not only redound to his credit, a pleasing reflection at all times, but also contribute to his happiness, "his being's end and aim". Some "iron spirits" may smile at this, and fancy that it would be misplaced upon the rough nature of a seaman; but there is not a man, however stern, who is altogether insensible of kind treatment; it is the talisman that creates harmony, and cements unanimity. Are these not desirable in a small community? And, where is the man, whatever may be his station, who does not feel the happier for having performed his duty with conscientious rectitude?

No. II.

There are duties pertaining to another party, whose interest it ought to be, to see that, whatever conduces to the comfort—aye! the *comfort*,—welfare, and safety of those it employs,—unquestionably in perilous, arduous, and trying labours, shall be provided and attended to with paternal care. I allude to the ship-owner or merchant.

It has often been verified that no greater injustices are perpetrated in every-day life than by deputies, agents, and middle-men. Some, perhaps, many, of our merchants have outlived their habits of activity, though, as we may say, nominally, holding their stations. Having realized large fortunes, by the aid of "Poor Jack," they become M.P's, or, fall into the ranks of the country gentleman; leaving the routine and minutiae of the "concern" to deputies.

It is said some of these substitutes (sobre, trimmers) often turn out to be the most dictatorial counts imaginable! The manner in which the vessel is stored may not be altogether unworthy of the scrutiny of the "weather eye," but the victualling, and berthing, and the treatment of the crew—where is the solicitude about these? The aristocratic owner may be supposed to be as wise in these matters as the "man in the moon!"

The consequences are various. The men are badly provisioned and berthed, fertile sources of many of the disturbances which occur on ship-board, often when the ship is upon the point of sailing. In these matters the Jacks have seldom any redress. No doubt they are sometimes wrong, but when they are right, so strong is the prejudice entertained against their complaints, that, a little finesse, a confident assurance, and a proof that the pudding is good (good enough for sailors!) send the growlers to the wall, and sometimes to the tread-mill. The masters and the trimmers, too, seldom set their "horses together," which leads to many of the former being un-shipped, the cause generally negative; the true reason being the desire to substitute some pliant mate, whose policy is to be subservient to the whims of the controlling power. But, from all I can learn, such proceedings are not confined alone to the will of deputies; but would seem to pervade, more or less almost the entire confraternity; and we have been assured that, the hardest task-master, the veriest "Jew" among the negociants is he, who has been bred up in the merchant sea-service, and has exchanged the care of his log for that of a ledger.

British merchants, years ago, were proverbial for their liberality. The elite is no doubt still so, but I am sorry to be obliged to state that in a great many instances the very reverse is now the case. I have heard of a wordy commotion on account of the expenditure of a pound or two of paint, used to cover a part of the ship which from hurry was neglected, whilst in port, by the hired painter. The result was that, the skipper, a clever and independent spirited seaman, in utter disgust, resigned the command he held. Another: a long and bullying contention took place about a few cabbages and other vegetables supplied by the captain to the crew, whilst the vessel lay in a foreign port. The meanness attending this transaction would have disgraced even a Genoese. The weighty affair was settled at last by arbitration, proposed by the merchants, and given against them! The captain, as a matter of course, in anticipation of what would follow, resigned his charge. The sum expended, and which was objected to by the liberal owners, was only a few shillings!

These two examples of recent date will suffice for my purpose, but it is well known that such contentions are of common occurrence.

Banyan days have become, so we are told, obsolete in the merchant service, at least generally; but it sometimes happens, from a want of attention, or a penurious desire for economy that, the provisions fall short; and the crews are obliged to submit to short allowance, and the substitution of other food than that which is necessary to keep up their stamina. For instance, barley or rice, in Yankee fashion, sauced with molasses or treacle. Such diet when continued is likely to bring on diarrhæa, and of course to reduce the effective strength of the crews.

I hardly know whether the captain of a ship is answerable for the deficiency of any portion of the edible supplies; but there is no doubt he often bears the blame.

It has been the boast of the officer, that he would not order another to do that which he would not be prepared to do himself, were there a necessity for it. This avowal, I believe in most cases is honestly given. Is the owner of a ship, or his agent abroad conscientiously scrupulous with respect to the food (other than salted provisions) he appropriates to the use of the seamen he employs?

I can perceive no excuse for negligence in the ship-owner; beef and pork of the best quality (not such mahogany looking animal flesh as may be often seen) should be laid in; and in sufficient quantity for full allowance during an entire voyage; and in harbour fresh meat and vegetables.

It is well known that the Jacks have imbibed a dislike to the too frequent use of rice, from a notion that it ultimately leads to ophthalmia; but, leaving that aside, whether well founded or not, as there can be no reasonable excuse why a ship sailing from a British port, should not be provided with a supply of beef and pork to last the entire voyage, I am constrained to lay such omissions down to a paltry economy. The short allowance system we may, perhaps correctly, suppose is never put in force in ships belonging to what are styled the more respectable firms. The word, indeed, is of very vague import; but it usually in a commercial sense, implies a length of purse, or, large capital. I

should be glad to learn that it guarantees liberal conduct towards those hard-workers, without whose aid they could not thrive.

Whence the word "banyan" is derived, I do not know; it is familiar to Eastern ears. A scanty vegetable diet may suit the habits of the temperate Hindoo, who is withheld by his creed from partaking of animal flesh, but a British seaman requires John Bull fare to satisfy him; and there is not one grievance more likely to rouse his lion spirit to resistance than that of tantalizing his cormorant appetite with any thing resembling the *panado* food of infants.

It has been thought a mean subterfuge, the keeping back that which is necessary for the sustenance of laborious life, under the cloak of its being a salutary observance for the preservation of health; or, to lay the blame on the antiquity of the practice; as if, admitting it to be so, an old observance could possibly be an excuse for injustice! It may not now be strictly followed in the merchant service, but short allowance, and the barley and treacle *fufu*, or rice, bring it to the same thing. Both these articles are nutritious, and no doubt very wholesome when they are good; and probably, as vegetable substances, are slightly anti-scorbutic; but barley is usually an ingredient in soups, and the water in which it is boiled is the beverage of sick persons. The complaints, however, principally apply to short allowance of water, and frequently a niggardly supply of that essential article.

Do the owner, the agent, and the captain ever consider it conducive to their health, to abstain from solids and try the *fufu*? Do they? Bah! How the jolly old magnati would stare at his dearly-beloved rib, if she, by way of experiment, were to place a mess of barley and treacle before him at dinner, with these observations; "My dear Diddle, this is the real *fufu*. You recollect you told us the other day that, it was good for the health of the sailors, who were dearly fond of anything which had the least relation to rum; and that it was excellent in keeping away plethora; and that it made them very light and nimble in climbing up the tall masts to reef the sails. Come, there's a dear, try a little bit to please me. What! won't it tempt tempt you?" "Pshaw? take it away, take it away,—give it to Carlo!" Think you, gentle reader, there are no Diddles? Go ask the first skipper you meet.

As for "Mr. Trimmer," the agent, he consistent man, would excuse himself upon the score that what was good for the man, may not be good for the master; but he would be glad, (the d—I doubt him,) if the clerks would try it! Are there no Trimmers?—Ask the skipper.

Now for the captain;—what a hearty d—n would follow the sighting such a dish. Alas! poor cook or steward, who would venture to introduce such a novelty at *his* board as *fufu*;* one, or both of these funtionaries would have to bolt the mess, with the additional seasoning of vinegar, mustard, and cayenne pepper, hot enough to ignite a bundle of straw! Who believes?—You need not ask the skipper. Dr. Kit-

* The Preserved Potato is highly extolled; why should it not be supplied as an article of food to ships' crews? not from the cost surely. The Spanish bean—"Callavanger" is excellent, and moreover is one of the most nutritious of vegetables, besides being much liked by seamen. Within the tropics the yam is the substitute for the potato, and, if it is not, should be supplied to the seamen.

chener may not have known such a dish, but I have seen a similar dose administered on ship-board!

Water, as everybody knows, is essential to the sustenance of human life; its good quality is also necessary for the preservation of health; the quantity too, supplied to an individual is also of consequence.

Generally speaking, the supply of this first necessary of life, on ship-board, is not sufficient for the wants of a crew; the consequence is that, when the voyage is lengthened from a succession of contrary winds or other cause, the men are put upon short allowance. There can be no excuse for this, and it may happen that, the spirit of economy which dictated it, defeats itself; the captain finding it necessary to relieve the discontent of the men by frequent supplies of rum.

If the owner will not grant sufficient room in the ship's hold for a supply that shall last out the voyage, he at least should sanction the vessel's putting into some port to replenish her stock of water. But this, economy forbids; and the crew is obliged to submit to the deprivation. I recommend this particular point to Captain Fitzroy's notice.

It is the practice in vessels which have not a full supply of water, to catch that which falls from the clouds. This water soon corrupts, and becomes unfit for use. Nevertheless, it is often served out to the crew, and sometimes in a very offensive state. Should the owner's desire of economy be permitted to jeopardize the health of the seamen?

I would notice, *en passant*, a practice which should be more carefully attended to, *i.e.* that of putting lime into the casks or iron tanks as a purifier. This is often done in too great an extent, by which mischief ensues. Lime is, it should be remembered by those who use it for such a purpose, both astringent and caustic. A table spoonfull in a cask or tank is quite sufficient.

(To be continued.)

THE NOVELTY STEAM-SHIP.

Cowpers' Court, Cornhill, Jan. 12th, 1843.

SIR.—Public attention having been recently attracted by the performance of this vessel, which you are aware has been fitted by me (under my patent) with a screw-propeller, worked direct from the engines. I will make no apology for offering a communication on this interesting subject, through the medium of your pages. The results are so extraordinary, and incredible, that with the view of drawing public notice more forcibly to the important facts I have developed, I inserted a challenge in the *Times* of the 15th of December.

To this challenge I have had no answer. This is as I expected, for what steamer is there in the world, which, with a power of only 25 horses, and of 328 tons admeasurement, having 140 tons of ballast on board, and whose immersed section is 164 feet could realize a speed of eight and a half miles per hour?

This circumstance is altogether so unprecedented, that we must seek in vain to account for it upon any of the hypotheses by which the properties of screw-propellers have been heretofore investigated.

I am myself a plain unlettered man, and have always felt what a more learned individual declared after much hard theoretical study, namely, "that a grain of practice is worth a pound of theory." I there-

fore, have given facts, which are stubborn things, and if I adventure upon theory of my own by way of accounting for the great result I have attained from such small means, I may be beaten and silenced on the arguments. But I shall quietly point to the performance of the "Novelty," as a proof that I am *practically right*. The theory to which I refer, has been sneered at by those engineers to whom I have broached it, and, I expect it will be so by others; but as greater men have been laughed at by those who afterwards applauded them, I have no doubt that my theory will ultimately be admitted to be *correct*. But just let me state the facts regarding the Novelty's performances and power.

The Novelty is a very burthensome vessel, built as I have said by myself, with a view of testing the application of steam, in combination with a screw as an auxiliary power to merchant ships. She is a three-masted vessel with a capacious hold, and as her funnel forms the mizen mast, and as she is of course without the clumsy appendage of paddle-boxes, she differs in no respect in her external appearance from that of an ordinary sailing vessel.

She is fitted with a pair of non-condensing engines, the cylinders are 13 inches diameter, and the length of the stroke 2 feet 4 inches; the effective force of the steam on the piston is about 20 lbs. mean pressure, being cut off at half stroke. The engines make about fifty-five double strokes per minute, and the power is applied direct to the crank or cranks on the screw axis without the intervention of gearing or any kind of multiplying motion. The combined power of these engines will be found to be about 25 horses; and with these I have repeatedly realized a speed of $8\frac{1}{2}$ statute miles per hour. Now, I ask, what power would be required to propel such a vessel, fitted with paddles at the same rate. I assert, without fear of contradiction, that you cannot do the same work with less than *three times the power*. If any one thinks I am wrong let my challenge be accepted.

Now for my theory:—Let us suppose the screw and paddle-wheel each exerting the same propelling effort, and that the power of the engine is applied direct to the screw axis by means of a crank or cranks. It is clear in such case the pressure on the piston is not required to equal the propelling effort, because the latter is applied on the principle of the wedge; while in the case of the paddle-wheel the pressure on the piston must be as many times greater than the resistance encountered in moving the floats, as the length of the crank is to the radius of the wheel. The paddle-wheel also exerts its force in the direction of the vessel's motion; while the screw acting as a wedge, requires a power equal to the hypotenuse. Here then the lever is in favour of the screw and against the paddle, and this, I think, accounts for the great advantage I have attained. If I am right in this theory, (and I appeal to the facts for its confirmation,) then the methods employed by other experimentalists for increasing the velocity of the screw over that of the engine, are all of them detrimental (independent of their complexity) to the best application to the power, for they are multiplying the opposing lever, which multiplication I have shown to cause the inferior performance of paddle-wheel steamers.

The Archimedes is fitted with a pair of engines of the united power

of 90 horses, and her screw has a multiplied velocity over that of the engine of $5\frac{1}{2}$ times, and I find by Capt. Chappell's report, as well as by Mr. Galloway's Appendix to Tredgold, that with an immersed section of only 135 feet or 29 feet less than the Novelty, and nearly four times her power, she only attained a speed of 10 miles per hour.

I am met on every side with the assertion that, when the power of the screw is obtained direct from the engine, the increased pitch of screw will entail a greater loss by diagonal action. I will answer in the words of a learned mathematician, who had been attempting to investigate screw-propellers, and who concluded his labours by declaring that, results have shewn us that we "know nothing about angular action in the water." The fastest fish apply their force at the most acute angle to their line of motion; though the practice in screw experiments has been the reverse. In my opinion the angle of power, is the difference of the velocity of the screw, and that of the ship, and not the angle of departure.

If you will allow me space in your valuable columns on a future occasion, I will state fully the grounds of my hypotheses. At present I shall wind up by enumerating the advantages of my plan, well assured that I am underrating their extent.

1st.—Less than half the power is required.

2nd.—No gearing or multiplying motion, the best of which are complicated and uncertain.

3rd.—A saving of half the fuel, with a proportionate decrease of labour in firing.

4th.—An increase of room for cargo and passengers to nearly double the space available at present.

5th.—The steaming power does not affect the sailing properties, *vice versa*, whereas with paddle-wheels the sailing powers, from the cumbersome nature of the paddle-boxes, and the immersion of the lee wheel with the wind abeam, is of little value.

6th.—The weight of the propeller is not one-tenth of the paddle-wheels and their boxes.

7th.—The beautiful appearance, and snug and safe rig of a sailing vessel is preserved by using the funnel as the mizen-mast.

8th.—A saving of nearly 30 per cent. in first cost, when equipped and ready for sea.

9th.—A saving of at least 50 per cent. in disbursements.

10th.—Room for carrying nearly double the amount of passengers and cargo, thus increasing the returns cent. per cent.

11th.—The power of instantly disconnecting, shipping, and unshipping the propeller.

From all the preceding advantages, it can require no argument to prove that the time has come when vessels, worthy the name of ships, (and not boats, as the present race of steamers are properly denominated) may be usefully and economically employed in carrying her Majesty's mails, with safety and despatch; and that we may use steam when unnecessary only, that is to say in adverse winds and calms, retaining there-with the capability of laying aside steam, and using the old fashioned and cheaper power, the winds of Heaven, whenever they blow from the right quarter, instead of being compelled in such cases to consume our

fuel, and work our engines, for no other purpose than that of preventing the inactive wheels from performing the office of a drag to the vessel's sailing velocity.

I am, Sir, &c.,

HENRY WIMSHUNT.

H.M.S. Samarang, before these pages leave the press, will have sailed from England, under the command of Capt. Sir Edward Belcher, c.B. on the important mission of opening the Navigation of the ports on the Coast of China; which by the late treaty have been assigned by the Chinese Government for the trade of this country. Our readers are aware that this officer has just returned home, in command of H.M.S. Sulphur, with large contributions in Hydrography from the Pacific, after having distinguished himself in the attack on Canton, where he gave proof that, he could use the pencil of the surveyor, besides fulfilling the ordinary duties of an officer in naval warfare; or in other words, he has proved to the Naval Service at large, that, to distinguish himself in the field of scientific pursuit, and to excel in the art of war, are by no means incompatible with each other. Indeed, we do not know a more desirable position for a Naval officer to be placed in, than in that, where his scientific acquirements can be made subservient to the purposes of military achievement. The result of the Sulphur's voyage will be found as valuable an acquisition to Navigation, as the innumerable specimens in Natural History, brought home by Captain Belcher, have proved to be to our Museums.

SHIPS TAKEN UP BY GOVERNMENT.

Abstract of a Return of Convict Ships and Transports hired between the 1st of January and 31st of December, 1838.

In 1836 there were 21 ships hired for the conveyance of convicts, of which 13 were of the class $\text{Æ} 1$, and 8 of the class A 1. The lowest rate per ton of the former class was 2*l.* 19*s.* 4*d.*, and the highest rate of the same class 5*l.* per ton. The lowest rate per ton at which the latter class was hired was 3*l.* 18*s.* 7*d.*, and the highest was 6*l.* In 1837, for the same service, there were 17 ships hired, of which 11 were of the class $\text{Æ} 1$, and 6 of the class A 1. The lowest rate per ton paid for the former class was 3*l.*, and the highest per ton for the same class was 4*l.* 7*s.* The lowest rate paid for the latter class was 3*l.* 9*s.*, per ton, and the highest was 4*l.* 7*s.* 6*d.* In 1838, for the same service, there were 20 ships hired, 7 of which were of the class $\text{Æ} 1$, and 13 of the class A 1. The lowest rate per ton paid for the former class was 3*l.* 8*s.*, and the highest rate for the same class was 4*l.* 6*s.* per ton. The lowest rate per ton paid for the latter class was 3*l.* 11*s.*, and the highest rate paid for the same class was 4*l.* 9*s.* 6*d.*

The number of vessels hired and employed as transports between the 1st of January, 1836, and the 31st of December, 1838, was 24: of these, 20 were of the class $\text{Æ} 1$, and 4 of the class A 1. The lowest rate paid for the former class was 12*s.* per ton per month, and the highest rate for the same class was 16*s.* per ton per month. The lowest rate paid for the latter class was 12*s.* per ton per month, and the highest rate for the same class was 18*s.* per ton per month.

This return was moved for by Sir James Duke, and was ordered to be printed by the House of Commons, on the 3rd of May, 1839, and is signed "James Meek, Comptroller of the Victualling and Transport Services."—*Shipping Gazette*.

BREAKWATERS.—We once heard of a Company which was to make up the sad deficiency of harbours on some parts of our coasts, that has been long complained of, and so severely felt among our merchant shipping, by means of floating wooden breakwaters. And we were taught to expect that, long before this time, the coasting trade would rejoice in the protection afforded by them, viz., the decrease of wrecks, and saving of life and property to a vast amount, and Brighton itself was to have been the first place to enjoy these benefits. We certainly might have had our doubts of the promised protection, but then the names which formed the Committee ought to have been sufficient to quell them all, combining as they do (or did?) so much professional experience! and we, accordingly, quietly awaited the happy result. Well, we were nearly tired of waiting, when from some unexpected delay, we presume, on the part of the timber merchants, instead of a wooden breakwater, an iron one appears; and this, not the foster child of a company headed by a committee of Naval and other gentlemen, but the sole produce of an Army officer? And why should not soldiers build breakwaters as well as sailors? So, Dover west bay was the site determined on, and the floating breakwater an iron cylinder is moored in its place accordingly. But waves are waves after all, and the sea will not regard the bounds allotted to it by man; why should it. Like a huge wild animal as it is, it may be trifled with in its playful moments, but only enrage it, and its power will soon be displayed. And we should have thought that the Committee might have seen this power exemplified some time or other. Therefore calling to mind our original doubts, which in spite of all we could not get rid of, we felt no great surprise at reading the following in the *Shipping Gazette* of the 14th of January:

"Dover.—Jan. 13: 7 A.M.—Wind S.S.W., a gale, and rain. Noon.—W.S.W., strong, and rain. 7 P.M.—W., strong, and cloudy.

"The floating breakwater broke adrift in Haycliff Bay, and has come on shore near Archcliff Fort during a gale at S.W."

Will this be a sufficient warning? very likely not—for perhaps if one "convinced against his will, is of the same opinion still" many more will be so, and we may yet live to see more floating breakwaters, both of iron and wood scattered on our shore by a stormy sea, which is very different from the gentle waves of the Mar Pacifico of Magellan, at Callao.

So much for floating Breakwaters, now for fixed ones; we are not going to treat on the Plymouth edifice. That which we have in hand is something less costly, although we must not be considered as proposing it. A desire for the appearance of the plan, in this journal, having been expressed, we readily give room to the following

PROPOSED PLAN FOR A FIXED BREAKWATER.—By Mr. Johnston of Brighton.

THE first thing doubtless to be looked to with respect to any project that may be submitted for the accomplishment of so difficult and important a work as the construction of a Harbour of Refuge on the more exposed parts of the Coast of the United Kingdom, is the *practicability of the plan proposed*. The next important matter for consideration is the *certainty of its efficacy*, as to the main object in contemplation; while another, and scarcely less essential point to be considered, is the *durability of the structure* when completed.

The dimensions of the wedge-shaped cassons, (see sketch) are as follows;—horizontal length, from the apex to the base, 40 feet; width, till verging towards the apex, 30 feet; extreme height from the foundation, 58 feet. This will allow eight feet above the highest spring tide, supposing the casson settled down in five fathoms water, when the tide is at the lowest ebb, allowing 20 feet for the

rise and fall. The cassons to consist of cast-iron plates, one inch in thickness, to be united by flanges; the plates as marked in the Model, averaging at twelve feet in length, by eight feet in width. As the work progresses, each casson to be filled with solid or liquid concrete, or with both combined, as shall eventually be deemed most expedient. The upper surface, or top of each casson, to be completed with blocks of Purbeck stone, not less than six inches in thickness. An interval of 11 feet between the cassons is shewn in the sketch admitting three perpendicular piles, 14 inches square, leaving a space of one foot ten inches between them. The strongest cross beams, sustaining the piles, to be bolted into three-sided iron sockets, prepared in the casting. A strong cast iron brace, weighing about one ton, 15 cwt., is secured between the cassons, nearly on a level with the upper surface, and at the point where they verge towards the apex, or about 16 feet distant from the horizontal arms to which the piles are bolted; all these in conjunction giving great lateral stability to the cassons.

The process proposed for carrying on the work to its completion is this; the lowest part of each casson, to the height of 32 feet (being two or more feet above low water mark when sunk in its intended final position), to be completed on shore; all the necessary means of launching, when ready, being previously arranged, and provided for. In the construction of this low section, a plank bottom, rendered water-tight by caulking, must be securely fitted, being prepared with a water-plug, to be used in the operations of sinking the casson. Cast-iron plates, or slabs of stone (should such a provision be thought essential), might form a second bottom, resting on the upper surface of the iron frame-work, beneath which the planks are fastened; and which frame-work not only gives consistency to the casson, but secures the lower part of the tubes, through which the iron piles are to be driven. These plates or slabs would form a solid floor to receive the concrete already alluded to, long after the planks may have yielded to decay. The iron tubes, which offer great facility in the operation of piling down the cassons (and for which valuable suggestion Mr. Johnston has pleasure in acknowledging himself indebted to Mr. Mathews, for many years the experienced managing master of the Chain Pier), are securely fitted in this lower or foundation section by a corresponding frame-work at top. Thus completed the section, may be launched; and, previous to its being towed out to its final position, sunk down to a judicious depth, as well as to a level water line, by means of as much concrete as would be necessary to effect this purpose. Thus the section, when brought to its ultimate position, would have comparatively but a trifling depth to settle down in, and by which mode of proceeding it might be sunk into its place with the greatest precision. The work thus far accomplished, cast iron piles, eight in number, arranged in the ground plan, about 10 inches in diameter, and probably not less than 12 feet in length (although the length will have, doubtless, to be regulated by the nature of the bottom), are to be inserted through the tubes, and driven by the ordinary method (saving the addition of a forcing pile, which the tube will render necessary) into the solid rock; thus securing the casson against the possibility of being moved sidelong from its position, whilst the immense weight of concrete,* when finally raised to its destined height, must render the whole effectually secure. A solid foundation thus formed by the completion and settling down of the lower section, the latter operation, viz., raising the casson to its ultimate height, becomes a mere work of gradation, involving no difficulty. The driving and fixing the intervening piles, it is needless to say, would be a comparatively simple and easy process. The lighthouse, as exhibited in

* Calculating from the ascertained weight of a cubic yard of concrete, the area of each casson containing 2036 cubic yards, it appears the mass will amount to the enormous weight of 3190 tons, which, added to the iron portion of the work, gives 3346 tons as the weight of each casson. Should ten feet be added to the horizontal length of the cassons as heretofore suggested, the weight would then amount to 4494 tons.

the sketch, is supposed to be of stone, and is 35 feet in height, from the base of the column to the top of the dome, the column, or shaft being 11 feet in diameter at the base. The octagonal foundation on which the lighthouse stands, rises eight feet above the surface of the casson on which it is erected, consisting of solid masonry, well clamped together, raising the foundation of the hollow shaft 16 feet above the highest tide. The number and position of the lighthouses must, of course, depend upon the peculiar locality and extent of the Breakwater, and would necessarily be a matter for after-consideration. It is scarcely necessary to suggest, that since the recent important discoveries in connexion with the more effective application of the Diving Bell, the bottom may, without difficulty be thoroughly examined throughout the whole line of the intended Breakwater.

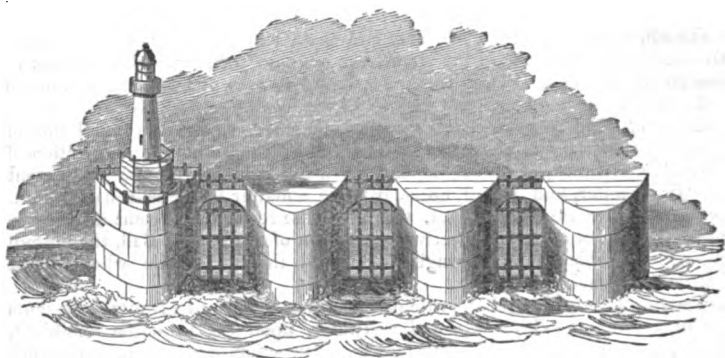
In addition to the foregoing particulars, another important advantage presents itself in connexion with a Fixed Breakwater, upon the principle exhibited, namely, the facility it would afford for the construction of a formidable outwork of defence, supposing the Breakwater erected in front of any important town. The surface of each casson, for instance (as shewn in the sketch), would offer ample extent and solidity for the working of a single piece of ordnance of the heaviest calibre; the gun-carriage being made to work on a traversing inclined plane, thereby counteracting the violence of the recoil. A succession of these cassons, to any number that might be deemed sufficient, and at whatever parts of the line should appear to be most effective, might be protected by a sloping parapet of stone, from four to six feet in thickness, and united by iron bridges, so as to form a powerful and co-operative battery.

Subsequently to the Model, &c., being submitted to the Board of Admiralty in the month of June last (and at which time but a roughly calculated estimate had been made of the required outlay), Mr. Johnston has availed himself of every necessary assistance, not only by means of tenders from more than one of the principal iron companies of South Wales, but also as regards every other portion of the work, with a view of ascertaining as nearly as possible the amount of expenditure which its completion would require; having made at the same time, an ample provision for extra labour, and allowed an equally liberal per centage upon the whole outlay for contingencies. The result of such calculation being as follows:—Cost of each casson, with the intervening piles according to the original dimensions as shewn in the sketch, £2320 18s.; gross amount of the work to the extent proposed, viz., for 111 cassons, £257,619. 18s.; additional cost of each casson, in the event of ten feet being added to its horizontal length, £350; the gross amount, with such addition, being £296,469 18s.*

The Ground Plan, as identified with Brighton exhibits the Breakwater as forming a crescent 1326 yards in extent, with an additional angle of 191 yards—together amounting to 1517 yards, or seven furlongs nearly; the crescent consisting of 97 cassons, and running nearly at right angles with the S.W., being the quarter whence, it is well known, most of the dangerous gales by which the southern coast is visited are found to proceed.

N.B.—If after all any doubt should remain as to sufficient stability, there are means clearly available of adding to the combined strength, and mutual support of the cassons; as for instance, by the addition of more horizontal braces between them, or by a still farther increase of their horizontal length, from the apex to the base. Or again by gradually widening the cassons, to their foundation, as shewn by the dotted outline in the sketch; and by which their stability would doubtless be greatly increased. It is scarcely necessary to observe that none of these precautionary measures would at all interfere with the general principle of the proposed structure.

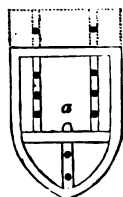
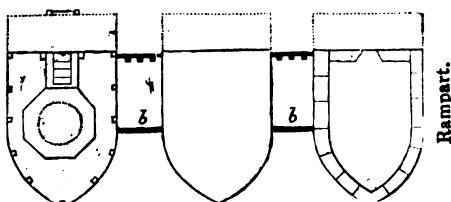
* It appears by the Parliamentary Report of the Commissioners appointed to survey the Harbours of the South-eastern Coast, as laid before the Lords Commissioners of the Admiralty in May, 1840. that the estimated cost of each of the three Breakwaters, as suggested in that Report, was from £2,000,000 to £2,300,000.



A High Water.

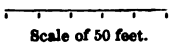
GROUND PLAN.

Lower or

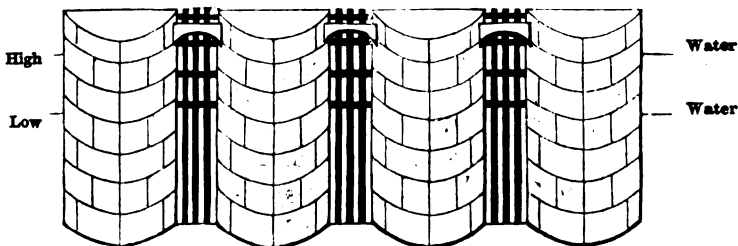


The proposed additional ten feet is shown by the dotted outline.
 b Cast-iron Brace.

Foundation Section showing position of the piles, &c.
 a Water Plug.



ELEVATION.



Should it be supposed that a greater degree of stability would be expedient, there are means clearly available of adding to the combined strength and mutual support of the cassons; as, for instance, by placing additional strong horizontal braces between them, or again, by a still farther increase of their horizontal length; but more especially by widening them towards their base, as shewn in the annexed sketch.

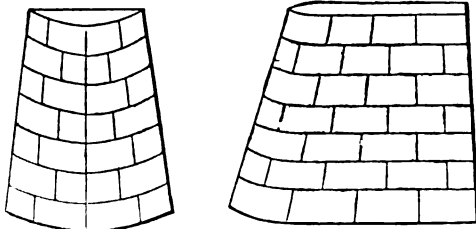


TABLE LXVIII.

For reducing Nassau feet to English feet, and English feet to Nassau feet.

1 Wisbaden foot = 0·93605405 English foot.

1 English foot = 1·06831436 Wisbaden foot.

Nassau or English feet.	English feet, and Dec. parts.	Nassau feet, and Dec. parts.	Nassau or English feet.	English feet, and Dec. parts.	Nassau feet, and Dec. parts.	Nassau or English feet.	English feet, and Dec. parts.	Nassau feet, and Dec. parts.
1	0·936	1·068	40	37·442	42·733	79	73·948	84·397
2	1·872	2·137	41	38·378	43·801	80	74·884	85·465
3	2·808	3·205	42	39·314	44·869	81	75·820	86·533
4	3·744	4·273	43	40·250	45·938	82	76·756	87·602
5	4·680	5·342	44	41·186	47·006	83	77·692	88·670
6	5·616	6·410	45	42·122	48·074	84	78·629	89·738
7	6·552	7·478	46	43·058	49·142	85	79·565	90·807
8	7·488	8·547	47	43·995	50·211	86	80·501	91·875
9	8·424	9·615	48	44·931	51·279	87	81·437	92·943
10	9·360	10·683	49	45·867	52·347	88	82·373	94·012
11	10·297	11·751	50	46·803	53·416	89	83·309	95·080
12	11·233	12·820	51	47·739	54·484	90	84·245	96·148
13	12·169	13·888	52	48·675	55·552	91	85·181	97·217
14	13·105	14·956	53	49·611	56·621	92	86·117	98·285
15	14·041	16·025	54	50·547	57·689	93	87·053	99·353
16	14·977	17·093	55	51·483	58·757	94	87·988	100·422
17	15·913	18·161	56	52·419	59·826	95	88·925	101·490
18	16·849	19·230	57	53·355	60·894	96	89·861	102·558
19	17·785	20·298	58	54·291	61·962	97	90·797	103·626
20	18·721	21·366	59	55·227	63·031	98	91·733	104·695
21	19·657	22·435	60	56·163	64·099	99	92·669	105·763
22	20·593	23·503	61	57·099	65·167	100	93·605	106·831
23	21·529	24·571	62	58·035	66·235	150	140·408	160·247
24	22·465	25·840	63	58·971	67·304	200	187·211	213·663
25	23·401	26·708	64	59·907	68·372	250	234·014	267·079
26	24·337	27·776	65	60·844	69·440	300	280·816	320·494
27	25·273	28·844	66	61·780	70·509	350	327·619	373·910
28	26·210	29·913	67	62·716	71·577	400	374·422	427·326
29	27·146	30·981	68	63·652	72·645	450	421·224	480·741
30	28·082	32·049	69	64·588	73·713	500	468·027	534·157
31	29·018	33·118	70	65·524	74·782	550	514·830	587·573
32	29·954	34·186	71	66·460	75·850	600	561·632	640·989
33	30·890	35·254	72	67·396	76·919	650	608·435	694·404
34	31·826	36·323	73	68·332	77·987	700	655·238	747·820
35	32·762	37·391	74	69·268	79·055	750	702·041	801·236
36	33·698	38·459	75	70·204	80·124	800	748·843	854·651
37	34·634	39·528	76	71·140	81·192	850	795·646	908·067
38	35·570	40·596	77	72·076	82·260	900	842·449	961·483
39	36·506	41·664	78	73·012	83·329	1000	936·054	1068·314

STATISTICS OF STOWAGE.

London, January 9th, 1843.

SIR.—It has frequently been matter of surprise to me, that notwithstanding the numerous works in existence for the benefit of shipmasters, not one has yet appeared, with a view to assist them, in calculating the probable quantity of any kind of merchandize their ships would stow or carry, and if you were to invite those of your subscribers, who are masters, owners, or brokers of ships, to furnish you with the particulars of the stowage of those ships they are concerned in, to be published in the *Nautical Magazine*, under the head of "Statistics of Stowage," (similar to your "Table of Wrecks,") a mass of important and valuable information would, in time, be collected, from which Tables might afterwards be constructed, referring to each kind of goods, showing the per centage of carriage to the register ton. If this were done I am quite sure the master-mariners of the whole kingdom (particularly the young ones) would hail such a work as an inestimable boon, enabling them from the facts thus recorded, to arrive at more just conclusions as to what their vessels will carry, than by forming vague conjectures, as is now frequently the case, or having to trust to the information of parties, who, in many instances ignorantly, in others wilfully, mislead them.

If any of your subscribers coincide with me in the view I have thus taken, I would suggest their furnishing you with the following details, viz. the name or or initial letter of the vessel, register tonnage on the old and new principle, usual dead weight, and the different cargoes (reduced to tons) the vessel has had in, when full laden, with any remarks they may consider useful; all which information might be published in the Magazine after the following form.

Statistics of Stowage.

VESSELS NAMES.	Register Tonnage.		Dead Weight	Carriage.
	Old	New		
R	199	178	270	200 tons tallow, gross. 160 imperial tons olive oil. 210 tons (nett) currants.
W	104	97	150	120 " wine from Tenerife. 120 " Mogadore produce.
W	278			320 loads timber, Quebec. 400 tons Brazil sugar, gross.
S	123	288	160	248 " mahogany, 68 tons logwood 105 " clean hemp. 130 " tallow (gross) Odessa. 128 " ditto (do.) Baltic. 130 " Valonea. 134 " fruit (nett) Chesme. 150 " (nett) coffee, Rio de Janeiro 134 " (nett) sugar, Brazil. 125 " Tenerife wine.

Although only the initial is given of each vessel's name, the correctness of the foregoing statement may be depended on, as it is what each has actually carried.

I hope to find this subject made a feature of your journal, and shall be glad to aid in carrying out the object, by furnishing occasionally from my own store, trusting your other subscribers will follow the example; and from these published facts, a series of tables, similar to the two which accompany this letter, might, when sufficient data has been obtained, be compiled, highly serviceable to all concerned in shipping matters.

I am, Sir, yours, &c.

To the Editor, &c.

S. Y.

TABLE No. I.—OLIVE OIL.

Freights are paid by the Tun of 252 Imperial Gallons.

VESSELS NAMES.	Register Tonnage.		Imperial Tuns of Oil.	Per Centage on		Remarks.
	Old.	New		Old Tonnag	New Tonnag	
S.A. . .	109	105	92	84.40	87.62	From Sicily.
R. . .	104	90	76	73.08	85.55	Malaga, in 108 pipes, 20 hhds. and 36 quarter casks.
N. I. . .	87	74	70	80.12	94.60	Gallipoli.
N. I. . .	87	74	68	71.16	91.90	Seville.
I. . .	110	100	87	79.9	87.00	Malaga.
	497	443	393			
Average	99	89	79	79.80	88.76	
A. . .	120	104	91	75.83	87.50	Marseilles.
C. . .	140	126	113	80.71	89.68	Malaga, in 171 casks, 22 half do. and 44 quarter do.
E. . .	145	131	118	81.38	90.8	Gallipoli.
I. . .	123	108	108	87.80	100.00	Malaga.
C. . .	133	122	117	88.00	95.90	Ditto.
R. . .	128	106	110	86.00	103.77	Spain.
R. W. . .	127	111	105	82.67	94.60	Gallipoli.
L. S. . .	120	103	80	66.66	77.67	Candia, had not suitable casks for stowage.
	1036	911	842			
Average	130	114	105	80.77	92.11	
R. . .	199	178	160	80.40	90.45	Gallipoli.
L. L. . .	160	141	138	86.25	97.87	Smyrna.
	359	319	298			
Average	180	160	149	82.78	93.13	
A. . .	109	} Unknown.	71	65.14	—	Seville, in 125 pipes, 42 hhds.
G. . .	90		78	86.67	—	Ditto.
I. D. . .	106		79	74.53	—	Ditto, (and in addition 14 tons shu- mac.)
S. L. . .	114		80	70.18	—	Malaga.
S. . .	113		80	70.80	—	Ditto, had too many small casks for stowage.
	532		388			
Average	106		78	73.58		

Table No. I.—Olive Oil,—Continued.

VESSELS' NAMES.	Register Tonnage.		Imperial Tuns of Oil.	Per Centage on		Remarks.
	Old.	New		Old Tonnag	New Tonnag	
F. . .	149	} Unknown.	140	94.00	—	Spain.
F. . .	135		140	103.70	—	Gallipoli, had suitable casks for stowage.
G. . .	133		118	88.72	—	Ditto.
G. . .	133		120	90.23	—	Ditto, second voyage.
H. A. .	138		125	90.58	—	
I. . .	145		131	90.35	—	Seville in 272 pipes 80 hhds.
L. A. .	124		81	65.32	—	Ditto, had not suitable casks for stowage.
N. . .	145		145	100.00	—	Gallipoli.
P. . .	127		110	86.61	—	Ditto, in 126 pipes, 14 hhds. and 75 quarter casks.
P. . .	132		145	109.85	—	Ditto.
P. . .	132		140	106.06	—	Ditto second voyage.
R. . .	140		118	84.28	—	Seville.
T. . .	131		102	77.86	—	Malaga.
W. D. .	134		102	76.12	—	Seville.
	1898	1717				
	136	123	90.06			

Recapitulation.

	Register	Tonnage			
5 vessels from 87 to 110 tons old or	} Brought on the Average about	} 20 per cent. under their old register	}		
74 " 105 " new					11 " " new
8 ditto 120 " 145 " old or					19 " " old
103 " 131 " new					8 " " new
2 ditto 160 " 190 " old or					17 " " old
141 " 178 " new					7 " " new
5 ditto 90 " 114 " old					26 " " old
14 ditto 124 " 149 " old					10 " " old

TABLE NO. II.—MOGADORE PRODUCE.

The chief articles of export from Mogadore, are almonds, gums, bees'-wax, olive oil, skins, wool, and ostrich feathers.

The freight is regulated by the ton of 1800 lbs. Mogadore weight for almonds, gums, bees'-wax, and olive oil; by the ton of 1200 lbs. for wool and ostrich feathers; and by the ton of five bales of goat skins, each bale containing sixty skins.

Table No. II,—Mogadore Produce,—Continued.

VESSELS' NAMES.	Register Tonnage.		Tons of Produce.	Per Centage on		Remarks.
	Old.	New		Old Tonnage	New Tonnage	
B. . .	100	90	93	93·00	103·33	Chiefly oil.
F. . .	109	95	105	96·33	110·53	
W. . .	104	96	118	113·46	122·92	
A. . .	90	73	81	90·00	110·96	
A. . .	86	76	85	98·83	111·84	
	489	430	482			
Average	98	86	96	98·00	111·64	
H. . .	148	155	174	117·57	112·26	
M. . .	142	132	151	106·34	114·40	
J. . .	123	108	145	117·89	134·26	
S. . .	122	105	125	102·46	108·70	
C. . .	116	110	130	112·97	118·18	
	651	610	725			
Average	130	122	145	111·54	118·85	
B. . .	unkn	73	76	—	104·11	22 tons skins formed part of the cargo. Same vessel, another voyage when the cargo was chiefly skins,—say 66 tons.
S. . .	86	unkn	81	94·20	—	
S. . .	86	unkn	93	108·14	—	

The result of the foregoing is, that small vessels from 86 to to 110 tons register (old) carry on the average about 2 per cent. of produce *under* their register tonnage, but that larger vessels, say from 116 to 148 (old) carry nearly 12 per cent. *over* their register tonnage on the average.

These Tables as far as they go, may be depended on, but owing to the scanty resources at my command, are not so complete as could be desired; they must rather be regarded as examples of what may be done at some future period, when more ample materials are obtained in the manner pointed out in the accompanying letter.

S. Y.

SUGGESTIONS FOR THE BETTER REGULATION OF SHIP-MASTERS,
AND OF SALVAGE, &c.

SIR.—The following observations may, perhaps, be deemed worthy a place in your Magazine, as the subjects animadverted upon apply to ship-owners, ship-

ping, shippers, and emigrants, and are of so frequent and important recurrence as to justify your aid in endeavouring to procure an amelioration of the present evils, and of the incongruous and absurdly inconsistent jurisdiction confided to the sole opinion and decision of a Judge in the Ecclesiastical, Prerogative, and Admiralty Courts of Doctors' Commons.

It is an every day occurrence to find that commanders in the Merchant Service, are guilty of the greatest abuses, not only against their employers, but also towards the person and property intrusted to their charge; and these abuses are the natural result of the extensive powers necessarily confided to them, when employed upon a distant foreign voyage. The ship-owner has no other check upon the master, than the very imperfect one of the ship's log, and even the delivery to his owner of this scanty and often defective information, is merely a voluntary act; whereas it should be imperative on the master and upon the mate, each to keep a correct log, and the master and mate to declare at the Custom-house to the correctness thereof; the mates log book to remain at the Custom-house with the ship's papers; and which declaration, if proved untrue, to be made subject to the penalties of perjury, and the master's log should then be at once delivered up to the ship-owner. This arrangement would greatly tend to lessen those glaring abuses which now prevail to an enormous extent, and would contribute very much to the furtherance of justice, it would also be an additional protection to emigrants and underwriters, by surrounding them with the safeguard which publicity never fails to confer. But for the purpose of making the safety and comfort of all parties more certain, and the interests of the ship-owner and crew secure, the laws now in force on the subject of salvages, must be wholly altered and remodelled, so as to fully meet the objects of humanity, to which they owe their origin. As the law of salvage stands at present, it actually holds out a premium to induce the master and crew to deviate from their voyage, thereby probably vitiating the Insurances, delaying the landing of the passengers to their great loss and injury, and running hazards needlessly, for their own benefit: for whilst the ship is delayed their wages go on the same, the ship's provisions are consumed and her stores used freely, damaged or even destroyed. And when salvage is recovered, *three-fourths of the sum awarded goes to the master and crew*, causing a heavy loss to the owner, nine times out of ten, from which loss no previous private arrangement with the master and crew avails to prevent this unreasonable, and I will add, unjust distribution of salvage.

So great is the benefit to be gained by master and crew from this unfair distribution of salvage, that it frequently happens to the salving vessel to be left by her crew for ten or twelve hours, and sometimes for a whole day, at the mercy of the winds and waves, and if a storm should arise, owing to the distance of the one ship from the other, the salving ship must inevitably be lost. If however, she escapes a storm, then at all events her detention will comprise ten or twelve days, during which time, some other injury or accident may arrive, whereby the owner would be deprived of the contemplated security of his own Insurance. If this delay and risk with the employ of ship, boats, gear, and materials, and current expenditure and charges are to be forced upon the owner, contrary to his wishes, orders, and interests; and as such delay and risks are unprovided for and at variance with the covenants of his Insurance, then surely it would be but fair, though not equivalent to the danger of his property and contingent expenses, to allow him at least one half of the salvage award, and the other half would still constitute an ample inducement to the master and seamen, to save endangered property.

The justice of this reasoning will be better appreciated when due attention is given to the numerous instances of masters refusing to delay or run risks *where only human life is to be saved*; because, they, the masters, are not thereby at all benefited, since no salvage can in such case be claimed by the master, for preservation of life only. And it deserves to be noted that, whenever such services, to save human life, have been rendered, the owner is gratified by the

fortuitous occurrence, and never demands remuneration; why then, it may be asked, shall the owner be compelled, against his will and possibly to his total ruin, to submit to the interested acts of his servants, solely for their own benefit, they being free from all risks of property, &c., and at the same time well paid by the owner?

The salvage law was originally established for the humane and meritorious object of preserving sea-faring men from being lost, by the perils of their useful and adventurous mode of life; but the beneficent intention as originally contemplated, is rendered futile and of little avail, and human life is too often disregarded; but where property can be saved, men who have nothing at stake, to the manifest injury and danger of their owner, risk every thing for their own advantage; it would, therefore, be desirable that remuneration to some extent should be given to the master and crew for saving human life, and that a more equitable distribution of salvage as suggested should take place where property has been saved; and for the reason herein stated a general revision of the salvage law is much called for, and which would speedily be acceded, if some large Government vessel had only been lost whilst engaged in salving property, then such a case would call forth censure, and probably punishment of the Captain by the decision of a Court-martial; but if the salving merchantman be lost, the owner is not only without redress or relief, but the master would still go to the Admiralty Court of Doctor's Commons, be there highly praised and handsomely paid!

I am, &c.,

G. T. W.

WRECKS OF BRITISH SHIPPING.

THE late gales *as usual* have made sad havoc on our shores, scattering wrecks far and near; and spreading mourning, and, desolation among the unhappy relatives of those, who periled their lives in the treacherous Merchant Ship! It is a melancholy and degrading fact, notwithstanding the vaunted amount of our mercantile fleet, that no severe gale passes over these islands without bringing with it, as a kind of necessary consequence, destruction to a large number of its ships. We may leave the causes of such destruction for the investigation of others; they might no doubt be found among the list of fifty stated by a correspondent in our volume for 1841, and which, as it might possibly serve some useful purpose, we will repeat here:—

Causes of the loss of ships at sea, by wreck and otherwise.

1. Short complement of men.
2. Deficiency of materials and stores.
3. Deficiency of water and provisions.
4. Bad materials—anchors, chains, boats, spars, sails, cordage, &c.
5. Bad quality of water and provisions.
6. Teetotality—coffee instead of rum, &c.
7. Bad condition of the ship from age, want of repairs, caulking, and looking properly to.
8. Bad construction of the ship, out of trim, &c.
9. Incapacity of masters and others.
10. Presence of captain's wives, and other women.
11. Insanity.
12. Inability of men, or crews, from sickness, maims, exhaustion, &c.
13. Drunkenness, revelry, &c.
14. Discipline, too lax or too severe.
15. Mutiny and insubordination.
16. A dead-and-alive set: no devil on board.
17. Discord and dissension—the devil let loose.

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R

18. Deaths, desertions, and discharges.
19. Fire.
20. Collision.
21. Upsetting in a squall, &c.
22. Shifting of cargo, &c.
23. Consternation,—the ship on her beam-ends, on fire, water-logged, &c.
24. Shipping of seas, foundering by stress of weather, &c.
25. Springing a leak by starting a butt-end, &c.
26. Deep lading, crowded stowage on deck, &c.
27. Striking on rock, grounding on shoals, &c.
28. Driving on a lee shore.
29. Impressment at sea, detention and deviation.
30. Incorrectness of charts, compass, &c.
31. Want of care: bad dead-reckoning.
32. Want of vigilance: bad look-out.
33. No latitude by observation, on account of fogs, &c.
34. No flying the blue pigeon, no regard to lights, bells, drums, &c.
35. Capture or destruction by an enemy or pirate.
36. Struck or blown up by lightning.
37. Masts, &c., rolled or pitched away.
38. Driving with a foul anchor: a kink in the cable, &c.
39. Parting a cable.
40. Staving of boats, carrying away of masts, splitting of sails, &c.
41. Sleeping on watch, drowsiness of helmsman, &c.
42. Breaking adrift of floating-lights &c.
43. Mistaking of headlands, lights, &c.
44. Sinking or destroying a ship purposely.
45. Rising of prisoners, convicts, &c.
46. Fool-hardihood,—guns run out when blowing hard upon a wind, press of sail with a crank ship, &c.
47. Carrying away topmast from neglect of breast back-stays, after going about.
48. Broaching to when weathering a headland in a gale of wind.
49. Incapacity of persons having charge as pilots.
50. Abandonment of ship without sufficient causes, in case of wreck, officers leaving their juniors in command, with orders to land the treasure, the men, &c.

The foregoing list is well worth attention, combining as we believe it does, the real causes of our numerous wrecks. Year after year, we have gathered together the names of these wrecks, and we have accompanied them with the tales of sorrow and suffering which they produced, until we could come to no other conclusion than that, they formed a necessary feature in the economy of our mercantile marine; and being therefore received accordingly by the public, we have devoted our space to other more useful matter. And again the scenes of horror are repeated! The recent dreadful loss of life by wreck at the Cape has scarcely passed before us, when the still more calamitous wrecks of the *Reliance*, and the *Conqueror*, to say nothing of a host of others, again create in our minds those painful sensations, which such wholesale loss of life cannot but occasion; spreading affliction in many a family, and carrying the pang of sorrow for the departed, to the homes of parents, brothers, sisters, and friends! And all this will pass away, as a tale that is told; and all this will again recur as a necessary feature in the economy of our mercantile marine!

We have often said, it would fill the greater part of our journal to record the scenes which are witnessed on the occasion of these numerous wrecks, and it would be of little avail to do so. To account for them and to point out the means of avoiding them, is a far worthier employment of our space, and this we shall endeavour to do.

WRECKS OF BRITISH SHIPPING.

(Continued from p. 871, vol. for 1842.—cs. crew saved; cd. crew drowned.)

VESSELS' NAMES.	BELONG TO.	MASTERS.	FROM.	BOUND TO.	WRECKED.	WHEN.
Aber. Robinson		Young	London	Algon Bay	Table Bay	Aug. 28. cs
Adamant		Luckley	Liverpool	Rotterdam	Hinder	Oct. 17. cs
Alfred	Pr. Ed. Isld.	Pearce	Pr. Ed. Isld.	Bristol	Nova Scotia	Nov. 29. cs
Argyle	Waterford				Louisburg	Oct. 15. cd
Belle	5 Hull	Simpson	Petersburg		Faro R.	Oct. 12. cs
Bellona				St. Lawrence	Kamouraska	
Brothers		Rust	Grangemoth	Sunderland	St. Abbs Hd.	Nov. 23. cd
Cath. Frazer		Fish		Pictou	Canso	Oct. 24. cs
Chatham	with Emigra	nits	London	Sydney	Portugal	Nov.
Christina	10 Windsor	Birkett	Macao	Bombay	China Sea	July 1.
Cleostratus	timber ldn.	Levens	Shediac	Greenock	abandoned	Nov. 16.
Comet	Milford	Davidson		Windsor		Oct.
Commerce	St. John	Bennet	Gloucester		Portynon B.	Nov. 14
Curlew	Argyle	Price		42 N. 48 W.	abandoned	Dec. 8. cs
Crown	14					Nov.
Dahlia			Liverpool	Petersburg	P. Skerries	Nov. 30. cs
Dovecot	missing in	the	Indian Seas,	1842, suppos	ed captured	by pirates
Echo	Newcastle	Erans	Strangford	Newcastle	Cannon R.	Nov. 27. 4 d
Eliza	London	Perrian	London		Anticosti	Nov. 18. 3 d
Enterprise	20	Cawson		St. Lawrence	Manicougan	Nov. 24.
Gazelle	Sunderland	Thomas	Hartlepool		Tees Bay	Nov. 21. cs
Hamilton	London		N. Shields		Gunfleet S.	Nov. 15. 9 d
Helen	London	Scot	Glasgow	Limerick	S. Uist	Dec. 4.
Henry Davidson	London	McDonnell	Bombay	China	China Sea	Sept. 3. cs
Hope	25 Liverpool	crow sav'd	& landed at	Strangford	Channel	Nov. 17. cd
Integrity		Harman	seen to	founder in	Lynn Well	Nov. 29.
Isabella			Liverpool	Calcutta	abandoned	Sept. 30.
Isis, steamer		Loney	St. Thomas	Falmouth	off Bermuda	Sept. 11. cs
Jackson	Dundee		Petersburg	London	Gothland	Oct. 11. 5 d
Jane	30 Perth		Hartlepool	Aberdeen	run foul of	Oct. 6. cs
James Richmond	Whitby	crew brou	ght to Leith	Galway	abandoned	Dec. 14. 2 d
Joanna	Glasgow	Houler	Malta	by Renfrews	Heron I.	Nov. 18.
John and Ann	Belfast	Davies	Bangor	Alexandria	African C.	Nov. 1.
John and Marianne			sprung a	Swansea	Salvo Hr.	Dec. 12. cs
John Askew	25	sunk from	Hull	Stettin	Creotown	Dec. 17. cs
Junio				Glasgow	North Sea	Dec.
Lady Ann	Sligo			missing, sup	posed lost	Dec. 2. cs
Lion		Walker	Wyburg	Hull	Norway	Dec. 2. cs
Liverpool		Ord	Amoy	Chusan	Yang-tse-Ki	Nov. 5.
Manchester		Armstron'	St. Petersbg		Schereen	Nov. 9. cs
Martha Ridgway	40				Barrier Reef	
Mavis		Jones	by lightning		Gr. Ladrone	July 31. cs
Mary	Sydney				Manidieu	Nov. 3. cs
Mary			Belfast		Montrose	Dec. 12. cs
Medora	Liverpool	Carter	Liverpool		Barbados	Dec. 1. cs
Middlesex	45		Sydney	London	C. Brazil	Nov. 22. cs
Naisid	Halfax	Pearson	Halfax	Demerara	capsized	Sept. 22.
Nancy					Goodwin S.	Oct. 22. cd
Northern Conference	abandoned	at sea				Nov.
Northumberland		Birknash'	Archangel	London		Sept. 27. cs
Oakwell	50		Llanely	Beaumaris	founded	Oct. 6.
Ottar	Littlehpton	Pepper	Shields		at sea	Oct. 3. cs
Parken	Sunderland				Shipwaah	Dec. 13. cs
Pero	Penance		Miramichi	abandoned	48 N. 27 W.	Dec. 21. cs
Progress	Goole	Drury	Canton		Swin	Nov. 19.
Reliance	55	Green		London	C. France	Nv. 12. 113d
Resolution	London		London			Nov.
Ricardo			Sunderland	Calcutta	Hooghly	Sep. 15. 10d
Rob. Ralkes		Ruthrford		Hamburg	Sudervog	Nov. cs
Royal Albert	Liverpool	Gibson	Waterford		C. Mesurado	Oct. 4. cs
Sarah	60 Waterford	Tedbalt		Swansea	Ireland C.	Nov. cs
Shamrock				New York	Barnegat S.	Nov. 14. cs
Severn			On bar of	Prince town	Harbour	Oct. 30.
Sophia		Thornbun	Sydney	Halifax	Nova Scotia	Oct. 29. cs
Spring		Cave	Sunderland	Petersburg	Gothland	Oct. 15. cs
Thomas	65 Newcastle	Holmes		Newcastle	Herd Ind.	Nov. 14. cs
Trinidad	run foul of	by the	Honduras	abandoned	40 N. 28 W.	cs by Hawk
Unknown			Integrity	off Flambro	Head	Nov. 16.
Waterloo	Greenock	Houstin	London	Hobart-town	Table Bay	Au. 28. 190d
William		Slater	Gloucester	Greenock	Bute	Nov. 9. 3 d
Zephyr	70				Donaghadee	Nov. 24. cs

WRECKS OF BRITISH SHIPPING, *see Table.*

10 CHRISTINA.—*Bombay*, Oct. 31.—The Christina, Birkett, from Macao for this port, struck on the West London Shoal, in about lat. 9° N., long. 112° E., on the night of July 1st, and became a total wreck.

11 CLEOSTRATUS.—On the evening of the 16th of December last, the French, brig Annette, from St. Peter's, Newfoundland, for Granville, hove in sight, and upon the Cleostratus hoisting signals of distress, lay to. The master and crew of the foundering vessel then quickly took to their boats, and got safely on board the brig, leaving the Cleostratus, apparently just about going down, in lat. 48° 33', long 23° 30'. The Annette landed the master and his men at Granville, whence they were forwarded by the English consul there to Jersey.

33 JOHN and ANN.—Wrecked about 200 miles from Alexandria; one man drowned, the remainder of the crew and the master saved on raft; but the latter subsequently died through exhaustion. They were plundered by the Bedouins, some of whom have since conducted them to Alexandria, where they remain at present under the care of the British consulate.

38 LIVERPOOL.—On the 6th of August last, the brig Liverpool, Capt. J. Ord, belonging to Messrs. Higgin and Lane, of Liverpool, ran upon a bank of sand in the Yang-tse-Kiang river, and became a total wreck.

The Liverpool left Amoy on the 21st May last, for Chusan, where she arrived on the 11th June, after a troublesome passage along a coast, and through channels very little known. She completed loading on the 8th of July, and joined the convoy lying outside the harbour. The navigation among the Chusan islands is most difficult, the currents and whirlpools being fearfully rapid, sometimes rendering ships totally unmanageable. After several dangerous incidents, the brig got safely to Woosung, on the Yang-tse-Kiang river, on the 14th of July. On the 4th of August the senior naval officer at Woosung gave orders to proceed to Nankin with other vessels, under the convoy of H.M.S. Harlequin. By the 6th of August, they had reached a point of the river about fifty miles above Woosung and 100 from Nankin. This is the most dangerous part of the river, having rapid tides, and the shifting banks, so that the channel is very uncertain. The Liverpool was steering after the Harlequin, when the latter was suddenly seen to ground. The anchor of the Liverpool was immediately let go, but, in swinging round, she also grounded. The other vessels which were astern dropped their anchors and avoided the bank. Assistance was rendered to the Liverpool from the other ships, and by powerful efforts she was got off, but, the capstan giving way at a critical juncture, she was forced on the bank again, and, as the tide was falling, all efforts to get her off again failed. Meanwhile, the Harlequin had succeeded in getting into deep water.

On the 8th the weather became boisterous, and the vessel straining sprung a leak. Captain Ord requested permission from the captain of the Harlequin to throw overboard the cargo, but this was refused, and on the 10th two junks were taken alongside. Part of the cargo was put into these, and part thrown overboard. The crew, with ample assistance from the Harlequin, toiled incessantly both at the pumps and in removing everything of value into the junks on behalf of the owners and underwriters. On the 11th it was found that the ship had broken her back. On the 18th, having saved everything possible, and the wreck being nearly buried in the sand, she was abandoned, and the crew divided on board the junks; the mate, Mr. Bell, taking charge of one, and Captain Ord, of the other. It is stated, that the whole of the fleet alluded to, consisting of seven sail, had been on shore three or four times, so intricate is the navigation.—*Albion.*

41 *MAVIS*.—The following is a summary mode of disposing of a vessel:—the brig *Mavis*, Jones, from the West Coast, with specie, was struck by lightning, and instantly blew up, July 31st, near the Grand Ladrone; crew saved.

46 *NAIAD*.—Mr. Kimball, of the brig *Shawmut*, arrived at Boston, on the 6th of December last, from Rio Janeiro, states that on the 11th of Nov. in lat. 28° 10', long. 58° 10', he fell in with the wreck of the British brig *Naiad*, Pearson, late master, of and from Halifax, for Demerara, which sailed Sept. 14th, and on the 22nd, lat 29½°, was capsized in a heavy squall, keel out; was under close-reef topsails at the time. She righted next day full of water, and with loss of all her spars, except her foremast. Took from the foretop, William Fosdick, of New York, seaman, the only survivor; two men were drowned in the forecabin when she capsized, and six had died of hunger and thirst, and Fosdick was in a helpless state, unable to stand, and could not have survived but a short time.

The following additional particulars were obtained from young Fosdick, by Mr. Gurney, the pilot, who brought up the brig *Shawmut*. Mr. Kimball, it will be recollected, rescued Fosdick from the wreck. It appears from his statement that he remained forty-nine days on the wreck, with little or no food. A little flour was washed up from the hold, which they collected, wet with salt water, and dried in the sun, and ate. It was known that there was a canister of salmon preserved in oil in the cabin. Fosdick dived down several times and succeeded in obtaining six, on which they lived for some time; after that nothing remained to support life. Of the seven that remained, (two being drowned in the forecabin when the *Naiad* upset,) it is remarkable that the most fleshy, and apparently the strongest, died first. Everything was done by Fosdick to keep up the spirits of his companions, but they failed one after another, and as soon as hope fled they yielded and died. When the weather was at all rough they were obliged to take to the foretop and lash themselves, there to remain till it became calm. They had now all perished but two—Fosdick and a companion, who were in the top. One dark night, when it began to rain, Fosdick reached over to where his companion lay, to rouse him to obtain a few drops of water as it fell, but found him dead. In the morning he cut him loose and he fell into the sea. He then remained alone six days before he was taken off by Mr. Kimball.

Great praise is due, and should be awarded to Mr. Kimball, for the medical skill he displayed in saving his life, for he was a mere skeleton, unable to stand or even to speak. He is now in comfortable quarters at the Seamen's Home, in North-square.

54 *PROGRESS*.—Mr. Drury and crew, of the schooner *Progress*, of Goole, which vessel foundered on the 19th November last, in the Swin, publicly wish to return their heartfelt thanks to Captain Saxby, of her Majesty's cruiser *Desmond*, for his praiseworthy conduct in saving the whole of them, at the imminent risk of his own life, also for the handsome treatment they afterwards received from Captain Saxby, who supplied them with dry clothes and food, and landed them safe at Harwich.

[We have little doubt that we shall present our readers with a similar tale to the foregoing in our next number.]

THE COCKLE GAT.

H.M.S. Shearwater, Harwich, Nov. 9, 1842.

MY DEAR SIR.—The Trinity Board, as you are aware, with their usual consideration for the benefit of the shipping interest of this kingdom, have recently issued a circular requesting the opinion of ship-owners, pilots, &c., with respect

to lighting the Cockle Gat at the northern entrance into Yarmouth Roads; knowing this is a subject in which you take a deep interest, and deeming it my duty, as having charge of the survey of the North Sea, and to be in obedience to the general tenor of my instructions, to lay before you my ideas on this point, I do not hesitate to do so, although I am well aware that many others of far more experience than myself have well considered the question; still as it is one of essential importance to the vast body of shipping which trade along the eastern coast of England, it appears to me that every one should help forward the cause to the utmost of his ability.

I take it for granted that, with all unprejudiced and disinterested persons, there can be but one opinion as to the utility of lighting the Cockle Gatway:—this gatway is the only entrance into Yarmouth Roads from the northward, a track followed daily by thousands of our merchant ships, it forms also the chief entrance into the only practicable anchorage for her Majesty's North Sea fleet, in case of war, between the river Humber and the Downs. Immediately in its vicinity, forming the channel, are the dangerous sand banks named the Cockle and Barber to the west, and the Sea Heads and Scroby to the east, beyond these to the northward is that disastrous space between Hasbro' and Winterton called the Would, a tract about ten miles long, bounded by Hasbro' Sand to the east; and this, as is well known to every sailor who navigates the North Sea, is the most fatal spot along the east coast of England, and the number of wrecks, and the annual destruction of life and property which take place here are notorious.

A reference to Lloyd's register would fully bear me out in this assertion, but I may just remind you of the gale of the 13th of October, 1823, when the "Ranger" Revenue cutter and eight merchant vessels were driven on shore at this spot, and all perished save one; while her Majesty's surveying vessel "Protector" only escaped, under Providence, owing to the skill and presence of mind of Captain Hewett who seeing no alternative boldly ran his vessel over the Sea Heads and Newarp Sands right out to sea:—and here I beg to refer to that lamented Officer's letter to the Admiralty, of the 16th of January 1826,* describing his escape and urging in unanswerable terms the necessity of lighting the Cockle Gatway. On that occasion had the means existed of running through the Cockle in the night time not one of the vessels alluded to need have suffered, the wind being perfectly fair; as it was they preferred the chance of saving their lives on the beach to the certainty of losing them on the detached sand banks in attempting a difficult passage without a light to guide them.

It can hardly be necessary to adduce other accounts of losses, but I happen to have before me a list of eighteen vessels wrecked near this spot in the two years 1840 and 41, several of the crews of which were drowned; of these, at one time in September 1841 four vessels were lying wrecked upon the Scroby, one of the very sands in question, having attempted the passage by night and been deceived by the soundings which led them in a deep water inlet between the sands called the "Barley Pightle"; this could not have happened had there been a light. Only one other instance will I mention, namely, that of September 1838, when out of hundreds of vessels, which for want of a light were obliged to anchor in the Would, in one night 170 lost their anchors and cables, every one of which, had the means existed, would have thankfully sought shelter in Yarmouth Roads.

Of the necessity of a light then I apprehend there can be but one opinion, and a light vessel seems to me to be far preferable to any lights on shore; nor, do I consider the difficulty of placing one so great as it may seem at first sight; with due deference to those more conversant with these affairs, I should say, that a light vessel moored about one-third of a mile from the eastern sands half way between the white buoy of the Scroby, and the red beacon buoy of the

* See our volume for 1841, p. 107.

Sea Heads, in 8 fathoms water, would be sufficient; the light should be single, kept low, of a dark red colour, and shaded to the eastward so as only to show from N.N.E. by compass round Westerly to S.W.b.S. then vessels running up would keep it on a South bearing till close up to it, when a S.W. course or a N.E. bearing would carry them safely into the Roads.*

The only objections I have heard urged against this proposal are

1st, the difficulty in getting a vessel to ride in the broken water near the sand.

2ndly, the fear of confusion from the number of lights in this vicinity.

3rdly, the greater danger to shipping lying in Yarmouth Roads by night in case of a free passage through.

Lastly the difficulty of defraying the expence of such a light without taxing the trade with increased light dues.

To which I answer that there probably may be some difficulty in getting the vessel to ride, but at one-third of a mile distant from the sand with extra moorings, and all the precautions which the experience of the Trinity masters would suggest, this difficulty will, I feel confident, be overcome; at any rate the experiment is worth trying for one year.

Secondly.—the only light for which the Cockle can by any possibility be mistaken is the Newarp, (for the St. Nicholas and Stanford lights in coming from the northward are out of the question,) now the Newarp light vessel bears three lights in a triangle, it is distant seven miles from the spot where it is proposed to place the Cockle light, and a bearing of either the Hasbro' or Winterton lights, would prove at once which of the two it was; it is to be remembered also that the Cockle is to be a single dark red light, only visible from four to five miles, and to be shaded to the eastward; it may be said how shade the light of a vessel that swings, this too is far from impossible, the watch on deck has merely to turn the shade according to the vessel's head by the compass, which will probably only vary at each change of the tide, or twice during the night; the light also if thought requisite for distinction-sake might be made revolving.

The third objection that Yarmouth Roads will be unsafe riding, seems quite untenable, the width of the roadstead is more than a mile and a half, vessels lying in the Roads anchor always close to the town of Yarmouth, whereas those running through would naturally hug the sands and steer for the St. Nicholas and Stanford light; many vessels, too, that now are obliged to bring up in the Roads would take advantage of the light and pass on, and thus Yarmouth Roads would be kept clear of the enormous mass of vessels, at times exceeding 2000, that in a long series of northerly winds crowd the place to the great detriment and risk of all; besides, is not the Swin, a much narrower channel, well lighted? and do not vessels anchor there for the tide both above and below the Swin middle light, while hundreds of others, and especially steamers, pass up and down, as it may be, without any other precaution than a good look out; and yet how rarely do we hear of an accident there, where the channel is not one-third of the width usually to be found in Yarmouth Roads.

Lastly the increased light dues which it would be requisite to levy; admitting for a moment the necessity of such light dues (which I doubt) and making every allowance for the depressed state of the Shipping interest in the North, let us see what such dues would amount to. The first cost and complete equipment of the light vessel would not exceed £3000† the annual expence of men,

* A secondary object in thus placing the light would be that, in the event of a scant wind at west or W.S.W. the same south course would carry a vessel up in smooth water clear through the passage between the Scroby and the Sea Heads, and lead direct to the South cross sand buoy, but the passage is not recommended, except in case of emergency.

† Or, less if built of iron, which I strongly advocate, her draught of water then need not exceed 7 feet, and in case of breaking adrift she would pass unharmed over most of the shoals in this vicinity.

provisions, oil, wear and tear, £900, say £1000; now the number of loaded vessels that pass along this coast cannot be less on an average than a thousand a month (I believe it far exceeds that number) of these one hundred are large steamers, and the burthen of the whole may be fairly taken at 17,000 tons; now at a farthing per ton this would amount to £2125 per annum; so that half a farthing per ton on freighted vessels would cover the whole annual expence, and leave a large surplus for contingencies; whereas the loss of property on the single night of the 13th of October, independently of one hundred men's lives, far exceeded twenty thousand pounds.

It appears then that the present annual loss of life and property at this spot, imperatively calls for some remedy; that there is no insuperable obstacle to placing a light vessel in the Cockle-Gat; that there is no fear of its being mistaken for any other light; and that the cost of keeping up such a light would not exceed half a farthing per ton upon the trade; why then may we ask is it delayed? the towns of Yarmouth, of Lowestoft, of Ipswich, and Harwich, are all unanimous for its adoption, every officer serving in the Revenue cruisers on this station with whom I have conversed, every pilot, every seafaring man at all conversant with the subject, is in favour of it; we have the testimony of Captain Hewett, more than twenty years a surveyor on this coast, to the necessity of it; the Trinity Board, by their recent circular are evidently in favour of the measure, and see the value of such a light, for the accommodation of steamers, and the hourly increasing trade along this coast; then why is it delayed? there must be some cause which does not appear, I cannot bring myself to believe that opposition to such a measure can arise from the Ship owners of Shields and Sunderland, because a trifling extra expense, at the utmost half a farthing per ton, will be entailed on their vessels, common humanity, nay common justice to the poor sailor, who daily risks his life for our benefits and our comforts, forbids that such a plea should be listened to for a moment, but should such an objection exist and be considered reasonable, I humbly trust, nay, I implore that her Majesty's Government viewing this as a national benefit will earnestly press upon the consideration of the Trinity Board, the necessity of immediately taking measures for lighting this Gateway, and thus confer one of the greatest boons yet bestowed on the Shipping interest of the East Coast of England.

I am, &c.,

To Capt. Beaufort R.N., Hydrographer.

JOHN WASHINGTON, Captain, R.N.

THE ROYAL YACHT.—*Pembroke*: The following ceremony which took place Dec. 5th, may not be uninteresting to you and your readers generally. It has already been stated in the public papers that a steam-yacht was to be built in Pembroke dock-yard for Her Majesty. The building was commenced, and her keel laid on the blocks the 9th of November, and moulds have been preparing to the form of this splendid vessel; the saw-mills are in full operation, and a great number of sawyers have also been busily employed in cutting oak and larch plank, of which she is to be built in three thicknesses, without timbers. This novel mode of building will ensure lightness combined with strength; and her engines being equal to 430 horse-power, it is considered she will possess great speed; her length to be 200 feet, and breadth 33 feet. A sufficient quantity of materials having been provided, upwards of 150 men have begun with the planking, and her stern frame being ready, the ceremony of raising it into its place was performed in a very interesting and imposing manner. A brass plate had been engraved with the following inscription:—"This Royal Yacht, built for Her

Majesty Queen Victoria, at Pembroke Dock-yard. The Keel laid down Nov. 9, 1842, the First Anniversary of the Birth-day of His Royal Highness Albert, Prince of Wales. The launching of the Yacht to take place in March, 1843. Superintendent, Captain Sir Watkin Owen Pell; Master Shipwright, William Edye, Esq.:" and a copper box prepared to contain it, with the gold and silver coins of the realm. They were placed in the box, and the top of it closed and soldered; so that it is completely water-tight. This box was sunk into a groove cut in the fore part of the principal stern-post; it was then very securely fastened with copper nails. This part of the ceremony was performed by Lady Evelyn, who drove the nails with much ease and precision. All being ready, the word was given to "set taut the purchase;" the massy weight rose majestically, and in one minute the frame was erect and in its place, the Royal Standard flying on the top of it; the Dock-yard band playing God Save the Queen. Hearty cheers were then given with three-times-three for Queen Victoria, and the workmen regaled with strong porter, two barrels having been placed one on either side of the keel. The whole of the arrangements were admirably performed, and there is no doubt but every part of this splendid vessel will be equally so. She is to be ready for launching in the almost incredible time of three months.—*N. & M. Gazette.*

THE LIVERPOOL ASSOCIATION OF SHIPMASTERS.—In a few of our recent numbers, we have inserted some important communications, forwarded to us by the Secretary of the Shipmasters' Association, at Liverpool, being the contributions to an open book for the purpose, kept in the room of the Society by its members for each other's information. It is clear that, such a method of communicating information to each other by shipmasters, respecting different parts of the world, is most excellent; and when further diffused, both at home and abroad, through the pages of this work, it becomes still more useful. It was with much satisfaction that, we gave room for these communications; feeling as we did, that, we were working with them, not only for their benefit, but for that of the community at large. It appears, by recent proceedings, however, that, the Association from some cause unprovided against, has been only saved from dissolution by an enlightened body of these gentlemen, who have passed resolutions, which will result in a reorganization, and no doubt a healthy progress of the establishment.

Every friend to society must rejoice in this; as every one must see that, the position of the master of a British merchant ship is (and ought to be maintained as) equally respectable as that of the captain of a man-of-war; and being so, it is just as desirable that, they should have their clubs and reading rooms as naval officers. Indeed we congratulate the Association on the step just taken, as it evinces a determination on the part of the shipmasters *themselves* to preserve their station: and we are quite sure that it will eventually be followed and work well. It is within our compass to recollect the shipmaster in the station we have mentioned. Well do we remember him appearing on the quarter-deck of his Commodore, from his own ship under convoy, as

much a gentleman as any other officer on that quarter-deck. And why should it be otherwise ?

But we look on all such measures as those of the Association, as putting the shipmasters on their trial, whether they will, or will not resume their proper station ; and those of Liverpool have not only responded in the affirmative, but have proved their desire by their decision on Capt. FitzRoy's proposed bill, to preserve that *esprit de corps* which formerly belonged to them,—in fact, by respecting themselves to make themselves respected. We sincerely rejoice at it and tell them in all sincerity that, “ KNOWLEDGE IS POWER.”

NAUTICAL NOTICES.

ROLLERS WEST OF THE EIGHT STONES.

WE have received the following from the Secretary of the Shipmasters' Association at Liverpool, and have referred to it in a former page:—

The following communication seems interesting, being so much in accordance with what Captain Midgley noticed on 29th of Dec. 1840 (precisely one year prior to Mr. Tomkins' date) and only 1° 44' further north, and 1° 54' east, than the situation of Midgley's Rollers, as given in the *Nautical Magazine* for this month, page 26.

“ On 29th of December 1840, in lat. 34° 44' N. and long. 17° 30' W. with a light breeze from the eastward experienced a very unaccountable but heavy swell from the north-east. It commenced about 3h. P.M. and at 8h. had reached its height, breaking at times over the vessel in an alarming manner. We had not much wind for two days previous, nor had we a strong breeze afterwards till over the line.

“ It resembled as much the boiling of a cauldron as any thing I could imagine, but was very unlike a sea or swell occasioned by wind. At midnight it had gradually subsided. All this time we had been rolling gunwales under on each side.”

Jan. 1842.

“ E. G. TOMKINS,

“ *Master of the barque Lady Mary.*”

CYRUS SHOAL, *Straits of Macassar.*

Barque Cyrus, June 9th, 1842.

SIR.—Allow me to request you will make known to the public, through the agency of your useful and valuable periodical, the *Nautical Magazine*, the existence of a dangerous and extensive shoal in the Straits of Macassar ; and which I first discovered in April, 1835. and at the time wrote an account of it to Lloyd's agent at St. Helena, but which shoal not having yet appeared in any of the charts of those Straits, I fear very few still know of its existence. Having my journal by me of that voyage, I take the liberty of sending you the abstract from that day.

“ April 9th. 1835, At four P.M. Cape Termoel E.b.N. the South Watcher N.N.E. $\frac{1}{2}$ E., the officer at the mast-head reported extensive and heavy breakers ahead of the ship. Steering then due north we immediately hauled off and brought the reef and South Watcher in one, bearing N.E. $\frac{1}{2}$ N. from the ship reef bears by compass S.W. $\frac{1}{2}$ S. from the South Watcher, and west from Cape Termoel. The weather was very squally at the time which prevented me from exploring it with my boats. It appeared to be about two miles in length

E.N.E. and W.N.W., and deep water within a mile of it, which was as near as I felt it prudent to go."

In 1840 I again saw the said shoal, and gave the bearings of it to Capt. Harford Arnold, of the Charles Kerr. It has been seen last month by Capt. Hey, of the ship Eclipse, who landed on it, and places it in the same position as I do.

To the Editor, &c.

I remain, &c.,

RICHARD SPRATLY, Master.

RIO GRANDE, Brazil.

Rio Grande de San Pedro do Sul, June 20th, 1842.

SIR.—A vessel arriving here should not draw more than 10 feet 6 inches water, in consequence of the shoalness of the bar, particularly when the winds have prevailed for some time from the west or north-west. Make the land about the Estreito, 8 leagues to the northward, where the anchorage ground is good, and where a vessel may come to with safety with any other than a south-easterly wind, provided there is no possibility of getting in that day, and which I should recommend in preference to standing off and on at the risk of being drifted away by the current. Early the following day get underway, coasting it down, not venturing in less than $4\frac{1}{2}$ fathoms of water until you come in sight of a white tower, which is a very conspicuous object; this lately has been made higher. There is a lantern on the summit, which is lighted at night.

This tower must be brought to bear north, when a flag will be seen on the top; if this signal is kept up a vessel may enter; if lowered down she must go out to sea again. After you have crossed the bar come to an anchor near the gunboat stationed there, until you have received a visit, when a pilot will come on board, and take the vessel up to the town. It is of importance that vessels coming here should be of light draught of water, as the canal up to the town is very shallow, and vessels have generally to be lightened before they go up. All other information is contained in Norie's Book of Directions; but as no recent account has appeared, I think it would be doing a great service to masters of vessels coming here to publish the above in the *Nautical*.

I am, &c.,

T. HOUGHTON.

[See some remarks on this place in our last vol. p. 720.—Ed.]

MINTO BREAKERS, Macassar Straits.

London, Dec. 8th, 1842.

SIR.—On my passage from New Zealand to Manila, in the barque Countess of Minto, the 3rd of January, 1842, at 9 A.M. a patch of breakers were observed to the south-west, dry in some places, more particularly the north part, it appeared to extend in a north-west and south-east direction. Took several good sets of sights for chronometers, and had a good meridian altitude of the sun, which carried back, will place this danger in lat. $8^{\circ} 10' W.$, long. $154^{\circ} 34' E.$

In my Chart, which is *Norie's latest*, there is no shoal, near this either in latitude or longitude. On the 6th of January passed Guam, interval three days, and with cross bearings could detect no error in chronometers; that is allowing the longitude per *Norie's epitome, last edition.**

I am a constant subscriber to your valuable work, and have not observed

* In p. 451 of our vol. for 1841, Capt. Goodwyn of the *Florentia*, says, "Norie's position $144^{\circ} 56'$ is about correct;" but Lieut. Raper, who has gone over these maritime positions with so much care places it in $144^{\circ} 41'$, far more likely to be "about correct."

any danger near this spot, mentioned before ; should you think the above, and the following worthy a place, you may confer a favour on my brother sailors.

I am, &c.,
J. K. WISHART.

In my passage from Singapore to London, same ship, by the Carimata passage June 1st 1842, turning to windward I was within a mile of a shoal, or sand bank above water, visible from the deck two to three miles, with the Eastern point of Billiton South Western Montaran Island E.N.E., and think the passage between the Montaran and Billiton very unsafe. On the 2nd of June saw the Discovery reef, and Discovery Bank, the positions agreeing with my observations.

J. K. WISHART,

CLARK ROCK, *Atlantic.*

15, *Surry Square, Dec. 6th, 1840.*

STR.—In reading this last months *Nautical*, I see a rock described as “Clarks Rock” wherein he gives the lat. $45^{\circ} 40' N.$, long. $19^{\circ} 17' W.$

When going out to the West Indies in 1840, in lat. $46^{\circ} 36' N.$, long. $19^{\circ} 30' W.$ I saw a rock within 100 yards, of a conical shape, it appeared about four feet out of water in the trough of the sea. It was blowing a strong gale at the time with a very heavy swell. I should think it would be under water in a smooth sea.

You will see by the Chart between these two places a vigia marked as doubtful called “Mayda” so it appears very evident that there is a rock about there.

I am, &c.,
D. ENGLAND.

NEW LIGHT IN THE BALTIC.—We understand that in consequence of the representation of Her Majesty's Minister at Riga of the great importance of a light at the extreme point of Courland to the trade of that place, it has been determined by the Russian Government to erect a Light-house at Lyserort, and measures have been adopted accordingly. This light will greatly facilitate the present dangerous navigation of that part of the Baltic, as it will lead from the north-west angle of Courland to the light on the northern extreme of Domeness into the Gulf of Riga.

Hydrographic-Office, Admiralty, Jan. 2, 1842.

NEUSTADT LIGHT.—Notice has been given by the Board of Trade and Customs at Copenhagen, that an Intermitting Light has been established on Point Pelzerhagen, in the Gulf of Lubeck, near the entrance of Neustadt Harbour. It gives a strong Flash every two minutes, but shows during that interval a continuous though much weaker light; and each Flash is preceded and followed by a momentary darkness. The height of the lantern being 48 feet above the level of the sea, the Flashes may be seen in clear weather 8 or 9 miles; and the weaker light about 6 miles.

The Lighthouse, which is whitewashed, stands in lat. $54^{\circ} 5' 17'' N.$, and long. $10^{\circ} 51' 54'' E.$ of Greenwich, bearing by compass from Travemünde N. by E. $\frac{1}{4}$ E. about 2 leagues, and S.E. by E. about half a league from the entrance of Neustadt harbour.

FALSTERBO LIGHT.—The Swedish Government has given notice, that the original Coal fire has been replaced in Falsterbo lighthouse instead of the

temporary Lantern announced on the 6th of July last from this Office; but that next Summer the Lantern light will be again resumed, till the apparatus for the new lamps is fitted.

The following are from the Shipping Gazette.

TORRES STRAITS, Stead's Passage.—Having passed through Torres Straits several times, I would advise persons taking that route, when once to the north of Port Jackson, to get into the longitude of Wreck Reef, to steer a direct course for it, and to sight either it or Cato Bank—the first in preference. Then steer to pass between Frederick and Keen Reefs, (on the latter the Bonavista was lost, whose crew I brought away in 1828,) and get into the fair way for Sir C. Hardy Island. When nearing the outer barrier, always try and make a reef laid down in lat. $12^{\circ} 12' S.$, long. $143^{\circ} 56' E.$ On the east of this reef is marked a "dry rock;" I saw three, the northernmost is the largest. Should the reef be made after noon, I advise to haul to the wind, and to try to gain a southing, so as to sight these rocks at daylight; but from the very strong northerly current it will be almost impossible to keep your ground. At daylight I should stand in, and sight the reef. If you do not see the rocks you may be certain you have drifted something to the northward. I would then tack and stand to the north-eastward, and in all probability you will make the detached reef; and, still standing on, you will see the wreck of the Flora on a reef to the northward of Detached Reef. In such case stand direct up to Detached Reef, get off the west end, and there wait for your latitude at noon; then steer a direct course for Sir C. Hardy Island. To pass through the Passage named after me, there will appear no opening, but keep on without fear, and on the northern reef, on the starboard bow, you will find the reef appear sunken, or a rippling; pass it, and you will soon see the opening; and, shortly after, Sir C. Hardy Island, then steer in for the Sand Hills, (marked in Horsburgh's small chart) and anchor for the night. Weigh at daylight, following Horsburgh's chart, until you have Bird Island south two or three miles; you will then be in Capt. King's chart;* follow his track strictly, noting the different islands and reefs as you pass them: should you neglect this, they are so numerous and small that confusion will follow. Anchor at Cairn-cross for the night, with the island S.E., one mile distant, in ten fathoms, muddy ground. From Bird Island to Booby Island there is not the smallest difficulty, provided you follow strictly Capt. King's track, always keeping the weather danger abroad.

The only difficult part of the passage is off Good's Island, where you will have to pass between two rocks. Steer boldly for that visible off Good's Island, and pass it close; you will then probably see that to the northward, which is sunken, and only just visible—so I have found it when the tide was at its highest, and the water very smooth; possibly, therefore, it may not be seen—but by passing close to the one off Good's Island you must be perfectly clear of the other.

T. A. STEAD, *Lieut. R.N.*

* Captain King's chart of the north-east coast of Australia, Sheet 3. contains the whole of the navigation already alluded to by Lieutenant Stead.

DICKINSON REEF.—The following letter was addressed to the editor of the *Bay of Islands Observer*, by Mr. William S. Harans, of the ship Thomas Dickinson, July 20. 1842:—

SIR.—Having recently very narrowly escaped shipwreck, I beg leave, through the medium of your paper, to make known the existence of a very dangerous reef (and not laid down in the charts extant, and probably before unknown).

Leaving Whyttertach, one of the Society Islands, on the 20th of June, steering W.S.W., all hands were roused on the 26th, between the hours of five and six A.M., by the officer of the watch, who in much confusion, was endeavouring to avoid the danger he alone had discovered. I reached the deck in time to have a fair view of the reef, as we passed to the windward of it at about two cables' length, as near as I could judge. It being dark as at midnight at the time, I could not determine its size, but think it about two ships' length, N.E. and S.W. The wind blowing a gale at the time, at E.b.S. the ship running off eight knots, under reefed topsails, and heading directly for the reef when first seen; the sea running high and breaking furiously over the reef, which was very little, if any, above its surface, (a point we could not determine), as we could see nothing but the spray and foam as it broke upon it. Had the ship struck, she must have gone to pieces immediately afterwards. Position of the reef by two chronometers—lat. $21^{\circ} 32' S.$, long. $168^{\circ} 54' 30'' W.$

ADELE BANK, R. GUAYAQUIL.—The following is an extract of a letter from Mr. Game, master of the Adele:—

“On the 1st of September arrived off the entrance of the river of Guayaquil, and despatched a boat to the town of Puna for a pilot. While beating up meanwhile, with a light breeze from the N.E., under easy sail towards the town, most unexpectedly and unfortunately struck the ground, or bank of hard sand, not laid down in any charts; in fact, the large Spanish plan of the bay and river indicated seven fathoms mud near the very spot where we struck.

“As the bank is in the route of vessels going to Puna for a pilot, I note the bearings, and would advise all masters of vessels bound up the river to anchor in front of Punta Espanola, at the head of Mola Bank, and send up for a pilot, for as yet the shoals have not been properly buoyed.

“The above shoal is about half a mile in circumference, with hard sand; the shoalest part has five feet water on it, and bears from Punta Mandingo S. $70^{\circ} E.$, and from Espanola N. $55^{\circ} E.$ per compass. Distant from the nearest land $1\frac{1}{2}$ ths mile to $1\frac{3}{4}$ mile.”

[Although not in the Spanish chart, in the survey of the river by Captain Kellett while in command of the Sulphur, we find the shoal alluded to. The survey we understand is preparing for immediate publication.]

SYDNEY.—New South Wales.—Aug. 20th: H.M.S. Favorite, arrived here from Tongataboo, touched at the different Friendly Islands—Tahiti, Tutuilla, Opolu, and Vavou. At Tongataboo she recovered her guns, which were taken from her when under the command of Capt. Croker. The natives appeared to be very friendly, and offered no resistance. The Favorite has experienced a succession of gales from the westward since leaving the islands.

A reef was seen by the Favorite on the 27th of July, in lat. $23^{\circ} 35' S.$, long. $180^{\circ} 49' E.$ (mag.) seven miles off the situation ascertained by the time at noon, with breakers on the south-west of it.

APPROACHES TO AUCKLAND.—Waitemata.—(Extracts from Harbour Master's Reports.) Commanders of vessels steering to or from the Port of Auckland should be careful to avoid the under-mentioned dangers: a rock lies off the north side of the Island of Waipeka, distant about four miles, even with the water's edge at high-water, with deep water extending to a short distance around it, from which the following bearings and land marks were taken:—North-eastern end of Waipeka, due east (mag.), Bird Island E.b.N. $\frac{1}{2} N.$; Northern end of Huva Kid W. $\frac{1}{2} S.$; Peak of Rangitoto S.W. $\frac{1}{2} West.$

A rock situate to the eastward of the Island of Tiri Tiri, Mantangi, distant

about one mile and a half, having two feet on it at low water, and 15 fathoms close to every side, from which the following bearings and land-marks were taken:—A remarkably white rocky islet at the north-eastern side of Tiri Tiri Mantanga, N.W.b.W., $\frac{3}{4}$ W. (magnetic.); Southern end of Tiri Tiri Mantanga, S.W. $\frac{1}{4}$ W.; centre of Little Barrier Island due north; Peak of Rangitoto S. $\frac{1}{4}$ E.; Castle Hill, E. $\frac{1}{4}$ S.

NEW LIGHT AT NEWPORT.—(R.I), Dec. 13th: The new lighthouse on the pier, built out from the north end of Goat Island, opposite this town, will be lit up this week, and the old one disused. This change will make no alterations in the directions for vessels entering this harbour; but the bearings of the light from various points are slightly varied. Vessels coming into the harbour from any quarter can run directly for the light, as heretofore, but can approach much nearer to it, and can pass close by N. of it.

SWEDISH LIGHTS.—The Royal Swedish Department of Marine has notified that the Baskar and Botto Lights, situated in the canal of Gottenburg which hitherto have been only lighted from the 15th of August of the one to the 15th of April of the following year, will in future, like the crown lights, be kept burning throughout the whole year.

DELAWARE LIGHTS.—Floating Lights Nos. 1 and 2, in the Delaware Bay, will leave their station on the 10th of December next.—ARNOLD NAUDAIN, Superintendent, Wilmington, Del., Nov. 28, 1842.—*New York paper, Dec. 6.*

HURRICANE of the 13th of January, 1843.

[Extract of a letter from Lieut. Evans, R.N., dated Bedminster, near Bristol.]

Thursday, 12th.—Calm and foggy; the ground covered with snow. Afternoon, a light breeze from the N.N.W.; night frosty, wind variable to the westward. A remarkably large circle round the moon; the area within of a pure azure colour, all without white fog; and immediately around the moon a yellow coloured halo, the circle extended to the zenith; air frosty.

Friday, 13th.—It was anticipated that some remarkable change in the weather would follow the lunar appearance of the preceding night; but why such a prediction was made, it would, perhaps, be difficult to say; it was, however, verified. Was the circle seen in the sky, a reflection of the approaching meteor rushing over the bosom of the ocean? Is the thought preposterous? However, about 2h. A.M. the rain suddenly came pouring down in tropical torrents. and shortly after a strong gale from about S.S.W. followed; squalls violent, wind veering to the south-west.

At 8h. 30m. A.M., wind had drawn round to W.S.W. and lulled; the rain ceased. 9h. both recommenced; the gale strong from west. Towards noon another lull and cessation of the rain for half an hour. The barometer is stated to have been at this time as low as 28 $\frac{1}{4}$ °, (at Liverpool the depression was from 28.92 to 28.05.)

About half an hour past noon the gale and rain were renewed; the squalls very powerful from W.b.N.: 3 P.M. squalls extremely heavy from W.N.W.; the crisis appears to have been between noon and 3 P.M. Between 3h. and 5h., there were lulls; the rain gradually lessening, and shortly after 5h. ceased

altogether. At 5h. the wind had veered to north-west; clouds breaking, and the scud fleeing to the south-eastward. At 7h. p.m. the sky became clear, and the squalls less severe, but it still blew a gale. At 8h. smart squalls, some of the puffs heavy but of short duration. 9h. squalls lessening, but the gale continued up to midnight with wind about N.W.b.N. a duration of 22 hours.*

In Kingroad the vessels at anchor drove, and one or two were driven on shore. In other parts, many vessels have been wrecked; but in none of the accounts I have seen, is there the least mention of the direction and veering of the wind! The storm appears to have been moving to the E.b.N. 11 or 12 changes of wind. Its severity I should say, from mere judgment, not to have exceeded 11 of the scale, and at intervals very much lower.

This storm was followed by the rare phenomenon of an Aërial Whirlwind.

Saturday 14th.—The squalls continued until daylight, when the wind gradually lessened, became moderate and backed to west. During the remainder of the day it was variable; and notwithstanding the deluge of rain which had fallen, the evaporation was so strong that the roads became not only dry, but in some places dusty. As the day closed, the clouds gathered, and snow, sleet, hail, and drizzling rain succeeded each other—for a short time the sun came out bright, and the fall of moisture ceased. About 4h. p.m. the sleet, hail, and rain were renewed; the latter continued until darkness spread over the land.

At 7h. 30m. my attention was suddenly arrested by the smoke rushing down the chimney, and speedily filling every part of the house; a circumstance that had never before happened. Immediately after, to my great surprise, I heard the roar, as if a furious hurricane was raging outside, the sound I can compare to nothing better than the approach of a thousand steam carriages along a railroad. I ran instantly into the garden, to my infinite astonishment it was a *dead calm*, with a few perpendicular drops of rain falling, but, the *roar* of wind seemed not only to surround me, but to be over head also! The night was light, the sky cloudy, and the tall tops of the elms waving to and fro. I stood amazed! In five minutes after, the wind rushed down upon the spot with the violence of a hurricane, the blast was from the W.N.W. Its disruption was instantaneous. At 8h. a stiff gale blew from the N.W., veering to the northward. At 8h. 15m. a lull,—wind north At 9h. a light breeze. At 9h. 30m. a calm! Snow fell as the wind veered northerly, and covered the ground. It was felt at Bristol about the same time; a mile distant.

EXTRACTS OF LETTERS from the Hon. Capt. R. S. Dundas, C.B. to Capt. Beaufort.

Melville Castle, Jan. 18th, 1843.

“I slept on Thursday night the 12th instant at Gosford, which is close to Aberlady Bay, and came home here on Friday afternoon by the Coast road, the ground being covered with snow, which had fallen early on the morning, with a strong breeze from the south-east; but certainly not a very heavy gale.

“At the time when I was coming home, there was very little wind; and on my arrival in this house the barometer was at 28.0. We all naturally concluded that we were to expect a heavy gale, or, that we should hear of one at no great distance from us; but the night passed off with another somewhat strong breeze, but with nothing extraordinary.

“When I went to bed, about 11 o'clock, the clouds were passing slowly from the north-west, and, I believe, the wind in the night was about W.N.W. (true). Nothing further occurred, not even the loss of a chimney pot, and in the morning the Barometer had risen to 28.50, and has continued rising slowly ever since. I was of course by no means surprised to hear that there had been heavy gales on other parts of the coast, and perceiving in the Newspapers that

* Lightning and Thunder were reported to have occurred.

the wind in the Channel was south-westerly, and that in London, at Plymouth, Deal, Yarmouth, and North Shields, there were gales which are all stated to have commenced blowing violently about two, and three, and four o'clock on the morning of Friday, the 13th inst., it naturally occurred to me to consider that this was precisely the time when I was at Gosford, and that the sleet and snow were pattering against my bedroom window facing about south-east. My curiosity being excited, I took up an Edinburgh Newspaper yesterday morning, filled with paragraphs from other papers, and with sundry reports at Lloyd's; and fixing upon the hour of three o'clock on Friday morning, I find the wind is stated to have commenced at Devonport at west, veering afterwards to the northward. Off the Owers, and at Brighton, it was called south-west; at Deal and Ramsgate S.S.W.; at North Yarmouth, south and westerly, and at North Shields, south-east. A vessel is said to have been wrecked on the Coast near Dunbar, and another ran on shore on the Mickry Rock, in the Firth of Forth, with the wind at E.S.E.

It is not a little singular, however, that at Liverpool there was no gale at all until Friday afternoon, when it seems to have commenced blowing violently about six o'clock in the evening, at which time the Barometer here was at the lowest. A glance at the Map of England, will shew that the neighbourhood of Liverpool is nearly midway between Devonport, where the wind at 3 a.m. was west, and the Firth of Forth where it was E.S.E. Taking then the neighbourhood of Liverpool as a centre, with the distance from thence to Plymouth as a radius, and describing a circle upon the map, you will perceive, that the circumference as it passes round Deal, Yarmouth, Sunderland, &c., until it reaches to the northward of the Firth of Forth, will correspond with tolerable accuracy with the direction of the wind at all the different places, as I have quoted it at random from the newspapers; it being necessary, however, to suppose the storm rotatory round Liverpool, as a centre, at that hour, and to revolve from south by east to north. My rough data will not enable me to arrive at any more satisfactory conclusion, and I am altogether at a loss not only with respect to the other half of the circle, but still more so with respect to the subsequent motion of the centre. I must, however, conjecture, that the lull in the morning at Liverpool was succeeded in the afternoon by a gale quite as violent as at any other place; while the half gale in the morning here, was succeeded at six o'clock in the evening by a lull with a very low barometer.

The facts so far are curious, and as I am not quite convinced yet of the truth of this rotatory theory, I feel that if any thing is ever to be made of it, it can only be by careful comparison of correct data, such as can be only collected upon occasions like the present. It seems, however, to me that the motion of these storms, if rotatory at all, may sometimes be elliptical, and that the ellipses occasionally may be very eccentric, and in that case I imagine that the observations of the Coast Guard officers, and Tide observers, in the country would be most useful auxiliaries in establishing or rejecting the truth of the theory.

I am, &c.,

R. S. DUNDAS.

Melville Castle, Jan. 19th, 1843.

Since my letter of yesterday, I have picked out the following extract from a *Cork Newspaper* of Friday the 13th, "Violent Storm.—This city has been visited last night and this morning, with one of the heaviest gales, &c., the wind blew from N.N.W." Another *Cork* account of the 13th states that, "It has blown a tremendous gale all night from S.S.E., this morning it shifted to the westward."

The report from Kinsale is: "Jan. 13th wind N.W. a gale." I therefore think it probable that, with reference to the time fixed upon in yesterday's letter,

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the two accounts of the wind from N.N.W. and N.W., coupled with the other account of a shift on the morning of the 13th, will be found to be correct, and that the wind on that part of the Coast, was in reality north-westerly, about the time which I selected. A reference to the circumference of the circle will shew that this is, as it ought to be, to establish the truth of my proposition, and is so far satisfactory; but another inference to be drawn from these extracts, is the very obvious one of the necessity for correct data, both as to time and direction, from as many places as possible.

I cannot discover the direction of the wind at Liverpool, at any one particular hour of the day, except that it was west there before it began to blow strongly, and when the barometer there was so low. The ship *Vernon** put to sea on the Friday morning, which corroborates the fact of the weather there being moderate at the time it was most furious along the south coast.

R. S.

THE LATE WRECKS.—We have just learnt that a large meeting, at which the benevolent Sir John Pirie, Bart., presided, has been held at the Hall of Commerce; at which it has been resolved, that a concert shall be given in that establishment, the produce of which is to be devoted to the relief of the unhappy relatives of those, who have lost their lives by the late wrecks. Surely one concert room will not hold all those who would contribute to so gratifying a subscription. Why not have three?

THE LOSS OF THE CONQUEROR.

Woolwich, January 20th, 1843.

SIR.—In the *Times* of the 19th inst. there is a letter from a correspondent signing himself "Lux," who says the cause in his opinion, of the loss of the "Reliance" and the "Conqueror," is simply the new light on Cape Grinez, which being much more powerful than any other in the channel, is liable to be mistaken for Dungeness."

Although the writer modestly disclaims having "much acquaintance with nautical matters" it is to be feared that many who read this letter, and see no contradiction to it, may think that the cause of these unfortunate wrecks, has been correctly assigned, and that there is no need of further enquiry; and still worse that this lamentable disaster will pass over and be forgotten, and not serve as a warning to others: whereas if the true account of the case be stated, it conveys another emphatic warning to all sailors, that no lights, no look out, no seamanship can avail, if we neglect the only real safeguard of our shipping

THE LEAD.

Cape Grinez light cannot by any possibility be mistaken for that of Dungeness, inasmuch as the latter is a *fixed* bright light, and Grinez a brilliant *revolving* light eclipsed every half minute.

Dungeness light stands on a low shingle point, at an elevation of 92 feet above the sea, and is visible only 14 miles. Grinez light stands on a cliff 194 feet above the sea, and is visible from 22 to 25 miles in clear weather.

So far "Lux" is right, that the latter is visible far beyond the former; yet not because of its greater brilliancy, but on account of its greater elevation. It would be easy to build Dungeness light-house higher, but very undesirable, inasmuch as one of the chief objects of that light is to draw ships over to the English shore, and thus enable them to clear the two dangerous shoals the *Varne* and the *Ridge*, which lie midway between the English and French coasts hereabouts; and no ship under any circumstances should attempt to run farther up channel without having sighted Dungeness.

* It is remarkable that the ship *Vernon* was wrecked.

The only light for which Grinez *may* be mistaken, (and this I should have thought impossible, had not an instance of such a mistake, even by a Branch Pilot, recently occurred) is that of Beachy Head. Both are revolving, the latter once in two minutes, the former in half a minute, but these lights are fifty-four miles apart, and to provide against such a possible contingency would baffle even the skill and experience of the Corporation of the Trinity, who are always on the alert to place lights, with judgment, on the most prominent and the most useful spots. The British Channel, to use a homely expression, is as well lighted as Regent Street, and in running up or down in clear weather, one light is hardly lost sight of before another is seen; but as I said before no lights will avail if we neglect our lead.

It may be objected that the light on Cape Grinez has only been revolving since the 1st of July last year;—granted, but immediately on its being notified by the French Government, a printed official notice of the change was issued from the Hydrographic Office of the Admiralty, in the beginning of March last, and upwards of three hundred copies of it sent to the Trinity, the Customs, Lloyd's, and other corporations connected with shipping. It was also published in the *Times*, and thence copied into all the leading journals in Europe and in India; it appeared too in the *Nautical Magazine* and *Shipping Gazette*, and has been reprinted and circulated by the Trinity Board, so that the change has been made as extensively known as possible.

The case of the unfortunate *Reliance* seems inexplicable. She appears to have run up channel with a fair wind, but without sighting the land. Her longitude would seem to have been right, as just before she struck they were looking out in a north direction for Dungeness, which was its right bearing, but unhappily she was five-and-twenty or thirty miles too far to the southward. Was no sun or no star visible during the long run up channel by which to get a sight for latitude? Perhaps, it was thick weather? Perhaps, her compasses were affected by local deviation? Possibly she steered a wrong course! * the only means of detecting errors arising from these various sources would be the soundings. † Had the lead been kept going, the deeper water and "coarse ground" in mid-channel, and over towards the coast of France, would have warned the *Reliance* of her danger.

In the more recent case of the *Conqueror*, a fisherman (not a pilot) was taken on board off Torbay, and an effort was made to land the passengers at Portsmouth. We may, therefore, fairly suppose that the light at Beachy Head was seen. Shortly after it appears that the sails were all split, and the ship became unmanageable, and drifted, apparently by the mere force of the gale on to the French coast near Etaples. Under these circumstances the best and indeed the only thing to be done was to anchor. The masts had already been cut away, ‡ the vessel, therefore, was in the best state for riding, if it was possible to ride, and had she anchored at once with two cables ahead, there seems to be no reason for supposing that she might not, under Providence, have rode out the gale. §

I submit this explanation with the greatest deference, as Captain Duggan is said to have been an excellent seaman, and would doubtless take the best steps in such an emergency; but my object is to impress upon younger Commanders in like circumstances, indeed in any case of fog, or doubt or difficulty, that our best and our never failing safeguards, are our lead and our anchors. With a

* Improbable as this may sound the writer was on board a frigate, the "*Sibylle*," in 1813, which, in running down Channel from Portsmouth to Plymouth, in a long winter's night blowing hard from the eastward, steered W.S.W. instead of W.N.W., and the first lights seen were the Caskets off Alderney on the coasts of France.

† By soundings I mean not an occasional cast, but once an hour at least, or oftener in thick weather.

‡ It was so stated in the first accounts.

§ The Russian vessel that brought up with two anchors is now safe in Boulogne harbour.—Ed. N.M.

good scope of hemp cable (two cables at least) a ship will ride much longer than is generally supposed. It was the common practice of the North Sea fleet during the last war to anchor in the middle of that Sea, and always with much greater safety than driving about in thick blowing weather, in long winter nights at the mercy of uncertain tides, and in the immediate neighbourhood of sand-banks.

Our other safeguard is the lead, and above all Massey's patent sounding lead. Formerly it was necessary to deaden a ship's way, and in deep water to lie to, in order to get correct soundings. But with this invaluable machine the accurate depth may be got, when running at the rate of ten knots an hour, and the expense of it is so trifling, that it is surprising that, any owner of a ship, or the underwriters at Lloyd's, will allow a vessel to go to sea without it.

Let us not then deceive ourselves by fancying that lights more in number or more brilliant would, in such a case, save our ships from running on shore. Near the spot where these two unfortunate vessels struck, there were no less than five lights close at hand, D'Alpreck, and the two lights in the Bay of Etaples to the north, and the Points de Berck and Cayeux to the south, (for it must be borne in mind that the Coast of France here trends north and south, not east and west as is often imagined) yet these lights were of no service, even if the state of the weather allowed them to be visible:—no, the warning was required sooner, and nothing but the lead could give that warning, and in the case of the "Conqueror" nothing but immediate anchoring could have made that warning of any avail.

Once again then I must be allowed to repeat, even at the risk of tiring the patience of your non-nautical readers, that with good Charts, the real safeguard and stand-by of our shipping are our anchors and our lead. In the calm and sunshine of fine weather it is just possible that these may be thought lightly of, but in the hour of need, in mist and storm, and darkness, when neither light nor star can be seen, the mariner may under Providence, confidently place his reliance in the means at his command, if he have but judgment and decision to have recourse to them in time.

I remain, &c.

JOHN WASHINGTON, *Captain R.N.*

To the Editor, &c.

P.S. I have heard several suggestions as to placing a light-vessel in this neighbourhood, as on the western edge of the Ridge, or, mid-channel, but I cannot approve of them; if a light-vessel is to be placed anywhere, the middle of the *West Vergoyer* shoals in 8 fathoms water, nearly in the parallel of Etaples, would seem to be the best place; but, as I said before, I deprecate any additional light.

But there is one point that demands immediate attention, namely, that of establishing life-boats, mortars, rockets, and every thing ready for succour in case of shipwreck on that wild and uninhabited coast between Boulogne and St. Valery. From the known liberality of the French Government, I feel sure, that a representation of the necessity of such a measure would meet with immediate attention, and might be sufficiently carried out by the Royal Humane Society of France, and then we should be spared the lamentable loss of life incurred, in future, as on these two recent occasions.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

The Queen has been pleased to nominate and appoint Captain Thomas Bouchier, a Companion of the most Hon. Military Order of the Bath, to be a Knight Commander thereof. Her Majesty has also been pleased to nominate and appoint the

following officers, in her Majesty's Naval Service, to be Companions of the said Most Hon. Military Order:—Captains the Hon. Frederick William Grey; Peter Richards, Sir James Everard Home, Bart.; Brevet Lieut.-Col. Samuel Burdon Ellis, Royal Marines; Charles Richards; Henry Kellett; Rundle Burgess Watson; William Henry Anderson Morshead; Richard Collinson.

Admiralty, Dec. 30.—With reference to the *Gazette* of the 23rd instant, the undermentioned Naval Promotion has taken place, in consequence of the recent war in China:—Lieut. T. F. Birch, to be Commander.

PROMOTIONS.

CAPTAIN—J. Hallowes.

COMMANDERS—T. G. Forbes—J. A. Gordon—G. Smith—E. Piérse—F. Cannon—Hon. C. Sinclair.

LIEUTENANTS—H. R. Foote—F. T. Chetham—S. Fowell, R. Hopkins, J. N. Norman—S. H. Derriman—J. Seacombe—G. Smith—A. F. Kynaston—G. R. Moyle—G. H. Gardner.

SURGEON—A. Adam.

PURSER—W. Bateman.

APPOINTMENTS.

ADMIRAL—Sir C. Rowley, Bart., *gc.* to be Port-Admiral at Portsmouth.

CAPTAINS—R. F. Rowley, (1830) to be flag-captain at Portsmouth—E. Belcher, *cb.*, (1841), to *Samarang*—C. Hotham (1833) to *Gorgon*—G. F. Rich, (1823) to *Queen*—W. Toby (1840) to flag ship at Portsmouth—G. W. Smith (1841) to *Sulphur*—G. N. Broke (1840) to *Thunderbolt*—W. Maitland (1840) to *Spiteful*—G. G. Otway (1841) to *Vixen*.

LIEUTENANTS—G. R. Moyle (1842) to *Dublin*—P. Parkhurst (1841) and W. H. Rushbrooke (1841) to *Cambridge*—F. W. Horton (1839) to *Dido*—S. Fowell (1842) to *Harlequin*—W. Horton (1842) and Lord A. A. Beauclerc (1841) to *Gorgon*—J. C. Provost (1835) and R. W. Twiss (1829) to *St. Vincent*—C. F. Wade (1838), H. W. Baugh (1841), and E. A. Inglefield (1842) to *Samarang*—J. F. Stirling (1824) to be flag-lieut., to Adml. Sir E. Codrington—H. R. Foote (1842) to *Albert*—C. J. P. Glinn (1842) to *Camperdown*—T. B. Stewart (1842) and W. P. Jamison (1840) to *Thunderbolt*—C. C. Powell (1838) to *Frolic*—G. A. Leary (1821) to *Shylark*—G. Oldmixon (1815) to *Megara*—W. Winniett (1821) to *William and Mary* yacht—T. J. Smyth (1842) to *Madagascar*—H. Wall to *Resistance*.

MASTERS—E. M. Chaffers (1831) act. to *Warspite*—J. F. Loney, act., to *Samarang*—J. H. Ashton (1841) to *Thunderbolt*—H. N. Thomas (1835) to command *Supphire*—H. Baker (1841) to *Gorgon*.

MATES—M. R. Dyett to *Wasp*—H. F. W. Ingram (1840) to *Aigle*—R. M'Kinley Richardson to *Resistance*—J. J. O. F. Carnichael to *Aigle*—W. J. Pollard to *Megara*—A. Wodehouse, R. H. Mends, F. W. Smith to *Excellent*—H. T. N. Cheshire to *Pique*—C. M. Aynsley to *Scout*.

SECOND-MASTERS—N. J. Loane to *St. Vincent*—Ivemay to *Quail*—W. H. Crane to *Caledonia*—G. Moore (add.) to *Redwing*—J. F. Beckett to *Thunderer*—W. D. Beach to *Vernon*—T. Griffith, to *Megara*—J. Richards to *Samarang*—W. Tozer (act.) to *Hamoaze*—G. Hicks (act.) to *Devon*.

SURGEONS—C. M'Arthur, *m.d.*, to *Victory*—W. Bruce to *Camperdown*—P. Niddrie, *m.d.*, to *Gorgon*—H. W. Mahon to *Samarang*—J. Hateley to *Thunderbolt*—J. Rees to *Frolic*—M. Pritchett to *Spiteful*.

MASTERS'-ASSISTANTS—J. Waye to *Caledonia*—W. N. Jewell and W. H. Harvey to *Victory*—G. F. M'Dougall and H. Browne to *Samarang*.

MIDSHIPMEN—F. Rich to *Indus*—J. T. Cust, to *Thunderbolt*—B. O. Adelborg to *Warspite*—C. E. Rowley to *Agincourt*—G. Stratton to *Frolic*—E. Scroggs to *St. Vincent*.

VOLUNTEERS 1st Class—C. S. Seaman to *Bittern*—W. R. Bent to *Lucifer*—H. Montagu to *Vanguard*—J. Marryatt, J. H. Ormonde, and C. P. Vyvan to *Samarang*—G. B. Keene to *St. Vincent*—J. C. Soady to *Wasp*—E. Barclay to *Gorgon*—H. P. Milman to *Monarch*—M. Breen to *Scout*—T. W. Smyth to *Cambridge*—G. Tucker to *Thunderbolt*.

ASSISTANT-SURGEONS—M. T. West to *Lily*—J. Walsh *m.d.*, J. F. Moffatt, and E. Johnson, *m.d.*, (add.) to *Illustrious*—J. J. Acheson, C. Smith, and T. Crawford to *Dublin*—G. St. George Power to *Minden*—E. Evans to *Gorgon*—J. S. Peddie to *Victory*—A. Adams to *Samarang*—R. Hastings to *Thunderbolt*—J. Finlay (add.) and A. Slight to *Illustrious*—L. C. Campbell and J. Bernard to *Madagascar*—M. J. Dill, *m.d.* to *Spiteful*—J. Henderson, *m.d.* to *Caledonia*—W. Bateman to *St. Vincent*—W. Care to

Rhadamanthus—D. Tucker to *Wasp*—E. Elliott to *Malabar*—R. Brennan to *Megara*.

PURSERS—W. D. Bateman to *Dido*—W. Coningworth to *Gorgon*—Cunningham (act.) to *Wolverine*—W. S. Cooper to *Samarang*—Hamilton to *Thunderbolt*—Dyer and J. G. Lean to *Champion*.

CHAPLAINS—Rev. W. N. Snowe to *Pique*—Rev. T. Main to *Excellent*.

NAVAL INSTRUCTORS—M. P. Sambell to *Queen*—C. Osbourne B.A., to *Thunderer*.

CLERKS—W. Hickman to *Spider*—C. Richards to *Samarang*—J. A. Messner to *Thunderbolt*—E. R. Robins to *Victory*—J. H. W. Bowman to *Wasp*—E. F. S. Cheesman to *Megara*—Z. Slaney to

Whinchester—J. E. Price to *Howe*—A. T. M. Roberts to *Frolic*.

COAST GUARD.

Appointments.—Lieut. A. Cooper to the command of the station at Cromer—Lieut. W. A. Ferrar to Jury's Gap—Lieut. W. Southey, to Winchelsea Station.

Removals.—Mr. W. Gray, to be acting Chief officer at Staiths—Lieut. H. Gill, to 39 Tower—Lieut. J. Coleman, to priory—Mr. P. Jenkins to be chief mate of Victoria R.C.—Lieut. W. Tullis, to Gourock—Lieut. W. Congdon, to Milk Cove—Lieut. J. Markett, to 48 Tower—Lieut. J. D. Ramsay—Lieut. F. Hire to Cornhill.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ALBAN, (st. v.) Mr. J. King, Jan. 2, left Portsmouth for Deptford.

CAMBRIDGE, 78, Capt. E. Barnard, Jan. 2, sailed for Plymouth.

CHARYBDIS, 3, Lieut.-Com. De Courcy, Jan. 13, arr. at Spithead, from West Indies.

MEGERA, (st. v.) Lieut. Goldsmith, 17, Jan. left Plymouth for West Indies.

ROCKET, (st. v.) 31 Dec. paid off, crew turned over to the Fearless.

ROVER, 18, Com. Keele, Jan. 7, arr. at Portsmouth from Quebec, 8, sailed for Chatham, 12th at Sheerness and proceeded to be paid off.

SPITEFUL, (st. v.) commissioned at Portsmouth, by Lieut. A. C. Murray, for Com. W. Maitland.

TARTARUS, (st. v.) commissioned at Woolwich, Jan. 2.

PORTSMOUTH—In Harbour.—St. Vincent, Victory, Excellent, Royal George yacht, Samarang, Frolic, Nautilus, Thunderbolt, Volcano, and Fearless steamers.

PLYMOUTH—In Harbour.—Caledonia, San Josef, Cambridge, Spiteful, African, and Confidence steamers. In the Sound.—Thunderer.

ABROAD.

ACORN, 16, J. Adams, Nov. 9, left St. Helena for Ascension and Coast of Africa.

AGINCOURT, 72, Capt. W. H. Bruce, Sept. 22, arr. at Hong-Kong.

ALFRED, 50, Com. J. W. Purvis, 27, Dec. at Rio.

AVON, (st. v.) Lieut.-Com. H. Byng, Nov. 22, left Jamaica for Port au Prince Dec. 1, returned.

BASALISK, 6, Lieut. J. C. Gill, Aug. 12, arr. at Arica from Valparaiso, 21 sailed for Yslay.

BEAGLE, (st. v.) Com. J. L. Stokes, Aug. 8, arr. at Sydney from Launceston.

BITTERN, Com. Hon. C. Carey, Nov. 3, left the Cape for Benguene.

BRAMBLE, Mr. C. B. Yule, Aug. 28, arr. at Hobart Town.

CALLIOPE, 26, Capt. A. L. Kuper, 5 Oct. left Macao for the Cape.

CARYSPORT, 26, Capt. Lord G. Paulett, Nov. 2, arr. at Magatlan.

CLEOPATRA, 26, Capt. Wyville, Oct. 26, left the Cape for the Mauritius.

CLIO, 16, Com. J. G. Freemantle, 20 Nov. at Kedgess from Macao.

CROCODILE, 26, Nov. 25, arr. at St. Vincent, from Granada, and sailed for Barbados.

DAPHNE, 20, Capt. J. J. Onslow, Nov. 24, arr. at Rio.

ELECTRA, 18, Com. Darley, Nov. 14, left Honduras for Vera Cruz.

FLY, Capt. H. P. Blackwood, Aug. 8, arr. at Hobart Town.

HAZARD, 18, Com. Bell, Oct. 15, arr. at Singapore from Chusan, 17, sailed for Sydney.

HEROINE, 10, Lieut. Stewart, Nov. 7, arr. at Bathurst, from Cape de Verdes, 9 sailed to leeward.

LILY, 16, Com. J. J. Allen, Oct. 24, at the Cape.

LOCUST, (st. v.) Lieut.-Com. J. Lunn, Dec. 24, at Gibraltar from Plymouth, 27 proceeded to the eastward.

MALABAR, 74, Capt. Sir G. Sartorius, October 22, arr. at Monte Video from Rio.

NIMROD, 20, Com. C. A. Barlow, 7, Nov. at Calcutta from China.

PARTRIDGE, 10, Lieut.-Com. J. Nott, Oct. 12, arr. at Monte Video, from Buenos Ayres.

POLYPHEMUS, Lieut. J. Evans, Dec. 22, arr. at Gibraltar, 26, returned to Malta.

RODNEY, 92, Capt. S. Maunsell, Dec. 27, arr. at Lisbon from Barcelona.

SALAMANDER, (st. v.) Com. A. S. Hammond, Nov. 15, arr. at Rio.

H.M.S. DRUID, 44, AND **HYACINTH**, 18.—The British residents in China have presented Capt. Henry Smith, c.b., of the *Druid*, and William Warren, late of *Hyacinth*, with a handsome service of plate each, value 400 guineas, "as a mark of their esteem, and in testimony of their high sense of the energy, ability, and judgment displayed by them in the performance of the arduous duties devolving on them throughout a period of difficulty and danger, during the eventful season of 1839 and 1840." At that period the *Hyacinth* and *Druid* were the only two of Her Majesty's ships on the station.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 15th, Feb. Southsea, the lady of Captain Frederick Wood, R.N., of a daughter.

Marriages.

At St. Paul's on the 10th inst., Capt. Douglas, R.N., to Elizabeth, daughter of — Hawes, Esq. of Southsea.

Jan. 7, at Charlton Church, Kent, the Rev. W. Burnett, M.A., Fellow of new College, Oxford, only son of Sir W. Burnett, K.C.H., to Maria Rosara, third daughter of Rear-Adm. Sir James A. Gordon, K.C.B.

Feb. 15, 1842, at Norfolk Island, N.S.W., Capt. Edward Hill, of H.M.S. 96th Reg. youngest son of the late Thomas Hill, Esq., of Brighton, to Catherine Emmy, youngest daughter of Capt. Macanochie, R.N., K.H.

At Antony Church, Cornwall, on the 13th Feb. Sir Cecil Bishopp, Bart., to Miss Hillyar, eldest daughter of Rear-Admiral Sir James Hillyar, K.C.B., K.C.H.

Deaths.

On the 22nd inst., at St. John's-wood Admiral Sir John Lawford, K.C.B.

On Sunday, the 18th inst., at Cross, near Londonderry, Capt. Vincent Beatty, aged 64 years.

On the 18th Dec. at Freshford, near Bath, William Lawson, Esq., Lieut. R.N. He served in the late war, and was severely wounded when mate of the

SCYLLA, 16, Com. R. Sharpe, Dec. 2, arr. at Jamaica from Barbados.

SPARTAN, 26, Hon. Capt. Elliott, 28 Nov. arr. at Jamaica from Bermuda.

TWEED, 20, Com. H. Douglas, Nov. 17, sailed for Antigua.

VANGUARD, 80, Capt. Sir David Dunn, Dec. 27, arr. at Port Mahon from Malta.

VINDICTIVE, 50, Capt. J. T. Nicholas, Sept. 20, left the China Sea, for Sydney and South America.

VOLAGE, 26, Capt. Sir W. Dickson, Nov. 20, left Halifax for St. Vincent.

WOLF, 10, Com. C. O. Hayes, Oct. 28, left Simon's Bay for Hong-Kong.

Cambrian, 1805, and again at the siege of St. Sebastian.

At St. George's-square, Portsea, on the 19th, inst., Captain W. Riddle, R.N. aged 77 years.

At Haslar, on the 31st of Dec., Mr. W. Grady, gunner, R.N. aged 30 years.

Lately at Cork, after a short illness, Lieut. Edward Biffin, R.N.

On the 9th of Dec. at St. Thomas's, West Indies, of yellow fever, aged 25, John Kent, eldest son of the late Lieut. W. Ellison, R.N. and grandson of the late John Kent, Esq., Royal Naval Hospital, Plymouth.

At Gateshead, Dec. 24th, Mr. Timothy Young, Purser, I.N. (1806), aged 60 years.

At Haslar Hospital, Dec. 28th Mr. W. Wiseman, purser, R.N., (1815).

In London, Jan. 1st, G. A. Ellis, purser, R.N., after many years suffering from a severe wound received in action with a flotilla of French gun-boats off Dunkirk. He was brother of Lieut.-Col. Ellis, c.b. Royal Marines.

At Dover, on the 25th Jan., Lieut. J. Hamilton, R.N., aged 29 years.

At Bury Road, near Gosport, Anna Maria, sister of Com. T. Ball, R.N.

On the 28th, Dec. Mary Irwin, of Trevor-square, Knightsbridge, widow of the late Capt. J. Irwin, R.N., aged 67.

At Stoke, near Devonport, on the 26th Dec. Commander J. Keane, (1814).

In Waterford, Maria, wife of Lieut. Darby, R.N. Commander of H.M. Packet Advice.

At Hardway, on the 8th Jan., Elizabeth, daughter of the late Capt. Henry Ashington, R.N.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.
From the 21st of December, to the 20th of January, 1843.

Month	Day	Barometer		Fahr. Thermometer				WIND.				WEATHER.		
		In Inches and Decimals.		In the Shade.				Quarter.		Stren.		AM.	PM.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	A.M.	P.M.	AM	PM			
		In Dec.	In Dec.	o	o	o	o							
21	W.	30.30	30.30	50	54	47	55	W	W	2	1	o	bc	
22	Th.	30.20	30.09	49	51	48	53	SW	SW	4	5	bc	b	
23	F.	29.65	29.58	47	46	46	47	SW	SW	4	2	or (2)	o	
24	S.	29.60	29.66	34	39	32	40	SW	SW	3	3	b	bm	
25	Su.	29.80	29.75	34	44	31	47	SW	SW	3	4	b	o	
26	M.	29.57	29.50	48	48	46	50	SW	SW	6	6	qbc	qo	
27	Tu.	29.29	29.43	43	43	42	45	W	W	2	2	or (1)	bc	
28	W.	29.93	30.07	32	38	31	41	SW	W	2	2	b	b	
29	Th.	30.12	30.10	45	49	31	50	SW	W	6	5	qo	qo	
30	F.	30.18	30.20	51	53	49	55	SW	SW	4	4	o	bc	
31	S.	30.15	30.03	51	63	50	54	SW	SW	5	6	qo	qo	
1	Su.	30.24	30.23	36	37	35	38	NW	NW	4	4	b	b	
2	M.	30.00	30.00	32	35	29	36	NW	N	2	4	bm	bm	
3	Tu.	30.12	30.16	27	33	25	34	W	SW	2	1	bcm	bcm	
4	W.	29.88	29.90	39	41	31	42	SW	NW	6	4	qor (2)	bc	
5	Th.	29.83	29.80	37	38	33	41	W	N	4	6	bcp (2)	qbc	
6	F.	30.09	30.06	33	37	31	38	NW	SW	3	1	bc	o	
7	S.	29.94	29.81	40	44	37	44	SW	SW	2	4	bc	qbcp (4)	
8	Su.	29.40	29.35	39	38	37	40	W	W	5	4	qp (1) (2)	bc	
9	M.	29.60	29.60	31	38	30	46	NW	SW	3	5	bm	or (4)	
10	Tu.	28.85	29.03	39	39	38	40	W	W	8	8	qor 1) (2)	qo	
11	W.	29.07	29.03	32	37	31	38	SW	SW	3	2	b	os (4)	
12	Th	28.70	28.91	32	33	31	34	NE	N	2	3	os 1) 2)	bcm	
13	F.	28.44	28.26	40	42	27	43	S	SW	10	9	qor (2)	qbcr (3)	
14	S.	28.99	28.76	35	39	34	39	W	S	7	6	qb	ors 3)	
15	Su.	28.90	28.86	31	34	29	35	SW	NW	2	3	bcp (1) (2)	b	
16	M.	29.25	29.64	33	39	28	40	NW	N	4	5	o	bcm	
17	Tu.	30.15	30.16	34	40	33	41	SW	SW	2	2	o	or (4)	
18	W.	30.30	30.38	41	48	39	49	W	SW	2	2	bc	bcm	
19	Th.	30.48	30.48	37	41	36	42	SW	E	1	1	of	of	
20	F.	30.30	30.20	38	39	37	40	E	NE	3	4	o	o	

DECEMBER.—Mean height of barometer=30.096 inches; mean temperature=44.8 degrees; depth of rain fallen=0.74 inches.

Note—January 13th was tremendously windy, and the Barometer at 1 p.m. was down to 28.18 inches; a depression not equalled at Greenwich since December 1821;—between 8 and 9 o'clock this morning we had thunder and lightning.

TO OUR FRIENDS AND CORRESPONDENTS.

We are glad to recognize again the signature of our old friend Captain R. H. MILLER. His letter too late for our present, shall appear in our next.

"Improvements in Naval Architecture," in our next.

We have received the paper on Mr. MAXTON's tide-gauge. We will write to the Secretary.

Captain SCOTT's letter received.

The "Merchant Service" will be continued in our next.

Nautical Magazine.

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ON PASSAGES IN THE BAY OF BENGAL.—By Capt. J. H. Miller.

IN a former communication* on the navigation of the Bay of Bengal, I stated some general rules for making a passage up or down at different seasons. I am again led to the same subject by perceiving, that it is but little understood by the numerous strangers to this part of the world which the increasing trade with India annually adds to our mercantile marine. Crossing the Bay in February last, I spoke two vessels from Europe, under very different circumstances. One was running along shore under studding-sails, abreast of Point Godavery, and had crossed the equator eleven days before. The other was in about 90° east, and standing to the eastward with a northerly wind, and had been twenty-six days from the equator; another vessel in sight seemed pursuing the same course, supposing her bound to Calcutta. Now, I should think that the first of these vessels would reach the Sandheads, from the position where I spoke her, in four days; while the others would take ten days or more, if they persevered in the same plan of beating up direct. Vessels crossing the equator in January, should not contend against north-east winds with a view to keep up their easting, further than to enable them to fetch the coast about Madras. The land-winds, it is true, are not certain in January, but the north-east winds may be said to be over; and towards afternoon draw round well to the eastward, enabling a ship to make a long tack to the northward along shore. By the 5th of February the land-winds may be calculated on with certainty, and a ship finding herself in the middle of the Bay at that time, would do well to set a topmast-studding-sail, and steer for the land.

As a general rule it may be observed that, the most favourable passages may be calculated on in the Bay of Bengal as follows:—

From Jan. 15th to May 31st,—Up the west side; down the east side.
 June, July, and August, Up the middle; down the middle, or, to the eastward of the Andamans, and round Acheen Head.
 Sept., Oct., and Nov. . . . Up the east side; down the west side.
 Dec. to the middle of Jan. . Up and down the middle, or beat dead on end.

 HURRICANES IN THE EASTERN SEAS.—Redfield's Theory.

DEAR SIR.—Mr. Redfield, a name destined, I trust, to immortal honor, from the wanderers o'er the waves, has stated in a paper (see *Nautical Magazine* 1839,) the probability of a typhoon that was experienced in the China Sea, in October 1831, being identical with a hurricane in the Bay of Bengal, which happened a few days later, and “that it is important to know if this storm crossed the Burman empire before making its appearance in the Bay of Bengal.”

* We refer our readers to our January number of 1839, for this communication of Capt. Miller's; and those, who are interested in the navigation of the Bay, will find some more useful information on the eastern side of it, in our February and October numbers of last year, from the same intelligent commander.—Ed. N.M.

Considering it the duty of every seaman to assist men of science in their investigation into the laws of nature in a department so peculiarly their own, I beg a place in your columns for the following communications and remarks, on the subject above referred to, as the most proper and convenient mode of submitting them to Mr. R. The first is an extract of a letter from E. A. Blundell, Esq., Commissioner of the Tennesse-rim Provinces, which I am kindly permitted to publish. "At the period referred to by you, viz. 24th—31st of October, 1831, I was at Ava, where, certainly, no hurricane was felt, nor as far as I am aware was any such experienced on this coast; indeed, during the number of years I have resided in this part of the world, no hurricane or even heavy gale of wind has been known." To this extract I may add that, Mr. Blundell has resided at Maulmain since 1826-7, if my memory be correct, and that his remarks embrace the whole coast under his government from Mergui to Maulmain. The fortunate circumstance of the communication also including Ava, the capital of Burmah, adds much to its value, as this is a limit to which I had doubts of being able to extend my enquiries with any chance of success.

The next is communicated by William Spiers, Esq., R.N., at Rangoon, who states in reply to my letter: "We have had one hurricane or storm here since I came to the place in 1826, but I do not recollect the exact time. I only recollect that Cuthbertson was here in the *Eliza*. It was such a storm that there was no communication with the shipping for two or three days, and the *Eliza* was the only ship that did not drive; but she struck lower yards and topmasts." The reference to the ship *Eliza* in this communication enables me to state on my own knowledge, that this storm happened previous to 1831, as that vessel was broken up at Calcutta in 1829; and the circumstance of not being able to communicate with the ships, and their driving in a river not broader than the Thames at Gravesend, with a bottom of excellent holding ground, being stiff clay, just off the town of Rangoon, where the ships lie, indicates this to have been a hurricane proper.

From my own experience of twenty years navigating in these seas, my impression is, that hurricanes do not visit the Gulf of Martaban, or but very rarely do so. During the very worst part of the south-west monsoon, the weather may be more properly termed broken than bad; that is, frequent heavy squalls, but fine in the intervals, enabling a ship to make all sail and good progress, as the sea does not run high to impede her course. The worst of this broken weather is generally on the *neaps*. During the *springs*, the weather is often settled and fine. This is contrary to what is experienced in other parts of the world; but I have remarked it so often here, that I think it deserving of notice. In support of my opinion that hurricanes do not extend to the eastward of the islands in the Bay, I mention the following instance:—In October 1832-3, I sailed from Rangoon, bound to Calcutta, and after clearing the river got an easterly wind, (always a suspicious one in that season,) which carried me to about a degree or more to the westward of the Preparis, when it came on furiously at W.N.W. The barometer warned me of an approaching hurricane, and acting upon preconceived ideas I ran back to the eastward, inside of the islands, on purpose to avoid the encounter. Here I had squally weather with thunder, and a deluge of

rain for three days; after which the weather became settled, with the wind about south, and I had a rapid run to the Sandheads, where I learnt that a hurricane had swept the northern shores of the Bay, and many ships came in after being disabled. I need hardly say, that at this time the circular course of these storms was unknown to me; but, in this instance, I could hardly have adopted a better course than I did by chance. It fared otherwise with me upon a subsequent occasion, (an account of which I sent to the *Nautical* last year,*) when I got the first wind at north, and steered, unwittingly to the eastward as long as I could; thus running right into the thick of it, for which I paid the usual penalty, short of destruction, by loss of masts and crippled in every way. The subject of these storms had attracted my attention, in common, I presume, with most reflecting seamen many years ago. In 1828, while at anchor at the Nicobar Islands, a storm came on very unexpectedly at south, veering to the south-west. I cannot state the exact time, but it was probably in December, for we took advantage of it and ran up to Rangoon in a few days. Although our cargo was not completed, I thought at the time it might have been the tail of a typhoon, which had swept across the narrow belt of Asia, dividing this sea from the Gulf of Siam, and this idea was subsequently strengthened by learning that a typhoon had been felt in the China Sea a few days *previous*, but there was no corresponding hurricane in the Bay of Bengal†; nor did this storm assume the character of a hurricane proper, although it blew very hard.

When the theory of hurricanes becomes as familiar to seamen at a future period, as many other branches of the profession that were formerly but little understood, are to those of the present day, perhaps, some enquirers into the past may wish to know how we managed to blunder on, and combat these storms. For the benefit of such curious gentlemen who may read the *Nautical Magazine* a century hence, I beg to state that Dr. Franklin's theory of the motion of the air had great weight with many, that a current of air resembled that of water set in motion by opening a sluice;—that the motion took place first at the sluice or vacuum, and successively at other parts *up the stream* as the level became depressed, or what would have the same effect, the air became rarified; and this it must be allowed seems a very satisfactory way of accounting for the progress of a storm on the earth's surface, being in a direction opposite to the course of the wind. From some cause or other I had supposed that hurricanes always began to blow in the north-west quarter, and shifted suddenly to the south-east, by a natural reaction

* See October number.

† That part of the Bay of Bengal lying to the eastward of the Andamans and Nicobar Islands is called the Gulf of Martaban by Provincials, (the gentlemen as drives coir ships,) who have also a local nomenclature for other parts in India, that sometimes leads to confusion. Thus for instance the coast of Sumatra is called the West Coast; that of China, the East Coast; while the whole of the western coast of Hindostan, is called simply The Coast. I was once the innocent, at least unintentional, cause of misleading one of H.M. ships by this vague manner of expression, which I have no doubt was registered in the minds of the officers as a piece of bearism in a Merchant Skipper; and I am the more sorry for it as this ship was one of the few that appear to make themselves actively useful in India.*

* We trust this apology will meet the eye of the officer who received the information.—ED.

like the recoil of a wave, and that the safest plan was to run, if the wind was fair, with sea room, as long as prudent, which is as long as the ship can be steered, and the skipper's nerves will hold out, and then lie to until both wave and recoil have passed over. I have always adopted this plan, and, of course, thought a great deal more of my judgment in the matter than I choose to state here; but from any idea of avoiding the severe part of a hurricane by running out of it, I had none, and always treated such with contempt.

Mr. Redfield has already brought such force of evidence in support of his theory that in the opinion of many confirms it; but, as I believe its confirmation can only depend upon extensive observations they cannot be too many, and, therefore, request you will kindly publish the above as my mite.

Yours faithfully,

J. H. MILLER.

THE MERCHANT SERVICE.—*By an Old Voyager.*—No. III.

(Concluded from p. 107.)

A considerable degree of exultation among the Medicos has spread its echoes abroad on the total suppression of that dreadful disease of the ocean, the scurvy, which of yore, with fatal effect, swept off more of our brave tars, than fell in battle.

In the Navy unquestionably it has nearly, if not quite disappeared, and why? Not alone from the free use of the citric acid, but from the unceasing attention to the cleanliness and comfort of the seamen. In the merchant service is it so? Not long ago a vessel arrived in the Downs with the remaining portion of her crew disabled by this very disease, the other having sunk under its virulence! It still lingers in the trading ships, and probably will, until the legislature compels the shipowners to do their duty.

The antidote, as is well known, is lime or lemon juice, which should be served to the crew daily; and none but the best sorts of food should be admitted on ship-board; and the pernicious practice of serving out drams to the crew, should be prohibited.

It has often been observed that it is the abuse, not the use of spirituous liquors which is hurtful to the human constitution. Opinions vary much on this point. My belief is that, there is no necessity whatever for the use of alcohol. But even admitting that there may be some truth in the observation, it is unfortunately a fact that, few sailors are found who do place a restraint upon their will in this matter. Whilst at sea the use of spirits is kept within due moderation; but, as if it were intended that the habit should not be lost, the unthinking, or wrong thinkers, among the captains, foster it by giving drams. In harbour it is, indeed, often quite beyond even the most vigilant attention of a commander to prevent intoxication, and that with the very worst description of spirit—new rum or tafia.

It is this "fire drink" which carries off hundreds of our seamen, and until "total abstinence" from liquors shall obtain a firm and general footing on ship-board, the effect will continue. Precept is lost upon those who will not admit the force of reason and of example. Men who seldom reflect on consequences arising from the indulgence of the habit of drinking strong liquors, can never be expected to become converts to moderation by any influence which precept is capable of exercising upon the human mind under ordinary circumstances. A firm determination alone, not to supply ardent spirits to the crew, in the shipowner, and a proper example set by the captain, may be expected to root out the evil. The Americans are trying the experiment on a large scale; and the "pledge" to "Father Matthew," has redeemed, gloriously, thousands from that bewildering curse of the "Green Isle," the insidious Farintosh!

When spirits are supplied to ships before quitting England, the liquor is generally sufficiently old to be free, in a great measure, from the fiery quality; but, the rum which is received on board in the West Indies is usually new, above proof, and extremely pernicious to health. I am induced, therefore, for the information of those who may be unacquainted with it, to add here a simple receipt for giving the quality of mellowness to new rum. I obtained it from an old planter of Jamaica, and have seen him use it, and with success. To a twenty-eight gallon cask of new rum, add about a gallon of scalding water; keep the bung hole open for ten days or a fortnight. There are none, we may rest assured of the temperate masters of ships, who have the credit of their station at heart, but most earnestly hope for that day when the inveterate grog drinkers among them will be reduced to a small minority. What a happy riddance it will be when the last of these rum geniuses shall have left no shadow behind! So that the surviving members by their conduct shall vindicate their "craft" from the stigma of brutality which the reiterated proceedings on the "Coast of Guinea," retrospectively, had dishonoured it.

The relative position of employer and employed, in the merchant service, is never considered in its true relation. With the many there is no sympathy whatever for the endurance of the hardships encountered by the seaman. Such a feeling as compassion, judging from circumstances, we may believe is the least operative of any which ennoble our nature, in the breast of a shipowner. No doubt, there are honorable exceptions, but, I believe, I speak the fact when I say that, the majority do not trouble their heads how the sailors fare in their employ. It is quite enough for them to know that, their property afloat is insured, and economy studied by their deputies: seamen's lives cannot be insured; they are the only sacrifice, and but too often a sacrifice offered upon the shrine of Mammon!

There is a want of attention generally to the comfortable, convenient, and wholesome state of the berths, which are appropriated to the use of the crews of merchant vessels. The spirit of economy even reaches to the spaces designed for the cribs in which the men repose. I have seen one of these consigned to the use of the chief mate, which was a foot too short, and so narrow that there was not sufficient room for him to turn!

The captain is not answerable for the position in which the men's berth is fixed; neither is he accountable for the extent of space allotted to their use. The merchant would say he knew nothing about the matter,—that the builder has followed the plan which is customary, &c.

But I would take leave to tell the owner of a ship that, whether he thinks so or not, it is *his duty* to direct, at least, that in every respect the berth for the crew of his vessel should be placed in a dry position, and otherwise made as comfortable as possible.

What would be thought of the landlord who should suffer his house, which he was desirous of letting, to remain in a leaky and damp state? Would he obtain a tenant? Unfortunately for the Jacks, however, they are obliged to take what they can get; and as almost all vessels come under the same category, they have no advantage by choice. If a sailor shook his head at the sight of the dark and wet hole which is designed for his resting-place, he would be told that, if he did not like it, he might seek elsewhere for a better, others could be found who were not so fastidious! I am sorry to observe that there is a common feeling abroad, especially among masters of ships, who, by-the-by, having themselves suffered, ought to have imbibed a different sentiment,—that attention to the comforts of a seaman is thrown away, and that, the rougher his life is, the more efficient he becomes; as if, forsooth, the treating of a human being like a *brute* was likely to add to the qualifications of the *man*.

I know that the captains are generally averse to the men's berth being anywhere but forward. This arises from a notion that a too close approximation of the subordinates to the state-cabin, may be detrimental to the discipline which it is necessary to keep up, and to the distance that should be observed between the officers and the men. But the idea is erroneous. Both are dependent on the moral conduct, and not on local arrangement; for, if from the former the captain shall ensure the respect and obedience of his crew, he may rest assured that the mere circumstance of the men's berth being placed in a central situation, will not prevent those duties from being satisfactorily exercised: and, I appeal to those who command vessels in which the berth is under the break of the quarter-deck, whether any annoyance or inconvenience have ever arisen from that circumstance. I have made two passages, in ships so fitted, of 16,000 miles, and never heard the least cause of complaint. On the contrary, the men were so satisfied with their position, that, there was nothing but cheerfulness and content among them; and I am sure the captains felt their account from these, for they appeared equally happy.

With respect to the state and condition of the berth, there is a total want of attention in the ship officers generally. The master, unless he happen to be of a kind, considerate, and benevolent disposition, thinks it no concern of his; he enters the men for the voyage; directs the steward, the cook, or the boatswain to ration them; keeps them incessantly at some work or other, determined to "get the worth out of them." Whether they live in dirt and damp, or not, he care! not he indeed; he has his passengers, who are profitable to him (5% and upwards a week for board and lodging,) to attend to, and the navigation of the vessel to occupy his thoughts; besides, "he neither built the ship, nor super-

intended the internal arrangements for the accommodation of the inmates." This may be all very true, but I take leave to tell him that, it is *his* special duty to satisfy himself that, the crew of the ship he commands is in every respect made as *comfortable*, I insist upon the word, as possible. *His comfort* is not neglected, and upon every rational principle, that, of those, who, in their sphere are equally useful, and equally entitled to the consideration of the owner, ought to be attended to, not negligently, but with care.

The mate, who, by-the-by, has much to complain of, fancies that he has enough to do without troubling himself about the matter; besides, "the men do not like prying into their berth." Such excuses are not admissible. The fact appears to be that, there being no rules or regulations for the better governance of merchant ships' crews, but such as have been in vogue, and authorised only by custom, neither officers nor men know exactly what duties are binding upon them, beyond those habitually performed. Now, as to prying into the men's berth, a look below once a day by the mate, would not be so considered by the inmates, if it were explained to them that, the object was to ensure their health; and that it was a point of duty, and not of curiosity, or, from a desire to annoy them.

What, I may ask, would be said of the crew of a man-of-war, who objected to have their berths examined. And, if it be not beneath the dignity of a captain of one of her Majesty's ships to, personally, inspect the seamen's berths, surely the mate of a merchantman should not feel his consequence lowered by such a performance.

Strictly speaking, this officer has no berth to retire to. There is great room for improvement in his case. It is true that it is a general practice to invite him daily to the captain's table; and, I believe, it is not departed from, even though the owner be a passenger, and I think very properly; but further than this he has no use of the state-cabin. Now, I contend that it would be for the advantage of the service in which he is embarked, that, he be provided with a small separate cabin, to which he could retire when not on duty. In every respect I think this would be an improvement, and I urge that his claim for its realization is both reasonable and just. Some mates are hardly to be distinguished from a foremast-man; this arises from the want of a general uniform. All the officers in merchant ships should adopt one, neat and plain—blue, of course, but in no way trespassing on the patterns of those worn by the officers of the royal marine.

No. IV.

I may state *en passant*, here, before returning to the point under review, the seamen's berth, that a great number of respectable youths,*

* In the East India and Australian traders, 100l. have been demanded, and often paid, for the entry of a lad into either. Advertisements have even appeared in the newspapers to this effect! Steamers have followed the example; and what is the excuse? "That respectable youths may be obtained!" Respectable youths indeed! as if selection would not insure that; besides, I happen to have been told by one of the captains of a N.S.W. trader, long before the adoption of the money scheme, that, the number of applications from officers of the navy and army, and gentlemen of other professions and trades, was astonishing, and not a tithe of their sons could find admittance in the large ships.

the sons of officers and gentlemen of small fortunes, have, within the last few years, entered the mercantile marine. There can be no question as to the benefit that will ultimately arise from this event; but it is extremely desirable that these youths should not be "located" in the common berth of the seamen; but in a separate cabin in which they should be allowed to mess with junior mates and petty officers. I think that no reasonable objection could be advanced against this proposal. That objections exist to their entry at all in the merchant service, I am aware; and I happen to know that some captains prefer, when they have a choice, shipping strong able bodied men, in limited numbers, as ordinary seamen, to any youth, however well recommended. The reason for this preference is economy. The owner, or agent of a ship which ought to have fourteen or sixteen hands to navigate her properly, desires the captain to ship ten able bodied men only, by which there is a saving of wages and food. This economy of numbers, leaving the balance of strength out of the question, is the cause of almost all our ships being short handed. It is a general practice, and often leads to very distressing results. But, there is no doubt, that the men are often, if not generally, taken at a venture, from size and apparent strength. Now, a stout active youth of 17 or 18 years of age often acquits himself better than many of his seniors; and no allowance is made for lazy or drowsy spirits—bulk of body is the criterion. And if the men were taken by "weight" disappointment would often follow, as heaviness of body does not imply strength of muscle. One of the strongest young men I ever met with was, as "thin as a whipping-post." Owners, or masters of ships are not, necessarily, physiologists; but they are without a question deeply versed in the philosophy of the economy of labour, *i.e.* making one man do the work of two. But, they ought to remember, which, however, they are seldom disposed to do, that there are times and circumstances (not unfrequent) in which two lighter hands, may be of considerable more value than one of muscular power; for the simple reason that *one* man cannot be in *two* places at the same moment. The fact, is that this system of economy is one of the links of that universal principle, exercised alone by Englishmen, of sailing a vessel "with the least possible expense;" and to this very cause may be attributed many of the shipwrecks which are so continually announced. Under-manned ships make but a bad figure in a heavy squall, on a lee shore, in a hurricane, and when leaky; but then who cares? It would appear neither the owner nor the insurance office! I recommend this subject to the notice of Captain FitzRoy.

I may add in proof of the difficulty experienced by respectable youths to obtain vessels, that, I am in possession of six instances at one port, where all the young men came well recommended, and with good characters. Two, after twelve months application, at last succeeded through the interest of the wives of shipmasters. Two, both being the sons of Naval officers, a Commander, and a Lieutenant, have not yet succeeded, although their friends have made interest for them in several ports. The last two, are adrift, after having paid a hundred pounds each; as yet, without expectation. How are these lads to become able seamen if their services are declined? As apprentices, it is probable, they would stand a chance, as the sea-pay would be saved to the owner;

but the bad treatment which apprentices are subject to, deters the respectable youths from binding themselves as slaves to the will and caprice of such task-masters, as many of the skippers have proved themselves to be.*

I return to the state of the men's berth. If left to themselves—"what is every body's business becomes nobody's," so that often the "fore cuddy" as the hole is called, is in a state rivalling that of a pig-sty; indeed, worse in one respect, for it wants that free circulation of atmospheric air possessed by the hogstead; and unless relieved with the subdued light of the bull's-eye, when the hatch is on, must be in total darkness. And yet such a place as this is considered "good enough for sailors!" Can any wonder be expressed that, in such a dormitory, during cold, wet, and foggy weather, wherein ten or a dozen men are cooped up, typhus fever, catarrh, and rheumatism should be so prevalent? In this very circumstance, leaving all others aside, am I not borne out in my assertion that, the relative position of the employer and the employed is not estimated as it should be?

In some ships where there are old men-of-war men, the practice is to wet swab the berth out every day. This is not proper, as the steam which arises from the process, for the most part, lodges in the sleeping cribs, and is otherwise absorbed by the bed clothes, and woollen garments which usually lie scattered about often in a damp state.

It may be proper one fine day in a week to cleanse with water, sand, and stone, the deck of the cuddy, but it should always, after being swabbed, be scraped dry with "dumb scrapers," and a wind-sail put down in order to complete the purification. A thick thrumb mat at the foot of the ladder is necessary, but it should be dried daily. After a few week's stoning the deck would become white, and be easily kept clean during the other six days of the week, merely by being swept, and any wet dried up carefully. A *fag* for the week should be chosen, and on no account should he be allowed to escape the duty. Every fine day a wind-sail should be put down for one or two hours whilst at sea, in any climate below the 50th degree north and south; for, the neglect of free ventilation is a fertile cause of sickness everywhere. To accomplish these necessary duties, would occupy very little time each day, and the benefit that would arise from their fulfilment, would amply repay even much more time and labour.

These internal regulations should be ordered by the captain, and regularly enforced through his subordinates; but it is desirable that rules should be adopted throughout the service for the better regulation of the crew; for to the neglect of a system, much of the sickness, and uncomfortable mode of life to be found in merchant vessels may be attributed. I am quite convinced that the result would be beneficial to all on board.

The partition or bulk-head between the men's berth and the hold, should be made air-tight, so as to be impervious to the fumes which may arise from the cargo, such for instance as sugar, hides, salt-fish,

* The conduct of two of the masters who commanded ships which voyaged to Australia, is described by eye-witnesses as having been extremely brutal towards the hapless cadets.

wool, cotton, &c. There is perhaps no lading with which a ship can be freighted that generates carbonic acid gas more freely than that of sugar. The fumes from a West India ship, when the bilge water is pumped out may be scented a long way off in her wake; indeed the vessel seems to be surrounded by an atmosphere redolent of saccharine putrescence from a chemical process which takes place in the hold, although in itself the sugar is antiseptic.

A wool cargo, though not so offensive to the olfactories, is, perhaps, more detrimental to the health of a ship's crew; and has sometimes proved dangerous, from its liability to spontaneous ignition, when stowed in a damp state.*

It is, vulgo, a "sweating" cargo. The steam which arises from its exudation, finds its way through the interstices of the bulk-head into the men's berth, the air in which is like that of an oven which is kept humid by the sprinkling of water! Let us for a moment conceive the effect that would arise from such a process, on even the strongest constitution. Think of a man after sleeping with his pores opened in a "steam-bath," as we may call the air of the cuddy in such a state, being suddenly obliged, as is constantly the case, to spring up into the atmospheric air at a temperature near to, or below the freezing point, (in the Southern Ocean for instance) and proceed aloft in a sleet or snow, or hail shower, with a strong wind rapidly evaporating the

* I recommend this notice to the Australian growers of wool.—"We are not about to inflict, a lecture on ethics upon our readers, nor a chrestomathy of copy-book proverbs; but we have a lesson to read to our friends in Australia who are growers of wool.

"We attended the last public sales of this, the most important of Australian staples, and what then occurred convinces us of the necessity of the remarks we have made and intend to make.

"A dispute occurred between the buyers and the selling brokers as to the wording of a particular clause in the printed conditions of sale. The buyers insisted that the sellers should guarantee any loss arising from the introduction of extraneous substances into the bales of wool, and from the introduction of inferior qualities into the interior of the bales. A compromise was made, and the sales proceeded, and realized much higher prices than at previous sales. Happening to be well acquainted with several of the largest buyers, we made it our business to inquire, why it was thought requisite to insert a clause so derogatory to the credit and honor of the exporters. The reply was characteristic, but very unsatisfactory to us as friends of the colonists—Experience had taught the buyers that the dishonest practices mentioned, frequently occurred. Large stones were often found in the centre of a bale. One of the largest buyers, Mr. Varley, had taken one stone out of a bale which weighed 50lbs. Being a quiet humorist, he wrote a polite note to the selling merchants requesting them in future to forward the stones by sea to save carriage, and the wool by land.

"We tell the colonists that the existence of these practices, diminishes the market value of the whole of the wool imported from the Australasian colonies; that the buyers have a high opinion of the article itself, but a bad one of the honesty of the growers, and the consequence is, that every honest bale of wool is sold for less than its real value, in order to pay the assurance against loss from the dishonest bales.

"Surely such a state of things as this requires a remedy; and surely a remedy can be found. What is there to prevent the establishment in each Australian port, of an office for the examination of every bale of wool? The expense might, on the first blush, appear considerable, but we do not hesitate to affirm, from our knowledge of the state of feeling among wool buyers, that such expense would be repaid fifty-fold by the increased price which would be obtained for wools.

"We now leave this subject to the earnest and early consideration of the Australasian colonists."—*London Mercantile Journal*, Jan. 1843.

moisture of his body, and leaving him scarcely half his muscular power to fulfil the tough duty of reefing or furling a frozen sail! Only think of that

“Ye gentlemen of England, who live at home at ease.”

Only think of that, I say, and ye will assuredly shiver from mere imaginative sympathy! But where is the genuine sympathy—the compassion that would prevent such endurance? Alas! where? Is it the shipowner that would seek and apply a remedy? These facts which are incontrovertible will best answer that question. It is these instances of utter carelessness of the owners, and I fear of many a ship-master too, toward the comfort and the health of the seamen they employ, that ruins the constitution of hundreds, and not unfrequently, consigns many a hard working and valuable tar to a premature grave! And yet, there is scarcely one, even among those who profess to be very religious, who would not be, or pretend to be, shocked at the bare recital of some act of carelessness or neglect towards the paupers of a Poor’s-house, by the master or matron! Oh! the inconsistency of human nature!

An inevitable consequence arising from the crew’s berth being forward, in the “eyes” of the vessel, is that, the bedding becomes wet; not only from the sprays which find their way down the scuttle, but from leakage through the seams of the deck above; and as if the measure of their hard treatment was not enough on ship-board, the practice of those harpies who make and sell sailor’s beds, is, to fill the casing with refuse cotton (seeds and all!) and pass this filling as flock! This act may perhaps be classed as one coming under the head of *mala in se*, (evils in themselves,) which, however nefarious, the purchaser should guard against by a careful inspection; but even this may sometimes fail; for, a slit is left open, with a handful of flocks stuffed in, for the sake of deception! I mention this to put the seaman upon his guard.

A wet bed often lays the seeds of incurable disease. By the use of Jeffery’s cement the men’s forward berth may be effectually guarded from leakage; but I contend that it should be on the half-deck; and the stores removed to the fore cuddy, which may now be kept dry.

The captain should feel it to be his duty to direct, in fine weather, the men’s beds and bedding to be brought up and spread out to air, as also their damp and wet clothes. And it should ever be present to his thoughts that he is *de facto* as much the guardian (*pro tem*) of his men, as he is *de jure* their commander; and, therefore, should feel some little solicitude for their welfare.

No. V.

In port, within the tropics, the crews of vessels are subject to malaria fever by inhaling the air from morasses, wafted off by the land wind; at least nosologists say so. Take the Havana, in Cuba, and Port Spain, in Trinidad, as examples, where, at a certain season, pestilence lurks in the night breezes which sweep over lacustrine levels.

This is one of those physical evils which the owner and captain of a ship may, perhaps, say they cannot control. But I assure them that it can be, in a great measure, prevented; and, in saying so, I by no means

speak at random from conjecture or theory. Various mixtures and modes, have been tried for disinfecting air which is charged with poisonous or deleterious effluvia, and to destroy contagion. One of the best is a simple chemical preparation, called "chloride of lime." It is a certain corrector of the carbonic acid gas which is sufficiently obvious on ship-board from the dark glary coating often seen on the wood-work. For his own sake no captain should go to sea without a small cask of it. The owners, however, should supply it for the ship's use; it is not expensive. As a proof of its efficacy, I may state that during a sickly season in the unhealthy port of Havana, one vessel among a great many, from 80 to 100, saved her entire crew by its free use, whilst the officers and men of the other ships were, to use the language of the occasion—"dying like rotten sheep."

The proportion of the substance for use is about a pint to a bucket of water, (salt water will answer); if the liquid, half a pint. If fresh meat be dipped into a solution, it will keep a long time in hot weather. Chlorine gas is the antidote to Prussic acid; and chloride of soda, in solution, 10 to 30 drops in a wine glass of water, every six hours, in malignant stages of small pox, fever, and cholera is stated to be of great service.

Prompt medical aid is not always at hand. The captain is provided with a medicine chest, and book of instructions; but, how few are competent to make proper use of the one, or understand the other? Every call upon the purse, brings a groan from the skipper, purely as regards himself, for he is well aware of the sour looks that are given at the sight of extra expense. Is it not the duty of the owner of a vessel to bear the charge for medical attendance? I imagine the common law is to that effect.

I would recommend in those harbours where morasses are present, or, level land liable to be flooded exists, that lofty wind-sails be used at night, carried up half as high as the topmast-head; and there should be a small scuttle in the side of the vessel, with a bent tube in it, to carry the foul air out of the berth.

Where ships are not moored head and stern, they will of course swing to the land wind. In this case, the best plan for the captain to pursue for his own comfort and safety is, to fasten or shut the companion hatch, and open a central window; keeping the chloride mixture in a bucket in the middle of the cabin; and a high wind-sail if he pleases. This will insure him a pleasant air to breathe in, and although under the torrid zone, he may feel as secure from the apprehension of the insidious attacks of malaria, as if he were within the temperate region. The motive for using very high wind-sails will appear obvious when we consider that the sources of miasma are generally low, and the gas, or vapour, or whatever it may be, arising from swamps, rises slowly in its admixture with the general atmosphere. Voyages to unhealthy climates are not always well timed; in some cases this is unavoidable, but when the distance is not great, it should be attended to. The winter season of the northern hemisphere is the healthiest throughout, hence West India voyages should be undertaken in that season.

Another point which it appears is wholly neglected by the owners

of ships is that of providing safety-boats. Of what use would be the most perfect life-buoy, if the common boats of a ship are unequal to withstand the seas in a heavy gale of wind? Indeed, these are often secured in such a manner that an unfortunate seaman falling over-board would be drowned, were he the most expert swimmer, before assistance could be rendered him. Such neglect reflects discredit on the humanity of those who employ seamen, and I hope that Captain FitzRoy will take this subject under his fostering care. The expense of the remedy would amount to a few pounds only.

It may be said that the seamen often behave in an insubordinate manner, and cause great disquiet to the captains. I am quite aware of that, but consider that such a circumstance can be no reason for not attending to the general comforts of the class. Indeed, it would not be difficult to prove that much of the bad conduct of the men arises from their comforts being neglected, and also from the harsh, violent, and sometimes brutal treatment they receive from their officers, particularly from the mates, who imagine that in "blue water" they are arbiters of marine law, and can assault a seaman with impunity upon every trifling occasion. They ought to know, however, that they are liable to prosecution for such assumption of power.

Some of the masters contend for the power of inflicting corporal punishment. It is not difficult to understand that good would not arise from such a measure; it would be a dangerous concession, and, I think uncalled for; and, further, I believe that seamen would not serve in merchant ships were such a power exercised by the masters. Besides, every exertion is being made to do away with the fiction in our men-of-war, and substitute what has been termed "moral command." A far better plan would be a code of rules and regulations by which the conduct of the officers as well as the men should be controlled. It is the want of some reciprocal law for ensuring good treatment on the one side, and respect and obedience on the other, that really seems to be necessary.

Although there may be no law to bear a master harmless, who, in a case of extreme necessity, inflicts summary chastisement on a mutinous seaman, yet when that can be made sufficiently apparent, there is no doubt, (for there are precedents) the judge would vindicate the "universal law of obedience" in the servant, by supporting the authority of the sea-master.

With respect to the wages of seamen, there appears to be no fixed rate, as in ships-of-war. Why, I do not know, unless the dictate of economy may be the cause. Like a marketable commodity, the price fluctuates according to the demand and supply. When the seamen are numerous, and there are few ships fitting out, lower wages are taken by the necessitous; but when they are scarce, and ships are waiting for hands, then the wages rise. One of the effects of this irregularity is that, very often the unsteady, and sometimes the entire crew, desert their ships abroad, for the purpose of obtaining excessive wages for the run home. Some owners screw the men down to the least possible sum their necessities oblige them to take; and the Jacks, when their turn serves, become as it were usurers. We have a recent instance of this in the American service: the seamen at New York (most of them, of course, British

subjects,) lately combined, demanded, and obtained 15 dollars a month. Taking the dollar at 4s. 8d. their pay is now £3 10s. per mensem; which is much higher than the British merchant pays to our seamen.

I am glad to find that the Sabbath day is now observed in some ships with decency and respect; and that it is not unusual to find the steady portion of a crew reading their bibles on that sacred day. This should be encouraged by all captains as a point that will bring its own reward, as the individuals who perform their sacred duty, are the more likely to be obedient and respectful to those to whom they owe obedience and respect.

In a small community, unanimity and good feeling, take their rise, and are maintained principally from the conduct of the superiors; and the blessings they bring to the whole, are so extremely desirable that, a man must be blind to his own comfort, or be altogether hardened and insensible, not to exert his best efforts for their consummation. The yielding of a little self-love, and self-importance for the furtherance of peace and comfort, would be no obstacles to the maintenance of good order and discipline; but it is obvious that to ensure these, the absence of intemperate conduct, abusive epithets, and "club law," must be banished from a ship. An acute observer maintains that he can pretty correctly draw a conclusion of the character of the captain, from the state in which he finds the crew. I shall not insist upon this; but I am quite convinced that, the captain has his own comfort and happiness, and those of his crew, very much in his own keeping.

In conclusion, I would strenuously recommend the work entitled "Two years before the mast," to be in the hands of every commander of a ship. Its cost is one shilling only. He will therein see the delineation of the Yankee skipper, *Veluti in speculum*, avoid his errors, and vindicate the character of the British merchant captain.

"Honour and shame from no condition rise,
Act well your part;— there all the honour lies."

FERNANDO PO AND AFRICAN ISLANDS.—*From Remarks of Commander Fishbourne, H.M. steam-vessel Alban.*

(Concluded from p. 83.)

VESSELS steering for the anchorage of Ascension should haul round the north side of it, and keep at such a distance as to prevent being becalmed, until they open the anchorage; when they should keep close alongshore. By this means they will fetch into a good berth without tacking. It is not advisable to bring Cross Hill, on which is the Semaphore, to the eastward of S.S.E. $\frac{1}{2}$ E.; for though you might do so, and be still clear of the foul ground you would be within the influence of the rollers which sometimes break a mile N.N.W. of the western extremity of the bay, roll over the foul ground and so agitate the water on the anchorage side as to render it highly imprudent to allow of a loaded boat lying alongside.

Vessels making the land towards nightfall ought to keep well in by the north end of the island, before dark taking the bearing of the Three

Sisters Hill, easily known by there being four prominent stones on its summit. This hill has been mistaken for Cross Hill, and in consequence a very dangerous berth taken which the vessel was obliged to way from immediately, and not without apprehension that a flaw might cast her on the rocks which were quite close. Having made the Sisters, stand on until Cross Hill opens, haul close alongshore without apprehension till Cross Hill bears S.S.E. and anchor in 9 or 10 fathoms: Cross Hill in the centre of the sandy bay may be a better direction as the difference of compasses may throw a vessel into a bad berth from its proximity to the foul ground.

Water is to be obtained readily here, and seldom without fail. Many vessels are supplied even when the rollers are in.

The rollers are said to be very capricious in their rise and progress, but this assertion I think will fall before continued observation, and my experience of eight months tends to show that they render to reason a sign of their coming, if not a solution of their cause. A distant ripple extending itself to north-west from the extremes of land, was visible from any part of the bay or island, appearing to arise from the water outside of the island being higher than that within the bay.

This ripple was apparent from the middle of February to August, and of greatest amount in May and June, and seems to be the result of a N.N. Westerly current, which runs during these months. This current divides at the southern extremity of the island, passing along either side, and forms the rollers which flow laterally into the several bays of the island, the southern extremity of each bay preventing a direct inflow. Thence the direction of the roller must depend upon the position of the bay, with respect to the current.

They commence, however, generally from a direction as far to the southward as the southern extreme of each bay will admit of, from which direction, subsiding as they alter their direction, or sweep round the point of the bay they disappear about five points north of their first direction. They commence in February and become more frequent and heavy in May and June, after which they are less in size and frequency, and cease in September. I have been told that rollers come in from the north in December. This however is rare, but they are then quite as high if not higher than at any other period.

While I believe the direction to be correctly stated, I think the height exaggerated; it being estimated from the effect upon the pier, which effect must always be greater, all other things equal, than from any other direction, on account of the more direct action, the pier being open most to waves from north to north-west, the foul ground breaking their force when from the westward.

The rollers were generally preceded by light and variable winds, and followed by an increase of trade wind, (considerable when the rollers were highest), and an extremely attenuated atmosphere, so transparent that the Green Mountain certainly appeared but half its distance from the anchorage, and this without any increase of moisture. Once there was considerable moisture; the mountain appeared then still nearer, and the rollers were accompanied, if not preceded by rain. Attention to these indications enabled me to predict the coming rollers; and though I inferred corresponding barometric changes, I was not

surprised at the apparently insufficient differences, on account of the many circumstances attending to vitiate the apparent unconnected if not corrected results. For instance the mountain being on the weather side of the island, and the bay on the lee, the clouds condensed by the mountain, pass over the bay in dense masses, assuming a singular constant triangular shape, during the aforementioned months, the apex of the triangle being in the north-west. Though the tide may be in some measure corrected for when regular, its height is too irregularly modified by the rollers to admit of a correction. The concentrated heat in the bay modified by the direction and force of the wind, producing a greater or less increase of elasticity, all tend to vitiate barometric results.

The following may go far to elucidate the causes of the above mentioned effects. Lieut. Bold in his African Guide, says, "that the currents have nothing or southing in proportion as the trades incline towards the tropics, and their velocity is increased by an increase of trade wind." Now, such must be the case at this place, during the months of May, June, and July, when the south-east trade is extending its northern limit further to the northward, and will account for the strong ripple mentioned before, and also for the strong N.N.Westerly current, which we found in July to be running full 30 miles in 24 hours in smooth weather, and must have been quite 35 miles during the stormy breezes which we experienced in June. Again the height of the barometer in this latitude being less than it is to the southward, this last increased perhaps by more southing being in the wind in May and June, together with the fact that the rarefaction of the air in the tropics, (and being greatest here about May and June) produce an ascending, consequently, relieving pressure current, and to the greatest amount during these months, will tend to induce a wave in this direction from the point of greatest pressure, which must be from the south, while the sun is so far north of this latitude; and from the high barometric state, together with the descent of the superior return current in the southern latitudes, we may infer a wave will be propagated in the direction of the point of least pressure which will be generally to the northward in this Hemisphere, but I presume must be so during the months of May and June.

If this implied want of Hydrostatic equilibrium be correct, it ought to be greatest, or at least produce greatest effects in the winds, currents, and rollers in the months of May and June. I find on reference to the log, that the winds were of greatest force during the last days of April, but still strong through May and June. The *Edward of Shields* arrived here having experienced strong winds in May, and *H.M. Ships Fawn, Prompt, and Rolla* arrived here early in June, having had to contend with strong southerly winds, with a northerly current; and referring to the remarks in the Meteorological table, I find that the rollers were heavy, and most continuous in May and June.

To account for the change of direction in the rollers as they pass to their subsidence, I can well imagine that, as the equilibrium is in process of restoration, the currents of air and water will decrease in velocity, the wave also will decrease and alter its direction, till even reaction may produce almost an opposite direction, in which cases it must roll

into bays open to the north-west. The anchorage here, and at St. Helena, being on the north-west side of the islands may account for the rollers being said to come from the north-west; and it is probable that they are highest at the anchorages, from their being to leeward. The period when the rollers are said to come in from the northward being in December, at which time the sun is in high south declination, it is not improbable, I think, that the pressure may be greater to the northward than here, and hence propagate a wave in this direction. There is a singular, and as I am told regular, process observable here, and it appears consequent upon the rollers or their causes, which is a beautiful illustration of a nice adaptation of a universal law to individual habitudes, and another of the many proofs of design with which earth, air, and ocean are strewed, bespeaking a Creator, lavish in greatness, supplying all our real wants, bounteous in goodness and truth.*

The selvage of sand round the bays where the turtle lay their eggs is increased considerably in breadth, during the season of incubation.

* We are induced to add here the following extract, describing these rollers from the "Voyage of the Chanticleer," by Mr. Webster, her Surgeon, on account of its interesting nature, and the cause which he assigns for the phenomenon.—Ed.

"One of the most interesting phenomena that the island affords, is that of the rollers; in other words, a heavy swell producing a high surf on the leeward shores of the island, occurring without any apparent cause. All is tranquil in the distance, the sea-breeze scarcely ripples the surface of the water, when a high swelling wave is suddenly observed rolling towards the island. At first it appears to move slowly forward, till at length it breaks on the outer reefs. The swell then increases, wave urges on wave, until it reaches the beach, where it bursts with tremendous fury. The rollers now set in, and augment in violence, until they attain a terrific and awful grandeur, affording a magnificent sight to the spectator, and one which I have witnessed with mingled emotion of terror and delight. A towering sea rolls forward on the island, like a vast ridge of waters, threatening as it were to envelope it; pile on pile succeeds with resistless force, until, meeting with the rushing off-set from the shore beneath, they rise like a wall, and are dashed with impetuous fury on the long line of the coast, producing a stunning noise. The beach is now mantled over with foam, mighty waters sweep over the plain, and the very houses at George Town are shaken by the fury of the waves. But the principal beauty of the scene consists in the continuous ridge of water crested on its summit with foam and spray: for as the wind blows off the shore, the over-arching top of the wave meets resistance, and is carried as it were, back against the curl of the swell, and thus it plays elegantly above it, as it rolls furiously onward, graceful as a bending plume, while, to add still more to its beauty, the sunbeams are reflected from it in all the varied tints of the rainbow.

"Amid the tranquillity which prevails around, it is a matter of speculation to account for this commotion of the waters, as great as if the most awful tempest, or the wildest hurricane had swept the bosom of the deep. It occurs in situations where no such swell would be expected, in sheltered bays, and where the wind never reaches the shore. The strong and well-built jetty of George Town has once been washed away by the rollers, which sometimes make a complete breach over it, although it is twenty feet above high water mark. On these occasions the crane at its extremity is washed round in various directions, as the weathercock is turned by the wind, and landing becomes impracticable for the space of two or three days. Such are the rollers of Ascension, and like unto them are those of St. Helena and Fernando Noronha. The season in which the rollers prevail is from December to April, although they do occur at other periods, and they have been felt severely in July. Ships at the anchorage are perfectly secure, and they have to apprehend no danger unless within the immediate influence of breakers. Not only are the seasons of the rollers the same at St. Helena and Ascension, but they sometimes are simultaneous in occurrence.

"The Chanticleer, while at anchor at St. Helena on the 17th and 18th of January, experienced some very high rollers, insomuch that Capt. Foster and his gig's crew

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In this process of extension it becomes shelving and easy of access, after which it appears to narrow to its original dimensions, and becomes precipitous, thus affording additional space and facility of gaining it.

Of the many vessels which arrived at Ascension from England, one only made a really good passage, owing to their going by the western route, or in consequence of standing over to the African shore, supposing no doubt that they would not otherwise fetch Ascension.

The course I should recommend, is to pass sufficiently far to the westward of the Cape de Verds, and continue till to the southward of their influence in order to avoid the calms, with rain in squalls which generally obtain under their lee. Then shape a course for 16° on the equator. This will bring you soon into the south-west wind which obtains generally throughout the year, and which will enable you to make southing to get out of the easterly current, the limits in latitude of which vary from the equator to 2° north. A westerly current obtains to the southward of this, and within narrow limits. Should you not have crossed the line before coming to 8° longitude go about if you can make a west course by compass on the port tack, from which you will fetch Ascension as you come up on drawing out from the African Coast.

Several steamers have taken the eastern passage to the Cape of Good Hope, erroneously considering that they will invariably have land and sea breezes to aid them to the southward, and that they will be enabled to get fuel not only in sufficient quantity but with facility. The green wood which is to be had is a very insufficient fuel for obtaining full steam, and even this is not to be procured without delay. It is better far to coal at Ascension, but even this delay may be avoided by husbanding fuel on the passage from England.

For instance let a vessel leave England with fourteen days coals on board, and have also the ordinary amount of sail that our men-of-war steamers have, such as the Vixen. Then working expansively and taking advantage of the winds, she need not expend more than seven days coal before she arrives in the south-east trade, from which she must sail with one engine going to the southern limits which may thus be reached by vessels such as the Vixen in eight or nine days, and the westerly winds may be reached in one day more, having expended then from twelve to thirteen days coal. These westerly winds will run her to the Cape in eight or nine days, or even to a position to fetch Mauri-landed with the utmost difficulty. On our subsequent arrival at Ascension, I inspected the meteorological journal of my friend Mr. Mitchell, the Surgeon of the island, and found it noted that the rollers were so violent on the 15th, 16th, and 17th of January, that landing was impossible. Here then, is a coincidence as to time.

"The cause of the rollers have been speculated on, and various conjectures have been formed of them. Some have attributed them to the effects of the moon,

"Whom Ocean feels through all his countless waves,
And owns her power on every shore he laves."

"And others have attributed them to the tides; but it is evident that these have nothing to do with them. They occur in the most tranquil season of the year, when the south-east trade wind is often very light, where the vast volume of water is constantly impelled in one direction. There is then a tendency to a back-set, or, a rush of water in a contrary direction, and a tumultuous swell is produced, wherever it meets with resistance from the islands and the banks on which they are based, as well as the shores of a continent. The long steep beaches of Ascension are admirably adapted for the full display of the effect which has just been described."

tius with the south-east trade in five days more. If she be bound to China this would be advisable, though in following this route she may have gone much to the southward of her direct course to the Cape, she will yet have attained to a latitude in which the degrees of longitude are so short as nearly to compensate for that but apparent great difference. Now, let it be supposed that the same vessel shall have gone to Ascension with only the same consumption of coals, or two days at least more. If she objects to make the detour necessary to fetch it under sail, this she cannot effect under two to six days more time. She will not then complete her coals, in the first case under six days, and in the second case under eight days. She will not then reach the Cape of Good Hope if she steer direct in fourteen days time, and may be blown off by a south-easter, and then have to stand to the southward under sail, her coals being expended, while if she shape her course to the southward of a great sailing course as far as may be without increasing her distance above that of a direct course distance, she will have arrived in the westerly winds, which will run her into the Cape, so as to insure fetching, though a south-easter should catch her, and this in about fifteen days, perhaps with a saving of one or two days coals, which are valuable to contend with any unforeseen difficulties which might occur. For instance they might enable her to steam in against a north-wester. Then suppose a similar vessel to make the eastern passage, and to complete her coals at Fernando Po:—she will not arrive at this place till six days at least after another may have reached the northern limit of the south-east trade;—she will then require six days to complete her coals;—she will not then reach the Cape, husbanding her coals as she may, under twenty days, for which she must have eighteen days fuel. If she stop any where to obtain the four days above her ordinary quantity, it will occupy fully eight days, if not eight days will not be more than enough to allow for completing the passage under sail.

The accompanying abstract will shew the relative values of each route:—

Probable passages of three steam vessels of equal capacities from point of divergence lat. 14° North, allowing that each has expended five days coals in reaching that point, then

Western Passage.	Days.	Fuel.
Expended as above	—	5
From divergence to north limit of south-east trade	5	1
From thence to south limit of south-east	9	4½
“ westerly winds	1	1
“ Cape of Good Hope.	9	
Total from divergence to Cape	24	11½
If to Mauritius without touching at the Cape 12 days more, total	36	14
If to Mauritius touching at Ascension great circle route	42	22
If to Mauritius viâ Fernando Po	67	36
If to Cape viâ Fernando Po	57	36

Eastern Passage touching at Fernando Po.	Days.	Fuel.
Expended as above	—	5
From divergence to Fernando Po	11	7
To complete coals at Fernando Po	6	
From Fernando Po to Cape of Good Hope	20	18
She will require eight days to complete the quantity of fuel above stated	8	
Should she not complete her fuel, she will require the above eight days to sail, and will then use but fourteen days fuel	—	14
Total from divergence with expense of fuel	45	30
If she do not stop to complete her fuel	—	26

Eastern Passage touching at Ascension.	Days.	Fuel.
Expended as above	—	5
From divergence to Ascension	8	3
To completing fuel at Ascension	7	
On rhumb-line route	14	14
Then coals being expended by sail, from Ascension to Cape	7	
. Total	21	14
Great circle route	12	12
Then under sail	3	
From Ascension to Cape Total	15	12
From divergence to Cape 1st route	34	22
“ 2nd route	30	20
Left of fuel to proceed to Mauritius	—	2

At 2h. 30m. P.M. on the 14th of October, we left Ascension with a light and variable trade, and generally found ourselves to the north-westward of our reckoning, for though the current as appeared in the abstract, was but the difference between the dead reckoning and the observed, yet being with so very few exceptions, in one way it shewed the *direction*, though the amount may not be correct. Much of the amount however would appear to arise from the circumstance of the vessel over-running the log, and when making westing the difference was westerly, and when making easting the difference was easterly. On the 19th of November we arrived at the island of St. Michaels, off which we anchored, with the city bearing S.E.b.E. $\frac{1}{2}$ F., on which bearing is the best anchorage, good holding ground, but very much exposed to winds from W.S.W.

to E.S.E. Experienced considerable difficulty in weighing with patent windlass; bad landing, and dangerous to boats alongside, from the heavy sea which sets in with southerly winds.*

Beef is easily obtained of good quality, at $3\frac{1}{2}d.$ per pound. We found our chronometer 40' miles out owing to the concussion from firing (possibly), it being from a jump rather than an altered rate, at least such appeared to be the case, from our making St. Agnes at a distance rather to accord with the old rate than with the new.

We found 3° of decrease of heat in the water on getting into soundings. Part, but only part of this fall of temperature arose from changes of latitude, as appeared from the changes previously. It is also possible that part might arise from the coming east wind, which we afterwards experienced. This appears more probable as on the 18th we had an equal but contrary change and a southerly wind obtained.

On the 16th of November we experienced a rise of the barometer, and an E.N.E. by S. and S.E. wind followed, in strong squalls, indicating a change, and to the S.E. as the barometer fell a little.

On the 19th we arrived at Spithead.

IMPROVEMENTS IN NAVAL ARCHITECTURE.

THE method of theoretic construction, which this paper is intended partly to elucidate, differs from every one that has been as yet set forth. It does not set out, as founded upon mathematical investigation; yet it will be found, whenever it shall be fully known, and examined, to be capable of sustaining the most rigid search, under that view; so that it will become refined, rather than destroyed, by such a process. It bears a very faint resemblance to some of the modes of Naval Architecture, already used and condemned; but it differs from them in this, that, while even the best of them, takes for the groundwork of its rules, a standard necessarily not perfect, although the best that was known at the time; this takes for its basis a standard derived from nature, consequently correct. In the application of this principle, the various results ascertained by science, and general experience, are taken to assist but not to control. For several years, the naval world has been violently agitated, between scientific and practical persons, as opposed to one another; not remembering, that science and practice if both true, must agree. The truth does not appear to have rested wholly with either, and while in their turn, they can each boast of very successful attempts, they have both also to acknowledge great failures.

The principle this paper sets out with is, that water, in passing obstacles, assumes certain determinate courses, which, it is presumed, are the curves of least resistance, under the existing circumstances. It is not deemed unreasonable, to construct a system of designs, mainly

* So many anchors have been lost off St. Michaels by vessels being obliged to slip their cables from bad weather coming on, that, the anchorage in many parts is foul. So much dispute has taken place about recovering lost anchors that the Governor gives none up to a vessel, that is not marked with her name.—Ed.

founded on the admission of this principle. There is a want of experiments on this subject. They are more within the reach of a nation, than of an individual. The writer cannot help contrasting the pains bestowed on this subject in former times, with the apathy, that seems to prevail now. If ever these experiments shall be made, the writer expects that they will fully corroborate his views. He has been led to his results, during long continued experiments and trials, yielding discoveries in their course, which gave a new direction to them, opening such an extensive view of the subject, as to shew convincingly, and beyond the possibility of all doubt, the universal application of the results of the experiments, to all classes of vessels, be their tonnage small or large.

To bring improvements in Naval Architecture to the test of fair trial by experiment, is extremely difficult, and unsatisfactory, on account of the various particulars, which may affect the results. The many and even trivial matters, that may influence what is called trim, and the lottery of circumstances, which may act, on any given trial, render results, sometimes, so much matter of chance, that some persons have come to the hasty conclusion, that there is no nicety required in the form of the vessel; and that any one, that is well trimmed, and well handled, will perform as well, as that, which is most elaborately constructed. It must be acknowledged that we often see facts, that would strongly press these conclusions. Notwithstanding these occasionally vexatious results, there is a generally ascertained, and even admitted, excellency, beyond, and quite untarnished, by them, in which good results have been so generally observed, that we can no longer refer them to accident or chance, but to fixed principles. When a peculiar system of Naval Architecture has been found more or less successful, in every instance in which it has been fairly tried, we are bound to consider it good, and worthy of further use. This has been the case with the system, which this paper is intended, merely to *glance at*.

The principles of Naval Architecture, as at present established, are generally acknowledged to be correct; yet there are some of great importance, viz., the question of resistances, and the forms of least resistance, not so well known. This system proceeds on a closer or more reasonable consideration of these points, that has led to improvements, which it is not the intention of the writer, at present, *fully to elucidate*; yet in shewing some of the considerations, whence these improvements are derived, he trusts they will be found based upon views sure to lead to success.

If we consider the curves which water forms, when passing any obstacle, or when any solid body passes through it, it will be soon noticed, that the shapes of some of these bodies, are not very like that which the water assumes in its passage. Where experiments have been made, in drawing bodies of various shapes, somewhat like a vessel, through the water, it has been remarked, that the water does not follow the shape of the bow of the model (when that is clumsy); but that there is an artificial bow of liquid, remaining before it, and that the swifter mass of moving water, slides by this artificial bow of stationary water, scarcely taking any of it away. The same may be said of the opposite end, where the water again closes. Again, if we view

a river, in violent flood rushing past the piers of a bridge, which are clumsily shaped, we shall, in some cases, observe a great hollow or vacant space, for some feet downwards, where the water does not touch the pier, but forms a different curve from it, and more like the bow of a well formed vessel. May we not expect that these curves have at least some approach, to those of least resistance. We shall soon perceive, that all these curves are gentle. Nowhere in the motion of flowing water, do we observe the suddenness of line, which we see in some vessels. These forms are no doubt selected, in such vessels, to give greater bulk, which they certainly do, but with an increase of resistance, and other opposing qualities, which eventually frustrate the intentions, which led to the selection of these forms, and ultimately conduce to better ways of combining, bulk and velocity. In the present day, there are many pleasing attempts at such improvements. If we can even approximate to the curves, supposed to be those of least resistance, in the various parts of a vessel, we shall have made an important step in advance, which has been attempted in the method of construction now alluded to.

We may next consider, how these primitive curves are affected, by their position in the structure of the vessel. Some are deep in the water, others near the surface, while there are a few more out of the water, not constantly immersed, yet occasionally violently struck by the sea. These considerations may require some modification in the first imagined curves. In this view, we should not lose sight of the propriety of so arranging these curves, as, while we do not lose speed, to produce the greatest stability and bulk, where those objects are desired. All this has been strongly kept in view in the method proposed. The proportion of the ends to the middle of the vessel, in order to avoid those violent undulations, called pitching and scending, and at the same time, taking care not to increase the direct resistance, is a subject of great importance in construction. Much difference of opinion exists respecting it. Some expect much from round and spreading forms, in the upper part of the bow, in order to upbear the vessel, when she falls in the sea: others for the same reason, keep the lower water lines of the bow either straight, or pretty full, but never hollow. It is probable that these shapes in the bow, have not, by themselves, as much influence on these motions, as many suppose. They are more affected by the proportionate length of the whole structure, and by the proportion of the bulk of the ends, to that of the middle, with the distribution of the weights. Weighty central bodies, appear to require fuller ends, or greater length in the whole structure, and finer middle bodies appear to be injured by over full ends. The mode of construction derived from these views nearly defines the proportionate bulk of the ends to the middle, except in cases where it is wished to depart from the just proportion, for the purpose of increasing burden, although at the expense of velocity; or where very short and bulky forms, must be used, from some necessity; and even here, it produces a consistency of character, and a unity of design, in the different parts of the structure.

It will be very important to the practical builder to consider, how far the primitive curves should be modified, to meet difficulties in the mechanical construction, as regards the materials. Some changes are

required, to ease the form of the timbers, in particular parts, and procure a better disposition of all the materials. This observation chiefly affects wooden vessels, as in iron, any form that theory points out, is readily executed. This point, although in a theoretic light of view not so important, has also been attended to, in the system under consideration.

A point may here be noticed, whence improvement has been derived, and which seems to have escaped observation; yet it seems of great importance in all, but especially in Merchant vessels, which occasionally alter their immersion very much. It will be readily granted, that every vessel has, at each particular loading, or immersion, some position in the water, by the head or stern, in which it is easier to propel her, or in other words, a level of least resistance. As it is allowed, that the whole has a level of least resistance, it follows, that each part of that whole, has also a level of least resistance. If these parts agree in one level, it must be better than where, by differing, each has a level of least resistance peculiar to itself, and necessarily in a condition of opposition among each other. An analogy may assist my view. It is well known to constructors of optical instruments, how much the clearness and power of a lens, or reflector, is increased when every part has the same focus. We must therefore recognise, a most decided improvement in the correspondence of level I have now pointed out.

There are many instances of the neglect of this, where the upper and lower part of a vessel did not agree, and when in consequence, she had a very different level, when light, and when loaded, and on the whole sailed much worse than would be supposed, from an inspection of her form. The method alluded to, takes these points into consideration, and provides for them. Each successive horizontal plane, should have its centre of gravity more abaft, as it nears the surface of the water, so that all these centres being marked on the shear draft, will when a line is drawn through them, shew a curve, having its convexity forwards. I would appeal to the analysis of some very successful designs for some proof of this, and of some other points here advanced; although if I were to adduce a reason, it might not be so readily acknowledged. The fact however must be recognised, examining them according to their seat in the water, as actually found, by experience of the best trim.

Two modes could here be mentioned by which any draughtsman, whatever his peculiar views of construction may be, might improve his designs, and which will at the same time shew the consistency of the method alluded to. One respects the diagonal ribbands. They are used in a draught, for the purpose of fairing the body, and of dividing the space for the most judicious termination of the timbers, and the best disposition of the planking. There are very few introduced for the former purpose, and they often seem to have no relationship to each other. If used for the purpose of examining the drawing at close intervals, it will soon be found, whether or not there is much relationship between the different parts of the drawing. I would urge constructors, even of deserved reputation, to make this trial, and mark the results. Another mode, relates to the proportionate bulk of the similarly situated parts at either end. A drawing generally represents many

but which are not placed at certain proportionate spaces, so that it cannot readily be seen, whether one end exceeds the other in bulk. Sections should be used for that purpose expressly in designing, which may be afterwards rubbed out, to give place to the regular intended frames. Thus, the whole length between the rabbets, on the load water line, should be divided into eight equal spaces, marking them, so that, those equidistant from the centre, or ends, should correspond. It will then be seen, whether or not, the bulk is the same in the corresponding parts, and the difference, if any, will be readily observed, even without calculation. These modes are carefully used, in the method here mentioned. Two mechanical advantages, are secured, by this new method. One, increased strength, from the gently arched form; the other, security against starting a butt, arising from the freedom from suddenness of curvature.

This enumeration of separate points of improvement might proceed farther. Enough is stated, I hope, to shew the advantage of attending even to one of them. How much then, from the whole that is stated, although it is by no means the whole, of what might be stated, relative to the superiority of this peculiar method, which must not be taken, as a mere theoretic projection. It has been already carried out, to an extent sufficient to convince intelligent observers of its excellency, who may be told, that the vessels in question are built on peculiar principles. In general, as resistance is diminished, a greater degree of velocity may be expected, and it is evident, that the vessels built on these principles have a diminished resistance. Thus, stemming a tide, or resisting a swell, with such a faint wind, as nearly to arrest the progress of other vessels, these vessels have glided away from their companions. Their performance in rough water, is also conspicuously good: so much so, as to cause a belief, that they were much larger than their papers stated. How can we account for these facts but on the principle alleged?

This quality of low resistance, must be highly suitable to steamers; and if these improvements, and others, in the engine and fuel, were well combined, these vessels may be expected to perform, with good effect, voyages, which they barely get through now with great difficulty, and at a ruinous expense. These principles may also be applied to ships of war. There would, however, be great interference with the usual proportions, and dimensions, chiefly resulting from this consideration, that, while in the usual constructions, the load water line, has no specific relation to the length or breadth of the vessel, or to the area of the midship section; in this new method, it would be as to relative dimensions, rather finer, than that which is usual. In fact, in this system, many of the items of construction, result almost as in an arithmetic rule, from others arbitrarily fixed. Even the forms tend to grow out of one another as it were, from the harmony, which it is strongly necessary to preserve among them. The load water line, and all the other water lines result from dimensions, and bulks, previously fixed upon; but never depend on the mere will of the constructor, except in the case of modifications. These considerations might require, a serious change of dimensions, in most classes, while in the larger ones, some modification of the pure principles, must be consented to, on account of the limited size and strength of materials. It would be prudent, to try the

improvements first, in the smaller classes; although no doubt can exist, of their applicability to all. I cannot but think, however, that the superiority of the British Navy will not arise from that of the ships alone.

The reader will here pardon an observation on Iron vessels, which seems called for. There are many advantages stated by the advocates for Iron. I fully accord with them. In addition I would observe, that, if any theory of construction points out, great absolute or relative length, which timber would be unequal to, there need, I think, be little apprehension of undue weakness, resulting from long structures of Iron, if properly done; so that the largest sizes, and the most extreme proportions, may be safely contemplated, in that material.

Thus I have endeavoured to glance at some of the general characters of the natural curves of least resistance in water,—their modification arising from position, and sea qualities,—the proportion of the ends, and middle,—the necessity for meeting mechanical difficulties, and particular cases, and the uniting all the parts, in a common focus of action. I have also hinted at modes of improving drawings on the usual plan, as the mechanical advantages secured, and I have stated the tests of the excellency of these plans, by striking peculiarities in their performance; also, the moral certainty, of their beneficial applications to steamers, and men-of-war, when fully understood. For obvious reasons, the way of producing these effects, is not more specifically pointed out. Yet a conviction arises, that any constructor will improve his designs, by attending, closely, to the points stated. These principles are applicable to all vessels, and when known, present a positive certainty of improvement in them. I may mention diminished risk in insurance, and greater security to life resulting therefrom; but these points are not appreciated in the present state of the world.

Although the time is now at hand, when the interests of all parties concerned in ships, will be found to agree, in beneficial improvements, such as are founded, on those harmonious combinations, upon which, the principles now advocated are based, dovetailing each other, in their practical operation, for the benefit and security of the whole.

HYDRANKULOS.

THE LOSS OF THE RELIANCE.

THERE has been so much said, and so much written on the late wrecks on the Coast of France, that it might appear unnecessary to say more about them, but for two reasons:—

The *first* is, because there evidently appears a vast deal of misconception on the subject:—persons with the best of motives having been endeavouring to guide the opinion of others, themselves being uninformed on the most important points. And the *second* is, that it has not yet been stated what light it was, that was mistaken for that of Dungeness by the *Reliance*. Now it is not with the view of throwing blame on the memory of the lamented Captain Green that we enter on this sub-

ject; but although we do not blame him for the measures he adopted about the time of her loss, it is impossible to acquit him of previous *indiscretion*. We have taken some pains to investigate this subject of the loss of the *Reliance*, and can come to no other conclusion than that which we shall now place before our readers. And we do so from no idle motive or qualmish feelings of indelicacy to the memory of Captain Green, but with the view of showing the imperative necessity, on the part of the captain of a ship coming up Channel, *of not running in bad weather, either by day or night*, (and more especially by night,) until he is satisfied by *observation* of his latitude, or, *has seen and made out the land* beyond the smallest possibility of doubt. Indeed, we look on the case of the *Reliance* as remarkable in shewing *how* a commander may be deceived to the destruction of his ship and all in her, unless he shall have adopted the precautions we have mentioned.

Amongst what has been written on the subject, (for numerous letters have appeared,) much good sense and experience has been shewn, along with much ignorance. Would any one for instance require more lights on the Coast of France, who knows, that there is not a portion of it between C. Grinez and Fecamp, but what really is within the range of view of one light or another! that there are already twelve lights on the coast within the above limits which include that dangerous bay in the middle of which the *Reliance* and *Conqueror* were lost; and that of these twelve lights five are visible in ordinary weather from fifteen to twenty-five miles distant. There is no portion of this coast on which a vessel, at the distance of five miles from it in ordinary weather, may not see a light, and with the exception of a space off Merlimont (the place of the wreck), one light may be always in sight, at the distance of fourteen miles, from any part of it. No one could desire to see more pains taken in lighting a dangerous coast than have already been taken by the French Government in lighting their coast between C. Grinez and Fecamp, an extent of not more than ninety-three miles.* But those who are not aware of this want more!

Again it might be expected, that those who do not know how many

* We will here enumerate these lights from a pamphlet long since published from the Hydrographic Office of the Admiralty, and sold by Mr. Bate in the Poultry.

Commencing in about the meridian of Beachy Head, we have

1. Fecamp, a fixed light on Mont de la Vierge, visible twenty miles; see also our volume for 1836, p. 379.
2. St. Valery en Caux, a fixed light on the western jetty, shown when there is eight feet water in the channel, and visible seven miles.
3. Cape d'Ailly, a revolving light (of 80 seconds) seen eighteen miles distant.
4. Dieppe, a light on each mole head forming the entrance of the harbour, one of which (the eastern) is lighted all night, and visible six miles; the other lighted when there is ten feet water in the passage, and visible nine miles.—See also our volume for 1837, p. 823.
5. Treport, a fixed light on the western mole head, lighted when there is six feet water in the channel, and visible seven miles.
6. Cayeux, an intermitting light on the south side of the entrance of the Somme river, and visible fifteen miles.—See also our volume for 1835, p. 647.
7. Point Berk, a fixed light on the north side of the mouth of the river Anthie, and visible six miles.—See also our volume for 1836, p. 129.
8. Point Touquet, a fixed light on the south side of La Canche river, Etaples Bay, visible seven miles distant.
9. Point Lornel, on the north side of La Canche river, visible six miles.

lights there are, should be ignorant of the nature of those of which they have heard. And accordingly the light of Grinez, by one writer, is called a fixed light, while in fact it is an intermittent one, appearing every half minute. Another writer wrongly calls Alprez light *fixed*, and says that the Reliance mistook that for Grinez light, "beyond any possibility of doubt," adding at the same time, that it is not visible more than twelve miles distant, which latter assertion is true enough; but admitting also that Merlimont is fourteen or fifteen miles from it to the southward in which direction the Reliance was. Before this writer so readily recommended Dungeness light to be changed from the *fixed* to the *revolving* principle, he should have informed himself that both Grinez and Alprez lights are already so.

But we do not desire to follow these mistakes with any other motive than that of removing the wrong impressions which they must make among the uninformed.

The information concerning the Reliance, previous to her loss, is scanty and unconnected, but sufficient has appeared in the public prints by stringing it together in its proper order, to follow the ship to the place of her destruction. We know from the Captain's letter that he had had a most tedious passage, and had been long delayed by easterly winds, before he could get into the Channel. At length he has a fair wind, but accompanied by foul weather, and one of the mates in a letter to his mother dated twenty-eight hours before the event says, "We are now, we believe, off the Start Point, but having had it blowing very hard, for the last two days, and very thick weather, we have not been able to get an observation." We have here at once placed before us the leading cause of the loss of the Reliance. Other causes contributed towards it, as is frequently the case on these occasions, and joined as if to render the loss of the ship secure.

We may take the foregoing letter as having been written on the night preceding that on which the Reliance was lost. But let us ask what would have been the conduct adopted by one of H.M. Ships supposing herself off the Start as the Reliance did, uncertain of her position, with no observation for two days previous, while blowing hard with thick rainy weather. Undoubtedly she would not run; she would quietly lay

10. Point Alprez, an intermitting light, visible twelve miles.—See also our volume for 1842, p. 285; originally established 1832.

11. Boulogne, fixed lights, on the N.E. and S.W. jetty heads, the latter visible four miles.

12. Cape Grinez, "building."—Of this light we may observe that it was first established as a fixed light in November 1837, (see our vol. for 1838, p. 133 & 365.) October 1838, an additional intermitting or flashing light was established close to it to distinguish it from that of Dungeness; and in July 1842, it was changed to a revolving light visible twenty-four miles distant.—See our volume of last year, p. 285. And we distinctly refer to this light as evincing the desire of the French Government to do as much as could be expected from a civilized people. No sooner is Cape Grinez lighted than it is mistaken for Dungeness, and both being then fixed lights there is doubtless great probability of the mistake, considering the nature of the tides in setting ships to the southward, thereby preventing their seeing Dungeness. To remedy the mistake the French place another light, so that the two might distinguish Grinez from Dungeness. But no, mistakes are still made; the lesser light could not be seen, so as a last remedy Grinez becomes a single revolving light. If wrecks still occur, surely our French neighbours have done all in their power to prevent them.

by with her head either way, keeping the lead going, and as she found her soundings decrease on approaching either the English or French coast, would wear from it until she had recognized by seeing the land, or lights, or by an observation, her actual position. Such we say would have been the conduct of one of H.M. Ships. Indeed, we know an instance of this occurring in the course of last summer to a sloop-of-war from the East India station. She was coming to Portsmouth, and was uncertain of her position, with a fair wind, but no observation from thick weather. She felt her way with the lead to the north shore, made St. Catherines and shaped her course accordingly.

We have heard it said that, the Commanders of our East Indiamen, are so satisfied with their own experience as seamen and navigators (and most excellent ones they are, we are quite ready to admit), that they seldom trouble themselves about heaving the log! estimating their rate of sailing, and entering it accordingly, and running in such cases as this before us. Such is the effect of custom. It may be very inconvenient for the officer looking out to wet his fingers with the log line, and it may be still more so to lay to for a clear, to find out the precise position of the ship, and by so doing, to run out the time of the insurance and lose a good market;—but it is better to do all this than to lose a good ship, with every one in her. Here then was the indiscretion to the charge of which the Commander of the *Reliance* laid himself open. We fully admit, as we shall presently see, that his reckoning was good, but the *Reliance* should not have run, in the circumstances under which she was placed.

Taking the accounts in the order in which they occurred, not in that in which they are told, (for this is most unconnected, and most unsatisfactory, failing us in many particulars which we would desire much to know,) the next intelligence we have of her progress is that of falling in with a French fishing-boat in the course of the day preceding the night on which she was lost. *A French fishing-boat!* Surely this was a sufficient warning, to a reflecting mind, that to meet a French fishing-boat in such weather, was a tolerably sure indication of the place where she was, being nearer to the French than to the English shore! Had this occurred to the mind of the Captain, he surely would have at once felt his way across to his own shore by his lead! But the warning was lost. She was out of Cherbourg perhaps, or some place near it, but in such weather a French fishing-boat would more probably be found nearer to her own coast than to ours!

The *Reliance* hails her to know how the land lay; but the answer is not distinctly heard. The *Reliance* lay to expecting her to board, but the fisherman stands away. Some blame has been attributed to the fisherman for this, but we cannot see the justness of it. The fisherman may not have understood the *Reliance* in all probability, and communicating might have been, in such weather, not only dangerous, but a loss of time. This warning is lost and the *Reliance* stands on.

The ship is now approaching a part of the channel in which the influence of the tides is most dangerous, the effect of both flood and ebb being to set her to the southward. There is another cause for a southerly influence upon her, (which has been very justly alluded to by one writer) in the local deviation of the compass. It is well known that the

greatest effects of this deviation are exerted when the ship's head is east or west. The writer says, it is now known and allowed for in Her Majesty's ships; but is it so in Merchant ships? This we cannot say, but we know that it should be, and it is very possible that it had its effect in drawing the Reliance to the southward of her course, down to the French coast, notwithstanding the experience and confidence of her Commander.*

The Reliance was now fast approaching the scene of her wreck. We have said too in a part of the Channel where the tides are most dangerous; *their* influence being to set a ship to the southward. We must refer our readers to the chart of the English Channel, to the eastward of Beachy Head, by Captain Martin White,† with which they will be enabled to follow us in this discussion. A reference to this chart will shew the positions of all the lights we have enumerated in the commencement of our remarks. A glance at a general chart of the Channel, would shew that the body of the flood tide running up Channel would set directly on to the coast, between Cape Grinez and Cayeux; this coast as Captain Washington observed in our last number, trending north and south; and it is easy to see that a vast portion of water from the westward, coming with the flood tide, and interrupted by the narrow passage through the Straits of Dover, as well as the Shoals called the Varne and Ridge lying in the middle of it, and unable to flow on to the eastward, would form a kind of eddy; and accordingly we find this view confirmed by the arrows, shewing the circular direction of the tide in the chart before us of Captain White.

Among those who have speculated opinions on the loss of the Reliance and to whom we alluded in commencing our remarks, is one who writes under the signature of a "Brother Sailor"; and there is so much of downright good sense in his observations, as well as fervency of desire to do good, that we shall extract some of them here as the best possible information and advice we could give, resulting from the experience of

* That it is at length *acknowledged* to exist in Merchant ships, and that is saying a great deal, the following extracts which we shall place on record here, as they appeared in the *Shipping Gazette*, of last year, amply testify.

"BRIDLINGTON.—Dec. 5:—Mr. Alexander, of the brig Hannah, of Guernsey, recently on the beach near this port, wishes me to state, that on an examination and comparison of his compasses with others, since he came in here, they prove to be two points wrong; caused undoubtedly by the attraction of the iron he had on board for ballast, and which he states is the cause of his being misled, and his vessel going on shore during the thick weather."—Dec. 6.

"LYME.—Dec. 16:15—Amongst the various pieces of wreck lately washed on shore here, is a ship's binnacle, about three feet high and three feet wide, painted green, unconnected with the companion, having brass rings on each side to lash it to the deck; on the starboard side, close to and level with the compass, a wooden box was fixed, about 8 inches by 6 inches, filled with iron chain, several fathoms in length; which is most extraordinary, and which the sailors here cannot understand, as it must have had a great influence on the compass."—Dec. 17.

"LIVERPOOL.—Dec. 21:—The brig Commerce, Morgan, of and from Drogheda, arrived here on the 19th; was boarded on the 18th by a boat belonging to the schooner Autumn, of Scarborough, from London for Marseilles, about twenty miles E. of Lambay, St. George's Channel; supplied her with a compass, her own being found useless, supposed from the attraction of her cargo (iron and steel)."—Dec. 23.

† Published by the Hydrographic office of the Admiralty.

* Possibly it may have belonged to one of the vessels lately fitted by the Astronomer-Royal as a protection to her compass.—ED.

a seaman. He says, after insisting on the necessity of a ship lying to, in bad weather, between Beachy Head and the Ness,

"I also wish to observe, in reference to so many vessels getting over upon the coast of France, that sufficient attention is not paid to the tides, and, by shaping their course too much southerly, all combine to set their ships across the channel. • • • All this might be avoided by exercising their judgment better by keeping nearer our own shores. I am happy to say there are a great number who act with prudence and discretion, and invariably adopt the system of heaving to in time, which has tended to the most beneficial results; but, there are others who, regardless of all warnings and good examples, and an utter contempt of the dangers that lie hidden in their path, run recklessly on, perhaps to eternity, and which we have had lamentable proofs of lately. I will put this question to the calm reflection of any person in charge of a ship, whoever he may be—that previous to a tempest coming on, when he has judged he has run the length of the Head, and perhaps, not seen land nor lights coming up Channel, whether it is not time to put his ship under easy sail, and lay her to till daylight, get a cast of the lead now and then, see that his cables are upon deck and nicely stowed, the ends clinched at some convenient place (for sometimes you cannot get at them for the cargo), shackles well looked after, as the swivels are of no service (when allowed to rust fast), to take the turns out, have anchors all clear, &c., and every preparation made in case of emergency? The man that does not do as I have stated does not take the necessary precaution that he ought to do, considering he is responsible for the lives of those committed to his care; and the greater the magnitude of the trust confided to him the greater cause has he to act with extreme caution. I mean to assert, fearless of contradiction, *that in some ships none of these things are thought of till they get a pilot on board.* I maintain that all ought to be in readiness before the pilot arrives. In conclusion, my humble and fervent prayer is, that my observations may be attended to, I have done my duty in making them public, and I sincerely hope they may tend to decrease the number of accidents and dreadful loss of life."—Nov. 26.

Assuredly no better advice than the foregoing could be given, and we are also doing our own duty when we repeat it to our seamen. We sincerely trust that the dreadful loss of life which the neglect of it has occasioned, will prove of service in securing its observance.

We have nothing of the further progress of the *Reliance* until midnight, an hour or so, before the calamity occurred. She was not laid to when supposed to be off the Head. We find her running on, and had she been to the eastward of the Start Point, when the mate wrote his letter twenty-eight hours before the wreck took place, she must have run in that time about 180 miles, to have reached the place of her wreck. We are told that she had her lead constantly going for two days; but although the Captain might have been deceived by the depths, still the gravel down on the south coast compared with sand, and broken shells, and stones on the English side of the channel eastward of Beachy Head, ought to have sufficiently indicated that he was on the French coast. A reference to Captain White's chart, to which we have alluded, will shew this peculiar feature,—one to which no seaman should be a stranger. The lead was kept going, but we do not know the interval between each cast, a very important consideration when the lead is in question.

The first notice we have of the ship near the scene of her wreck, is about half an hour after midnight. We say *about*, because as we

approach the time of the wreck, accounts become confused and unconnected. We are told that the course from midnight, as it was given at 12 o'clock was E.b.N. Now, as we have observed the distance from the coast about Merlimont to a position off the Start, where the Reliance was supposed by the mate to be, when he wrote his letter, in the first watch of the night before she was lost, is about 180 miles; from which we infer (this distance being run in twenty-eight hours,) that the ship had been running up channel about 7 or 8 knots an hour! We learn also that at the time of the wreck the flood tide had just made, from which we also infer that for the last 50 or 60 miles the Reliance must have been meeting the whole ebb, which setting on her larboard bow, would drift her to the southward. We are not informed what course she was steering all this time, but as she was supposed to be coming up with Beachy Head, her course would have been perhaps E.b.S. Whatever it might have been as she came to the eastward, in the latter part of the first watch, she would be set down to the southward.

Mr. Kain, a ship agent at Boulogne, says in a letter to the Editor of the *Shipping Gazette* of Jan. 26th.

“During the time Mr. Dickson, the carpenter of the Reliance, remained in Boulogne, the information I had from him was, the weather was so thick they could not see the lights; and previous to taking the ground they had just thrown the lead, and found six fathoms water with a very strong current running, afterwards shelving off to seventeen fathoms:—this was the sand named on the chart the Bassure Baas.”

This intelligence leaves no doubt of the track of the Reliance, and we therefore consider her to have crossed that bank, and got her depth of 17 fathoms about eight miles in a W.b.S. direction, from the place of her wreck, from whence a run of about four miles, would bring her within the range of the lights of the Haut Banc de Berck, and Point Touquet, in the bay of Etaples. And it is remarkable that in such weather as the Reliance had, these are the only *short distance* lights, which can be seen at the same time on that part of the coast. But standing on to the eastward a vessel would soon after see also that of Point Lornel. It was approaching this part of the coast from the Bassure Sand on an E.b.N. course, that we consider to have been the position of the Reliance when lights were discovered. The discovery of the lights, diffused a feeling of joy too soon alas! to be blighted. The seaman O'Neill says in his narrative that, “they had remarkably thick and hazy weather for some days previous to the 12th, and on Friday they shortened sail and the lead was kept going. At half-past twelve at night, one of the crew, named Thomas, whose watch it was on the fore-castle, reported that he saw lights, and soon afterwards they were distinctly observed by several others, on the larboard and starboard. The second-mate, Mr. Green, was on duty at the time, and said that those on the weather bow were a ship's lights and added, ‘Hurrah, boys, the light on the lee beam is Dungeness—we shall be in the Downs this morning.’ They then steered north and thought they were running for the Downs. Their course was E.b.N. as it was given at twelve o'clock, when the look out was relieved.*”

* Extract from the Boulogne Gazette in the *Shipping Gazette*, Nov. 23, 1842.

We also find that Captain Tucker from the mizen rigging, said he thought that he saw lights. In the position in which we consider the ship to have then been, there is no doubt on our mind that the light on the starboard, or weather side was that of the Haut Banc de Berck, and that on the larboard the light of Point Touquet, at the entrance of the river Canche.

They then steered north, which seems to have been confirmed by the exclamations of "Light ahead, light astern." The *Boulogne Gazette* says, "At the same instant the haze cleared up, (when six fathoms were called) and many voices sang out "light ahead, light astern." From this it would appear that six fathoms was had near the shore as well as on the Bassure shoal.

When we consider that the light on the larboard, when the *Reliance* was approaching the coast on an E.b.N. course, was mistaken for that of Dungeness, and that on the starboard for a ship's light, we can only account for this northerly course being adopted, if it was so, to approach the light to make certain of it. It is difficult otherwise to account for it. Now, for a vessel from the westward expecting to make Dungeness, E.b.N. is a very good course; and excepting the 6 fathoms cast on the Bassure Bank, she might be so far inshore, in the west bay, running on that course, as to have precisely the same depths as the *Reliance* had. And considering that land had not been seen since the ship had entered the channel, and that she had been for several days without even an observation, we may admit that the reckoning must have been tolerably good. It is true, that it was out some thirty miles of latitude, and about twenty-five of longitude; but that arose from the effect of tides, and perhaps local attraction; tides most assuredly. Yet after all, what does this general correctness of reckoning occasion, but a too great confidence, which may be exercised once too often, as in the case before us it most assuredly was.

We cannot but think that Captain Green must have been much perplexed with the soundings of six fathoms, and those which followed; but his confidence that the light, mistaken for Dungeness, was really that light, seems to have never left him, by his giving orders soon after one o'clock to wear ship. This was the fatal resolve! Had the *Reliance*, if she really was standing to the northward under her close-reefed topsails, which we are told was the case, but stood on a few minutes longer, the light mistaken for Dungeness would have been brought on such a bearing as would have at once convinced her commander of the fatal error under which he was labouring, even if the lead had not been quickly used, and which we must admit we are not without some doubts about.

How remarkable an instance we have before us of the readiness with which we are too willing to accommodate our wishes, that what we desire is realized. The light of Berck on the starboard side was readily supposed to be a ship's light, in order to admit of the other being that of Dungeness. How fatally was the *Reliance* deceiving herself in all this. But the last door for her escape was still left open; for with the wind as it was free and fair for her, she might still have escaped to the northward, and have extricated herself from her impending fate; but Providence willed it otherwise! There is nothing in the

measure of wearing about to be adopted under the erroneous impression on the mind of Captain Green, at all culpable. He had seen as he supposed a ship's light to the southward, and he imagined he had Dungeness on his lee bow, with room to wear and lay her head to the wind off shore. This was perfectly justifiable, but a series of errors had prevailed, and this was the concluding one of the whole, that which was to discover to them their now inevitable fate.

It may be well to remember that the flood tide had commenced setting on shore, rendering the position of the vessel still more dangerous. At length they proceed to wear ship, to execute the fatal order. The vessel is scarcely round when she strikes! The shock indeed must have been fearful. It is described by the man at the wheel, named Munroe, as being terrific, "It struck me," he says, "as if I had laid hold of an electrical machine." What must now have been the feelings of her commander can better be imagined than described. What now would he have given to have availed himself of the opportunity which the day before had afforded, of preserving his ship; the opportunity even of the last half hour which had elapsed. But it was now too late!

Thus was that delusive veil of haze and mist, which had so long blinded the eyes of the captain, suddenly torn aside! Thus was revealed to this too confiding commander and his officers, the stern, the dreadful reality of their situation! Each wave as it spent its fury on the devoted ship, mocking the puny efforts of the crew to avert their fate,* carried with it a fearful reproof for neglecting the timely warnings held out, while it hurried the fragments of the ship to the shore, amidst the cries,—the shrieks of those which it hurled to eternity! Oh! what a scene amidst

"The wreck, the dying and the drowned,"

was here, at which to read a lesson to the *too confident* captain! What a place for the most experienced of seamen to learn, that with all his

* One account says "They turned to their own resources; the weather quarter-boat had been early washed away, the launch in midships had been totally smashed in her position by the waves that struck the ship; the starboard quarter cutter had been cut down three streaks in the gunwale by the mainmast and yards falling; there was then no safety excepting in a raft. The whole of the interior of the vessel was gutted; the midships swept through by the roaring billows; the beams even gone; the forecabin and poop alone remained; they were crowded, many had even sought for safety in the fore and main tops, which the lee rigging still held to the vessel. It was a desolate sight. But the British seaman's energy never deserts him. The carpenter and some others collected spars to form a raft; the third mate, boatswain, and ten men determined to try their fate in the only remaining boat; the Captain dissuaded them from the attempt, but one seaman replied 'Well, Sir, we must trust to Providence.' They started but had not proceeded 300 yards when a tremendous sea struck her and capsized the boat; for a minute two were clinging to her and all disappeared! A thrill of horror ran through all on the wreck who had anxiously watched their advance. The hope of relief from the shore still sustained them till eight o'clock when the mizen mast fell over, carrying with it the poop, and hurling nearly all upon it into the boiling deep. The Captain, mate, and some of the midshipmen were on the raft, but the sea sweeping through the vessel, carried off spar after spar, and prevented the possibility of forming anything stable or powerful enough to resist the raging element around them."

The *Reliance* stands No. 55 in the table of wrecks in our last number, and we have registered the loss of 113 lives on this sad occasion.—Ed. N.M.

knowledge, all his experience, without precaution, he may deceive himself to his ruin, and perish with all the unhappy lives committed to his unworthy care! Let each commander of a ship;—we say it with all the fervour of that desire we have to avert from him a fate like this, contemplate the condition now, of the ill-fated *Reliance*; and then over the havoc that is going forward, over the work of death and destruction which he witnesses, there let him read the moral written by the fury of the waves with the lives of above a hundred human beings, who ought not thus to have met their end; there we say, let him learn the full value (to a seaman in charge of a ship) of that golden maxim,—“PRECAUTION IS THE PARENT OF SECURITY.”

It is not our purpose to repeat again the oft repeated horrors attending the wreck of the *Reliance*. Our object is rather to point out the causes which led to it, with the view of warning our seamen against falling into the same. And casting a glance at our narrative what do we see? We have before us a fine ship, full of life and richly laden, running up Channel from a wide ocean into a narrow sea, headlong in the midst of storm and darkness, by which all vestige of land or lights by day or night was concealed from her. We see a French vessel, flitting like a vision across her path, her very appearance carrying a prophetic but unheeded warning;—we see her still standing on, no soundings telling her (by that appeal to them which should have been made) that she was not on the English coast as she supposed herself;—we see her discovering lights, and too easily satisfying herself that one was the light she expected, and the other a ship's light;—we see her sacrificed with nearly all on board to the want of that precaution against the possibility of error, which we look for but in vain.

It has been observed by Captain Washington and we fully agree with him that the English Channel is “as well lighted as Regent Street.” There is no difficulty in running a ship up the English Channel. We assert there is none whatever to a careful seaman. Let it blow for a month with thick weather such as the *Reliance* had (and that was bad enough), what difficulty is there in laying a ship's head to the northward or southward, with an attention to her drift, to the tides, to the depths and to the soundings, as she approaches either coast. With these necessary precautions and those pointed out in the letter of a Brother Sailor, which we have quoted, a ship may take care of herself, to be ready to avail herself of some interval of clear, when the land, or a light may be made out; but not by running blindly on to it. Whether any, or what precautions were taken by the *Reliance*, respecting her anchors we cannot say; but it is clear, that when she was once aground her anchors were useless. Had she anchored as Captain Washington observes, instead of running on when lights were first seen, she might have rode it out.

The subject is one, on which we have felt it our duty to dilate, and give full vent to those feelings which it has occasioned. These losses must not occur. Our ships must not be thus cast away on the French Coast, and pointed at by our neighbours as so many proofs of the ignorance, the incapacity of our most experienced commanders. To say nothing of the dreadful loss of life and property they occasion, what are they after all, but so many instances of disgrace to us? and are

they not so many proofs to all the world that our Commanders do not know how to handle their ships better? We tell them then that *these things must not be*: there are causes enough for the loss of our Merchant ships, but they must no longer be thrown away thus on the French Coast.*

One more remark and we have done. It is quite clear that Grinez light had nothing to do with the loss of the *Reliance*, but there is a feature attending it which ought to have been known at the time of her wreck. In July, instead of being a *fixed* light as previously it had been, the light of Grinez became a *revolving* light. It is very probable that even this was unknown to the Commander of the *Reliance*, and had he even made Grinez light, he might have mistaken it for that of Beachy Head, as has been recently most unaccountably done by a man calling himself a pilot, while in charge of the *Curaçoa*; and which mistake, but for the seamanship of her captain, no less promptly decided upon than exercised, saved his ship. Some would have us employ more pilots, but here is an instance of what faith may be placed even in them. For our own part, we consider that every commander of a ship should know with his chart before him, sufficient of the channel himself to be able to exercise control over his pilot, rather than allow himself to be blindly led to destruction by his ignorance. But again, how completely does this alteration in the subject of channel navigation, render it imperative on a Commander arriving from abroad, to take every possible pains of instructing himself from the earliest source, where he can obtain information on the changes of this nature that may have taken place in his absence.

To show how necessary this is, and how cautious under any circumstances, Commanders of ships should be even in this apparently unimportant particular, here is an instance from the *Shipping Gazette* of the 3rd of February:—

“DUMFRIES.—Feb. 1:—The *George M'Leod*, reported yesterday as wrecked, belonging to Messrs. Huntley and Leishman, of Glasgow. The crew saw the light on the *Little Ross*, and as it has been erected since they sailed from Glasgow they did not know it, but took it for some light in the Clyde. About five o'clock on Sunday morning, betwixt Balcars Bay and Southerness, the ship struck on the sand bank of Drumroff, whilst lying to.” And we may briefly add was subsequently lost.

We have now said enough. We have raised our voice in words of warning on this painful subject. We have dwelt on it, not with more prolixity than we consider it to deserve; we have done our part towards preventing a recurrence of those disasters which we have said *must not*

* The nature of the coast on which the *Reliance* was lost, is thus described by one of the writers to whom we have above alluded. “From Point d'Alprez, the headlands slowly sink into a low beach, extending southward to the Somme. In westerly gales the sea breaks with terrific force upon this shore; it has always been fatal to shipping, yet strange as it may seem more fatal to the land; for the sea sand driven inland, has covered more than 6000 acres of rich land to the depth of from 20 to 100 feet within the district of Boulogne alone; and the same desert extends southward and is continually extending. Underneath this sea of sand lie buried country houses, farms, villages, churches, and seaports in former times filled with shipping. The French Government have made many attempts to arrest this progress of ruin; vast sums have been expended on these shores under able engineers, but all in vain, nature has ever proved too strong for art.”

be,—which we must not be disgraced by a repetition of; and we trust with the same sincerity which has called forth the warning of a “*brother seaman*” that we shall not have raised our voice in vain.

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BOTTLE PAPERS.

WE have occasionally laid before our readers, as they have come to hand, the particulars of papers found in bottles, sent adrift on the ocean, for the purpose of determining the direction and strength of currents. The device is one belonging to modern times, the earliest proposal of it we have met with being about the year 1801, and the date of the earliest bottles found being 1809. We shall not stop now to discuss the utility of these messengers, which would naturally involve the considerations of direction of the wind and sea, and the time they might lie unheeded on the strand to which they have been carried, but we are content to lay them before our readers with a chart to show their relative courses. In some future numbers we shall copy the contents of the papers themselves, among which will be recognized no doubt some old by-gone records highly interesting to their authors, as having survived the perils of their voyage, and been snatched from the “wreck of time,” to tell their own tales.

With respect to the courses on the chart we have a word or two to say. The lines drawn (it will be at once seen) must not be taken as the actual tracks of the bottles, as the line of No. 46 will at once show: but, are merely intended to connect the point of departure with that of the arrival of the bottle, the rest being left open to opinion and speculation. Thus it is most probable that No. 46 ran the gauntlet of the West India Islands and the Gulf of Florida, in its circuitous course to the Channel islands. Indeed they all present a fair field for discussion, in which, should our readers be inclined to indulge themselves, they shall be heard.

Although we have levied contributions from every source within our reach, and would wish to have registered the track of every bottle found, there are no doubt many still that have evaded us. And as we have now provided a receptacle for them, we shall be thankful to any one who will send us hereafter any of these interesting attempts at gaining information on a point which is so important to navigation.

The columns of the table speak for themselves, but by way of brevity we have registered the latitudes and longitudes where the bottles were thrown into the sea in degrees and tenths.

*H.M.S. Favorite, Dec. 14th, 1833, at Sea.*

*Paper No. 1.*

Lat. 49° 2' N. long., 5° 48' W.

I write this letter in order that I may find out the current: let me know if ever you receive it. It is a fine day for the time of year, but we have a foul wind.

EDWARD BEAUCHAMP PROCTOR.

Note by the person who forwarded the letter.—“This letter has been found at Berk, on the Coast of France, twenty-five miles south of Boulogne, this day, 4th of January, 1834.” This accounts for so many vessels being lost on this coast. Since the 1st of September last five vessels have been wrecked in the space of about three miles.—*Nautical Magazine*, vol. 1834, p. 130.

The year 1842 and 1843, appear to be as disastrous as 1833 and 1834.—Ed.

(To be continued.)



## BOTTLE PAPERS.

| No. | SHIPS.        | SIGNATURE   | WHERE LEFT.  |              |            | WHERE FOUND. |              | Interval.<br>Yrs. Days |
|-----|---------------|-------------|--------------|--------------|------------|--------------|--------------|------------------------|
|     |               |             | WHEN.        | Lat.<br>N.   | Lon.<br>W. | COAST.       | WHEN.        |                        |
| 1   | Favorite      | Proctor     | 14 Dec. 1833 | 49° 0'       | 5° 8'      | France       | 4 Jan. 1834  | — 21                   |
| 2   | Lydia         | Petree      | 7 Oct.       | 41° 47' 0"   | 7° 0'      | France       | 23 Nov. 41   | — 47                   |
| 3   | Grahm Moore   | —           | 6 July,      | 21° 47' 7"   | 7° 7'      | France       | 15 Sept. 21  | — 70                   |
| 3a  | Benbow        | —           | 2 May        | 42° 46' 8"   | 7° 7'      | France       | July 42      | — 60                   |
| 4   | Britannia     | —           | 5 Sept.      | 35° C. Clear | —          | Cornwall     | 11 Oct. 35   | — 36                   |
| 5   | Hope          | Pender      | 31 March     | 38° 50' 2"   | 9° 7'      | France       | 31 May, 38   | — 61                   |
| 6   | Arrow         | Sullivan    | 14 July      | 38° 48' 5"   | 9° 4'      | France       | 25 Feb. 39   | — 226                  |
| 7   | Malabar       | —           | 6 Aug.       | 38° 43' 4"   | 9° 0'      | Africa       | 8 Jan. 39    | — 155                  |
| 8   | Dead Whale    | Brooking    | 8 May        | 34° 41' 7"   | 9° 0'      | Portugal     | 6 June, 34   | — 29                   |
| 9   | Gunboat       | Rebuff      | 25 Oct.      | 10° 39' 7"   | 9° 6'      | Cadiz        | 19 Nov. 10   | — 25                   |
| 10  | Cashlton Park | Park        | 27 July      | 27° 48' 6"   | 10° 3'     | France       | 21 Dec. 37   | 10 146                 |
| 11  | Chanticleer   | —           | 3 May        | 41° 44' 6"   | 11° 1'     | Galicia      | 16 Nov. 31   | — 197                  |
| 12  | Osprey        | M'Gill      | 1 March      | 22° 49' 6"   | 12° 5'     | Wales        | 6 April, 22  | — 36                   |
| 13  | Erebus        | Ross        | 14 Oct.      | 39° 39' 3"   | 12° 7'     | Spain        | 19 Dec. 39   | — 66                   |
| 14  | Emerald       | Nockells    | 17 Dec.      | 31° 36' 7"   | 12° 5'     | Aneгада      | 8 Jan. 33    | 1 22                   |
| 15  | Lady Louisa   | Pallant     | 2 Feb.       | 30° 45' 0"   | 13° 7'     | France       | 14 Oct. 39   | 9 254                  |
| 16  | Catherine     | Wallace     | 25 June      | 17° 44' 0"   | 13° 7'     | Finisterre   | 10 Nov. 17   | — 138                  |
| 17  | Morning Star  | —           | —            | 42° 7'       | 13° 1'     | Portugal     | —            | —                      |
| 18  | Kinnear       | Mallard     | 26 July      | 35° 44' 5"   | 14° 0'     | Tenerife     | 28 June, 6   | — 337                  |
| 19  | Freeland      | Midgley     | 11 Feb.      | 33° 41' 8"   | 14° 4'     | Vigo         | 1 Mar. 33    | — 18                   |
| 19a | W. Maning     | Huskisson   | 9 Sept.      | 10° 35' 0"   | 14° 4'     | Hispaniola   | 19 Oct. 15   | —                      |
| 20  | Baretto, Jun. | Marshall    | 9 Dec.       | 39° 44' 8"   | 14° 3'     | England      | 12 Feb. 40   | — 65                   |
| 21  | Wallace       | Robertson   | 12 April,    | 35° 52' 2"   | 15° 0'     | Ushant       | 20 Aug. 35   | — 130                  |
| 22  | Thetis        | Bissett     | 18 Jan.      | 41° 50' 8"   | 16° 0'     | Hebrides     | 3 April, 41  | — 75                   |
| 23  | Mary          | Lock        | 12 April,    | 32° 48' 5"   | 16° 9'     | France       | 4 Mar. 33    | — 327                  |
| 24  | Tyne          | Hope        | 4 Jan.       | 34° 46' 6"   | 16° 9'     | Devon        | 16 Mar. 34   | — 71                   |
| 25  | Symmetry      | Smith       | 9 June,      | 25° Madeira  | —          | Turks I.     | 9 June, 35   | 10 —                   |
| 26  | Maitland      | Hodgson     | 22 April,    | 38° 49' 1"   | 18° 3'     | France       | 25 Feb. 39   | — 309                  |
| 27  | Kent          | W. L.       | 19 Aug.      | 36° 50' 3"   | 19° 0'     | France       | 23 Dec. 36   | — 126                  |
| 28  | Niger         | Merritt     | 7 Aug.       | 39° 48' 2"   | 18° 9'     | Quiberon     | Feb. 40      | — 177                  |
| 28a | Bolivar       | —           | 29 Aug.      | 40° 46' 9"   | 18° 6"     | —            | Dec. 40      | — 94                   |
| 29  | Mary          | Lock        | 17 April,    | 32° 44' 2"   | 18° 0'     | France       | 21 Feb. 33   | — 310                  |
| 30  | Flora         | Shaddock    | 29 July,     | 40° 43' 9"   | 18° 6"     | Cuba         | 1 April, 42  | 1 246                  |
| 31  | Ibbitson      | of Stockton | 5 Nov.       | 26° 55' 5"   | 18° 3'     | Killala      | 3. Jan. 27   | — 5                    |
| 32  | Leeds         | Sprague     | 25 June,     | 28° 49' 8"   | 20° 4'     | Scilly       | —            | —                      |
| 33  | President     | Scott       | 26 May,      | 36° 48' 5"   | 19° 6"     | France       | 1 Oct. 36    | — 128                  |
| 34  | Virginia      | —           | 16 June,     | 38° 42' 2"   | 19° 3'     | Cork         | Aug. 38      | — 45                   |
| 35  | Kate          | Cresswell   | 27 June,     | 25° 24' 0"   | 19° 0'     | Cuba         | 28 Nov. 26   | 1 154                  |
| 36  | Gambia        | River       | —            | 31° 13' 5"   | —          | Virgin I.    | —            | —                      |
| 37  | Persian       | Mallard     | 23 Oct.      | 34° 47' 1"   | 20° 4'     | Ireland      | 13 Feb. 35   | — 113                  |
| 38  | Albert        | Robertson   | 24 Jan.      | 22° 47' 3"   | 21° 9'     | Somerset     | 29 July, 22  | — 186                  |
| 38a | Fanny         | Palmer      | 16 Feb.      | 12° 30' 0"   | 23° 0'     | Penzance     | 4 Mar. 13    | —                      |
| 39  | Ardent        | Duncan      | 22 Sept.     | 24° 57' 0"   | 24° 5'     | Lewis        | 12 Mar. 25   | — 171                  |
| 39a | Superior      | Manson      | 13 May,      | 42° 53' 8"   | 24° 0'     | Donnet H.    | Nov. 42      | — 175                  |
| 40  | Enterprize    | —           | 5 June,      | 32° 45' 1"   | 24° 3'     | France       | 17 April, 33 | — 316                  |
| 41  | Thunder       | Owen        | 24 July,     | 33° 28' 4"   | 25° 5'     | Bahamas      | 12 Dec. 34   | 1 141                  |
| 41a | Pr. Elizbth   | —           | 6 Sept.      | 08° 14' 7"   | 25° 0'     | Martinique   | 18 April, 09 | —                      |
| 42  | W. Lockerby   | Parker      | 22 Jan.      | 38° 14' 1"   | 25° 2'     | Grenadines   | 10 July, 38  | — 169                  |
| 43  | Osprey        | —           | 28 Mar.      | 20° 5' 2"    | 24° 7'     | Martinique   | 13 Feb. 21   | — 322                  |
| 44  | Stratford     | Locke       | 21 Jan       | 36° 4' 1"    | 24° 3'     | Barbados     | 8 June, 36   | — 139                  |
| 45  | Osprey        | —           | 17 Jan.      | 22° 6' 2"    | 15° 6"     | Trinidad     | 28 July, 22  | — 192                  |
| 46  | Ldy Montagu   | Poore       | 15 Oct.      | 20° 7' 7"    | 8° 6"      | Guernsey     | 6 Aug. 21    | — 295                  |
| 47  | Mary          | Godfrey     | 22 Mar.      | 40° 47' 3"   | 27° 4'     | Clare I.     | 11 July, 40  | — 111                  |
| 47a | Orbit         | Boat        | 16 Nov.      | 11° 46' 8"   | 27° 0'     | Ireland      | 3 Oct. 12    | —                      |
| 48  | C. Dunmore    | Robertson   | 8 Mar.       | 28° 27' 4"   | 28° 0'     | Bahamas      | 19 May, 29   | 1 72                   |
| 49  | Two Brothers  | —           | 21 Nov.      | 26° 17' 0"   | 26° 0'     | Crooked I.   | 8 Dec. 27    | 1 17                   |

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|     |              |            | WHEN.        | Lat. N. | Lon. W. | COAST.       | WHEN.        |           |
| 50  | Dk Mrlbro'   | Thom       | 14 Oct. 20   | 16°4'   | 26°5'   | Hayti        | 24 July, 21  | — 283     |
| 51  | Wellington   | Liddell    | 10 April, 36 | 15°3'   | 27°4'   | NW Azores    | 21 Mar. 40   | 3 346     |
| 52  | Wellington   | Liddell    | 11 April, 36 | 17°9'   | 29°0'   | Abaco        | 1 Jan. 37    | — 265     |
| 53  | Romulus      | Crawford   | 27 July, 19  | 57°8'   | 30°7'   | Shetland     | 14 Nov. 19   | — 110     |
| 54  | Spermaceti   |            | 24 June, 40  | 10°2'   | 30°8'   | Hebrides     | 26 Aug. 40   | — 63      |
| 55  | Mary         | Locke      | 29 Jan. 36   | 14°5'   | 34°4'   | Jamaica      | 2 Nov. 36    | — 278     |
| 56  | Helen        | Butm a     | 10 Sep. 34   | 47°3'   | 33°6'   | Scilly       | 8 Mar. 35    | — 179     |
| 57  | Stratford    | Locke      | 29 Jan. 36   | 14°5'   | 34°4'   | Jamaica      | 2 Nov. 36    | — 278     |
| 58  |              |            |              |         |         |              |              |           |
| 59  | Sandwich     | Squire     | 1 June, 21   | 50°3'   | 36°4'   | Hebrides     | 2 Dec. 21    | — 194     |
| 60  | Sisters      | Pittman    | 17 Sep. 28   | 44°1'   | 36°9'   | Biarritz     |              |           |
| 61  | Isabella     | of Leith   | 2 April, 35  | 23°3'   | 37°8'   | Tortola      | 13 Sept. 36  | 1 164     |
| 62  | Echo         | Belcher    | 1 Jan. 37    | 17°3'   | 36°6'   | Antigua      | 16 July, 37  | — 196     |
| 63  | Amazon       | Brodrick   | 3 Aug. 40    | 50°6'   | 38°0'   | Ireland      | June, 41     | — 301     |
| 64  | J. Cropper   | Marshall   | 10 Jan. 24   | 48°3'   | 38°1'   | Mounts B.    | 12 Feb. 25   | 1 33      |
| 65  | Blonde       | Hall       | 23 Sept. 26  | 43°5'   | 38°5'   | France       | 15 June, 42  | 15 285    |
| 66  | Thunder      | Owen       | 1 Aug. 33    | 13°3'   | 39°2'   | Mosquito     | 5 Mar. 34    | — 216     |
| 67  |              |            |              |         |         |              |              |           |
| 68  | Julia        | Davidson   | 6 Nov. 21    | 6°0'    | 40°0'   | Tobago       |              |           |
| 69  | Seine        |            | 18 Sept. 11  | 50°7'   | 40°3'   | Kerry        | 18 June, 12  | — 274     |
| 70  | ThreeSistrs  | Pollock    | 20 July, 24  | 41°0'   | 42°0'   | Mounts B.    | 12 Oct. 25   | 1 86      |
| 71  | Opossum      |            | 2 June, 39   | 27°2'   | 42°0'   | Bahamas      | 22 May 42    | 2 354     |
| 72  | Georgia      | Baugh      |              | no date | 43°0'   | Finisterre   | no date      |           |
| 73  | Albion       | Thompson   | 20 Oct. 36   | 41°3'   | 43°9'   | Hebrides     | 7 Nov. 38    | 2 18      |
| 74  | Blonde       |            | 28 Sept. 26  | 43°5'   | 38°5'   | France       | 16 June, 41  | 14 261    |
| 75  | Brit. Queen  | Hamilton   | 10 Aug. 38   | 43°9'   | 44°5'   | Nieuport     | 15 Oct. 38   | — 66      |
| 76  | Royal Union  | Grant      | 27 Sept. 22  | 48°2'   | 45°2'   | Scilly       | 00 Dec. 22   | — 75      |
| 77  | Hecla        | Parry      | 16 June, 19  | 58°2'   | 46°9'   | Tenerife     | 29 July, 21  | 2 43      |
| 78  | Helen        |            |              | 47°0'   | 47°3'   | Scilly       |              |           |
| 79  | Egarn'd Cstl | Pittman    | 7 July, 25   | 45°7'   | 47°0'   | Andros I.    | 10 May, 29   | 3 297     |
| 80  | Sarah        | Mickle     | 29 May, 25   | 49°0'   | 48°2'   | Somerset     | 14 April, 36 | 10 321    |
| 81  | Elizabeth    | J. E.      | 15 Aug. 19   | 47°0'   | 49°2'   | Rathlen I.   | 21 June, 20  | — 311     |
| 82  | Victoria     |            | 13 Aug. 34   | 15°0'   | 50°0'   | Lands End    | 16 Mar. 35   | — 215     |
| 83  | Alexander    | Parry      | 27 May, 18   | 59°1'   | 52°3'   | Staffa       | 28 July, 19  | 1 62      |
| 84  | Alexander    | Parry      | 29 May, 18   | 62°0'   | 54°0'   | Donegal      | 19 July, 19  | 1 21      |
| 85  | London       | Wreck      |              | 61°5'   | 57°0'   | Orkneys      | 20 Mar. 18   |           |
| 86  | Fury         | Parry      | July, 21     | 62°1'   | 62°5'   | Donegal      | 9 Mar. 22    | — 252     |
| 87  | Merioneth    | Morris     | 27 July, 20  | 62°2'   | 19°5'   | Bute         | 4 Sept. 20   | — 70      |
| 88  | Hecla        | Parry      | 22 May, 19   | 59°1'   | 6°9'    | Norway       | 21 Sept. 19  | — 122     |
| 89  | Racehorse    | Home       | 20 May, 35   | 8°6'    | 52°0'   | St. Vincent  | 24 June, 35  | — 35      |
| 90  | C. M'Crthy   | Field      | 15 Oct. 24   | 22°0'   | 53°5'   | Salvador     | 29 May, 25   | — 226     |
| 91  | W. Miles     | Pike       |              | 18°5'   | 37°3'   | S. Eustatius | 26 Feb. 39   |           |
| 92  | Racehorse    | Home       | 26 May, 35   | 1°3'    | 47°8'   | Tobago       | 15 July, 35  | — 60      |
| 93  | Emma         |            | 17 June, 38  | 11°1'   | 58°8'   | G. Cayman    | 27 Aug. 38   | — 71      |
| 94  |              |            |              | 45°0'   | 60°0'   | Cornwall     |              |           |
| 95  | Racehorse    | Home       | 16 April, 36 | 11°5'   | 61°5'   | Maracaybo    | 3 May, 36    | — 17      |
| 96  | President    | Bradshaw   | 12 July, 34  | 35°6'   | 62°8'   | Bahamas      | 1 Dec. 34    | — 142     |
| 97  | Newcastle    | Napier     | 20 June, 19  | 38°9'   | 64°0'   | Ireland      | 11 June, 20  | — 365     |
| 98  | Newcastle    |            | 20 June, 19  | 39°2'   | 63°9'   | Azores       | 20 May, 20   | — 335     |
| 99  | Osprey       | Kisningh'm | 21 April, 40 | 31°1'   | 63°4'   | P. Rico      | 14 Jan. 40   | — 54      |
| 100 | C. Heselstn  | Young      | 4 May, 41    | 28°6'   | 64°0'   | Bahamas      | 12 Mar. 42   | — 312     |
| 101 | Racehorse    | Home       | 17 April, 36 | 12°2'   | 65°8'   | Bonaire      | 22 April, 36 | — 6       |
| 102 | Fr. Spaight  |            | Nov. 35      |         |         | F. Ventura   | May, 36      |           |
| 103 |              |            |              |         |         |              |              |           |
| 104 | Romney       | Brown      | 13 May, 33   | 42°2'   | 66°4'   | Nova Scoti.  | 13 June, 33  | — 31      |
| 105 | S. America   |            | Mar. 33      | 40°5'   | 68°0'   | Lancashire   | 34           |           |
| 106 | J. Esdaile   | King       | 28 July, 21  | 36°9'   | 71°8'   | Lancashire   | 5 Dec. 22    | 1 130     |
| 106 | a Dispatch   | Chouder    | 14 May, 38   | 39°2'   | 72°7'   | New York     | 25 June, 38  | — 42      |
| 107 | Robert       | Coulter    |              | Alto    | Vela    | Florida      |              |           |

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|     |             |           | WHEN.        | Lat.<br>N. | Lon.<br>W. | COAST.       | WHEN.        |                             |
| 108 | Chanticleer | Austen    | 23 Feb. 31   | 15°5'      | 76°0'      | Yucatan      | 20 April, 31 | — 56                        |
| 109 | Lark        | Smith     | 20 July, 39  | 16°0'      | 76°3'      | Mexico       | 25 Mar. 40   | — 249                       |
| 110 | Dove        | Kehoe     |              | 16°0'      | 78°5'      | Ireland      | Aug. 37      | —                           |
| 111 | Thunder     |           | 10 Mar. 34   | Sera nilla |            | Honduras     | 23 April, 34 | — 44                        |
| 112 | Lark        | Smith     | 21 May, 40   | 16°4'      | 82°5'      | Mexico       | 1 Nov. 40    | — 164                       |
| 113 | Thunder     | Barnett   | 29 April, 40 | OffC hagr  |            | es Belize    | 1 Oct. 40    | — 155                       |
| 114 | Lark        | Smith     | 29 Nov. 38   | 25°5'      | 79°3'      | Madeira      | 2 Oct. 40    | 3 30c                       |
| 115 | Lark        | Smith     | 12 July, 38  | 24°5'      | 83°2'      | Florida      | 20 May, 39   | — 312                       |
| 116 | Briton      | Gordon    | 2 Feb. 30    | 27°9'      | 84°7'      | Florida      | 12 Oct. 30   | — 252                       |
| 117 | Lark        | Smith     | 31 Jan. 38   | 20°7'      | 85°6'      | Galveston    | 26 May, 39   | 1 115                       |
| 118 | Thunder     | Owen      | 25 May, 34   | 17°7'      | 86°2'      | Yucatan      | 3 July, 34   | — 49                        |
| 119 | Pilot       |           | 13 Jan. 40   | 23°7'      | 87°6'      | Texas        | 16 Sept. 40  | — 37                        |

**RETIREMENT OF MR. ROBERT STEVENSON.**—The following general order has been circulated on the occasion of this gentleman's retirement.

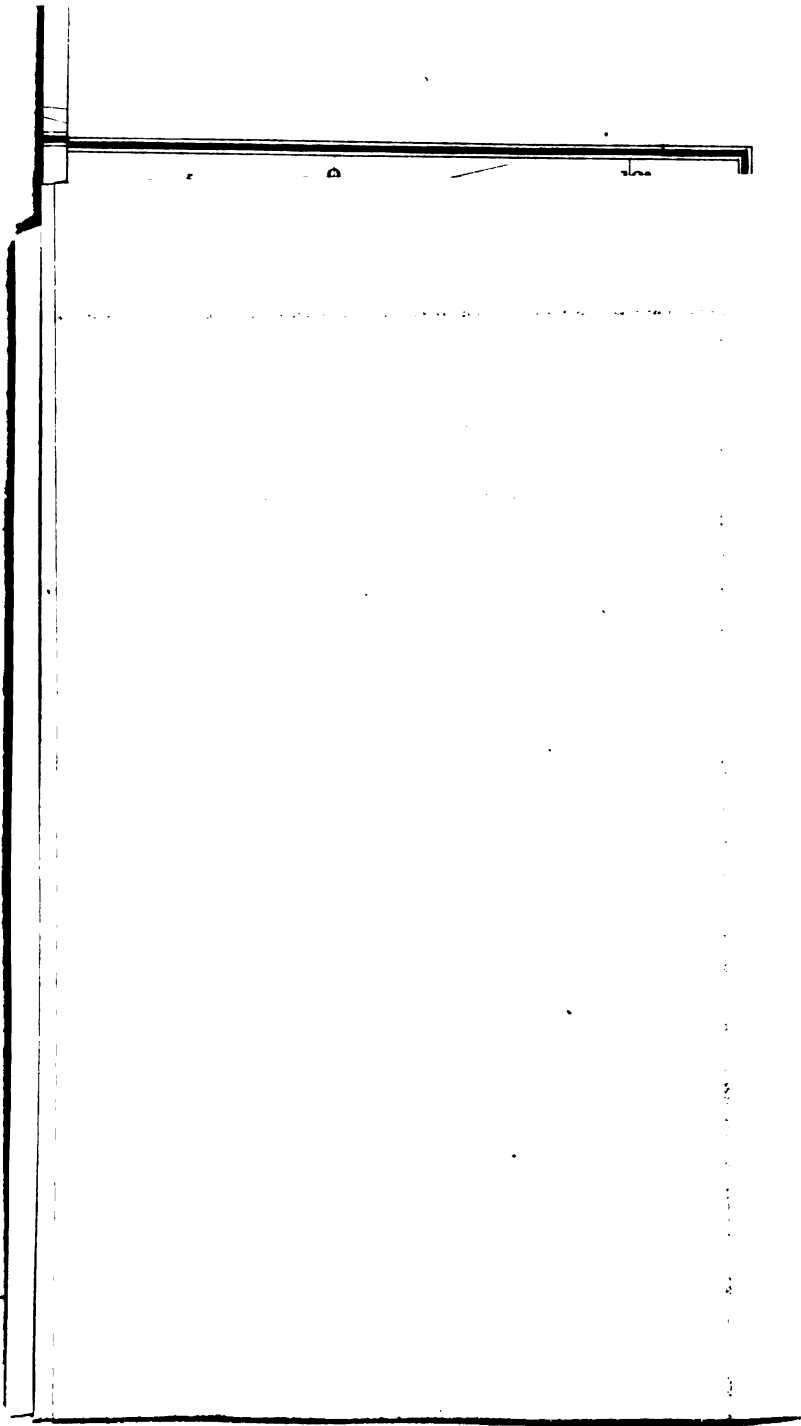
The Commissioners of Northern Lighthouses have to intimate to the Light-keepers, and officers in their service, in the department of the Engineer, that **MR. ROBERT STEVENSON**, who for the long period of nearly fifty years has been connected with the Lighthouse service, and for forty years has discharged the duty of Engineer to the Board, has retired from the service. The Commissioners could not allow this occurrence to take place without expressing to Mr. Stevenson, as they now do to their lightkeepers, and officers in his department, the high sense which all the Members of the Board entertain of Mr. Stevenson's services, during the long period he held the office of Engineer—being satisfied, that to his skill, attention, and zealous anxiety to promote the welfare of the Establishment, is in a great measure to be attributed the present admirable system in which the Lighthouses under their care are carried on. The Annual Reports made by the Engineer, of the regular, steady, and correct discipline of the Light-keepers, and Officers in his department,—the only mode in which such a service as this can with efficiency be maintained,—has at all times afforded the greatest satisfaction to the Board; and in announcing that Mr. Alan Stevenson, a gentleman in every way highly qualified for the situation, has been appointed to succeed as Engineer to the Board, the Commissioners beg to state that they have conveyed to him their desire that the same admirable system adopted by the late Engineer should be continued;—and they trust they have only to express their hope, that by the same scrupulous fidelity in the discharge of their important duties, and strict attention to the orders of the present Engineer, the Light-keepers, and other Officers in his department, will maintain the high character they have so justly acquired.

By order of the Board,

*Northern Light-Office,  
Edinburgh, 14th Jan., 1843.*

ALEX. CUNINGHAM,  
*Joint Secretary.*

**MALTA.**—On the 31st ult. the Formidable, of 84 guns, was hove down to be examined. Upwards of 800 men have been employed in the work. About nine feet of the lower part of her sternpost was found to have been carried away—six feet, or thereabouts, of her gripe and stem. Nearly the whole of her false keel was gone, and some 50 feet of her main; her rudder was gone, and a quantity of dead wood; the copper was in several places rubbed off her side. Axes were instantly at work to cut away the useless wood, and the copper was here and there stripped off to examine her more closely. In fine, after a hard day's work, she was righted again, and floated, moulds having been taken of the required repairs. She was hove down again on the 3d inst., and her repairs commenced.—*Hampshire Standard.*





## CAPTAIN FITZROY'S BILL.

## A BILL FOR REQUIRING AND REGULATING THE EXAMINATION OF MASTERS AND CHIEF MATES OF MERCHANT VESSELS.

(Prepared and brought in by Captain FitzRoy, Mr. Alderman Thompson, and Mr. James Oswald.)

[Note.—The words printed in *Italics* are proposed to be inserted in the Committee.]

WHEREAS many vessels have been wrecked, and other serious accidents have happened, by which much property has been destroyed, and many lives have been lost in consequence of the defective knowledge or misconduct of persons in charge of such vessels: And whereas, with a view to diminish similar evils in future, and because in the Mercantile Marine, increased as it has been of late years by steamers as well as sailing vessels, masters or mates are sometimes so suddenly wanted that their fitness for employment as such cannot be always known; it is expedient that provision should be made for ascertaining the qualifications of persons to be so employed hereafter, and for requiring and regulating their examination:

*Boards to be appointed, &c.*

May it therefore please your Majesty, that it may be enacted; and 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 as soon as conveniently may be after the *passing of this act*, boards shall be appointed, in manner hereinafter provided, for the examination of persons desiring to qualify for the office of master or chief mate of a merchant vessel, one of which boards shall sit at each of the following places, that is to say, London, Liverpool, Bristol, Hull, Plymouth, Glasgow, Cork, Belfast, Newcastle or Sunderland, and Aberdeen or Dundee.

*Constitution of the Boards.*

And be it enacted, that the board to be appointed to sit at London shall consist of four examiners, and shall be attended by a secretary and clerk; and that each of the other boards shall consist of three examiners, and shall be attended by a clerk.

*Principal Examiner and Secretary.*

And be it enacted, that one of the examiners of the London board shall be called the principal examiner, and shall be a person having an accurate knowledge of theoretical and practical navigation, and who shall have been at sea at least ten years; and that such principal examiner shall be chosen by the master, wardens, and assistants of the guild, fraternity, or brotherhood of the most glorious and undivided Trinity, and of Saint Clement, in the parish of Deptford Strond, in the county of Kent, commonly called "The Corporation of Trinity-house of Deptford Strond," and shall be subject to the approval of the lords of the committee of privy council, appointed for the consideration of all matters relating to trade and foreign plantations, and if so approved, shall be by them appointed to be the principal examiner; and that the secretary of the London board shall also be chosen by the corporation of Trinity-house of Deptford Strond, and shall be subject to the approval of the lords of the said committee of privy council, and if so approved shall be by them appointed to be such secretary: Provided that such secretary shall, previous to his appointment, give security for the due performance of his duties, by himself and two approved sureties (jointly and severally), to the amount of *one thousand pounds*.

*Qualifications of the other Examiners.*

And be it enacted, that the three examiners of the London board (other than the principal examiner) and the three examiners of each of the other boards, shall be experienced seamen, qualified in manner hereinafter mentioned; (that is to say) that one of the examiners of the London board (other than the principal examiner), and one of the examiners of each of the other boards, shall have commanded a vessel or vessels in the merchant service at least *seven* years, and shall have been in the Pacific and Indian Ocean; and that another of the examiners of the London board (other than the chief examiner), and another of the examiners of each of the other boards, 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; and that the remaining examiner of the London board, and the remaining examiner of each of the other boards, shall have commanded a steam-vessel or steam-vessels at least *three* years, and shall have been at sea at least *four* years in a vessel or vessels not worked by steam.

Provided nevertheless, and be it enacted, that the qualifications of the principal and other examiners may be altered and varied from time to time at the discretion and by the authority of the lords of the said committee of privy council.

And be it enacted, that the examiners of the London board (other than the principal examiner), and the examiners of the other boards, and the clerk of the London board, and the clerks of the other boards, shall be elected by the shipowners of the districts for which they are respectively to act, in manner hereafter provided; such examiners, nevertheless, being persons duly qualified as aforesaid; and every person so elected to be an examiner or clerk shall be examined by the corporation of Trinity-house of Deptford Strond, and also by the principal examiner; and upon its being certified under the hand of the master or deputy-master of the said corporation of Trinity-house of Deptford Strond, and under the hand of the principal examiner aforesaid to the lords of the said committee of privy council, that such person is competent to fill the office of examiner or clerk to which he shall have been elected as aforesaid, he shall (if approved by the lords of the said committee of council) be by them appointed to such office: Provided, that in case any person who shall have been elected to the office of examiner or clerk as aforesaid, shall not, in the opinion of the corporation of Trinity-house of Deptford Strond, and of the principal examiner, be competent to fill such office, or shall not be approved by the lords of the said committee of council, then and in such case another person, qualified as hereinbefore mentioned, and duly competent, shall be elected to such office in manner hereinafter provided, and so from time to time as often as occasion may require.

*Division of the Ports, &c.—Districts.*

And be it enacted, that for the purpose of the election of examiners and clerks, the coasts and ports of Great Britain and Ireland shall be divided into the districts hereinafter mentioned, and that each district shall comprise all ports and places lying between its extreme limits, and that such districts shall be as follow, that is to say—

- The London district, to extend from Cromer to Portland Bill;
- The Plymouth district, from Portland Bill to Ilfracombe;
- The Bristol district, from Ilfracombe to Strumble Head;
- The Liverpool district, from Strumble Head to Longtown;
- The Glasgow district, from Longtown to Cape Wrath;
- The Aberdeen and Dundee district, from Cape Wrath to River Adder;
- The Newcastle and Sunderland district, from River Adder to Flamborough Head.
- The Hull district, from Flamborough Head to Cromer;

The Belfast district, to comprise all ports and places on or near the coast of Ireland, lying north of 53 degrees north latitude; and the Cork district, to comprise all ports and places on or near the coast of Ireland, lying south of 53 degrees north latitude.

And be it enacted, that the meetings for the election of examiners and clerks for the respective districts of Aberdeen and Dundee, and Newcastle and Sunderland, shall take place at such one of those towns respectively in each district as the lords of the said committee of privy council shall from time to time (by notice to be advertised in the *London Gazette*) appoint, and who shall also in like manner appoint at which of the said places the respective boards for the two last-mentioned districts shall sit; and that all meetings for the election of examiners and clerks for the several other districts shall be held at the place from which the district takes its name.

Provided nevertheless, and be it enacted, that the number of the Boards of Examiners, and the number and boundaries of the districts for which they are to act, and the places at which they shall sit, may from time to time be altered and varied as may be deemed for the public advantage, at the discretion and by the authority of the lords of the said committee of privy council, provided that notice of any such alteration or variation be given by advertisement in the *London, Dublin, and Edinburgh Gazettes*.

#### *Election of the Examiners.*

And be it enacted, that in order to the election of the first examiners (other than the principal examiner aforesaid) and the first clerks to act in the execution of this act, the lords of the said committee of privy council shall cause to be notified to the Lord Mayor of London, and to the mayor or other chief magistrate of each of the other places where meetings for the election of examiners and clerks are, in pursuance of the provisions herein contained, to be held, that he is to proceed with all convenient speed to call a meeting for the election of three examiners and a clerk, such examiners to be duly qualified as hereinbefore mentioned; and in any case where a vacancy shall have occurred by death, resignation, or removal from office, in the office of examiner or clerk, of any of the said boards (other than the principal examiner aforesaid), the lords of the said committee of privy council shall cause it to be in like manner notified to the Lord Mayor, or mayor, or other chief magistrate aforesaid, of the place where the election for such examiner or clerk is to be held, that he is to proceed with all convenient speed to call a meeting for the election of an examiner or clerk (as the case may be), such examiner to be qualified as aforesaid.

And be it enacted, that the Lord Mayor of London, or the mayor or other chief magistrate of each such other place as aforesaid, on receiving such notification as aforesaid, shall and he is hereby required to call a meeting of the shipowners of the district, to be held at some convenient place in the city, town, or borough, at some convenient time, at an interval of not more than three weeks from his receiving such notification as aforesaid, and to be advertised by notice in one or more newspapers usually circulated in London, and also (where the election is for any other than the London district) in one or more provincial newspapers usually circulated in the place where such meeting is to be held, for the purpose of electing an examiner or examiners (duly qualified), or a clerk, or both, as the case may require, for the board of that district.

And be it enacted, that at such meetings the managing owners of all British vessels belonging to ports within the district, and being vessels trading over sea, of whatever burthen, or being coasting vessels of above fifty tons burthen, shall be entitled to attend, and that at such meetings every such managing owner shall have one vote for each vessel trading over sea of whatever burthen, and for each coasting vessel of above fifty tons burthen, of which he shall be the managing owner, and which shall belong to a port within the district, and



that such votes may be given personally or by proxy, such proxy being a person qualified to vote at such meeting in his own right.

And be it enacted, that at each such meeting the Lord Mayor, or mayor or other chief magistrate of the place, or some person to be appointed by him in his place, shall preside, and that the vote shall be given by show of hands, or by an open poll, if demanded.

And be it enacted, that if at any such meeting five persons at least shall not attend within one hour from the appointed time of meeting, the meeting shall be adjourned by the chairman to that day week, of which adjournment at least three days' notice shall be given, by advertisement in manner hereinbefore provided, and so from time to time as occasion may require.

And be it enacted, that within *five* days after any election shall have taken place, the Lord Mayor, or mayor, or other chief magistrate aforesaid, shall return the name or names of the person or persons elected to the lords of the said committee of privy council, who shall thereupon require the examination of such person or persons by the corporation of Trinity-house of Deptford Strond, and by the principal examiner.

And be it enacted, that every person elected in the office of clerk shall, before his appointment, give security for the due performance of his duties, by himself and two approved sureties (jointly and severally) to the amount of *two hundred pounds*.

#### *Power to remove Examiners and Clerks.*

And be it enacted, that upon its being certified to the lords of the said committee of privy council by the corporation of Trinity-house of Deptford Strond, assembled at a court, that the principal examiner or any other examiner, or any clerk appointed under the provisions of this act, is unworthy of continuing in such office, or is unable, by reason of ill-health or otherwise, to discharge satisfactorily the duties thereof, or ought for any other cause to be removed, it shall be lawful for the lords of the said committee of privy council to remove such person from his office, and thereupon another person duly qualified shall be appointed in his place, under the provisions hereinbefore contained.

#### *Meetings of the Boards of Examiners.*

And be it enacted, that each board of examiners shall meet for the examination of persons desirous to qualify for the office of master or chief mate of a merchant vessel, and for other the purposes herein specified, at least twice in each month, and as often besides as occasion shall require, and that at least *forty-eight* hours previous notice of such meeting shall be given to each examiner by the clerk under his hand, and that a meeting of any board shall at any time be called by the clerk upon the request of the chairman or of two other members of the board, upon such previous notice as aforesaid; and that every such meeting shall be held at some convenient place in the city, town or borough at which, under the provisions hereinbefore contained, the board is to sit, and that each such meeting shall be called a board of examiners, and that all the examiners of each board shall attend at each meeting of the board, unless prevented by illness or other urgent cause, but that *two* examiners shall form a quorum; and that the London board shall be attended by the secretary and clerk, or by the clerk, and that every meeting of any other board shall be attended by the clerk, and that the principal examiner shall preside at all meetings of the London board at which he shall be present; and that one of the other examiners of each board shall be appointed by the lords of the said committee of council to be the chairman of such board, and such chairman shall preside at all meetings of the board at which he shall be present in the absence of the principal examiner: Provided nevertheless, that the principal examiner shall, when his duties at the London board will permit, from time to time visit the several other boards, with a view to assimilate their proceedings

and to check irregularities, and that the principal examiner shall be chairman for the time being of any board of examiners at which he may be present; and, in case it shall be necessary, the principal examiner shall make a representation in writing to the chairman of any board of any matter requiring alteration in or with reference to the proceedings of such board: Provided, that in every such case the principal examiner do and he is hereby required to forward, within a week, a copy of such representation to the lords of the said committee of council.

And be it enacted, that if any examiner shall be absent from any meeting of the board of which he shall be a member for upwards of an hour after the time of meeting appointed during that sitting of the board, he shall forfeit and pay such sum (not exceeding five shillings for each hour) as shall be determined by the board, unless it shall be made to appear, at that or the next following meeting of the board, that, by reason of illness or some other urgent cause, he was prevented attending.

*Duties of the Examiners, Secretary, &c.*

And be it enacted, that it shall be the duty of each board of examiners to examine all persons who shall under the provisions hereinafter contained, be entitled to apply for, and shall apply for, certificates of qualification for the office of master or chief mate of a merchant vessel: and to grant to such of them as shall upon such examination appear to be properly qualified for the same, certificates of qualification, of the classes and descriptions hereinafter specified; and also to grant to such persons as shall appear to be entitled thereto certificates of exemption, according to the regulations hereinafter contained.

And be it enacted, that the clerk of the London board shall act under the directions of the secretary, subject to such regulations as shall be made by the board; and that it shall be the duty of the secretary and clerks to take and keep minutes of the proceedings of each meeting of the boards to which they are respectively attached, and to record the result of each examination, and to keep accounts of all fees, fines, and forfeitures incurred and paid, and of all other monies paid to the use of the board, and of all expenses, payments, and disbursements incurred and paid on account of the board.

*Classes and Descriptions of Certificates, Qualification, &c.*

And be it enacted, that the certificates of qualification shall be of two descriptions, those for masters and those for chief mates; and that a master's certificate shall entitle the party to whom it is granted to serve as master, and that a chief mate's certificate shall entitle the party to whom it is granted to serve as chief mate; and that there shall be three classes of certificates, of each of the aforesaid descriptions; (that is to say) first-class certificates, over-sea certificates, and coasting certificates; and that a first-class certificate shall entitle the party to whom it is granted, not only to the same privilege as an over-sea certificate of the same description, but shall be considered as a mark of special distinction; and that such first-class certificates shall be granted to such persons only as shall be found upon examination to possess superior professional attainments, and as shall apply for the same; and that an over-sea certificate shall entitle the party to whom it is granted to serve as master or chief mate (as the case may be) in over-sea voyages; and that a coasting certificate shall entitle the party to whom it is granted to serve as master or chief mate (as the case may be) in coasting voyages only; and that every such certificate shall be signed by all the examiners present at the examination of the party to whom it is granted, and shall be counter-signed by the clerk, and shall also bear the secretary's signature; and that such certificates respectively shall be according to the respective forms to be authorised by the aforesaid committee of privy council.

And be it enacted, that no person shall be entitled to apply for a master's certificate of qualification unless he shall be at least *twenty-one* years of age,

and shall have served at least *two* years as mate; or shall be qualified to hold a commission in the Royal Navy; and that no person shall be entitled to apply for a chief mate's first class or over-sea certificate of qualification unless he shall be at least *nineteen* years of age, and shall have been at least *five* years at sea; and that no person shall be entitled to apply for a chief mate's coasting certificate of qualification unless he shall be at least *eighteen* years of age, and shall have been at least *three* years at sea; and that before proceeding to the examination of any person applying for a certificate, the board shall be satisfied, by a certificate under the hand of a captain, master, owner, or officer, under whom he shall have lately served or otherwise, of the sobriety, integrity, and general good conduct of the party so applying.

And be it enacted, that every person intending to apply for a certificate of qualification shall give notice by letter, in his own hand-writing (addressed to the board or their clerk), of his desire to be examined, and no person shall be examined for a certificate of qualification until at least *two* days (exclusive of Sundays, Christmas-day, and Good Friday) after such letter shall have been received; and every such letter shall be preserved as a record, and for the better identification of the parties so applying.

*Fees to be paid previous to Examination.*

And be it enacted, that before any person who shall apply for any such certificate shall be examined by the board, he shall pay to the clerk of the board—

In case he shall apply for a master's first-class certificate, the sum of *four pounds*.

In case he shall apply for a master's over-sea certificate, the sum of *two pounds*.

In case he shall apply for a master's coasting certificate, the sum of *one pound*.

In case he shall apply for a chief mate's first-class certificate, the sum of *one pound*.

In case he shall apply for a chief mate's over-sea certificate, the sum of *ten shillings*.

In case he shall apply for a chief mate's coasting certificate, the sum of *five shillings*.

Provided always, that in case any person who shall apply for one of the higher classes of certificates shall not, in the opinion of the board, show himself so qualified as to justify them in granting to him such certificate, but shall nevertheless appear sufficiently qualified for a certificate of a lower class, the board (if requested to do so) shall grant to him a certificate of such lower class.

*Subjects and Nature of the Examination.*

And be it enacted, that the subjects of examination for each description and class of certificates shall include so much of seamanship, navigation, and general professional knowledge, as the corporation of Trinity-house of Deptford Strond, with the approval of the lords of the said committee of privy council, shall from time to time direct; and that the nature and subjects of the examination shall, as far as may be, be made public.

*Power to Revoke and Cancel Certificates in case of Misconduct..*

And be it enacted, that upon a proper representation being made to the corporation of Trinity-house of Deptford Strond, that any person to whom a certificate of qualification shall have been granted under the provisions of this act has been guilty of gross misconduct, and is unworthy of being any longer employed as a master or chief mate (as the case may be), they shall take the charge against such party into consideration; and in case it should be proved to the satisfaction of the said corporation that the party accused has been guilty of

gross misconduct, and is unworthy of being any longer employed as a master or chief mate (as the case may be), they shall represent the same in writing, under the hand of their master or deputy-master, to the lords of the said committee of council, who shall thereupon (if they shall think fit) revoke and annul the certificate of qualification of such party.

*Who Entitled to Certificates of Exemption.*

And be it enacted, that every person who shall have been employed as master or chief mate of a British vessel (not being a coasting vessel of fifty tons burthen or under) for at least *six* calendar months previous to the time appointed for this act to come into operation, shall be entitled to a certificate of exemption; and every person who shall at the time last aforesaid be employed as master or mate in the merchant service at such a distance from Great Britain and Ireland that he shall have had no opportunity of obtaining a certificate of qualification or exemption, shall be altogether exempted from the operation of this act, until he shall have had a reasonable opportunity of obtaining a certificate of qualification or of exemption (as the case may require.)

And be it enacted, that upon application by any person claiming to be entitled to a certificate of exemption to any of the said boards for such certificate, the board shall take such application into consideration; and upon being satisfied that the person so applying has been employed as master or chief mate of a British vessel (not being a coasting vessel of fifty tons burthen or under) for at least *six* calendar months previous to the time appointed for this act to come into operation, shall grant to such person a certificate of exemption, and which shall be signed by all the members of the board present at the hearing of such application, and countersigned by the clerk, and shall also bear the signature of the secretary, and shall be according to the form to be authorised by the committee of privy council aforesaid, and for which a master shall pay *ten shillings*, and a mate *two shillings and sixpence*.

And be it enacted, that any person who, under the provisions herein contained, shall be entitled to, or may have obtained a certificate of exemption, shall nevertheless be at liberty, if he shall think fit (subject to the regulation herein before contained,) to apply for a certificate of qualification, in like manner as if he were not entitled to or had not obtained a certificate of exemption; and upon every such application being made, the proper fees shall be paid, and the usual examination shall be held, and all other the provisions herein contained shall apply in like manner as in the case of any other person so applying; and that any person so exempt as aforesaid, applying for a certificate of qualification, shall, if found duly qualified, be entitled to such certificate, in like manner as if he had not been entitled to or had not obtained a certificate of exemption; and the board to whom he shall so apply shall grant to him such certificate of qualification accordingly.

*For renewing Damaged or Lost Certificates.*

And be it enacted, that whenever any certificate of qualification or exemption shall have become obliterated or defaced, so that the same shall not be distinctly legible, the person to whom such certificate shall have been granted shall surrender and deliver up the same to a board of examiners, and shall thereupon be entitled to have a new certificate granted to him in lieu of the certificate so delivered up, upon payment of a sum equal to one-fifth of the sum paid in respect of the original certificate; and whenever any certificate of qualification or exemption shall be proved to the satisfaction of a board of examiners to have been lost or mislaid, the person to whom the same was granted shall be entitled to have a new certificate granted to him in lieu thereof, on payment of the like fee as last aforesaid: Provided always, that if any certificate which shall be proved or represented as last aforesaid to have been lost or mislaid shall afterwards be found, the same shall forthwith be delivered up to the board by whom the said certificate shall have been granted.

And be it enacted, that on the first or second day of each month the clerk of each board of examiners shall make out a list of the names and addresses of all persons who during the preceding month shall have obtained certificates of qualification or exemption, stating in such list the description and class of certificate obtained by each person, and shall forward such list to the secretary of the London board, who shall cause the same to be recorded, together with a similar list to be made out by the clerk of the London board; and from the list so forwarded and recorded, the secretary of the London board shall cause a complete list to be made out of the names and addresses of all the persons who during the preceding month shall have obtained certificates of qualification or exemption at any of the said boards, with the description and class of certificate obtained by each, and shall without delay cause a copy of the last mentioned list to be forwarded to the clerk of each of the other boards, by whom it shall be recorded.

*Application of the Fees, &c.*

And be it enacted, that the amount of all fees, fines, and forfeitures which shall be paid to any such board of examiners shall be applied as follows: (that is to say) on the thirty-first of March, the thirtieth of June, the thirtieth of September, and the thirty-first of December in each year, an account of the particulars and total amount of the fines, fees, and forfeitures paid to the use of the board during the preceding *three* months shall be made out by the clerk of each board (including the London board), and *one-fourth* of such amount shall forthwith be paid to the secretary of the London board, to be applied in manner hereinafter mentioned; and out of the remaining *three-fourths*, all expenses incurred on account of the board during the *three* months then expired shall be defrayed, and the surplus shall be divided into twenty equal parts; whereof *six* parts shall be paid to the chairman, not being the principal examiner, *five* parts to each of the other members of the board, and *four* parts to the clerk; such several payments to be by way of quarterly salary to the said examiners and clerks; and as to the *one-fourth* part of the said monies hereinbefore directed to be paid to the secretary of the London board, the same shall be applied, in the first place, in payment of all contingent expenses not hereinbefore provided for, and the surplus thereof shall be applied quarterly in payment of the salaries of the principal examiner and secretary, in such proportions as the lords of the said committee of council shall think fit.

And be it enacted, that the sum of 4,000*l.* be granted annually to augment the salaries of persons employed under this act, in such proportions as the committee of privy council aforesaid shall from time to time determine.

*Prohibition of Servitude without Certificates.*

And be it enacted, that from and after the expiration of *six* calendar months from the passing of this act, it shall not be lawful for any person to serve as master or chief mate of any British vessel for the time being employed in trading over sea, or of any British vessel above fifty tons burthen for the time being employed in the coasting trade, unless he shall have obtained a certificate of qualification for the office of master (in case he shall be serving as master), or of master or chief mate (in case he shall be serving as chief mate), or unless he shall have obtained a certificate of exemption, or unless he shall be specially exempt from the operation of this act, under the provisions herein contained.

And be it enacted, that from and after the expiration of *six* calendar months from the passing of this act, no British vessel of above fifty tons register tonnage shall be allowed to clear out at any port in the British empire for any coasting voyage, and no British vessel whatever shall be allowed to clear out at any port in the British empire for any over-sea voyage, until the master of such vessel shall have exhibited to the collector or controller of the customs at such port, a proper certificate of qualification, entitling him to serve as master (and which shall be a first-class certificate, or an over-sea cer-

tificate, if the vessel is about to clear out for an over sea voyage,) or a proper certificate of exemption, or shall have satisfactorily shown that he is specially exempt from the operation of this act under the provisions herein contained; nor until he shall also have exhibited to such collector or controller a proper certificate of qualification for his chief mate engaged to serve on such voyage, entitling him to serve as chief mate (and which shall be a first-class certificate, or an over-sea certificate, if the vessel is about to clear out for an over-sea voyage,) or a proper certificate of exemption for such chief mate, or otherwise shall have delivered to such collector or controller a declaration in writing, signed by such master, certifying that such chief mate is duly qualified or exempt, according to the provisions herein contained; and all collectors and controllers of the customs at all ports in the British empire are hereby required not to permit any vessel to clear out from the port for which they act until the provision of this act shall have been complied with.

*Provision for the case of Death, &c.*

Provided nevertheless, and be it enacted, that in case the master or chief mate of any vessel, not being at the time in any port of Great Britain or Ireland, shall die, resign his appointment, leave his ship, be removed, or otherwise become unable, or decline or cease to perform the duties of his office, it shall be lawful for any person to act as master or chief mate in his place until the vessel shall next clear out at some port in Great Britain or Ireland, notwithstanding that the person so acting as master or chief mate shall not have obtained a sufficient certificate of qualification or exemption.

*Penalties.*

And be it enacted, that every person shall be liable to a penalty of *fifty* pounds who shall commit any of the following offences; (that is to say)

Every person who shall forge or counterfeit, or cause or procure to be forged or counterfeited or resembled, any certificate of qualification or exemption.

Every master or chief mate who shall knowingly, and without lawful excuse, have or be possessed of such forged or counterfeit certificate, knowing the same to be forged.

Every master or chief mate who shall transfer or lend any certificate of qualification or exemption, or permit any other person to make use of the same (except as by this act directed).

Every person who shall borrow or make use of any certificate of qualification or exemption which shall have been granted to another person (except as by this act directed).

Every person who shall untruly, and with intent to deceive, represent himself to have obtained a certificate of qualification or exemption, or having obtained a certificate of one of the aforesaid classes of descriptions, shall untruly, and with intent to deceive, represent himself to have obtained a certificate of a different class or description.

Every person who after the expiration of *six* calendar months from the passing of this act (not being specially exempt from the operation of this act under the provisions herein contained,) shall serve as master or chief mate of any British vessel for the time being employed in trading over sea, or of any British vessel of above fifty tons burthen for the time being employed in the coasting trade, without having obtained a certificate of qualification for the office of master (in case he shall be serving as master), or of master or chief mate (in case he shall be serving as chief mate), or a certificate of exemption.

Every master who shall after the expiration of *six* calendar months from the passing of this act, contrary to the provisions herein contained, clear out from any custom-house or port in the British empire, without having exhibited to the collector or controller of the customs, at such port, his certificate of qualification or exemption, and likewise his chief mate's certificate of qualification or exemption, or otherwise his own declaration of the qualification or exemption of

such mate, in manner hereinbefore provided, unless in any case hereinbefore specially provided for.

Every collector or controller of the customs at any custom-house or port in the British empire who shall knowingly permit any British vessel to clear out contrary to the provisions hereinbefore contained.

*Power to make By-Laws.*

And be it enacted, that it shall be lawful for the lords of the said committee of privy council (subject to the provisions herein contained) to superintend, direct, and control the proceedings of the principal examiner and the secretary, and the several boards of examiners and their clerks, and from time to time to make, alter, and rescind such by-laws, rules, orders, regulations, and ordinances (not being at variance with any of the provisions herein contained) as to them shall seem fit, and thereby to impose such penalties (not exceeding fifty pounds for each offence) and for such offences as to them shall seem fit: Provided, that no such by-law, rule, order, or regulation, or ordinance shall be of any effect until six months after the same shall have been advertised in the London, Dublin, and Edinburgh *Gazettes*.

And be it enacted, that the production of a written or printed copy of any by-law, duly authenticated by the signatures of the principal examiner and the secretary, shall be evidence of the existence and due making of such by-law, and of the same having been advertised in the London, Dublin, and Edinburgh *Gazettes*, and of the date of such advertisement in such *Gazettes*, if stated in such copy, without adducing proof of such signatures, or either of them.

*Penalties to be summarily recovered.*

And for the purpose of providing for the recovery of penalties or forfeitures imposed by this act, or to be imposed by any by-law made in pursuance thereof; be it enacted, that every such penalty or forfeiture may be recovered by summary proceeding, upon complaint made before two or more justices; and on the complaint being made to any such justice, he shall issue a summons, requiring the party complained against to appear on a day and at a time and place to be named in such summons; and every such summons shall be served on the party offending, either in person or by leaving the same with some inmate at his usual place of abode; and either upon the appearance, or upon the default to appear of the party offending, it shall be lawful for any two or more justices to proceed to the hearing of the complaint; and that although no information in writing or in print shall have been exhibited before them, and upon proof of the offence, either by the confession of the party complained against, or upon the oath of one credible witness or more, it shall be lawful for any two or more justices to convict the offender, and upon such conviction to adjudge the offender to pay the penalty or forfeiture incurred, as well as such cost attending the conviction, as such justices shall think fit.

And be it enacted, that if forthwith, upon any such adjudication as aforesaid, the amount of the penalty or forfeiture, and of such costs as aforesaid, be not paid, the amount of such penalty and costs, together with the cost of the distress, shall be levied by distress, and any two justices shall issue their warrant of distress accordingly.

And be it enacted, that it shall be lawful for the said justices to order any offender so convicted as aforesaid to be detained and kept in safe custody until return can be conveniently made to the warrant of distress to be issued for levying such penalty or forfeiture and costs, unless the offender give sufficient security by way of recognizance, or otherwise to the satisfaction of such justices for his appearance before them on the day appointed for such return, such day not being more than eight days from the time of taking such security; but if before issuing such warrant of distress it shall appear to the said justices, by the admission of the offender or otherwise, that no sufficient distress can be had wheron to levy such penalty or forfeiture and costs, they may, if they think fit,

refrain from issuing such warrant of distress, and in such case, or if such warrant shall have been issued, and upon the return thereof such insufficiency as aforesaid shall be made to appear to the justices, then such justices shall by warrant cause such offender to be committed to gaol, there to remain without bail for any term not exceeding *three months*, unless such penalty or forfeiture and costs be sooner paid and satisfied.

And with respect to the application of any penalties or forfeiture recovered by virtue of this act; be it enacted, that the justices by whom any such penalty or forfeiture shall be imposed, shall award one-half thereof to the informer, and the other half shall be paid to the clerk of the nearest board, and shall be distributed and divided in manner hereinbefore provided.

And be it enacted, that no person shall be liable to the payment of any penalty or forfeiture imposed by this act, or to be imposed by any by-law made in pursuance thereof, unless the complaint respecting such offence shall have been made before such justice within *six months* next after the commission of such offence, or (in case the offence shall have been committed out of Great Britain and Ireland) within *six calendar months* next after the party committing the same shall have arrived in any part of Great Britain or Ireland next after the commission thereof.

And be it enacted, that it shall be lawful for any justice to summon any person to appear before him as a witness in any matter in which such justice shall have jurisdiction under the provisions of this act, at a time and place mentioned in such summons, and to administer to him an oath to testify the truth in such matter; and if any person who shall be summoned as a witness before any justice touching any offence committed against this act, or against any by-law made in pursuance thereof, or any matter in which such justice shall have jurisdiction by the provisions of this act, shall without reasonable excuse refuse or neglect to appear at the time and place appointed for that purpose, having been paid or tendered a reasonable sum for his expences, or if any person appearing shall refuse to be examined upon oath, or to give evidence before such justice, every such person shall forfeit a sum not exceeding *five pounds* for every such offence.

And be it enacted, that the justices before whom any person shall be convicted of any offence against this act, or against any bye-law made in pursuance thereof, may cause the conviction to be drawn up according to the form to this act annexed.

And be it enacted, that no proceeding in pursuance of this act shall be quashed or vacated for want of form, nor shall the same be removed by *certiorari* or otherwise into any of the superior courts.

And be it enacted, that where in this act any sum of money, whether in the nature of penalty or otherwise, is directed to be levied by distress, such sum of money shall be levied by distress and sale of the goods and chattels of the party liable to pay the same; and the overplus arising from the sale of such goods and chattels, after satisfying such sum of money and the expences of the distress and sale, shall be returned on demand to the party whose goods shall have been distrained.

And be it enacted, that no distress levied by virtue of this act shall be deemed unlawful, nor shall any party making the same be deemed a trespasser on account of any defect or want of form in the summons, conviction, award of distress, or other proceeding relating thereto, nor shall such party be deemed a trespasser *ab initio* on account of any irregularity afterwards committed by him; but all persons aggrieved by such defect or irregularity may recover full satisfaction for the special damage in an action upon the case.

And be it enacted, that if any person shall think himself aggrieved by any determination or adjudication of any justice under the provisions of the act, he may appeal to the general quarter sessions for the county in which the cause of appeal shall have arisen; but no such appeal shall be entertained unless it be made within four months next after the making of such determination or



adjudication, and unless ten days' notice in writing of such appeal, stating the nature and grounds thereof, be given to the party against whom the appeal shall be brought, and unless the appellant forthwith, after such notice, enter into recognizances, with two sufficient sureties, before a justice conditioned duly to prosecute such appeal, and abide the order of the court thereon.

And be it enacted, that at the quarter sessions for which such notice shall be given, the court shall proceed to hear and determine the appeal in a summary way, or they may, if they think fit, adjourn it to the following; and upon the hearing of such appeal, the court may, if they think fit, mitigate any penalty or forfeiture, or they may confirm or quash the adjudication, and order any money paid by the appellant, or levied by distress upon his goods, to be returned to him, and they may make such order concerning the costs, both of the adjudication and of the appeal, as they may think reasonable.

*Interpretation Clause, &c.*

And be it enacted, that in this act the following words and expressions shall have the several meanings hereby assigned to them, unless there is something in the subject or context repugnant to such construction; (that is to say)

Words importing the singular number shall include the plural number, and words importing the plural number shall include the singular number;

The word "month" shall mean calendar month;

The expression "superior courts" shall mean her Majesty's superior courts of record at Westminster, Dublin, and Edinburgh:

The word "oath" shall include affirmation in case of Quakers, or others, declaration or solemnity lawfully substituted for an oath in the case of other persons exempted by law from the necessity of taking an oath.

The word "justice" shall mean justice of the peace for the county, city, liberty, or place where the matter requiring the cognizance of any justice shall arise, and who shall not be interested in the matter.

And be it enacted, that this act may be altered or repealed by any act to be passed in this session of parliament.

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RECORDS OF WRECKS.

WE expressed an opinion in our last number, that we should in all probability, lay before our readers, a Table of Wrecks, in our present pages, similar to that which it contained. The gales of the middle of January have unhappily too fully verified our expectation, indeed the mass of havoc and destruction presented in our table in the adjacent pages almost exceeds it. As we have already said, we are so accustomed to this kind of employment;—that of registering (as far as we can obtain them,) year after year, the wrecks of our unfortunate merchant shipping, and so often have deplored their necessity, (for so we presume it must be, as year after year they continue,) that we are in a manner accustomed to them, and look on them as things of course.

Over and over again have their causes been pointed out in these pages; and over and over again they recur. We well remember in our inexperience of these matters the feelings of horror they occasioned; feelings which called forth the bitter expressions of our indignation, that such things should be. But all that has worn away! We have grown wiser! have lived to learn that such things must be, and while in sorrow we have recorded them, have joined with others in the transitory breath of lamentation which they have occasioned.

But were we asked to state a few general reasons why so many wrecks of our merchant shipping occur, we should briefly reply,—from bad ships,—badly commanded,—badly manned,—and badly found. We do not assert these to be

the cause of *all* the wrecks, but of *many*. Exceptions there are to each of these causes of loss; and pity it is, there are not more.

What is the reason, we would ask, of ships foundering suddenly by springing a leak; \* of others being abandoned, before their voyage is completed; of others being capsized and foundering, and of others again going to pieces as soon almost as they touch the ground? What can all these be, but bad ships; and of all such cases our tables present instances. Again what is the reason of their being badly navigated and in bad discipline, which those who know anything of our wrecks, and their crews, and our police reports, cannot but see is the case. What is the reason of this, but that of being badly commanded. Are such ships in this condition to be considered as having a captain, able in all respects, to do his duty; not only as a seaman and navigator, but one who can preserve the discipline of his crew; and make himself felt by them as a father? Such ships we say are *badly commanded*. Again, when we say that, ships are badly manned, we not only allude to the ill state of discipline of the crews, but the insufficiency of their number. From many causes tending to lessen that already small number, besides desertion and sickness, our ships are *badly manned*. And of their being badly found there are many instances on record.

We shall not now recapitulate the annual loss in our merchant shipping from these and other causes. They may be taken without fear of exaggeration at about one and a half daily.

The chairman at a late meeting of shipowners at Hull, (held, by-the-way, for the purpose of *opposing* Capt. FitzRoy's bill,) who may be supposed to know as much of these matters as any one, said,—“As to the question whether more vessels had been lost in late years than formerly, he believed it would be found, from parliamentary documents, that such was the fact. He had selected from parliamentary documents the following figures:—From 1809 to 1815, during time of the war, six years, the average loss of British ships was one ship per day, which included sea risk and war risk. From 1820 to 1825 there was a considerable increase, the average being three and a half ships per day. From 1826 to 1833, six years, and the average loss was reduced to two ships per day. From 1837 to 1830 it was two ships per day. Therefore, from 1820 to 1825 was the period of the greatest increase.” We have not then overstated the fearful amount of the wrecks which take place annually amongst our merchant ships.

But while all this loss of life and property is going forward, there is a gratification in knowing that seamen wrecked on our own shores, when they happily escape with their lives are kindly received, and forwarded to their homes, and that the widows and children of those who unhappily perish are nourished and protected by the Agents of a Society, called the Shipwrecked Fishermen and Mariners' Benevolent Society. This Society is well entitled to the notice of our readers, and of their claims upon them, by their useful labours, the best means

\* We might adduce many instances similar to the following:—“The barque Alexander, (No. 75 of our table,) Primrose, *sprung a leak* on the morning of the 25th December, and *went down on the morning of the 26th*, 170 miles N.W b W. of Cape St. Vincent: the crew got on board the Danish brig Sirius, Koford, from Messina for Copenhagen, and were landed safe here to-day by a pilot-boat. Mr. Koford behaved with the greatest kindness to Mr. Primrose and crew; stopping by the ship the night before she sunk, and during the time they were on board his vessel.”

Here is another respecting the Monk steamer (No. 169 of our table):—“After hearing other evidence, the coroner summed up, and the jury returned a verdict of “Accidentally drowned,” expressing their opinion that *the steamer was not sufficiently seaworthy* and ought not to have been placed upon the station, and that great blame attached to those having charge of her in leaving Porthdynllaen on the day in question.”

Several other instances of such sea worthiness (worthy we presume of perishing at sea) may be found without referring further back than to our last number.—Ed.

we can give our readers of judging will be found in one of their advertisements.

**SHIPWRECKED FISHERMEN AND MARINERS' BENEVOLENT SOCIETY.**—Storms so fearful in their character, and so distressing in their consequences, as those which have recently occurred, have not visited the coasts of the United Kingdom for many years previous; hundreds of seamen have thereby been thrown into misfortune without the requisite clothing for protecting themselves from the weather, the means of gaining food and lodging, or of reaching their several homes. But still more lamentable are the facts concerning loss of life—a large number of widows and orphans have been left without the least means of subsistence—in utter destitution.

The Committee of Management of this Society earnestly crave the attention of the British public to the following particulars of the surviving relatives of 28 fishermen lost at the undermentioned places, in addition to 80 whose families were relieved on the 27th ult :

Eighteen fishermen lost, leaving eight widows, 28 children, and 12 aged parents, at Arranmore, county Donegal.

Five fishermen lost, leaving four widows, six children, and an aged mother, at Unst, Shetland Isles.

Three fishermen (brothers), leaving three widows and 12 children, at Dunrossness, Shetland Isles.

A fishermen lost, leaving a widow and three children, at East Donyland, Essex.

A fisherman lost, leaving a widow and two children, at Barmouth, South Wales.

The crews of the following vessels (70 persons), wrecked on various parts of the coast, have been boarded, lodged, clothed, and forwarded to their homes during the last week :

|                            |                          |
|----------------------------|--------------------------|
| Lion, of Newcastle         | Glenesk, of Montrose     |
| Water Nymph                | Alexander, of Kincardine |
| Ariel, of Greenock         | Southampton, of London   |
| General Brock, of London   | Dart, of Yarmouth        |
| Arundel, of London         | Tyro, of London          |
| Tampico, of Workington     | Emma, of Scilly Islands  |
| L'Union Fortuna, of Ancona | Sarah, of St. Ives       |

Donations and subscriptions will be thankfully received by Messrs. Williams, Deacon, and Co., Birchin-lane, London; by the 482 auxiliary branches; and at the central offices, 26, Bucklersbury, London.

Feb. 2, 1842.

EDWARD WEST, *Secretary.*

*Total number of persons relieved from the 8th of May, 1839, to the 4th of October, 1842;—*

|                                                          |   |   |   |   |       |
|----------------------------------------------------------|---|---|---|---|-------|
| Widows                                                   | . | . | . | . | 321   |
| Orphans                                                  | . | . | . | . | 1,155 |
| Aged Parents                                             | . | . | . | . | 195   |
| Shipwrecked Persons                                      | . | . | . | . | 2,891 |
| Fishermen, heads of families, left destitute from storms |   |   |   |   | 428   |

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4,990

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N.B. In addition to the sum of £100 granted for the beforementioned relatives of 80 fishermen, £84 has been voted this day for the benefit of the families of the 28 fishermen enumerated above.—Feb. 3.

WRECKS OF BRITISH SHIPPING.

(Continued from p. 123.—cs. crew saved; cd. crew drowned.)

| VESSELS' NAMES.   | BELONG TO. | MASTERS.  | FROM.       | BOUND TO.    | WRECKED.      | WHEN.        |
|-------------------|------------|-----------|-------------|--------------|---------------|--------------|
| Acasia            |            | Bellamy   | Ennore      | not heard of | since         | Sept. 22.    |
| Albert Edward     |            |           | Liverpool   | Galway       | Bideford      | Jan. 16. cs  |
| Albion            | Glasgow    |           |             | C. France    | Routhville    | Jan. 10      |
| Albion            |            | Thompson  |             |              | France        | Jan. 11      |
| Alexander         | 75         | Primrose  | Foundered   | off          | C. St Vincent | Dec. 25. cs  |
| Alexander         |            | Fabin     | Cherbourg   |              | C. France     | Jan. 27      |
| Amity             |            |           |             |              | Norway        | Jan. 4.      |
| Ann               |            |           | Trinidad    | London       | Somme R.      | Feb. 5.      |
| Ann               |            |           |             |              | Robin Hd. B   | Feb. 4.      |
| Ann and Avis      | 80         | Hudson    | London      | Chichester   | At sea        | Jan.         |
| Ann and Mary      |            | Baker     |             | Newcastle    | Off Yarm'th   | Jan. 6.      |
| Angler            |            | Brown     |             | Turks I.     | Gr. Turk      | Dec. 6.      |
| Ariel             |            | Hally     | Barbados    | off by Eliz. | Dennison      | Jan. 19. cs  |
| Beer and Wingyett |            | Smith     | crew taken  | London       | C. Holland    | Jan. 29.     |
| Blucher           | 85         | Mason     | London      | Rotterdam    | Newbiggen     | Feb. 4.      |
| Bragilla          |            | Jackson   | London      | Warkworth    | Bovisand B.   | Jan. 13.     |
| Brilliant         |            | Heale     | wreck       | on shore at  | Port Rush     | Feb. 4.      |
| Carolina          |            |           | Gottenburg  | Hull         | Marstrand     | Jan. 5.      |
| Catharine         |            | Fraser    | Halifax     | Pictou       | Pictou        | Nov. 24      |
| Centenary         | 90         | Foster    | Alexandria  |              | Baryaard S.   | Jan. 7.      |
| Ceres             |            |           |             |              | Port Isaac    | Jan. 14.     |
| Chatty            |            |           |             |              | Bridlington   | Feb. 4.      |
| Clifford          | 8. Shields | supposed  | foundered   | southward of | Torres Str.   |              |
| Conrade           |            |           |             |              | China Sea     | Oct. 1.      |
| Conqueror         | 95         | Campbell  | Calcutta    | London       | Lorel         | Jan. 13. 69d |
| Cynosure          |            | Duggan    | Singapore   | London       | St. Banca     | Oct. 2. cs   |
| Daphne            |            | Viner     | Exeter      |              | Cheviot B.    | Feb. 4. cs   |
| Dart              |            | Godfrey   | Yarmouth    | London       | Suffolk C.    | Jan. 13. 3d  |
| Diana             |            | Hubbard   |             | abandoned    | at sea        |              |
| Diadem            | 100        |           | Sunderland  |              | Herd Sand     | Feb.         |
| Diligence         |            | Edwards   | Newport     | Foundered    | Grassholm     | Jan. 13. cs  |
| Dolphin, steamer  |            |           |             |              | Podinllaen    | Jan. 14.     |
| Douro             |            | Gowland   |             |              | Scilly        | Jan. 27. cd  |
| Ebenezer          |            |           | Falmouth    | Jersey       | Bigland B.    | Jan. 13. cs  |
| Edwin             | 105        | Barrow    | Mostyn      |              | Barmouth      | Jan. 13. 17d |
| Edward and Mary   |            | M'Daniell |             |              | Sydney, N.S.  | Dec. 1. cd   |
| Edward & Samuel   |            |           |             |              | Sydney        | Dec. 1. ed   |
| Esther            |            |           |             |              | Gunfleet      | Jan. 13.     |
| Emily Louise      |            | Coats     | Cardiff     | New Ross     | Caldy I.      | Jan. 13. cs  |
| England           | 110        | Krough    | London      | Africa       | Off Ostend    | Jan. 16. cs  |
| Flora             |            | Lewes     |             |              | Souris H.     | Nov. 27.     |
| Fortitude         |            | Beaton    |             |              | Montrose      | Jan. 13. cs  |
| Frances Smith     |            |           |             |              | Madras        | Oct. 25. 16d |
| Friends' Glory    |            | Nielson   |             | Newcastle    | Tersechilling | Jan. 10.     |
| General Brock     | 115        | Courtland |             | stranded     | Batten B.     | Jan. 13.     |
| George            |            | Patten    | New Orleans | Liverpool    | Galway B.     | Jan. 29. cs  |
| George            |            | Shields   | Grenada     | Glasgow      | Athrfild Ldg  | Jan. 13. 2d  |
| George            |            | M'Leod    | Mauritius   |              | Solway        | Jan.         |
| George Canning    |            |           |             |              | Dunraven C.   | Jan. 13. cs  |
| George M'Leod     | 120        | Murdoch   | Mauritius   | Glasgow      | C. Scotland   | Jan. 29. cs  |
| Gleneira          |            |           | Singapore   | Slam         | P. Bintang    | Oct. 14.     |
| Glensk            |            | Barclay   | Riga        | Montrose     | Gothland      | Dec. 16. cs  |
| Glengary          |            | Hill      | Liverpool   | Savannah'    | Savana        | Jan. 7. ca   |
| Governor          |            | Corney    |             |              | Berk          | Jan. 27.     |
| Hale              | 125        |           | Creetown    |              | Formby B.     | Jan. 13. 4d  |
| Harmony           |            |           | Manilla     | Bombay       | China Sea     | Nov. 25. 4d  |
| Hector            |            |           | Liverpool   | Savana       | China Sea     | Jan. 5. cs   |
| Helen             |            | Wood      |             |              | Off Newton    | Jan. 31. cs  |
| Henrietta         |            | Roberts   |             |              | Off Lulworth  | Jan. 15. cs  |
| Hen. Brougham     | 130        | Foster    |             |              | Pakefield Fl. | Jan. 14. cd  |
| Herald            |            | Hancock   | Mexico      | England      | Carysfort R.  | Jan. 8. cs   |
| Hesperus          |            |           |             |              | Herd Sand     | Feb. 4.      |
| H. Stewart        |            | Berry     | Liverpool   | Hull         | Somersetsh    | Feb. 4. 3d   |
| Hope              |            | Easson    | abandoned   | off the      | Newarp Lt.    | Jan. 13. cs  |
| Indian            | 135        | Muller    | Shields     | Marselle     | Marjorca      | Jan. 6. 1 r  |
| Ipewich           |            |           |             |              | Newfoun Pd    | Dec. 18. cs  |
| Isabella          |            |           |             | Runcorn      | W. Hoyle      | Jan. 13.     |
| Isabella          |            | Black     | Newcastle   | Kircaldy     | Off Dunbar    | Jan. 13. cs  |
| Isabella          |            | Martin    | Boness      | Shields      | St. Peter I.  | Nov. 22. cs  |
| Isabella & Eliza  | 140        | Oliver    |             |              | Holy I.       | Jan. 27. cs  |

| VESSELS' NAMES.    | BELONG TO.  | MASTERS.    | FROM.        | BOUND TO.   | WRECKED.     | WHEN.       |            |
|--------------------|-------------|-------------|--------------|-------------|--------------|-------------|------------|
| Isabella and Jane  |             | Oakes       | Copenhagen   | London      | Terskellinz  | Jan. 10.    |            |
| Jane               |             |             |              | Glasgow     | Milford Hav  | Jan. 13.    |            |
| Janet              | Lepsit      | Towns       |              |             | Islay        | Jan. 14.    |            |
| Janet              | Montrose    |             |              |             | Forth        | Jan. 13. cd |            |
| James Clark        | 145         |             |              |             | Rye Beach    | Dec. 7.     |            |
| Jessie Logan       |             |             |              |             | Boscastle    | Jan. 16. cs |            |
| John               | Balbriggan  |             | Donaghadee   | Liverpool   | Holywood B.  | Jan. 13. cs |            |
| John               |             | run down    | Shields      | Jersey      | Off Portland | Jan. 15.    |            |
| John and Isabella  | Sunderland  |             |              |             | Tynemouth    | Jan. 13. cs |            |
| John Lilly         | 150         | Haunsey     | Liverpool    | Calabar     | Barnstaple   | Jan. 14. cs |            |
| John and Susan     |             | Merrix      | Shorcham     | Stockton    | Somer Coate  | Jan. 13. cs |            |
| John & William     |             | Smith       | N. Yarmouth  | New Haven   | Sussex C.    | Jan. 12. 2d |            |
| Lansdowne          |             | Limerick    | Mills        | Liverpool   | Limerick     | Berbercau   | Feb. 5. cs |
| Laurel             | 155         | Belfast     |              |             | Colonsay     | Jan. 31.    |            |
| Leeds              |             | Jackson     | Seaham       | London      | Winterton    | Feb. 4. 1d  |            |
| Liberty            |             | Liddle      | Lynn         |             | Salthurn     | Feb. 4.     |            |
| Lily               |             |             |              |             | Padstow      | Jan. 31.    |            |
| Linnet             |             | Maccluff    |              |             | Cromarty     | Jan.        |            |
| Little Test        | 160         | Southampton |              |             | Hartland     | Jan. 14. cd |            |
| Majestic           |             |             |              |             | Maldives     | Dec.        |            |
| Margaret           | London      | Jackson     | Rombay       | London      | Clay         | Feb. 4. cs  |            |
| Martha             |             | Lanfesty    | Warkworth    | Mayo        | Hartwell R.  | Nov. 12. cs |            |
| Martha             |             | Deward      | Ipswich      | Shields     | abandoned    | Jan. 13. cs |            |
| Mary               |             | Morris      |              | Milford     |              | Jan. 13.    |            |
| Mary and Eliza     | 165         | Wymington   | Wick         | Leith       | Findon       | Feb. 4. 4d  |            |
| Mary and Isabella  |             | Wick        |              |             | Torres St.   |             |            |
| M. Ridgway         |             |             |              |             | Torres St.   | Aug. 10. cs |            |
| Maryts             | London      |             |              |             | Breakwater   | Jan. 13.    |            |
| Mayflower          |             |             |              |             | Caernarvon   | Jan. 7. 22d |            |
| Monk               |             | Hughes      | Portinllaen  | Liverpool   | abandoned    | Dec. 17.    |            |
| Montrose           | 170         | Davis       | Liverpool    | N. Orleans  | C. Norfolk   | Jan. 13. cd |            |
| Nancy              | Dover       | Newton      | London       |             | Durlston H.  | Feb. 3. cs  |            |
| Native of Limerick | London      |             | London       |             | blown up     | Oct. 13. cd |            |
| New Times          |             | Prnosas     | London       | Badagry     | Tynemouth    | Jan. 13. 5d |            |
| Percy, st. v.      | N. Shields  |             | London       |             | C. Norfolk   | Jan. 13. cd |            |
| Petrel             |             |             |              |             | Aberdovey    | Jan. 13. cd |            |
| Phœbe              | 175         | Cardigan    |              |             | Bude         | Jan. 13.    |            |
| Phoenix            |             | Thomas      |              |             | Palawan P.   | Oct. 20.    |            |
| Porter             |             |             | Sydney       | Manilla     | Tampico      | Nov. 29. cs |            |
| Prince Albert      | Liverpool   | Mossop      | Liverpool    | Tampico     | foundered    | Feb. 4.     |            |
| Reliance           | Bridlington |             | Sunderland   | supposed    | Orfordness   | Jan. 13. cs |            |
| Resolution         | 180         |             |              |             | Wastenove    | Jan. 13.    |            |
| Ringdove           |             | Lucy        | Pr. Ewd. I.  |             | Hfracombe    | Jan. 13.    |            |
| Robert & Henrietta | Beaumaris   |             |              |             | Wastenove    | Jan. 16. cs |            |
| Rob Roy            | Portsog     | Newbiggin   |              |             | Blyth        | Feb. 8. cs  |            |
| Rochester Castle   | Blyth       | Short       |              |             |              | Feb. 4. cs  |            |
| Ruby               | 185         |             | Colombo      | Calcutta    | Ladras       | Nov. 22.    |            |
| Salus              | Greenock    |             |              |             | Instrahull   | Feb. 3.     |            |
| Santon             | Liverpool   |             | Calcutta     |             | Wexford      | Jan. 13. 4d |            |
| Sarah              |             | Edmonds     | Moulmein     | London      | Moulmein     | Nov. 18. cs |            |
| Sarah              | Tynemouth   | Denman      | Neath        | Tynemouth   | Tintagall H. | Jan. 14. cs |            |
| Seal Hunter        | 190         |             | St. John, N. | Halifax     | Langlais     | Nov. 28. cs |            |
| Sisters            | Lynn        | Turner      |              |             | Whiting S.   | Feb. 5. cs  |            |
| St. David          |             |             | Kingston     | Montreal    | Howe I.      | Dec. 26. cs |            |
| St. Mary Isle      | Kirke'dbght |             |              |             | P. YarroekB  | Jan. 13. cs |            |
| Tampico            | Workington  | Greg        | Limerick     | Glassendock | Sligo Bay    | Jan. 5. 4d  |            |
| Thetis             | 195         | Simpson     |              |             | P. DesMonts  | Dec. 25. cs |            |
| Thomas and Mary    | Newcastle   |             |              |             | Watchet      | Jan. 13.    |            |
| Thomas             | N. Shields  | Butchard    | abandoned    | at sea      | Off Staithes | Feb. 4. cs  |            |
| True Briton        |             | Turnbull    | Sunderland   | London      | Cross Sand   | Jan. 29. cs |            |
| Two Brothers       | Perth       | Sutherland  |              | Port Dundas | Forth        | Feb. 4. cs  |            |
| Two Sisters        | 200         | Fair        | abandoned    | off         | Cromer       | Feb. 4. cs  |            |
| Tyro               |             | Fray        | London       | Oporto      | Woolsnors    | Jan. 13. cs |            |
| Unaria             |             |             |              |             | Oporto       | April 21.   |            |
| Unknown schooner   | supposed to | be Betsy    | of Lynn      | on rocks    | near Mable   | Feb. 3. cd  |            |
| Vernon             |             | M'Donald    | Liverpool    | Glasgow     | N. Burbo B.  | Jan. 13. 2d |            |
| Victoria           | Barem       | Stone       |              |             | Aberdovey    | Jan. 14. cd |            |
| Volant             | Greenock    | Duncan      |              |             | C. Mayo      | Jan. 26. cd |            |
| Wave               | 205         | Montrose    | Mearns       | Riga        | Domesness    | Dec. 14. cs |            |
| Wellington         | Cardiff     | Evans       | Waterford    | Hull        | Off St. Ann  | Jan. 14.    |            |
| William and Ann    | Sunderland  | Tilley      | Sunderland   | London      | Gunflet      | Jan. 13. cs |            |
| W. Donaldson       | London      | Smith       | Sunderland   | London      | Somerecoes   | Feb. 4. 6d  |            |
| William            |             | Donaldson   | London       |             | Skegness     | Feb.        |            |

HOUSE OF COMMONS, Feb.—The following gentlemen are named as part of a select committee, to enquire into the causes of the wrecks of our Merchant Shipping,—Mr. G. Palmer, Mr. W. Gladstone, Capt. Gordon, Mr. H. Baring, Capt. FitzRoy, Mr. A. Chapman, Mr. Lyall, Sir H. Douglas, Admiral Dundas, Mr. Rice, Mr. Barclay, Mr. Duncan, Mr. Ross, Mr. Rumbold and Sir Charles Napier.

Mr. Editor.—I unfortunately became a shipowner between two and three years ago; not of my own wish; I was obliged to do it, or to have a suit in Chancery. That, however, is nothing to me, you will say, or think so. For all that, you will not be offended if I make a statement, or ask you a question or two. Well,—do you think that two surveyors (Lloyd's) can, or could, survey every ship that has been built in the Wear, Sunderland? About three years ago three hundred and sixty-four were launched in one year, some of them under special surveys—mine was one of them. Every voyage she has had to go into dock, or wanted repairs in the hull. The last voyage from Hamburg and the Tyne she had new water-ways, and there was not one bolt through the water-ways to bind the ship together, only a few spikes about two inches into the beam.

Now, Sir, are not Lloyd's surveyors to blame? or, rather, are not Lloyd's to blame for not appointing a sufficient number of surveyors where they are wanted? They have been well paid in the River Wear, but they have not, they could not do the duty (two of them). Lloyd's surveyor at Hamburg said "It was a disgrace that so fine a looking vessel should have been so badly put together." Others have made the same remark. A very great number of vessels and men have gone to the bottom within the last four months, and in my opinion the surveyors of ships are much to blame.

The masters, owners, and men come next; but that's another question. I hope something will arise out of Captain FitzRoy's intended bill to enlighten all the parties, and make every one do his duty. You will excuse this, for where the "shoe pinches" people complain.

A SHIPOWNER.

Newcastle-on-Tyne, Feb. 9th, 1843.

#### DISPLACEMENT OF THE ROUND-DOWN-CLIFF BY GUNPOWDER.

Dover, Jan. 26th, 1843.

You will not be surprised to hear that the announcement that an explosion of 18,000lbs. of powder was to be made in the Round Down Cliff this afternoon brought an influx of strangers into this town; still, though considerable, it was not so large as I had expected. Curiosity was, I think, paralyzed by a vague fear of danger, which kept some thousands at home who might have witnessed it, as the event turned out, without the slightest shock to their nervous system. The experiment succeeded to admiration, and, as a specimen of engineering skill, confers the highest credit on Mr. Cubitt, who planned, and on his colleagues who assisted, in carrying it into execution.

Everybody has heard of the Shakspeare Cliff, and I have no doubt that a majority of your readers have seen it. I should feel it a superfluous task to speak of its vast height were not the next cliff to it, on the west, somewhat higher. That cliff is Round Down Cliff, the scene and subject of this day's operations. It rises to the height of 375 feet above high-water mark, and was, till this afternoon, of a singularly bold and picturesque character. To understand the reason why it was resolved to remove yesterday no inconsiderable portion of it from the rugged base on which it has defied the winds and waves of centuries, I must make your readers acquainted with the intended line of railway between Folkestone and this place.

At Folkestone there will be a viaduct of great height and length. Then

there will be a tunnel, called from a martello tower near it, the Tower Tunnel, one third of a mile in length. Then comes a cutting through the chalk of two miles in length, called Warren's Cutting. Then comes the Abbott's Cliff tunnel, one mile and a quarter in length, and now half finished, although only commenced on the 16th of August last. From the Abbott's Cliff tunnel, to the Shakspeare Cliff tunnel the railroad will be under the cliffs close to the sea, and protected from it by a strong wall of concrete two miles long, and with a parapet of such a height as will not preclude passengers from the splendid marine view which lies under them. Now it was found that when a straight line was drawn from the eastern mouth of the Abbott's Cliff tunnel to the western mouth of the Shakspeare tunnel, there was a projection on the Round Down Cliff which must be removed in some way or other to insure a direct passage. That projection, seen from the sea, had the appearance of a convex arc of a circle of considerable diameter. It is now removed, and some idea of its size may be formed from the fact that a square yard of chalk weighs two tons, and that it was intended by this day's experiment to remove 1,000,000 tons. The Shakspeare tunnel is three-quarters of a mile long, and it is about the same distance from that tunnel to the town of Dover.

Having premised thus much as to the locality of Round Down Cliff, I now proceed to describe, as briefly as I can, the means employed to detach from it such an immense mass of solid matter. A horizontal gallery T, Fig. 3, extended for about 100 yards parallel with the intended line of railway, from which cross galleries were driven from the centre and extremes. At the end of these cross galleries shafts were sunk, and at the bottom of each shaft was formed a chamber, 11 feet long, 5 feet high, and 4 feet 6 inches wide. In the eastern chamber were deposited 5000lbs. of gunpowder, in the western chamber 6000lbs. and in the centre chamber 7000lbs. making in the whole 18,000 lbs. The gunpowder was in bags, placed in boxes. Loose powder was sprinkled over the bags, of which the mouths were opened, and the bursting charges were in the centre of the main charges. The distance of the charges from the face of the cliff was 70 feet at the centre and about 55 at each end. It was calculated that the powder, before it could find a vent, *must* move 100,000 yards of chalk, or 200,000 tons. It was also confidently expected that it *would* move 1,000,000 tons.

The following preparations were made to ignite this enormous quantity of powder:—At the back of the cliff a wooden shed was constructed, in which three electric batteries were erected. Each battery consisted of 18 Daniels' cylinders, and two common batteries of 20 plates each, to which were attached wires which communicated at the end of the charge by means of a very fine wire of platina, which the electric fluid as it passed over it, made red-hot, to fire the powder. The wires covered with yarn were spread upon the grass to the top of the cliff, and then falling over it were carried to the eastern, the centre, and the western chamber. Lieutenant Hutchinson, of the Royal Engineers, had the command of the three batteries, and it was arranged that when he fired the centre, Mr. Hodges and Mr. Wright should simultaneously fire the eastern and the western batteries, to insure which they had practised at them for several previous days. The wires were each 1000 feet in length, and it was ascertained by experiment that the electric fluid will fire powder at a distance of 2,300 feet of wire. After the chambers were filled with powder, the galleries and passages were all *tamped* up with dry sand, as is usually the case in all blasting operations.

At 9 o'clock in the morning a red flag was hoisted directly over the spot selected for the explosion. The wires were then tested by the galvanometer, the batteries were charged, and every arrangement was completed for firing them.

It was arranged that the explosion should take place at 2 o'clock; at that time there was an immense concourse of people assembled. In a marquee erected near the scene of operation, for the accommodation of the directors and

distinguished visitants, we observed among the number assembled, Sir John Herschell, General Pasley, Col. Rice Jones, Mr. Rice, M.P., Professors Sedgwick and Airy, the Rev. Dr. Cope, and there was also a strong muster of engineers, among whom were Mr. Tierney Clark, Mr. John Braithwaite, Mr. Charles May, Mr. Lewis Cubitt, and Mr. Frederick Braithwaite; the engineers and directors of the Greenwich, Croydon, Brighton, and South Eastern Railways, besides numerous foreigners of eminence.

At 10 minutes past 2, Mr. Cubitt, the company's engineer-in-chief, ordered the signal flag at the western marquee to be hoisted, and that was followed by the hoisting of all the signal flags. A quarter of an hour soon passed in deep anxiety. A number of maroons, in what appeared to be a keg, were rolled over the cliff, and on their explosion with a loud report, all the flags were hauled down. Four more minutes passed away, and all the flags except that on the point to be blasted were again hoisted. The next minute was one of silent, and breathless, and impatient expectation. Not a word was uttered, except by one lady, who when too late, wished to be at a greater distance. *Galeatum sero duelli pœnitet*. Exactly at 26 minutes past 2 o'clock a slight twitch or shock of the ground was felt, and then a low, faint, indistinct, indescribable moaning subterranean rumble was heard, and immediately afterwards the bottom of the cliff began to belly out, and then almost simultaneously about 500 feet in breadth, with reference to the railway's length of the summit began gradually to sink.

There was no roaring explosion, no bursting out of fire, no violent and crashing splitting of rocks, and what was considered extraordinary, no smoke whatever; for a proceeding of mighty and irrepressible force, it had little or nothing of the appearance of force. The rock seemed as if it had exchanged its solid for a fluid nature, for it glided like a stream into the sea, which was at a distance of about 100 yards—perhaps more—from its base, tearing up the beach in its course, and forcing up and driving the muddy substratum together with some debris of a former fall, violently into the sea, and when the mass had finally reached its resting place a dark brown colour was seen on different parts of it, which had not been carried off the land. The shattered fragments of the cliff are said to occupy an area of 15 acres, but we should judge it to be much less. I forgot to minute the time occupied by the descent, but I calculate that it was about four or five minutes. The first exclamations which burst from every lip was—"Splendid, beautiful!" the next were isolated cheers, followed up by three times three general cheers from the spectators, and then by one cheer more. These were caught up by the groups on the surrounding downs, and, as I am informed, by the passengers in the steam-boats. All were excited—all were delighted at the success of the experiment, and congratulation upon congratulation flowed in upon Mr. Cubitt for the magnificent manner in which he had carried his project into execution.

As a proof of the easy, graceful, and swimming style with which Round Down Cliff, under the gentle force and irresistible influence of Plutus and Pluto combined, curtsied down to meet the reluctant embraces of astonished Neptune, I need only mention that the flagstaff, which was standing on the summit of the cliff before the explosion took place, descended uninjured with the fallen debris.

No fossil remains of the slightest importance were brought to light, which was a matter of disappointment to many. A very few even of the most ordinary character were found among the mass, which it may well be imagined was soon after the explosion, teeming with the curious multitude from the cliffs above anxious to obtain some relic of the event.

On examining the position occupied by the debris of the overthrown cliff, we were much pleased to find it more favourably disposed than we could have conceived possible. Instead of occupying the site of the proposed railway at the foot of the cliff, it had by its acquired velocity slid past it, and left comparatively little indeed to be removed. At some considerable distance from the



cliff, the fragments appeared to be heaved up into a ridge, higher than any other part, forming a small valley towards the cliff, and another seaward, beyond which a second ridge appeared, when it finally slopes off towards the sea. The chalk was by no means hard, and appeared thoroughly saturated with water. The great bulk of the fragments ranged from about 2 to perhaps 8 or 10 cubic feet, although we observed a vast number of blocks, which contained from 2 to 3 cubic yards and upwards, one of which was driven some distance into the Shakspeare Tunnel, without doing injury to the brickwork. There was very little, indeed, of what might be termed rubbish in the mass.

Previous to the explosion, we had heard it stated that about a million yards were expected to be detached; indeed the *Railway Times* so stated it, on the 21st ultimo, apparently from authority, and after the explosion took place, it was publicly asserted by one of the officials, that three quarters of a million of cubic yards had come down. Now, on cubing the stated dimensions of the mass, which were given as under 300 feet in height by, say 50 feet longer than the gallery, which would therefore be 350 feet, by an average thickness or depth from the face of the cliff of 60, we shall have 233,333 cubic yards; but as the present face slope of the cliff is greater than before, the average thickness perhaps might be increased to 75 feet, which would make the quantity 291,666 cubic yards. From this is to be deducted 50,000 yards, the estimated quantity to be now shifted in forming the road, we shall then have 230,000 yards effectively removed by the expenditure of one ton of powder. We understand that Mr. Cubitt, the engineer, afterwards stated that a saving of six month's work, and £7000 expenditure was effected by this blast. Now allowing 6d. per yard for the removal of the quantity now required to be shifted, which would amount to £1250, and £500 for the powder used in the blast, the cost of forming the galleries, tamping, &c., &c., we shall find that this mass has been removed at a cost of 1.44 pence per yard. Again, taking Mr. Cubitt's statement, that a saving has been effected of £7000, to which, if we add the £1750, expenditure by the present plan, we shall find that he estimated the cost of removal by hand labour, at rather less than 7½d. per yard.

We felt an interest in examining the beds and fissures of the chalk in the neighbourhood of this blast, which clearly indicated that the plan of removal adopted by Mr. Cubitt, was not only the cheapest, but the safest method which could have been adopted. The vertical fissures which here traverse the chalk appear to lie pretty nearly parallel, and at a slope perhaps of one-fifth to one-tenth to one. It was in one of these fissures that the whole mass parted and slipped down, on which we believe it had set previously, no doubt brought about by the infiltration of water more than the sapping of the base by the sea. So treacherous indeed was this chalk, that if we are rightly informed, a mass equal nearly in bulk to that blasted on Thursday came down unexpectedly some time since in the night time, burying in its ruins a watchman or foreman belonging to that part of the line. In the zigzag gangways cut along the face of the cliff, to enable persons to ascend to the summit—this sliding of the chalk where those vertical fissures are intersected, appears very frequently, inspiring the passer-by with a feeling of great insecurity. How far the water might be intercepted, or otherwise be prevented from filtering through these fissures is a question of great importance, and would not, we think, be one of difficult remedy. It also becomes a matter of interesting inquiry as to the effect which a lesser quantity of powder would have had, deposited and fired in the same manner. Would it only have made the mass insecure, or caused a partial sliding down, rendering it then more difficult of removal by hand than at first? The proportion of powder which Mr. Cubitt employs in his blasting operations we understand is determined thus: "The cube of the line of least resistance in feet, gives the quantity in half ounces;" but in this case there does not appear to have been any such quantity employed, though much more than heretofore is found necessary in usual blasting operations. Perhaps the most curious circumstance, connected with the operation, was the apparent absence of shock

on the firing of the charge on some spots in the immediate vicinity, while at others, far more distant, it was clearly perceptible. Thus where the batteries were placed, those in charge of them thought the charge had missed fire, from their being insensible to any shock, while at five times the distance along the face of the cliff, it was clearly felt. But even along the face of the cliff it was very evident that the shock was felt by some and not by others, though standing within a few yards of each other.

Fig. 1.—Section of the Cliff.

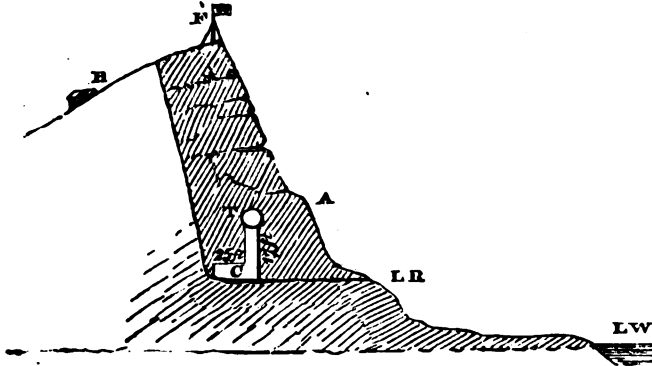


Fig. 2.—Section showing the Movement of the Mass.

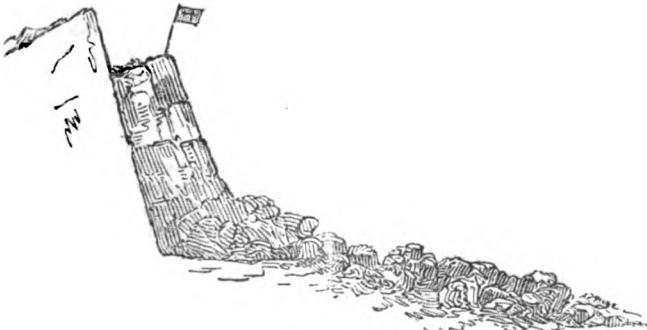
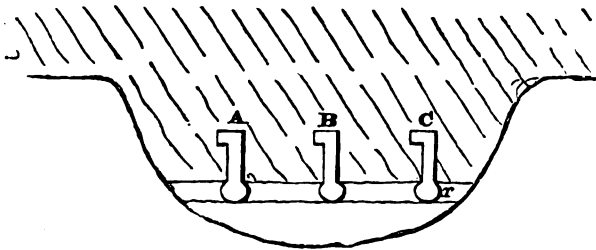


Fig. 3.—Plan of the Cliff and Chambers.



*Reference.*

Fig. 1.—Section of Cliff before the explosion; H house in which the bat-

teries were placed, F flag over the spot, T tunnel or heading, C one of the chambers, L R level of proposed railway, L W level of low water.

Fig. 2.—Section showing the movement of the mass.

Fig. 3.—Plan showing the projection of the cliff; the heading T, and chambers A in which 50 barrels of gunpowder were placed, B 70 barrels, and C 60 barrels.—*Civil Engineers and Architects' Journal*.

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SUGGESTIONS UNDER CAPTAIN FITZROY'S NEW BILL, for the better regulation of
Ship-masters, with security of Owners and Underwriters.

[We consider the following worthy of special attention, and think our correspondent should follow up the subject, illustrating his statements with cases in point.]

Sir.—As you have given place in your last month's number, to my "Suggestions relative to Ship-masters, salvage, &c.," I am induced to add a few more suggestions; the general bearings of which I leave for the consideration and discussion of your readers, should you deem the matters animadverted upon, worthy of publicity. Firstly, to making wages and disbursements of the master, recoverable on the ship, when arrived at home only, in the same way as the rest of the Ship's company. Many objections, I am aware, can be taken; but as the law now stands, there are no means for the masters coming under cognizance of the Court of Admiralty. The masters redress is a personal one against the Owner, and the latter has no cheap means for exposé or punishment, and which together induce dishonest and heartless minded masters, to help themselves in various ways, to any extent, and even upon the ship herself, *comme qui couste*, aware that they have no other security than against the Owner personally, and *vice versa*. The consequences of this, to my certain knowledge, have been, that when they choose to entertain doubts right or wrong, of their Owners responsibility, they set the agents at defiance, and act as they think fit, with ship and earnings, at any sacrifice and results; and for which an Owner may perhaps once in his life, be foolish enough to prosecute, if he can catch the master. But as this makes the loss and injuries greater, they are generally allowed to go their way; they proceed to other outports or to London, make up a case with references should they be pressed, and secure a fresh ship by gratuity to a Broker or Ships' auctioneer, and by the further incentive of taking £1 ,, ,, per month under current wages. I can cite five instances of the above kinds of a ruinous and infamous nature, which have occurred in the southern colonies within the last eighteen months! To legislate in detail for these cases would be futile. I allude to them to shew the necessity for great caution and investigation, and powers by the Boards proposed, under Captain FitzRoy's new bill, powers to require of masters and mates *themselves to produce written certificates, &c.*, from their employers during the last seven years, and for the Boards to make secret inquiries, and to take evidence, &c. *viva voce* or by declaration; for without these powers it will be found not only difficult to arrive at the truth *and real merits generally* (which are quite as essential as the Nautical abilities), but upon open application to the referees A. B. C. of the applicants, information will be withheld under doubtful cases, out of false sympathy or fear of trouble and annoyance.

Certainly it is better that, if the applicant cannot produce written testimonials, and the other general proofs to be required in support of other representations be not fully and satisfactorily adduced and supported, the rejection should be fearlessly decided on; rather than Owners, Shippers, Underwriters, Emigrants and others, should be deceived by committing their property and lives to the care, custody and integrity of the doubtful men!

We have Lloyd's registry and classification of ships, why not of the masters. This would give second rate men a chance of employ, by those who thought fit, whilst third rate men might pass perhaps, as mates of 1st or 2nd class, and

thus underwriters and passengers as well as shippers would at once see, judge, and act accordingly? It may be said that such powers are inquisitorial, not in the least, for those who have nothing to fear, let the means and the measures be full and efficient or not at all; and the Underwriters generally are deeply interested in seeing to this! It may be less important to those, who *fully insure* their *old* ships, to carry goods and passengers for freight only, and that being mainly paid in advance; but for those who only *partially insure* their ships, and load and trade them upon their own account, the ability, honour, and integrity of the master and 1st mate, are all important and vital; and for such tested men £20 or 30 per month wages, would at the end of a voyage, be found a security and saving. But I urge the making it illegal for Broker, or any other person whatsoever, directly or indirectly to receive any reward for recommending or obtaining any ship, master or mate: I can speak of the abuses and evils arising hereupon!

Yours, &c.,

G. T. W.

N.B.—That a distinct form, of log and journal combined, shall be laid down and enforced upon master and mate, is undeniably essential as simple, by numbering the left and right hand pages the same, making the former for the log, and the latter for the journal, &c.

AMERICAN DISCIPLINE.

ONE of the most remarkable instances of the degree of severity (partaking very strongly of Lynch-law) exercised in ships of the American Navy occurred a short time since on board the United States brig-of-war *Somers*, Lieut.-Commander A. S. M'Kenzie.

The Commander begins his narrative by stating that, after receiving information of a conspiracy, he treated the whole affair with ridicule; he considered that Mr. Spencer had been joking, but that the joking was upon a subject much too serious. No steps were therefore taken, but the unfortunate Midshipman being closely watched by Lieut. Gansevoort, was found "*narrowly examining the charts*," and further, he committed the enormity of questioning the Surgeon *about the Isle of Pines*.

To digress for a moment. We will only ask, Is any young sailor *not* inquisitive about this noted place? "Spencer passed the following day as usual, sullenly, in the corner of the steerage;" from which we infer that he was under an arrest, and at least had no watch to keep; but he was, moreover, observed "examining attentively a small piece of paper, occasionally working with his penknife on a piece of the tail of a devil-fish, with which he had fashioned a ring for his cravat." These, and numerous other absurd and childish remarks, such as sketching a brig with a black flag, telling Midshipman Rogers's fortune, &c., occupy the next portion of the narrative.

Another paragraph, to our ears aristocratic, sounds oddly:—"The circumstance of his being the son of an Officer high in the Government enhanced his baseness in my estimation, and made me more desirous to get rid of him!"

The Narrative then goes on to detail the unsuccessful means employed for effecting this object, and then attributes to the unfortunate Mid. the crime of having a most villainous smile, and a "strange flashing of the eye." Commander M'Kenzie then proceeds to relate his mode of accusation, the arrest and handcuffing of Mr. Spencer, "for the sake of greater security."

Thus, in rather unpleasant limbo for his "joking" conversation, his searching the charts, his villainous smile, and "flashing eye," Mr. Spencer was under the additional terror of having a bayonet inserted between his ribs.

"I directed Lieutenant Gansevoort to place a watch over Mr. Spencer, and to give orders to put him to instant death if he was detected *speaking or holding any communication* with any of the crew."

In Mr. Spencer's "locker" was found, it seems, "a string of characters in Greek letters. They proved"—(but in what way we trust the Justice of the Tribunal before which Commander M'Kenzie is arraigned will determine, for there is no proof mentioned in the Narrative),—"to contain the plan for the proposed mutiny. There was a list of the different members of the crew—(Query was it a watch-and-station bill?)—some of whom were marked certain, others doubtful; some were marked to be kept at all events, and others to be destroyed," &c. This ended in the arrest of two other men—Cromwell, the "tallest," and Small, the "shortest" man in the brig. These were also placed in irons.

On the 28th November, (the day following the arrest of Cromwell and Small,) Commander M'Kenzie addressed his ship's company upon what had transpired. The effect of his address upon them "was various;" many "seemed delighted at their narrow delivery," and others horror-struck "at the thoughts of the terrible danger" they had escaped; some "seemed overwhelmed with terror at the anticipation of punishment that awaited them; others were overcome by thoughts of returning home, and wept profusely at the mention of the friends they hope so soon to see." But among all these weeping, horror-struck, and delighted portions of the *Somers's* ship's company, we read of no sullen mutinous sort of fellows likely to attempt a rescue; and what therefore must be our astonishment at the black sequel?

The poor Midshipman endured his indignities resignedly until his "tobacco was stopped," the day after which "his spirit gave way. He would sit for a long time with his face buried in his cloak, and when he raised his head, his face was bathed in tears." In this respect he certainly had a wondrous similitude to a hardened mutineer! The succeeding portions of the Narrative are detailed in the same spirit of pure unadulterated American humbug; but the tragical end is, that the poor young man is launched into eternity "unfit to die," as he himself said, together with his two shipmates.

Passing over the cant and hypocrisy of the Narrative, we proceed to the manner in which the commander, M'Kenzie, justified the sweeping barbarity of his conduct to the young man. This, however, is too severe a libel upon the Americans; and it will be sufficient, we imagine, if the crime and cruel imbecility he has displayed are not, to condemn him at once.

"If it had been possible to take him home, as I at first intended, I told him that he would have got clear, *as in America a man with money and influential friends would always be cleared*; that the course I was taking would injure his father less than if he should have gone home, and be condemned, yet again escape." The Commander endeavours to qualify this by the following note;—"Perhaps this is an extreme and erroneous opinion, and not just, but I am merely stating facts which passed on the occasion."

We must not omit begging our readers' attention to the concluding paragraph of the Narrative.

We should not have been thus premature in our remarks, were the scene of trial nearer at hand, where we could be supposed to influence the course of justice. But removed far from the scene of the Lieutenant-Commander's oratory or that of his counsellors, we can but say that we look with anxiety to the receipt of the next news from America; and will only add, that if the measure of "English justice" is awarded, Commander M'Kenzie will have little reason to plume himself on his *meritorious* conduct.—*N. & M. Gaz.*

NAUTICAL NOTICES.

FLOATING LIGHT, BOMBAY, Dec. 28.—Notice is hereby given, that a floating light is stationed in the Fair Channel into Bombay Harbour, about three-quarters of a mile to the S.W.b.S. from the Fair Way Buoy, in about nine fathoms at high water, and seven fathoms at low spring tides, with the following bearings and distances:—

Flag-staff on Malabar Point, N. $5^{\circ} 46'$ E., distant 6.90 nautic miles.

The lighthouse on Colaba, N. $21^{\circ} 34'$ E., distant 4.56 nautic miles.

The Fair Way Buoy, N.E.b.N., distant three-quarters of a mile.

The Floating light at the Sunken Rock, N. $38^{\circ} 50'$ E., distant 4.68 miles.

Kennery Island, S. $14^{\circ} 15'$ E., distant 7.43 miles.

The point of the S.W. Prong in six fathoms foul ground bears N. about two miles.

The Middle of Thull Shoal E.S.E. two miles.

When approaching the harbour, if the floating light-vessel is seen bearing on any point from N. by E. round to the eastward as far as S.E. by S., a ship might steer directly for it; and, when up with the light-vessel, should steer from her N.E. easterly, so as to pass about three-quarters of a mile to the eastward of the other light-vessel, which is moored about a quarter of a mile to the southward of the sunken rock. After rounding the rock light-vessel, you may steer more northerly, and, if it be at night, should anchor about one mile to the N.E. by N. from it, where the water will be smooth. The south point of the middle ground shoal bears N.N.E., distant two miles from the rock light-vessel.

Both light-vessels are painted red, each carrying a ball on the light-mast, and during daylight they hoist a red flag when a sail is in sight.

The outer floating light burns a blue light at the end of each hour during the night, and displays a torch at the half hours.

The flood tide comes in from the S.W., and ebb from the N.E. It is high water at 12 hours on full and change of the moon.

East India House, Feb. 15.

JAMES C. MELVILL, *Secretary.*

Note—The floating light was tried during the last monsoon, and rode well, but in the event of her breaking adrift the fair way buoy is continued at its station.

PILOT STATION OFF THE MOUTH OF THE RIVER HOOGHLY.—Notice is hereby given, that the same causes existing, which, during the last S.W. Monsoon, rendered necessary the removal of the Pilot Station from off Point Palmyras to a position 6 or 8 miles S.W. of the Outer floating light, and in from 16 to 20 fathoms water, this latter station will be continued during the next S.W. Monsoon, viz. from 15th March to the 15th September.

During the last S.W. Monsoon no difficulty would appear to have been experienced by vessels passing from False Point Lighthouse to the New station, nor can any be felt if common attention be paid to the Lead, and to the following directions prepared by Captain Lloyd, late Officiating Marine Surveyor General, after a careful survey of the ground between the two Points.

“False Point Light-house is in lat. $20^{\circ} 19\frac{1}{2}'$ N., and long. $86^{\circ} 47'$ E., and that of the South Channel Buoy in lat. $20^{\circ} 59'$ N., and long. $88^{\circ} 4'$ E., and bears from the former N. 61 E. true, or N.E.b.E. $\frac{1}{4}$ E., by Compass, distant 83 miles, and is laid in 12 fathoms.

A bank of soundings extends from off Point Palmyras in a direction towards the tail of the Western Sea Reef, and the nature of the bottom (as distinguished from that of the Hooghly deposit, which is sand and mud with shining specks) is a gravelly substance composed of sand, shells, and small pebbles discharged from the ‘Kunka’ and other rivers near Point Palmyras, the lighter material of which being carried further out, is deposited and forms what is called the Pilots Ridge, which in crossing to the N.W. shews a little less water than on either side; coming from seaward you shoal rather suddenly, from 28 to 23 fathoms, upon its Eastern Edge. It is composed of a shelly sand, or minute gravel, of a reddish or rusty brown colour.

The best guide therefore to enable a Vessel to direct her course from False Point to the Vessels at the New Station will be to run down the Edge of the Pilots Ridge, which can readily be done by making the Light-house, and bringing it to bear about W.S.W., or S.W.b.W., distant by computation from 10 to 15 miles, then steering to the E.N.E., and having gradually increased the depth

of water to 23 fathoms upon the Eastern edge of the Ridge, regulated the course to keep between it and 27 fathoms, when by attention to the Lead, and nature of the soundings, course and distance run from the Light-house, it is almost impossible to miss the Pilot Vessels (if the above limits are kept within) either by getting too far to windward or falling to leeward; for the soundings increase so rapidly to seaward from the proposed New station, that 28 fathoms will not be more than 3 or 4 miles to the southward of it, and 23 fathoms the same distance to the westward of it.

The soundings to seaward of the Ridge are in general a greenish or olive-coloured mud, with occasionally a few bits of broken shells mixed with it."

Vessels approaching the Station during the day, are required to shew the usual signal for a Pilot, and by night, to give as early and as much warning as possible, by firing guns, burning blue lights, and by exhibiting Two lights in a Vertical position, where best seen; but Commanders are recommended to avoid, as much as possible, making the station during the night.

To mark the Station, one of the Pilot vessels will shew, during the day, a large "St. George's Jack" (white with red cross) at the main top gallant mast-head, and a good mast-head light during the night, and will burn a blue light and a maroon alternately every half-hour, and fire a gun at 8 P.M. at midnight, and at 4 A.M. Vessels approaching the station and while there, as well as when approaching the light* and buoy station vessels, are warned to be careful in avoiding collision by night, or by day and in communicating with either of the above vessels, either at anchor, or hove to, when it is necessary to cross her to pass under the stern; several instances of serious damage having occurred during the S.W. Monsoon, whereby the outer floating light was more than once compelled to leave her station for repairs, to the great inconvenience and risk of vessels entering and quitting the river.

A vessel will be stationed off False Point light-house, keeping it according to circumstances W.b.S. to N.W.b.N. in from 10 to 15 fathoms water.

She will exhibit during the day, when vessels are in sight, a large "Danish Jack" at the main top gallant mast-head (red with a white cross), and during the night a good mast-head light in the same place, and will burn a blue light every half-hour.

This vessel will have no pilots on board, and is only intended generally to furnish information touching the course to the new station, but particularly to do so to vessels which may be in ignorance of the position of the new station.
East India House, Jan. 18. JAMES C. MELVILL, Secretary.

* [The light vessels are directed, when another vessel is approaching during the night, to shew a light at the Gaff end to mark the way they are riding.]

H.M. Steam Packet Station, Holyhead, Jan. 31, 1843.

SIR,—I am directed by my Lords Commissioners of the Admiralty, to give public notice, that a bell has been placed at the end of the pier, near the light-house, for the purpose of guiding her Majesty's steamers into the harbour during fog. The bell will be rung at about half-past 2 P.M., when the packet generally enters the bay, and continued at intervals until her arrival.

I am, &c.,

JOHN KAINS, *Commander, R.N.*

THE master of the Hamburg schooner-brig *Paradise*, Zybrandts, discovered, July 18, 1841, on his passage from Valparaiso for Manila, in lat. 9° S., long. 172° W. of Greenwich, a group of six islands, thickly covered with cocoa-nut trees and apparently uninhabited, which were not laid down on the newest charts on board, and Mr. Zybrandts therefore named them "Paradise Islands." According to his observations he found the latitude of the northernmost island at noon to be 9° 6' 20" S., and its longitude, according to a good chronometer. 172° W. Mr. Zybrandts afterwards found that the "Uloë Group" is laid

down in the English charts 23' too southerly, the most south and westerly of those islands being in lat. $7^{\circ} 32' N.$, and long. $143^{\circ} 30' E.$ —*Borsenhalle*.

[We are sorry to deprive the Master of the *Paradise* of the honour of his discovery, by finding the Duke of York and Duke of Clarence Islands in the position pointed out by him in Kruzenstern's chart. With respect to the Ouliai Groupe of the Caroline chain we suspect he has been misprinted.]

MINDORO SEA.—Sir.—On my homeward passage from Manila, in the barque *Sarah*, when in the Mindoro Sea, I found it was next to an impossibility to beat her down the Mindoro Sea, against the whole strength of the south-west monsoon. After beating off the coast of Panay for a day or two, I found we were losing ground, likewise tearing the ship and gear to pieces, without any chance of doing good. I therefore bore up, to try, if possible, to get into the Pacific without going round by Celerite Point, which is at the entrance of the Straits of St. Bernardino.

The first place I ran for was the space between the Islands of Semarara and Cape Potoi, in the Island of Panay; but I found it full of shoals, small islands, &c., without an opening, (although the Spaniards allow a passage to exist there for Pontens, &c.) Being disappointed there, I stood to the northward, and found an excellent passage, free from all danger, between the Islands of Semarara and the south end of Mindoro; in the whole passage, as far as I saw, there being but one island, surrounded by a coral reef, which island lays, I think midway between the island called Tablas and Mindoro, and may be kept clear of by keeping on the Mindoro shore, about four miles off or so, until Cabeza Redonda on Tablas bears about E.b.N. then steer over for the head, making an allowance for a current setting to the N.E. about one mile per hour; after rounding this headland, it is very easy to get into the Straits of St. Bernardino. The passage from Tablas, to the channel between Burius and Masbate, being entirely free from danger. Cabeza Redonda lies in $13^{\circ} 36' N.$, $122^{\circ} 12' E.$

I remain, &c.

JOHN HALL, Jun.

P.S.—I suspect the island called Tablas has been so named at first in derision, it being very hilly indeed, instead of table land, which the name "Tablas," signifies.

Our correspondent would have conferred greater value on his useful letter, had he given us the date when he was in the Straits; and we should also like to know, how he obtains the particulars of this position, whether he landed or determined it by bearing and distance from the ship, and if so how the ship's position was determined; as without such information his communication will carry but little authority in these days. But on this subject in general, one so important to Mariners, we recommend to our correspondent's perusal the remarks contained in the second edition of Raper's *Navigation*, p. 351, which should be consulted by all seamen.—With respect to Tablas, are the hills flat-topped?—E.

THE VARIATION OF THE COMPASS.

(Continued from p. 845.)

Royal Observatory, Greenwich, Feb. 16, 1842,
Magnetical and Meteorological Department.

Mean Magnetic Declination for October 1842— $23^{\circ} 18' 4''$.

Mean Magnetic Declination for November 1842— $23^{\circ} 17' 22''$

Mean Magnetic Dip for November 1842.

At 9 A.M.— $68^{\circ} 56\frac{1}{2}'$

At 3 P.M.— $69^{\circ} 0\frac{1}{2}'$

Mean Magnetic Declination for December 1842— $23^{\circ} 17' 22''$

Mean Magnetic Dip for December 1842.

At 9 A.M.— $68^{\circ} 56'$

At 3 P.M.— $68^{\circ} 59\frac{1}{2}'$

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

TABLE LXIX.

*For reducing Wurtemberg feet to English feet, and English feet to
Wurtemberg feet.*

1 Stutguard foot = 0·9399448023 English foot.
1 English foot = 1·063892262 Stutguard foot.

Stutguard or English feet.	English feet, and Dec. parts	Stutguard feet, and Dec. parts.	Stutguard or English feet.	English feet, and Dec. parts	Stutguard feet, and Dec. parts.	Stutguard or English feet.	English feet, and Dec. parts	Stutguard feet, and Dec. parts.
1	0·940	1·064	40	37·598	42·556	79	74 256	84·047
2	1·880	2 128	41	38·538	43·620	80	75·196	85·111
3	2·820	3·192	42	39·478	44·683	81	76 136	86·175
4	3·760	4·256	43	40·418	45·747	82	77 075	87·239
5	4·700	5·319	44	41·358	46·811	83	78·015	88·303
6	5·640	6·383	45	42·298	47·875	84	78·955	89·367
7	6·580	7·447	46	43·237	48·939	85	79·895	90·431
8	7·520	8·511	47	44·177	50·003	86	80·835	91·495
9	8·460	9·575	48	45·117	51·067	87	81·775	92·559
10	9·399	10·639	49	46·057	52·131	88	82·715	93·623
11	10·339	11·703	50	46·997	53·195	89	83·655	94·686
12	11·279	12 767	51	47·937	54·259	90	84·595	95·750
13	12 219	13·831	52	48·877	55·322	91	85·535	96·814
14	13·159	14·894	53	49·817	56·386	92	86·475	97·878
15	14·099	15·958	54	50·757	57·450	93	87·415	98·942
16	15·039	17·022	55	51·697	58·514	94	88·355	100·006
17	15·979	18·086	56	52·637	59·578	95	89·295	101·070
18	16·919	19·150	57	53·577	60·642	96	90·235	102·134
19	17·859	20·214	58	54·517	61·706	97	93·175	103·198
20	18·799	21·278	59	55·457	62·770	98	92·115	104·261
21	19·739	22·342	60	56·397	63·834	99	93·055	105·325
22	20·679	23·406	61	57·337	64·897	100	93·994	106·389
23	21·619	24·470	62	58·277	65·961	150	140·992	159·584
24	22·559	25·533	63	59·217	67·025	200	187·989	192·778
25	23·498	26·597	64	60·156	68 089	250	234·986	265·973
26	24·438	27·661	65	61·096	69·153	300	281 983	319·168
27	25·378	28·725	66	62·036	70·217	350	328·981	372·362
28	26·318	29·789	67	62·976	71·281	400	375·978	425·557
29	27·258	30·853	68	63·916	72·345	450	422·975	478·752
30	28·198	31·917	69	64·856	73·409	500	469·972	531·946
31	29·138	32·981	70	65·796	74·472	550	516·970	585·141
32	30·078	34 045	71	66·736	75·536	600	563·967	638·336
33	31·018	35·108	72	67·676	76·600	650	610·964	691 530
34	31·958	36·172	73	68·616	77·664	700	657·961	744·725
35	32·898	37·236	74	69·556	78·728	750	704·959	797·919
36	33·838	38·300	75	70·496	79·792	800	751·956	851·114
37	34·778	39·364	76	71·436	80·856	850	798·953	904·308
38	35·718	40·428	77	72·376	81·920	900	845·950	957·503
39	36·658	41·492	78	73·316	82·984	1000	939·945	1063·892

HER MAJESTY'S VISIT TO SCOTLAND.—Our indefatigable artist Mr. Huggins, Marine Painter to his late Majesty, has commemorated this event with a painting representing the Royal Yacht *In tow of the Black Eagle and Shearwater*, at the moment of the Royal Squadron being met by the Monarch and Trident, belonging to the General Steam Navigation Company at the entrance of the Forth. An engraving has been made by Mr. Duncan, dedicated to H.R.H. Prince Albert affording to those who did not witness this interesting spectacle an opportunity of preserving a pleasing record of it in the shape of an elegant picture.

ADMIRALTY ORDERS.

Admiralty, Nov. 15th 1842.

My Lords Commissioners of the Admiralty are pleased to direct, with the view of further conducting to the health and comfort of Her Majesty's troops when embarked either on board ships of war or troop ships, by a liberal supply of necessaries, that, in addition to the existing scale of necessary money, one farthing a day be allowed upon all pursary accounts of Her Majesty's ships in which troops shall be embarked, for every military person embarked, commencing with such accounts as have been received in office since the 1st of January last, and which have not yet been passed.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, Dec. 26th, 1842.

The Lords Commissioners of the Admiralty are pleased to direct, that the following uniforms shall be established for Engineers of the 2nd and 3rd classes respectively.

Engineers of the 2nd class.—The same as that established for Engineers of the 1st class by their lordships' order of the 21st December, 1841, except that the button on the collar shall be of the same size as the other buttons of the coat.

Engineers of the 3rd class.—The same as that for Engineers of the 1st class, except that the button on the collar of the coat shall be of the same size as those worn on the waistcoat.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, Dec. 26th, 1842.

The Lords Commissioners of the Admiralty having had under consideration their orders of the 26th October, 1834, and 1st May, 1833, relating to the manner in which Steam logs and Engine registers are to be kept, are pleased to

direct that henceforth the production of Steam logs and Engine room registers, by the commanding officers of Her Majesty's steam vessels, shall only be required from the time at which each Steam vessel leaves the port where her Engines have been fixed or repaired until her return to any port for similar purposes.

By command of their lordships,
SIDNEY HERBERT.

Admiralty, Dec. 28th, 1842.

The Lords Commissioners of the Admiralty, having reason to believe that the consumption of tallow and oil for the engines of her Majesty's steam vessels is, in some cases, greater than necessary, I am commanded by their lordships, to desire that you will attend very strictly to this expenditure, and use every endeavour to economize these articles on board her Majesty's vessel under your command.

You will, in future, insert in each monthly report of Machinery (under the head of "Engines") an accurate statement of the exact quantity of each of the above articles used per twenty-four hours, during any number of days the vessel under your command may have been under steam in the course of the month; with the double object of enabling their lordships to judge of the actual expenditure necessary in Steam vessels of different powers, and of noting those Engineers who shall appear to practise the greatest economy in these articles, consistently with the efficient working, and due preservation, of the engines.

If, from any temporary circumstances, such as an over-heated bearing, the quantity expended should have been more than usual, the facts of the case are to be noted in your report.

By command of their lordships,
JOHN BARROW.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

DOWNING-STREET, Jan. 13.—The Queen has been pleased to appoint H. F. Seagram, Esq., Commander in the Royal Navy, to be Lieut-Governor of Her Majesty's Settlements on the Gambia.

WHITEHALL, Jan. 21—The Queen has been pleased to direct letters patent to be passed under the Great Seal, granting the dignity of a Knight of the United Kingdom unto Captain Edward Belcher, R.N.!

PROMOTIONS.

COMMANDERS—J. F. Stirling, F. B. Montessor, C. Thurtell, J. Wolfe.

LIEUTENANTS—R. M. Richardson for services in China, L. G. Halstead, F. Morris, R. Reid, G. H. Clarke.

MASTER—H. May.

PURSERS—G. J. Q. Pinhorn, W. E. Bluett, M. A. Feeley, H. R. Cole, A. Robinson, G. P. Rickord, T. T. Wise, R. C. Clerke.

APPOINTMENTS.

CAPTAINS—Sir T. Fellows, C.B., to be Captain-Superintendent of the Victualing Yard and Naval Hospital, Plymouth—J. Washington to *Blazer*.

COMMANDERS—G. Giffard to *Vixen*—J. Duffill to *Hecla*—A. Boyle and H. B. Young to study at Naval College.

LIEUTENANTS—W. Rendall and H. Jauncey to *Caledonia*—A. Darby to *Victory*—J. A. Bambridge to command *Pic-*

kle—F. Kemble to *Excellent*—W. H. Bridge to *Ardent*—F. H. Stevens to *Geyser*—H. W. Wire to *Snake*—O. J. Jones, S. S. L. Crofton, and C. P. Bellamy to *Queen*—W. P. Jamieson and Lord F. Kerr to *Thunderbolt*—W. Still agent to *Pestonjee Bomanjee* trans.—G. Cleveland and J. H. Weller to *Tartarus*—C. M. Mathison to *St. Vincent*—A. F. Kynaston, flag-lieut. to Vice-Admiral Parker, ocb.—L. P. Burrell to *Malabar*—W. Winniet to *Lightning*—W. H. Webb to *Styx*—J. Pritchard to *Spartan*—W. H. C. Leaver and F. A. Cudlip to *Blazer*—F. Morris to *Tweed*—C. F. Newland to *Spiteful*—G. T. C. Smith to *Hecla*.

MASTERS—C. P. Bellamy to *Queen*—J. Garner to *Spiteful*—H. J. Sclater to *Hecla*—A. B. McLean to *St. Vincent*—J. S. Pritchard to *Tartarus*—J. King to *Alban*—E. K. Calver to *Blazer*—H. May to *Frolic*.

MATES—C. Rainer to *St. Vincent*—C. St. John, H. De Lisle, and E. Lacy to *Excellent*—R. Reid to *Royal William*—E. Nicholls to *Lightning*—F. P. Warren to *Royal George*—S. H. Pickard to *Spiteful*—M. Burrows to *Gorgon*—W. R. Surridge and F. H. Shortt, to Naval College.

SECOND-MASTERS—J. S. Colman and D. Roberts to *Victory*—J. S. Colman to *Cuckoo*—J. Lurie to *Niagara*—H. Hunter to *Rhadamanthus*—J. Richards to *Samarang*—W. Roberts to *Lightning*—T. Arundell to *Gorgon*.

SURGEONS—E. Davis to *Blazer*—S. Donnelly to *Hecla*.

MASTERS' ASSISTANTS—J. R. Golden, and H. Sarratt to *St. Vincent*—H. Nuttal to *Samarang*—H. M. Draper to *Acheron*—E. Dwyer to *Thunderbolt*—A. Veitch to *Tartarus*.

ASSISTANT-SURGEONS—R. Hastings to *Thunderer*—J. H. Haire, J. Andrews, J. Gallagher, and J. P. Lawrence to *St. Vincent*—I. Bell to *Perseus*—H. T. S. Beveridge, MD., to *Lightning*—M. T. West to *Lily*—J. Lack to *Thunderer*—

S. Sproule, MD., to *Tartarus*—G. R. West to *Hecla*—W. Bullock to *Fearless*—D. Ritchie to *Cockatrice*.

MIDSHIPMEN—Hon. F. Curzon and S. T. Dickens to *St. Vincent*—J. S. Mann to *Excellent*—W. R. Fuller to *Hecla*.

VOLUNTEERS 1st Class—J. Hutchinson and A. J. Bullock to *Tartarus*—J. Murray to *Blazer*—C. C. Vyvian and T. Underwood to *St. Vincent*—H. E. Pritchard to *Imaum*.

PURSERS—J. Anderson to *Winchester*—Lyall to *Isis*—Mitchell to *Cleopatra*—Smith (act.) to *Bittern*—J. Benifold to the Ordinary at Chatham—G. P. Rickard to *Hecla*—W. Young to *Gorgon*—W. P. Browne to be storekeeper at Holyhead.

CHAPLAIN and NAVAL INSTRUCTOR—Rev. W. H. Elwyn to *Endymion*.

CHAPLAIN—Rev. J. Marshall to *St. Vincent*.

CLERKS—H. Braxton to *Perseus*—C. Saunders to *Tartarus*—C. Hellyer, F. J. Fegan, and J. Hayward to *St. Vincent*—R. G. Lillicrap to *Frolic*—R. Malone to *Heroine*—G. F. Knox to *Styx*—C. Richards and S. Watson to *Samarang*.

COAST GUARD.

Promotions.—CAPTAIN—Sir R. Hagan Knt.

COMMANDERS—W. Speck, W. Prowse, G. Drew.

LIEUTENANT—S. Sterling.

Appointments—Lieut. J. S. M. Watson to command *Victoria*—Com. D. Curry appointed to Newcastle District—Lieut. C. H. Baker to command *Harpy*.

Removals—Com. F. Edwin, to Cove District—Lieut. Fowler to Dunny Cove, Lieut. J. D. Ramsey to Aldboro'—Lieut. J. Hill to Tarcross—Lieut. W. Y. Gill to Wells—Lieut. J. Robinson to Buckle—Lieut. M. J. Liddon to Southampton Water—Lieut. G. Gahan to Laysdown—Mr. T. Stocker to Copperas Gap.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

GORGON, (st. v.) Capt. Hotham, Jan. 30, arr. at Portsmouth from Woolwich, 6th Feb. sailed for S. America.

THUNDERER, 84, Capt. D. Pring, Feb. 15, left Portsmouth for Cape of Good Hope.

VOLCANO, (st. v.) Lieut.-Com. Smith.

Jan. 31, arr. at St. Helens from Sheerness.

ABROAD.

ALECTO, (st. v.) Com. W. Hoseason, Jan. 18th, left Malta for Ionian Isles.

AVON, (st. v.) Lieut.-Com. H. Byng, Dec. 17th at Jamaica from Houduras.

- BEACON**, (sur. v.) Com. T. Graves, Jan. 8th at Malta.
- BELLISLE**, 72, Capt. J. Kingcome, Oct. 30th, arr. at Macao.
- BELVIDERA**, 38, Capt. Hon. G. Grey, Jan. 18th arr. at Gibraltar from Barcelona.
- BLENHEIM**, 72, Capt. Herbert, Oct. 27th, left Macao for the Cape and England.
- COLUMBINE**, 16, Com. G. Elliott, Nov. 4th, at Macao.
- CRUISER**, 16, Com. H. W. Giffard, Oct. 27th, left Macao for the Cape and England.
- CYCLOPS**, (st. v.) Capt. H. T. Austen, Jan. 12th, at Malta from Port Mahon.
- DEVASTATION**, (st. v.) Com. Hurry, Jan. 8th, at Malta.
- FORMIDABLE**, Capt. Sir C. Sullivan, Jan. 12th at Malta.
- GEYSER**, (st. v.) Com. Carpenter, 5th, Feb. at Malta from Messina.
- HECATE**, (st. v.) Com. H. Ward, 4th Feb. at Malta from Smyrna.
- HEROINE**, 10, Lieut. Stewart, Dec. 4th arr. at Bathurst from Sierra Leone, 15th sailed for Cape de Verdes.
- IMPREGNABLE**, 110, Capt. T. Forrest, c. b. Jan. 8th, at Malta.
- INDUS**, 84, Capt. Sir James Stirling, Jan. 28th, at the Piræus.
- JUPITER**, (tr. s.) Mas-Com. R. Fulton, Oct. 30th, arr. at Macao.
- LOCUST**, (st. v.) Lieut.-Com. J. Lunn, Jan. 14th, left Malta for Athens and Constantinople.
- MAGICIENNE**, 34, Capt. Warren, Feb. 1st, at Smyrna.
- MAGPIE**, (sur. v.) Jan. 8th, at Malta.
- MODESTE**, 18, Com. H. Eyres, Oct. 26th, left Macao for England.
- MONARCH**, 84, Capt. S. Chambers, Jan. 8th, at Malta.
- PICKLE**, 5, Lieut. Montresor, Dec. 14th, at Port Royal from Honduras.
- POLYPHEMUS**, Lieut. J. Evans Jan. 22nd at Gibraltar, and returned to Malta.
- PROMETHEUS**, (st. v.) Lieut.-Com. T. Spark, Jan. 8th at Malta.
- QUEEN**, 110, Capt. G. F. Rich, Jan. 8th, at Malta.
- RODNEY**, 92, Capt. R. Maunsell, Jan. 8th at Lisbon.
- SAVAGE**, 10, Lieut. J. H. Bowker, Jan. 31st, left Gibraltar for Alicante.
- SNAKE**, 16, Com. Hon. W. Devereux, Jan. 15th, at Malta from Athens.
- SPARTAN**, 26, Hon. Capt. Elliott, Dec. 4th, left Jamaica for Havana.
- STROMBOLI**, Com. Louis, Jan. 8th, at Constantinople.
- VANGUARD**, 80, Capt. Sir D. Dunn, Jan. 12th, at Malta.
- WATERWITCH**, 10, Lieut.-Com. H. J. Matson, Dec. 18th arr. at St. Helena from Coast of Africa.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

- On the 5th Feb. at Woolwich, the lady of Capt. Washington, R.N., of a son.
- On the 3rd Feb. at Southsea, the lady of C. K. Scott, Lieut, R.N., of a son and daughter.

Marriages.

- On 14th Feb. at Blendworth Lodge, Hants, the Right Hon. Earl of Northesk, to Georgiana Maria, eldest daughter of Rear-Admiral the Hon. G. Elliott.
- On the 7th Feb. at Droxford, Hants, the Rev. N. Midwinter, A.B., curate of Trinity Church, Fareham, to Louisa, second daughter of the late Vice-Admiral Sir E. G. Colpoys, K.C.B.
- On 25th June, at Wellington, New Zealand, Edward, eldest son of Admiral Sir E. Chatham, K.C.H., to Amelia, daughter of the late D. Riddiford, Esq., of London, and step-daughter of G. S. Evans, Esq., LL.D., of Lincoln's Inn, now of Port Nicholson, New Zealand.
- At Alverstoke Church, R. C. Bamford,

Esq., of the 59th Reg. of Foot, to Lavinia, daughter of Rear-Admiral Sir E. Chatham, C.B., K.C.H.

On 9th Feb. at Ilfracombe, Devon, D. Curry, Esq., Commander, R.N., son of Rear-Adml. Curry, C.B., to Mary Anne, only child of the late C. T. H. Rowe, Esq., of Stratford-on-Avon.

Deaths.

Of Catarrhal fever, on 10th of Feb. at Rose Hill, Bedminster, Sea Cadet, John Evans, son of Lieut. J. Evans, R.N., and great-great-grandson of the late Rev. Morgan Evans, LL.B. of Weobly in the County of Hereford, and Chancellor of Llandaff. He was a very promising youth, much beloved by his friends and acquaintances for his mild and amiable disposition and unassuming manners. He had recently returned from a voyage round the world.

On the 29th Jan. in the Royal Naval Hospital, Malta, J. Russell, Esq., late First Lieut. H.M. steam-frigate Geyser.

NEW CHARTS.—Published by the Admiralty, and Sold by R. B. Bate, Poultry,

NASSAU HARBOUR, Isle New Providence, West Indies,
The scale is about 17 inches to the mile, and the plan includes from Silver Cay on the West the whole sea face of the Town of Nassau.

SALT CAY ANCHORAGE AND HANOVER SOUND, —Island of New Providence,
The scale is about 5 inches to the mile, and includes from the Town of Nassau on the west, to the Salt Pond, on Rose Island. These two plans are from the surveys of Commander Barnett, of H.M.S. Thunder.

CHART OF THE COAST OF CHINA.—Messrs. Allen have just published a Chart of the Coast of China, extending from Canton to the Yang-tse Kiang, with plans of the principal known ports. The scale appears not sufficient for a ship on the coast, while it is unnecessarily large for one away from the land. And we should have preferred a larger scale, for navigating the ports without pilots. It is compiled from the latest documents.

EDWARDS'S PRESERVED POTATO.—The good opinion we have entertained of this excellent vegetable, has received additional confirmation, from the circumstance of its being adopted for the supply of the East India Company's troops.

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, 1843.

Month Day.	Week Day.	BAROMETER.		FAHRENHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	Quarter.		Streng.		A.M.	P.M.
								A.M.	P.M.	A.M.	P.M.		
21	S.	30.00	30.00	31	37	30	38	E	S	2	2	b	o
22	Su.	30.00	30.00	40	41	36	42	SW	S	2	2	o	o
23	M.	30.01	29.96	41	44	40	45	S	S	2	4	bc	o
24	Tu.	29.86	29.85	44	46	42	47	S	S	4	4	o	op (3)
25	W.	29.98	30.06	41	47	40	48	SW	SW	2	2	bc	bcm
26	Th.	30.00	30.02	46	49	44	50	SW	SW	3	3	o	o
27	F.	29.97	29.94	50	53	47	54	SW	SW	4	4	o	o
28	S.	29.80	29.78	54	54	50	56	SW	W	6	6	qo	qbc
29	Su.	29.93	29.92	50	54	45	55	SW	SW	5	4	od (2)	bc
30	M.	29.72	29.80	50	53	48	54	SW	W	6	5	qo	b
31	Tu.	29.94	29.90	42	50	39	51	SW	SW	4	5	o	od (3)
1	W.	29.92	29.90	46	50	45	51	SW	SW	2	3	bc	b
2	Th.	29.62	29.67	49	44	46	50	SW	SW	6	4	qor (2)	o
3	F.	29.52	29.19	38	42	37	45	SW	SW	6	7	b	qor (3 hs 3)
4	S.	29.32	29.50	31	36	23	37	NW	N	8	8	qps (2)	qbps (3)
5	Su.	29.80	29.80	31	36	30	37	N.	N	4	3	b	bm
6	M.	29.82	29.78	33	34	29	35	N.	N	3	3	bc	or (3)
7	Tu.	29.92	29.91	31	33	30	35	NE	NE	2	3	bc	os (3) r (4)
8	W.	29.99	30.02	34	37	32	38	NE	NE	2	2	o	o
9	Th.	29.95	29.93	37	38	35	39	NE	NE	2	2	od (1) (2)	or (4)
10	F.	29.85	29.83	34	38	33	39	NE	NE	3	3	bc	bc
11	S.	29.84	29.85	36	40	32	42	N	NE	2	2	od (2)	bc
12	Su.	30.02	30.02	37	41	35	42	NE	NE	3	4	o	o
13	M.	29.99	29.95	29	38	27	39	E	E	3	3	b	bm
14	Tu.	29.70	29.62	26	36	24	38	SW	NW	1	2	bm	* os (3)
15	W.	29.44	29.34	24	27	20	28	N	N	2	3	bc	bc
16	Th.	29.16	29.14	26	31	24	32	N	NE	1	3	bc	o
17	F.	29.42	29.48	25	35	20	36	N	NE	2	3	b	b
18	S.	29.38	29.40	31	32	29	33	NE	NE	6	6	qos (1) (2)	qos (3) (4)
19	Su.	29.40	29.37	33	34	31	35	NE	NE	4	4	og	or (3) (4)
20	M.	29.26	29.26	36	37	35	38	E	E	3	3	ogr (1) (2)	or (3)

JANUARY—Mean height of the Barometer = 29.735 inches; mean temperature = 39.6; depth of rain, and snow (melted) fallen = 1.25 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

We have received CAPT. SCOTT'S letter and will attend to its contents.

In Mr. MAXTON'S self registering tide-gauge the connection of *time* with the action of the tide, seems to be lost sight of, thereby many important features remaining unknown. The invention shows great ingenuity, but it falls far short both in this and several other particulars of the perfect machine of Mr. MITCHELL, described in our volume for 1832, and ever since used in many places both at home and abroad.

IMPORTANT TO THE MESS TABLE.



The Patentees request the particular attention of the Royal Navy, the Mercantile Marine, Voyagers, and the public in general to the following statement.

The keeping qualities of the Patent Preserved Potato in every variety of climate having now been fully tested and approved of, and its desirableness as a fresh vegetable generally acknowledged and appreciated during long voyages to distant parts of the world, its merits are established as an excellent and invaluable article of food, unequalled in cheapness and portability, and defying the effects of time in any climate to injure its inherent nutritious quality and flavour.

A quarter of a pound of the concentrated vegetable, by merely pouring over it a little *boiling* water, is at once converted into more than one pound of mashed potato, and that of a quality and flavour superior to, and more nutritious than, the best potato in its natural state, its being cooked in a few minutes, and no fire heat required, a great saving of time and fuel is effected by its use.

These great advantages, combined with the high opinions expressed in the certificates of Professors Brande, Daniell, Ure, Dr. Paris, &c., which are a guarantee as to its wholesomeness, are amply confirmed by the numerous testimonials the Patentees have received from all quarters of the globe, as also by special reports made to the Government and the Hon. East India Company, approving of it in the highest terms. Its practical utility is not confined to the mere production of an excellent dish of vegetable food; for, by the Preserved Potato being mixed with flour and *well boiled*, it produces without suet or eggs, a light and wholesome pudding; also, in bread making, pastry, soups, and a variety of other useful combinations it is alike valuable, while its great economy, portability, and facility of cooking, render it peculiarly suitable to the hurried meal of the tempest-driven mariner, the soldier on his march, or the emigrant on his voyage; in fact, all classes of persons in all situations and times, either at sea or on shore, may obtain in a few seconds a ready dish of excellent relishing food from the Patent Preserved Potato.

In addition to these advantages, the cost of the Patent Preserved Potato will be less than that of any other description of food; the Patentees, under the conviction of its extensive use, having determined to offer it to the public at a price (*delivered in London*) which does not exceed ONE PENNY PER POUND as the cooked Vegetable.

Among the numerous Testimonials, &c. in possession of the Patentees are the following:—

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 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, sago, or arrow root.

July 30th, 1842.

(Signed) ANDREW URE, M.D., F.R.S., &c.

Letter from Capt. Trotter, commander of 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 Messrs. 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. McWilliam, the surgeon of H.M.S. Albert, 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.

Report from Mr. Welsh, surgeon of the "Northumberland," conveying troops, Sept., 1841. In compliance with the desire of the Hon. Court of Directors of the East India Company.

I have the honour to report on the effects of a quantity of Edwards' Preserved Potato, sent on board the Northumberland for the use of the troops on their passage to Madras. The Preserved Potato has been served out to the men twice a week for the last ten weeks, at the rate of 2½ lbs. of the Preserved Potato to 6½ pints of water, the allowance for a mess of six men; this was found quite sufficient, and the men have enjoyed it as much as the fresh vegetable. I followed up the directions of the patentees with the first messes served out, allowing 3 lb. of the Preserved Potato to 6 pints of boiling water, I found this rather more than the men consumed, and the quantity of water too little to make the vegetable of the consistence of mashed potato. I substituted the following proportions, which made a much more consistent dish, and sufficient for six men, 2½ lbs. of the Preserved Potato, and 6½ pints of boiling water poured over it; the vessel used was the mess bowl, covered with a platter, and allowed to stand for twelve minutes, when the mashed potato was produced, superior to what was made from the fresh vegetable on board.

The Preserved Potato has kept of the same quality throughout the passage, and I feel confident if protected from damp it may be kept for any length of time without change. I consider Edwards' Preserved Potato a very valuable addition to the scale of victuals for the men, as it is equal in nutritious properties to the fresh vegetable, and as the men enjoy it as much, it must assist in keeping them in health.

JAMES WELSH, Surgeon.

MEMO.—The Patent Preserved Potato is now adopted by the Hon. East India Company, on the scale of victualling for the Troops.

Gentlemen.—I feel a pleasure in being able to forward the favorable result of your Patent Potato, for the benefit of Shipmasters and passengers going long voyages, as an invaluable article of diet at sea or on shore, where the real potato cannot be obtained, during my voyage from London to the Mauritius and Bombay, I made use of your potato upon a very limited scale, and on my voyage homewards, (having a long passage) slight symptoms of scurvy amongst the crew appeared, I immediately gave them your potato, three times a week, and I am happy to say the result was most favourable, without the use of Medicine.

I arrived in the port of London with a healthy crew, not having a man off duty with sickness, during eleven months, and I owe the greatest praise, to your Patent Potato, and I can recommend them as the most economical article of food as possibly can be obtained; and at the same time affording an excellent dish, after being a voyage to India, not losing its quality, and only requiring ordinary precaution of being kept dry; and occupying a very small space.—GEORGE CLARK, Commander of the "Vigilant," dated July 1842.

Letter from H.M.S. Wilberforce, Niger Expedition, Ascension, 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.

Extract of Letter from Capt. W. Allen, R.N., of H.M.S. Wilberforce, Niger Expedition.

Gentlemen.—I am happy to be able to give you my testimony in favour of the Preserved Potato, which I found to be quite as good as the fresh Vegetable, after having been on board H.M. steam-vessel Wilberforce more than a year, at least that which was packed in tin, I had some in barrels, which, owing to the excessive dampness of the Coast of Africa, and perhaps, to carelessness in the exposure, had lost its colour, &c., though possibly its nutritious qualities, remained in a great degree. I would strongly recommend it to be always taken in Metal cases, as the most economical way.

For Ships' crews, I think that the Preserved Potato would be found of great service, as part substitute for bread, it being usually the practice of the men, not to take up the whole of their allowance, and to exchange it for Vegetables, in harbour, they would thus have the means, if they choose, of obtaining a good Vegetable at sea.

I hope your excellent invention will receive extensive patronage, as you have enabled the longest Voyager to have a supply of potatoes, at all times, and in all climates.

(Signed) WILLIAM ALLEN.

MEMO.—Two cases of the Preserved Potato that were taken out per H.M. Steam-vessel Wilberforce are now in the possession of the Patentees, and the quality of the potato is the same as when shipped in April, 1841, for the Niger Expedition.

Gentlemen.—I have much pleasure in informing you, that I tried your Patent Preserved Potato during my passage from England to Madras, and it was the universal opinion of myself and passengers, that it was a most excellent substitute for potatoes.

Signed J. HAMILTON, Commander of the "Anna Robertson," Madras, July 20th, 1842.

Herewith are the signatures of my passengers to the above.—A. F. BRUCE, Madras civil Service; M. H. BRUCE, MARIA GILLESPIE, FREDERICA WARNER, W. H. WARNER, Lieut. Bengal Artillery; H. ROSS, Lieut.-col. Madras Army; H. P. HILL, Lieut. do. T. V. MOORE, Lieut. do. J. W. ARNOLD, W. M. HOWDEN, Surgeon, G. T. MIGLE, J. ROSS, Bengal Army; H. READ, E. J. HARDY, D. SANDERSON.

FOR CASH, and not less than one cwt. supplied, packed in Metal cases.

Samples and particulars to be had of the Patentees, EDWARDS, BROTHERS, & Co. 1, BISHOPSGATE STREET, corner of Leadenhall Street, London; and of their agents at Liverpool, Bristol, Portsmouth, Devonport, and other sea-port towns.

ANCHORAGE AT SANTA CRUZ, *Tenerife*.

SIR.—The officers of several ships that have come here for the first time, have complained that the directions in Horsburgh, for the anchorage, are extremely unsatisfactory. I think these must have been formed when the buildings of the town did not extend so far north as they do now. I send you a copy of directions I have drawn up, of which, some officers to whom they have been submitted, have expressed their approval. The bearings and depth of water I have taken from a plan of the bay given me by Lieut. Arlett, when here in the *Ætna*.

I have been much surprised to hear officers talk of this bay as a ticklish place to come to. A most erroneous notion. It is much superior as an anchorage to Madeira.

Very truly yours, RICHARD BARTLETT,
Santa Cruz, August 12th, 1842. H.B.M. Consul.

Directions.—(Compass Bearings.)

While running for the anchorage keep both leads going, and bring up to the northward of the Mole head; or, bring the clock-front of the square Church Tower on with a cupola, bearing W.S.W., and anchor with this mark on or to the northward of it.

Ships may anchor when in less than thirty fathoms. Give a large scope of chain cable. When the northernmost fort (Fort Paso Alto) bears N.N.W. the depth of water will be about twenty-five fathoms on the lines pointed out. The shore may be neared without risk, the water being deep, and no dangers that are not apparent. The anchorage to the south of the lines indicated, is reserved for vessels in quarantine. Variation 22° 41' west.

 STRAITS OF BASILAN, SAMBOANGAN, ETC.

HAVING previously drawn the attention of your readers to the difference between Mr. Horsburgh's Directory and the charts, I will now point out another instance which has lately led to rather serious consequences.

On the 15th of last June, while we were lying at anchor in Samboangan Roads, the "*Ann*," of Greenock, from China, bound to London, struck on the reef to the south-westward of the St. Cruz Islands, Straits of Basilan. This ship was aground seventeen hours, and was ultimately got off with assistance from the ships in Samboangan, after receiving considerable damage,—false keel knocked off, all the pintles of the rudder broken, and making a foot of water an hour. Had this occurred twelve hours sooner she must have gone to pieces, there being then a strong breeze with a heavy swell.

The master of the *Ann* had no suspicion of any danger in this situation. He was trusting solely to Mr. Horsburgh's chart, in which it will be seen that nothing is inserted extending above a mile from the St. Cruz Islands. This reef is at least four miles from them. By referring to the Directory however, (a copy of which was on board,) we find a statement of H.M.S. *La Sybille*, having grounded on a coral bank to the south-westward of these islands: also advice given to give them a

berth in passing. I subjoin a few bearings taken on board the *Ann*, while on shore,—Point Caldera, N.W.; Sangboys Island, W.b.S.; Easternmost Peak of Basilan, S.E.b.E; Easternmost St. Cruz Island, E. $\frac{1}{4}$ N.; Western St. Cruz Island, N.E. $\frac{1}{4}$ E.; and the mastheads of the ships which were lying in Samboangan Roads were to be seen over the Western St. Cruz Island;—estimated distance from the latter island about four miles. This, I think, is the outer verge of the reef,* the least water we found on it was 13 feet, and this shoal patch is not above 300 or 400 yards in length by 100 in breadth, other patches extend from this in the direction of the Eastern Island, between the shoal and the west point of the islands there is plenty of water; but to the westward of this point there is another shoal rather extensive, on which an American ship struck, and remained some time, immediately after the above occurrence.

I have had no opportunity of examining around these islands, yet this notice may serve to caution ships, when in their vicinity, to keep the lead going, there being anchorage, I believe, on the edge of all these banks, with plenty of drift for keeping clear; and from my own observations, when a ship, near these islands, during the night shoals the water under seven fathoms it is time to let go.

As many ships pass through these Straits, a few remarks on the town and anchorage of Samboangan may be serviceable. The anchorage off the town is not good. The bottom being foul, and the bank steep, many anchors have been lost and broken, yet when the localities are known there will be little danger of these casualties. I have anchored here four times within the last eighteen months,—the first time we lost an anchor, the chain broke endeavouring to weigh it, and the last time our anchor brought up two others. Several other anchors have been lost and broken within the same period; and the “Warrens,” of London, a short time prior to this, hove up two other anchors with her own as we did, one of which weighed 20 or 30 cwt. These facts will show the nature of the anchorage.

Immediately in front of the town, and at depths of from fourteen to eighteen fathoms, the bottom appears to be composed of large rocks, and here all the accidents have happened of which I know. Abreast of either end of the town, the fort being at the eastern extreme and the church at the western, the ground is considered more even. Some think off the fort there is better anchorage, as you then let go in seventeen or eighteen fathoms; but as a general rule it is affirmed by the coasters here, that all along this part of Mindanao from Point Caldera, the bottom is foul when in deeper water than twelve fathoms. This depth, however, off Samboangan is very close in. With fifty fathoms of chain out a ship will swing into seven fathoms, and will not be more

* The above description will serve as a useful caution to vessels navigating these Straits when in the neighbourhood of the Santa Cruz Islands. In the old chart of the Sooloo Archipelago, published by Dalrymple, in 1771, and still used by H.M. ships, there is a shoal of three fathoms mud due south of the westernmost Santa Cruz Island, and about midway between the position of the shoal above given by Captain Miller, which we have no doubt forms one of the patches extending to the eastern island to which he alludes, perhaps the same alluded to by the Sybille. If the chart in question had been on board of the *Ann* of Greenock, this would have been some, if not sufficient warning to her captain of the danger he was running on; and thus saved all the ills which followed. Horsburgh's chart ought to have shewn the shoal laid down by Dalrymple.—Ed.

than half a cable's length from the shoal water. Yet there is hardly any danger of driving in that direction, the tides being very strong, usually from 3 to 4 knots, and taking the direction of the land. It is, therefore, necessary to moor. Should a ship, in swinging, foul her anchor she will be sure to drift with it. From eighteen or twenty fathoms the water deepens very suddenly to thirty, then to thirty-five fathoms, and although this is deep water for ships to bring up in with chain cables, several have done so, and have all recovered their anchors, thus proving the bottom to be more even.

The refreshments to be obtained at Samboangan are bullocks, fowls, fruit, and yams; and in the shops many trifling articles of utility and consumption may be bought. All except the fruit are dear. A small bullock or calf, weighing about 2 or 3 cwt. costs six dollars; they are very lean, and the meat very dry. Fowls are not plentiful, but in general a few dozen may be gleaned up, the price to strangers (there being two prices for every thing at Samboangan) is from $2\frac{1}{2}$ to 3 dollars per dozen. Yams 2 and 3 dollars per pical. Fruit, consisting of pine-apples and plantains always in plenty, and tolerably cheap, also coconuts. The water is excellent and easily procured. It runs behind the beach in a fine stream, but unless filled very early in the morning it is rather thick; the whole female part of the population making a point of washing in it every day, and stirring the mud up; yet it soon settles. We have always cut our wood on the St. Cruz Islands, which I believe is customary with most ships. There is, nevertheless, plenty of it on the large island, and I have been told some of rare qualities, of which, at present, no advantage is taken.

The town of Samboangan contains about 6 or 8,000 inhabitants, of whom, perhaps, 20 are Europeans, chiefly officials. The Governor is a Lieut.-Colonel in the Spanish army; and it is said they muster here about 200 soldiers, such as they are, mostly militia; the others are convicts from Manila, this being a penal settlement. On arrival they are made soldiers, and continue so, I believe, for life, unless they can make their escape, as many do. There is also a gun-boat station here for the suppression of the Sooloo and Mindanao pirates. About 200 men are in this service, commanded by a Lieutenant in the Spanish navy. The other naval and military officers, with the exception of a Commandant of Artillery, are the coloured natives of the town.

The little trade which is carried on scarcely deserves notice. A few Sooloo proas come across occasionally, bringing Beche de Mer, or, perhaps, a small quantity of gold dust, or, the edible birds'-nests, which are bartered for cotton goods supplied from Manila. I believe no shipments of indigenous produce of any kind are made, a result not proceeding from want of capabilities in the land, or, an ill chosen situation, but from lassitude and absence of all spirit and energy in the governing party influencing the whole population.

In connexion with Samboangan, it may be observed that, the Spaniards have a small fort at Caldera, which is about seven miles to the westward, and at which place I have been credibly informed there is a secure but small haven, having four fathoms least water, perfectly safe in all weathers; and having steep shores where a ship may heave down, or, undergo any repairs, which they are able to do without assistance from Samboangan, as at present nothing of this kind may be

looked for from there. In the case of the *Ann*, (which ship it was necessary to heave out,) all that could be obtained from the authorities was the offer to store the cargo in Samboangan, then to put the ship in this port of Caldera, and they would supply the master with a vessel to go to Manila for workmen and materials to put the ship in order, although, there was attached to the gun-boat station, enough to have answered the purpose. But, being a stranger they objected to supply her from this source. Natives of the town were also hindered from entering on board to work the pumps while she made a passage to Ilo Ilo or Manila, both their own settlements, saying the men's lives were not safe on board, even should a small vessel be hired to convoy them. She ultimately proceeded to Sourabaya under convoy, but not that of the Spaniards.

ON RATING CHRONOMETERS.

*Charlotte Town, Prince Edward Island,
14th January, 1843.*

SIR.—Although chronometers are now so generally used, I have never yet met with a simple, and at the same time accurate rule, for finding the correction to the difference of longitude measured by them, which becomes necessary when it is subsequently discovered that they have changed their rates. Yet, as chronometers on board a ship are seldom or never found to have the same rate at the end of a voyage that they had at its commencement, it is manifestly a matter of some importance that simple rules, easy of application in all cases, should be given; by which either the required correction to the result of a previous computation may be directly obtained, or new and more accurate data supplied for a repetition of the calculation for the chronometric difference of longitude.

In hydrographical operations, especially, the necessity for such a rule is very apparent; and, I have, therefore, been induced to offer one founded upon the hypothesis which an experience of many years in the use of chronometers has taught me to consider as most probable:—*excepting in those cases where the daily comparison of the chronometer with a number of others, a consideration of its previous rate, or its habitual performance show us that it is inadmissible.**

Let it be supposed that, in a ship about to proceed on a voyage the errors of her chronometers on Greenwich mean time, have been ascertained by the necessary astronomical observation, and at the same time, by comparison with a former observation, their mean rates for a certain period, or number of days, previous to the last observation. With these *first* rates the longitude of the places which she calls at in the course of her voyage are approximately determined; but at the last of those places she remains a sufficient time to obtain the rates of her chronometers for another period or number of days, and finds that these *second* rates are different from the first.

It is required to find the correction to the longitude that becomes

* The hypothesis is not new, having been adopted by my respected friend and former commander, Capt. W. F. W. Owen, R.N., in his survey of Lake Ontario, in 1816; but I have applied it somewhat differently, and also endeavoured to develop its application more fully than he had occasion to do at that time.

necessary in consequence of such a change of rate, in the case of each watch separately, and under the supposition that the acceleration or retardation of its rate had been uniform.

Let v express the difference between the first and second rates; and t the number of days between the middle of the periods for which the two rates were obtained. Then will $\frac{v}{t} = r$, the ratio of acceleration or retardation per day.

Let n express the number of days for which the first rate was obtained; and p the period, or number of days for which the correction to the longitude is required:—then will $\frac{n+p}{2} \times p \times r = x$ the correction to the longitude in time.

Because $\frac{n+p}{2} \times p$ may be considered as expressing the sum of a series in arithmetical progression, the ratio of which is r , considered as a unit; the number of terms $= p$, and the first and last terms of which represent the space passed through by the watch (considering alone that part of its motion which is accelerated or retarded,) on the first and last days of p .

Or, as the acceleration or retardation is assumed to be uniform,* and to commence from the middle of the period (n), for which the first-rate was obtained; and as, moreover, the space passed through by the chronometer in the first day is equal to half the velocity acquired at the end of that day; therefore

$$\left(\frac{1}{2} n + p^2\right) - \frac{1}{2} n^2 \times \frac{1}{2} r = x.$$

for the whole amount of the space described by the uniformly accelerated or retarded motion of the chronometer in any time will be as the square of that time.

$$\text{But } \left(\frac{1}{2} n + p^2\right) - \frac{1}{2} n^2 \times \frac{1}{2} r = n + p \times p \times \frac{1}{2} r$$

$$\text{therefore } \frac{n+p}{2} \times p r = x.$$

The rule may thus be expressed in words.—To the number of days for which the first rate was obtained, add the number of days for which the correction is required; multiply half the sum by the last named number of days; and the product by the ratio of acceleration or retardation per day. The last product will be the correction to the longitude in time; which in west longitude, is minus with an accelerated gaining, or a retarded losing rate; and plus with a retarded gaining, or an accelerated losing rate; and in east longitude *vice versa*.

EXAMPLE I.

Let us suppose the ship to sail from Plymouth, and that the rate of her chronometer had been previously ascertained, by observations seven days apart, (say on the 1st and 8th of June,) to be 3.5s. gaining on mean time per day. Moreover, by the last observations the error of the chronometer was found to be 0h. 1m. 10s. fast of Greenwich mean time.

* It is, of course, not pretended that the acceleration or retardation of the rate, any more than the rate itself, is ever absolutely, or, in mathematical strictness, uniform, but only that it often approximates so nearly thereto in good chronometers as to justify the adoption of our hypothesis under certain limitations, the nature of which has been mentioned, and which must be left to the judgment of the observer.

Pursuing her voyage the ship arrives at St. Michaels, and observations for the difference of longitude are made there on the 17th of June, nine days after the last observations at Plymouth.

Chron. fast mean time at St. Michaels, on 17th June 1h. 44m. 28.1s.
 Chron. fast of Greenwich, M. T. on 8th June 0h. 1m. 10s.
 Gain in 9 days = 3.5s. × 9 = + 31.5

Chron. fast M. T. at Greenwich, on 17th June 0 1 41.5 0 1 41.5

Approximate longitude of St. Michaels 1 42 46.6 W.

Again proceeding, the ship arrives at Halifax, and the Chron. is found to be fast mean time on the 28th June 4h. 17m. 11.4s.

Chron. fast of Greenwich M. T. 8th June 0h. 1m. 10s.
 Gain in 20 days = 3.5s. × 20 = . . . + 1 10

Chron. fast M. T. at Greenwich on 28th June 0 2 20 0 2 20

Approximate longitude of Halifax dock-yard 4 14 51.4 W.

But on the 3rd of July, a second set of observations are obtained at Halifax, which, by comparison with the first set obtained there on the 28th of June, give the mean rate for the five intervening days = 5.58s. gaining.

Let us now proceed to apply our rule to find the correction; first, in the case of St. Michaels.

CASE I.

$v = 5.58s. - 3.50s. = 2.08s.$ $t = 26.$ and $\frac{v}{t} = r = 0.08s.$ the ratio of acceleration per day. $n = 7.$ $p = 9.$ therefore $\frac{n+p}{2} \times p r = 8 \times 9 \times .08 = 5.76s.$ the correction to be subtracted from the longitude according to the given rule.

Approximate longitude of St. Michaels 1h. 42m. 46.6s.
 Correction for acceleration of gaining rate - 5.76

Corrected longitude of St. Michaels 1 42 40.84 = 25' 40" 12" W.

CASE II.

For correction to the longitude of Halifax

$p,$ in this case, = 20 all else are the same, therefore $\frac{n+p}{2} \times p r = 13.5 \times 20 \times 0.08s. = 21.6$ the correction as before.

Approximate longitude of Halifax . . . 4h. 14m. 51.4s. W.
 Correction for acceleration of gaining rate - 21.6

Corrected longitude of Halifax dockyard 4 14 29.8 = 63' 37" 27" W.

EXAMPLE II.

The same hypothesis, that the rates of chronometers usually increase or decrease uniformly, will enable us to find directly the correction to the longitude of intermediate stations when the difference of longitude between the first and last stations is known, and when the rate at one of them only has been ascertained.

For instance, let us suppose the longitudes of Plymouth and Halifax to be known; that the rate of the chronometer at the former place had been ascer-

tained to be 3·5 gaining, between the 1st and 8th of June; its error on the 8th June, 0h. 17m. 50·8s. fast M. T. at Plymouth; and its error on the 28th of June, 4h. 17m. 11·4s. fast M. T. at Halifax.

Chron. fast M. T. on the 8th of June, at Plymouth 0h. 17m. 50·8s.
Gain in 20 days = 3·5s. $\times 20 =$ + 1 10

Chron. fast M. T. on the 28th of June, at Plymouth 0 19 00·8
Ditto " " " at Halifax 4 17 11·4

Difference of longitude by chronometer 3 58 10·6

Longitude of Plymouth 4° 10' 12" W.
Ditto of Halifax 63 37 27

True difference of long. 59 27 15 = 3h. 57m. 49s. 3 57 49

Chronometer gives too much diff. of long. 0 0 21·6
Or, too much longitude west.

Hence it appears, that the rate of the chronometer has increased, and if there be nothing in its previous rate of going, or in the comparisons with the other watches to prevent us, we may consider the acceleration of its rate to commence from the middle of the period (*n*), for which the first-rate was obtained. But if the comparisons indicated that the chronometer had changed its rate immediately, or soon after the ship put to sea, or if its rate immediately previous to the last seven days at Plymouth had been decreasing instead of increasing, and that there was no reason to think that it had ceased to do so before the ship sailed, then our hypothesis would be inadmissible, and we could not do better in such a case, perhaps, than take the mean sea-rate which would be found thus:—

Chron. fast M. T. on the 8th of June, at Plymouth 0h. 17m. 50·8s.
Known difference of longitude 3 57 49

Chron. fast M. T. on the 8th of June, at Halifax 4 15 39·8
Ditto " 28th of June, at Halifax 4 17 11·4

Gain of chronometer in 20 days 0 1 31·6

Gain in 20 days 1m. 31·6s. = 91·6. and $\frac{91·6}{20} = 4·58s.$ the mean sea-rate between the 8th and 28th of June.

In such a case, however, we should not by any means have the same faith in the results, as we should have in cases where there is no reason to suppose otherwise than that the change of rate had been uniform. For instance, let us suppose that the chronometer had begun to increase its rate before the seven days rating at Plymouth, and that the comparisons indicated that it had continued to do so since, we might then safely adopt our hypothesis and proceed as follows.

The chronometer gives too much longitude west by 21·6s, which is the whole accelerated motion in *p*, = 20 days; but we assume that the acceleration commenced from the middle of the period. *n* = 7 days, therefore $\frac{21·6}{n + p \times p} = \frac{1}{2} r$ = half the ratio of acceleration per day. But we may get at *r* the ratio by a more simple process, by consider-

ing that the mean sea-rate found as above belongs to the middle of the period p , as the first rate does to the middle of the period n .

Mean sea-rate between 8th and 28th answering to 18th June	. . .	4.58s.
Mean rate between 1st and 8th	}	answering to midway between the 4th & 5th
		4.5 . . . 3.50
	$t =$	$\frac{13.5}{\quad}$
		$v = \frac{1.08}{\quad}$

therefore $r = \frac{v}{t} = \frac{1.08}{13.5} = 0.08s.$ the ratio of acceleration per day.

Having the ratio we may apply our rule for the correction to the intermediate longitudes as before.

I have been induced to explain at some length the principle upon which a rule for correcting the difference of longitude for a subsequently discovered increase or decrease in the rate of the chronometer should be founded, because, as I have before remarked, a correct rule for the purpose does not appear to have been yet made public. But when we know the ratio of increase or decrease of the rate per day it is nearly as easy, (or at any rate not much more troublesome,) to repeat the calculation for the difference of longitude with a *mean rate* during the interval between the observations at the two places, as to correct the result of the previous computation with the first rate. I will, therefore, proceed to give a rule, founded upon the principle already explained, for finding the mean rate for any required interval, and from it the correct difference of longitude by the chronometer.

If it be required to know the rate at the termination of any number of days after the middle of the period n , to which the first rate belongs, it is only necessary to multiply the ratio by the given number of days, and add it to, or subtract it from, the first rate according as it may be increasing or decreasing. And half the sum of the ratio so found, for any two days will be the mean rate for the interval between them. But such a mean rate for any interval may be more directly and easily found by the following rule.

Let n , p , and r , have the same signification as before. Let a be the first rate; and m , the mean rate for the given interval. Then will $a + (n + p \times \frac{1}{2} r) = m$. and $m \times p =$ the whole loss or gain of the chronometer during the interval p . Which rule may be thus expressed.

To the number of days for which the first rate was obtained, add the number of days between the observations for the difference of longitude; multiply the sum by half the ratio; the product added to the first rate will give the mean rate, which multiplied by the number of days between the observations will give the correct gain or loss of the watch. Thus referring to Ex. I. for the longitude of St. Michaels; $a + (n + p \times \frac{1}{2} r) = m$, that is, first rate 3.5s. + $(16 \times 0.04s.) = 4.14s.$ the mean rate.

Chron. fast M. T. at St. Michaels, on the 17th of June, 1h. 44m. 28.1s.
Ditto " at Greenwich, 8th June, 0h. 1m. 10s.
Gain in 9 days, mean rate $4.14 \times 9 =$ + 37.26

Chron. fast M. T. Greenwich 17th June 0 1 47.26 0 1 47.26

Longitude of St. Michaels as before 1 42 40.84 W.

In further illustration of the subject I may add that, we might, if we wished, find the correction to the longitude deduced, from the first rate by means of the mean rate found as just explained.

For $(m - a) \times p = x$ the correction to the longitude required.—That is, the difference between the mean rate for the interval, and the first rate multiplied by the interval will give the correction required. But this, requiring a double operation, that is one for the mean rate, and another for the correction, would be evidently more operose than the rule which I have previously given and endeavoured to illustrate by Ex. I.

It will be perceived that I have used the same quantities in both examples. I have done so that the agreement in the results of different methods for finding the correct chronometric difference of longitude may be the more easily perceived.

There is one more remark which it may be useful to add, namely, that when the periods for which the rates have been obtained at two stations are equal, then half the sum of those two rates will be the correct mean rate by which to deduce the difference of longitude between those two extreme stations only; and half the difference of those two rates multiplied by the number of days' interval between the observations at those two stations will give the correction to the longitude deduced from the first rate. But when the periods of rating are unequal, or when the longitude of intermediate stations is required to be found or corrected, then the rules which I have given may be resorted to with advantage.

In conclusion I may remark, that when the rate of a chronometer is found to have *greatly changed* during a voyage, I should put little faith in the longitude deduced from it, whatever might be the hypothesis adopted to allow for such change.

Nevertheless, there are good reasons, even apart from experience, for preferring in common cases the hypothesis which I have adopted, reasons founded upon a consideration of the nature of the instrument itself; and of the varying action, as to degree of natural causes or agents on the machinery, and consequently on the performance of chronometers, subjected to such a gradual change of geographical position, and of temperature as often takes place during a voyage.

However, in all cases, quick runs between the two places whose difference of longitude is required, (and which, if possible, should not be more than ten days' sail apart,) thrice repeated in quick succession, so as to have the sea-rates during the voyage backwards and forwards, are the best mode of proceeding to insure an accurate result.

In hopes that what I have written may be useful to those who may not previously have had an opportunity of well considering the subject, which I have endeavoured to elucidate,

I remain, &c.,

HENRY H. BAYFIELD, *Captain R.N.,*
Conducting the Survey of the St. Lawrence.

To the Editor, &c.

We have taken the opportunity of annexing the following table to Capt. Bayfield's paper, not as any illustration of it, but as somewhat ENLARGED SERIES.—NO. 4.—VOL. FOR 1843. 2 G

DATE.	PLACE.	Temper. during rating.		Var. of Temper. between times.	Standard. Carter 201.	Parkinson 1826.		Baker, 1026.	Arnold, 634.	Arnold, 661.	Carter, 200.	Molyneux, 1326.	Parkinson, 1228.	Arnold, 268.	Appleton, 139.	Parkinson, 2207.	Arnold, 946.	Molyneux, 1854.	Brookbank, 848.	Arnold, 983.	Temper. between periods of rating.	
		Mean.	Extrem.			Max.	Min.															
16th and 24th II.	Nassau	73	3-5	0	+0-35	+1-32	+0-03	-0-48	-0-95	+0-88	+0-96	+0-88	+0-95								0	0
24th and 17th III.	Havana	78	3-5	3	-0-05	2-05	6-91	0-08	0-38	4-32	2-99	4-07	4-32								0	0
23rd III. and 1st IV.	Sisal	75	4	3	0-25	2-28	6-85	+0-97	0-55	3-95	5-53	4-43	4-43								79-5	73
16th III. and 21st IV.	L. Arenas	76	6-5	0	0-12	2-72	8-02	-0-48	0-22	3-66	4-14	3-78	3-78								81-5	76
10th and 21st V.	L. Contoy	79	5-5	0	-0-21	2-14	8-02	-0-48	0-56	3-86	3-65	3-71	3-71								83-5	73
27th VI. and 2nd VII.	Nassau	82	2-5	+	0-32	2-48	8-59	-1-18	0-88	2-88	2-82	3-82	3-82								84	81
25th IX. and 2nd X.	Nassau	83	3	+	0-05	3-97	9-85	stop'd	0-24	4-29	3-14	stop'd	3-62								77	70
12th and 19th X.	Bermuda	76	5	3	+1-02	4-65	11-17		0-97	6-23	3-39										77	70
21st and 28th X.	Nassau	70	8	13	2-35	5-69	12-28		1-62	6-23	3-22										77	70
26th II. and 2nd III.	Jamaica	80-1	2	7	2-02	5-97	12-15		2-22	6-32	3-77										85	82-5
14th V. and 19th V.	Canary Islands	83-5	2-5	10	1-59	6-23	11-89		1-89	6-41	3-59										86	84
12th and 16th VII.	L. Cayman	85	2	7	1-89	6-61	12-31		2-19	6-61	3-30										86	84
1st and 8th VIII.	Nassau	84-9	3-5	3-5	2-01	7-02	12-62		2-85	6-66	5-98										86	82-5
23rd VIII. and 3rd IX.	Nassau	83-5	3	4-6	2-27	7-01	13-09		2-85	8-22	5-10										86	82
30th X. and 3rd XI.	Ginger C.	80-5	2-5	7	2-78	7-23	11-26		3-46	8-13	5-71										86	82
8th and 15th XII.	Gt. Bahama Bk.	73-5	6-5	13-5	3-71	8-12			3-54	9-20	7-11										77	70
23rd and 30th XII.	Nassau	68-9	10	5	3-96	7-90	14-34		2-97	9-43	7-49										77	70
27th I. and 5th II.	Nassau	74	9-5	10	3-86	8-06	14-35		3-52	9-58	6-91										77	70
1st and 5th III.	St. John's	80-4	2-5	10-5	3-69	7-66	14-16		3-36	8-96	6-49										77-5	68
3rd and 7th V.	Chagres	82-7	3-0	5	3-55	7-42	13-95		3-42	9-05	4-72										81	79
11th and 18th VI.	Cayman	83-5	3	4	3-93	7-45	14-18		3-38	8-93	6-18										81	79
14th and 17th VII.	Nassau	83-5	3	4	4-16	7-56	14-23		3-30	8-90											83	83
27th VII. and 3rd VIII.	Nassau	83-5	3	4	4-40	7-68	14-34		3-41	9-25	6-34										83	83
8th and 15th X.	Bermuda	76-4	6-5	10	5-40	7-26	15-10		3-16	10-60	6-92										88-5	82-5
23th and 30th X.	St. Thomas	84-1	2-5	2-5	4-77	7-03	14-77		2-89	9-97	6-01										84	82
10th and 14th XI.	St. Domingo	77-5	4-5	8-5	5-33	7-45	15-13		2-75	10-43	5-78										79	72-5
23th and 29th XII.	Nassau	75-7	3-5	11	5-55	7-32	15-22		2-40	10-90	6-87										82	76
8th and 14th III.	Nassau	75-5	2	9	6-09	7-91	15-44		2-89	10-76	6-66										77	73-5
19th and 24th IV.	Nassau	76-5	5-5	5	6-03	8-27	13-69		3-81	11-11	7-25										76	74-5
19th and 24th V.	Nassau	76-5	5-5	6-5	5-72	8-20	15-55		36-2	11-29	7-25										3-01	17-63
5th and 11th V.	Charlotte	73-4	5-5	7-5	5-78	7-24	15-53		4-00	11-29	5-78										3-20	5-43
20th and 24th V.	Delaware	67-1	12	13	6-14	7-81	15-66		3-11	11-24	4-40										3-26	17-30
24th and 28th V.	Delaware	72-6	4	5	6-11	7-53	15-43		3-21	11-36	4-40										9-88	16-98

P. 1228 stop'd in the hurricane; A. 634 stop'd soon after; A. 268 and Ap. 139 brought out by transport; C. 200, P. 1826, & M. 1826, voyage to Pacific.

connected with the subject; as it shows in a remarkable manner, the tendency which most chronometers have to accelerate their rates in gaining. The table presents the rates of some chronometers employed by Commander Barnett, in the West Indies, through a period of three years, and shews that those which have originally a gaining rate increase the ratio of gain, while at the same time those which have originally a losing rate, decrease the ratio of loss, until they acquire a gaining rate, or in other words keep continually gaining, and accelerate their gain. The months are expressed in Roman characters.

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### REMARKS ON CAPTAIN FITZROY'S BILL.

I HAVE perused Capt. FitzRoy's proposed Bill, and am ready to grant that, if passed into a law, it will be a boon to the Merchant Service; but I am decidedly of opinion that, it is neither sufficiently comprehensive, nor suitable in some of its details. I would at once have an act introduced into Parliament for the *general government* of the British Merchant Service, making the examination scheme one of its component parts.

For this purpose and for the general management of the act, I would appoint only two principal Boards of Commissioners, five to be resident in London, and three in Liverpool. Two of the London commissioners *might be* chosen from officers of the Navy, of not lower rank than lieutenant, who should be well acquainted with the theory and practice of navigation,—have traded to places beyond, either the Cape of Good Hope or Cape Horn, and commanded a British merchantman at least five years; all the other commissioners to be chosen exclusively from the Merchant Service, one of each of the London and Liverpool Boards possessing the same qualifications as above mentioned, the others to be also well versed in navigation,—to have traded to places beyond the Atlantic, and commanded a British merchant vessel at least five years. Four of the commissioners to have salaries of at least £500 per annum, the remainder £400; a secretary to each Board with salaries of £150, and treasurer to the London Board with a salary of £300 per annum. Two of the commissioners to be chosen by the Hydrographer of the Admiralty, with the consent of the Lords Commissioners, two by the Trinity-House, and one by the respective underwriters of London, Liverpool, Glasgow, and Bristol. The London Board when constituted to choose a board of three commissioners to be resident at Leith, from masters either in the Foreign or Baltic trade, who have commanded a British vessel at least five years; salary of each member £200 per annum; secretary £70. This board only to examine mates and masters for the Baltic and coasting trade, or to places between and including the White Sea and Cape Finisterre.

The principal boards also to examine for the coasting and Baltic trade, but all mates and masters for the Foreign trade to be examined only by the principal boards. Certificates for mates in Foreign trade to cost when issued £1, for coasting or Baltic trade 15s.; for masters in

Foreign trade £2, in coasting or Baltic trade £1 10s. Renewal of certificate for loss, mates 5s., masters 10s.

I consider that no more than two classes of commanders, should be made imperative, but that, if applied for, and after extra examination, and as a proof of superior talents or capabilities, honorary certificates should be granted free of expense. No master or mate who has been so for six months previous to the operation of the act, to require examination, unless at their own request, but certificates of exemption to be granted. Any masters, however, who after the operation of the act, shall either lose or strand the vessel under his command, shall, previous to again taking command, under a heavy penalty, appear before either of the two principal boards on his arrival in England, and with at least one officer, and two other witnesses from the crew, be examined as to the cause of the loss or stranding, which, if proved to have arisen from the master's neglect, or misconduct, or want of knowledge, then his certificate to be cancelled, either wholly or for a temporary period. Mates, if culpable, also to be punished in the same manner.

No difficulty can be experienced in attending any of the boards here named, as steam affords now a speedy and cheap communication all over the country. Increasing the number of boards not only increases the expenses of the establishment, but adds to the chance of undue influence and improper management.

One of the commissioners from the London and Liverpool Boards to attend one of the police offices in each place, at least two days in each week, to give advice and assistance to the magistrate, in adjudging all nautical cases; all these cases to be brought only before that magistrate, and only on these particular days.

The London Board, immediately when established, to fix a scale of provisions for the Merchant Service, arranging the quantities of each article, after the manner it is done in the Navy, only increasing these quantities when necessary. Provisions to be regularly issued in all foreign going vessels according to this scale, and, if the crews do not draw the quantity allowed, to be paid for their savings at the end of the voyage, at rates fixed annually by the board.

All log-books for British merchantmen, to be issued to each chief mate, of the respective vessels, from the respective custom-houses in Britain, when the vessel is entered outwards for loading. The first leaf of these log-books to contain, and be used as, and instead of, the present ships' articles or muster-rolls; on the second leaf a list of all passengers in the vessel during the voyage, their occupation, destination, &c. Log-books to be of various sizes according to the length of proposed voyage, and each page to be numbered and stamped. All log-books to be returned to the custom-house where the vessel enters homeward; certificates of such deposition to be produced to the searching officer, and all leaves to be complete under pain of withdrawal of mate's certificate. Log-books being thus used instead of muster-rolls, not to be deposited with consul abroad, but produced when necessary under the usual penalty. Log-books to cost two-pence each leaf to go to the general fund.

The whole of the Merchant Seamen's Fund also to be entirely under the management of the London Board; vessels to pay their Hospital

Money every voyage; and wherever they discharge their cargoes, all the proceeds to be remitted to the general fund. Two hospitals to be constructed, one at London, and the other at Liverpool, on the general plan of Greenwich Hospital, for in-pensioners on the fund, each under the management of its respective board. Each separate sea-port to have a local and honorary board, consisting of chief magistrates, clergymen, and collector and comptroller of customs, who will recommend a number of seamen or widows for out or in-pensions annually, according to the number of men employed in vessels actually belonging to such sea-ports. Funds for building hospitals to be borrowed at present, and gradually liquidated from the general fund. All penalties under this act, prices of log-books and certificates, as well as all hospital monies to be paid to the London Board; and, if necessary, to meet the salaries and pensions, which will also be paid by the same board, a tax of two-pence per register ton per annum to be levied on all British vessels, payable yearly.

The act of 1834, called Sir James Graham's, to be completely revised and altered, and placed in the general act. The part relating to payment of wages, and recourse of seamen, or masters, and owners to remain generally as it is; but, to be quite altered as regards punishments and penalties on seamen. Our consuls in Foreign ports, police magistrates in British colonies, and captains and commanders of British men-of-war, either at sea or in harbour, to be not only empowered but obliged to adjudge all cases brought before them, either by master or seamen. Temporary refusal of *lawful* commands of master or officers, to be punished by forfeiture of three months' wages if due, or, solitary confinement and hard labour for six months. Aggravated cases, forfeiture of all wages and additional imprisonment, or other summary punishment according to circumstances. Striking master or officer, or other mutinous conduct, transportation according to offence. Any offence occurring at sea, when it may be necessary, for example and safety of vessel, to be punished at once; master to do so only with consent of at least one officer, circumstances to be fully stated in log-book; and seamen to have recourse, when on shore, if he considers himself aggrieved. Seamen to be allowed to enter for men-of-war as usual, but if they enter purely to escape punishment for some offence committed in a merchantman, they are first to suffer punishment for the offence before entering.

Such are, shortly and concisely, the principal enactments I should wish made in a general act for the management of the Merchant Service, many alterations, amendments, and various details, would of course, be made, and attended to, in framing such an act. I am extremely surprised at the opposition raised in this country to Capt. FitzRoy's Bill, particularly by the ship-masters themselves, I cannot, therefore, expect my present project to be well received; but, I most firmly believe, that until some such general act becomes the law of the land, the British Merchant Service must remain in its present degraded state. I write after considerable experience, and both as a master, and holding a small interest in shipping, have not come to the above conclusion without the most deliberate conviction of the necessity of the measure.

I think the enactments above proposed, requiring the examination of masters after a stranding or loss of the vessel under their command of

vital importance, as well as that requiring stamped log-books. These two clauses alone, if carried into effect, would exhibit a picture of the Merchant Service, of which, the British public have no conception.

The assistance to the police magistrate, I also consider very necessary, as it is impossible for any man, to judge between a master and his crew, who does not from experience understand their relative situations afloat.

The management of the hospital fund is notorious, and loudly and justly complained of.

I am sorry that circumstances have obliged me, at present, to treat this interesting subject, in such a short and unsatisfactory manner. I am quite prepared at any time to bring forward abundant proof, from actual observation, of the necessity of all the changes I propose; and, I am thoroughly convinced that the measures advocated are neither too stringent nor uncalled for.

MEXICANO.

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NOTICES OF JAPAN.—No. XI.

(Continued from p. 93.)

At these entertainments, each guest is served with a portion of every dish in a small bowl. Another bowl is placed beside him, and kept constantly replenished with rice, whilst the sauces and other condiments, of which, besides soy, are salted ginger and salted fish, are handed round by the servants of both sexes, who are in constant attendance. The viands consist of every kind of vegetable, (seaweed not excepted), of game, including venison, poultry, and fish. The last, however, is the standing dish at every Japanese table, answering to the English dish of meat. Every species is eaten, down to the very coarsest; the lower orders feasting upon all parts of the whale, even upon the sediment from which the oil has been extracted. But to return to the entertainment.

These banquets usually consist of seven or eight courses, during the changing of which the master of the house walks round, drinking a cup of saké with each guest. But the grand object in giving a dinner is said to be less the assembling a cheerful party, than the exhibition of the abundance, variety, and magnificence of the china and lackered-ware—called by us Japan—possessed by the founder of the feast; and no compliment is so agreeable or flattering to the master or mistress of the house, as admiration of the table-service, and inquiries concerning the price of the different articles.

Tea, made in the ordinary way, or boiled in the tea-kettle, is drank at all meals, and indeed all day long, by all classes. But there is another mode of preparing tea, which, on account of its expense, through the various utensils and implements employed in its concoction, all of which Japanese etiquette requires to be ornamental and costly, is wholly confined to the higher ranks, and by them given only upon grand occasions, and in great ceremony. It may be called the form of *un*

*thé* in Japan. The expense must consist wholly in the splendour of the lackered bowls, silken napkins, &c., without which this tea cannot be offered, since the materials and process, as described, convey no idea of extravagance. The finest kinds of tea are ground to powder; a tea-spoonful of this powder is put into a bowl, boiling water is poured upon it, and the whole is whipped with split bamboo till it creams. This tea is said to be a very agreeable, but very heating beverage.

When company are invited to such a tea-drinking, the room in which they are received must be adorned with a picture of the philosopher and bronze Daruma, its inventor probably, as he appears to be esteemed its patron kami, or saint. The decoration of a reception-room, according to this and other occasions, is, in Japan, a science not to be easily acquired. In a handsome Japanese drawing-room, there must be a *toko*—that is to say, a sort of recess, with shelves, expensively wrought of the very finest woods. In this *toko* must be exhibited a single picture—no more; beneath which must stand a vase, with flowers. Now, not only must the picture be suited to the particular occasion, and therefore constantly changed, but the flowers must be similarly adapted; the kinds, the variety, the number, and even the portion between the green leaves and the gay blossoms, all vary according to the occasion. The laws that govern these variations are formed into a system, and a book, treating of this complicated affair, is one of those studied by young ladies at school.

The Japanese are very sociable, despite their ceremonious nature; and, in these properly decorated apartments, they habitually assemble in considerable numbers, where the ladies sometimes occupy themselves with ornamental work, sometimes with music and dancing. At these parties, various sorts of games are likewise played; of each of these amusements, a few words must be said.

Of music, the Japanese are passionately fond, and their traditions give the art a divine origin. According to this account, the sun goddess, once upon a time, in resentment of the violence of an ill-disposed brother, retired into a cave, leaving the universe in anarchy and darkness. Music was devised by the gods to lure her forth. But, though it evidently succeeded, Japanese music, as described to us, corresponds but ill with the high purpose of its birth. It has, indeed, produced many instruments—stringed, wind, and of the drum and cymbal kind—of which the favorite is the already-mentioned *samishen*.\* But with all this variety of instruments (twenty-one in number), the Japanese have no idea of harmony; and when several are played together, they are played in unison. Nor are they proficient in melody; their airs, we are told, boasting neither “wood notes wild” nor any portion of science. Yet to this music they will listen delightedly for hours; and the girl must be low-born and bred indeed, who cannot accompany her own singing upon the *samishen*. And this singing is often

\* The *samishen* is a three-stringed guitar, and is usually played with a plectrum. The Japanese are acquainted with most of the musical instruments known among the Chinese, as well as others of their own invention, of which the *samishen* is one; one account, however, says it is from Lewchew. The *koto* (in Chinese *kin*) or scholar's lute, the *biwa* or guitar, pipes, drums, and clarionets or flageolets, are among the common instruments.

extemporary, as it appears that there is scarcely ever a party of the kind mentioned, in which some one of the ladies present is not capable of improvising a song, should occasion offer.

The dancing is of the oriental style (pantomimic), and depending upon the arms and body, rather than the feet, which remain nearly immovable, and concealed beneath the robes; it is, in fact, pantomimic in character, and generally designed to represent some scene of passion, absurdity, or every-day life. These domestic ballets are performed by the ladies, the men gazing in rapturous admiration; although the utmost praise their Dutch visitors can bestow upon the exhibition is that it is perfectly free, as might be anticipated from the character of the dancers, from the indecent and licentious character of those of the oriental dancing-girls. The country does not appear, however, to be destitute of this class of performers.

Cards and dice are prohibited, and although the law is said to be secretly transgressed in gaming-houses, at home the Japanese respect it and resort to other kinds of games. Chess and draughts are great favorites, as is one resembling the Italian moro. Another game seems original. A puppet is floated in a vessel of water, round which the company stand, playing the samishen, and singing as the puppet moves. As it turns, penalties of drinking saké are imposed, as in wrong guesses at the Japanese moro, and the like opportunities for forfeits. Upon occasions of this kind, the trammels of ceremony are completely broken, and the most extravagant merriment prevails, often ending in results, very contrary to English notions of the temperance of tropical and oriental climates. Saké is drunk, as a penalty or voluntarily, to intoxication by the men, who then sober themselves with tea, and again inebriate themselves with saké, until, after several repetitions of the two processes, they are carried away insensible.\*

In summer, their joyous meetings usually take the form of rustic, and especially water-parties, formed expressly for the enjoyment of fine scenery. Large companies will spend the afternoon, evening, and part of the night upon the lakes, rivers, or innumerable bays, of the sea, in their highly-decorated boats, with music and banquets. During the heat of the day, they lie moored in some shady nook, protected from the sun's rays, but open to the sea breeze, whence they command a pleasing view. In the evening, the waters resound with music, and are illuminated with the moving lights from the colored paper lanterns of the several boats.

In order to divert the company, should conversation flag, and their own music pall on the ear, professional musicians, jugglers, posture-makers, and the like, are hired for the day. To these are added a variety of the story-telling genus, very different in character from the ordinary members of the profession in the East. These persons make

\* The game here referred to called moro, is like the micare digitis of the ancient Romans; it is common in China. It is nothing more than guessing how many fingers will be turned down the instant they are bent. There is another play resembling it, consisting in guessing which hand holds a ball. Chess, called shiyogi, is a favorite game, and is played by all classes. The boards are painted upon a small table about a foot high, and contain eighty-one squares, with twenty men on each side.

it their especial business to learn, not romances, but all the gossip of a neighbourhood, which they retail for the entertainment of their employers. Some of these traders in scandal are frequently hired to relieve the tedium of a sick-room; but those engaged to divert a party of pleasure, have a second and somewhat startling duty—it is, to set an example of politeness and high breeding, to improve the tone of the society that requires their service. These, not very homogeneous, functions they are said to combine in a most extraordinary manner. We are assured that, although, in their capacity of amusers, they indulge in extravagant buffoonery, rudeness, and impudence, they remain perfectly self-possessed, and at the proper moment, resuming their polished demeanour, recall the whole company to order and good breeding.

From the pleasures and forms that mainly occupy the life of a Japanese, we must now turn to its closing scene; and, having begun with his birth, end the chapter with his burial. But first, we must advert to the length of time during which death occasionally precedes burial. Many Japanese of the higher order die *naibon*, either in the course of nature or by their own hands. If a man holding office dies, his death is concealed—it is *naibon*—and family life proceeds apparently as usual till the reversion of his place has been obtained for his son. If such a person be deeply in debt, the same course is adopted for the benefit of his creditors, who receive his salary, whilst he, though well known to be dead, is nominally alive. Again, if he has incurred any disfavor, or committed any offence, the conviction of which would be attended with disgraceful punishment, confiscation, and corruption of blood, he probably rips himself up, either in his family circle, if any good to his family be contingent upon his death's remaining for a time *naibon*, or publicly, in a solemn assembly of his friends if the object be solely a satisfaction of justice, and obviating of punishment.

When the necessity for the *naibon* ceases, or when a Japanese openly dies, either naturally or by the national *hara-kiri*, the first symptom of mourning that appears, is the turning all the screens and sliding doors throughout the house topsy-turvy, and all garments inside out. A priest then takes his place by the corpse. The family is supposed to be too much absorbed in sorrow to admit of their attending to the minor cares and preparations requisite upon the melancholy occasion; wherefore, they are permitted to weep in unmolested solitude, whilst their most intimate friends supply their places in all matters of business or ceremony. One of these kind substitutes directs the laying out of the corpse, whilst another orders the funeral. One stations himself at the house-door, in his dress of ceremony, to receive the formal visits of condolence paid by all the friends and acquaintance of the deceased, (sometimes in person, but very frequently done by a servant coming with his master's condolence,) and paid outside the door, to avoid the impurity incurred by entering the house of death. The digging of the grave is superintended by a fourth friend. This is situated in the grounds of a temple, is shaped like a well, and lined with strong cement to prevent the infiltration of water. If the deceased be married, the grave is usually made sufficiently capacious to receive husband and wife. A monument is prepared, bearing the name of the deceased, and, if married, the name of the survivor is added in red letters, to be black-



ened, or sometimes gilt, when this surviving partner shall rejoin in the grave the partner who has gone before.

When all preparations are completed, the corpse, washed, and clad in a white shroud, on which the priest has inscribed some sacred characters as a sort of passport to heaven, is placed, in the sitting posture of the country, in a tub-shaped coffin, which is inclosed in an earthenware vessel of corresponding figure; and the funeral procession begins. This is opened by a number of torch-bearers, who are followed by a large company of priests, bearing their sacred books, incense, &c. Then comes a crowd of servants carrying bamboo poles, to which are attached lanterns, umbrellas, and strips of white paper inscribed with sacred sentences. These immediately precede the corpse in its round coffin, borne upon a bier, and covered with a sort of white paper chest, having a dome-fashioned roof, over which a garland is suspended from a bamboo carried by a servant. Immediately behind the body walk the friends and acquaintance of the deceased, in their dress of ceremony, accompanying, attending, and surrounding the masculine portion of the family and kindred, who are attired in mourning garments of pure white. White mourning is also worn by the bearers and household servants of the deceased. The procession is closed by the ladies of the family and their female friends, each in her own palanquin, attended by her female servants. The palanquins (*norimono*) of relations are distinguished from those of friends by the white mourning dresses of the attendants. In families of lower rank, the female relations and their friends walk after the men.

The sorrowful train is met at the temple by another body of priests, who perform a funeral service, and the corpse interred to a peculiar sort of funeral music, produced by striking copper basins. During this ceremony, two persons, deputed from the house of death, sit in a side chamber of the temple, with writing materials, to note down the names of every friend and acquaintance who has attended.

Funeral ceremonies differ very much in the several principalities. The ability of a family to incur the expense of a funeral, the condition in life of the deceased, his age, his religious belief, or the local customs of the place, all combine to alter the ceremonies observed at his interment. One account will not apply to all parts of the empire. The funeral regulations of the different religious sects are adhered to by every one belonging to them, and priests are called in at every well ordered obsequies, by whom much of the business is directed. There are three modes of disposing of the remains of a person; by burying the dead body in a grave, which is called *doso*; by burning it and interring the ashes contained in an urn in a grave, which is called *kwaso*; and by throwing the corpse into the ocean, called *suiso*, which is now disused.

When a person dies, his body is washed, and laid out with the head to the north, and face looking westward, the hands being clasped upon the breast; this custom is said to have some reference to the fox, which is supposed to compose himself in this manner to die. The shroud is of white, but we are told that in Owari, it is sometimes made of paper, with long extracts from the books of the Budhists printed upon it. The head is usually shaved, and in some places the hair is placed in

the coffin; the short sword of a nobleman, or a wooden substitute is also put into the coffin. The mode of burying in a tub is too expensive for all classes, inasmuch as the tub must also be inclosed in a square coffin; therefore some content themselves with a simple coffin, in which the body is placed in a reclining posture. Double coffins are sometimes made; in rare cases the body is said by Titsingh to be surrounded with cinnabar to preserve it. These various duties, besides many others which society imposes of a condoling nature, are performed by the relations and family priest, assisted by the members of the household. It is customary to send for the priests as soon as the person is dead, who chants hymns, prepares the *ihai*, or ancestral table, with the *koï-miyô*, or temple designation of the deceased.

In some places, it is not usual for the women to accompany the body to the grave; but whatever male relative does so must be dressed in a white *kamishimo* or dress of ceremony, without the coat of arms upon it. Friends who aid the funeral procession wear a blue dress. The body is brought out of the house by the eldest sons, but carried to the grave either by retainers, by domestics, or by professed undertakers; the bier is carried on the shoulder, if a man of rank, or in the hands, if a commoner. The eldest son, called *ato-tsugi* in this case, follows first as chief mourner; the rest of the procession is as described above. Gongs and cymbals and other kinds of music are used by some persuasions; others omit all music. After burial, the friends are politely thanked for their kindness in attending the obsequies, and are afterwards visited when the period of mourning is over. We cannot ascertain that the grave is lined with cement, and that it is not always situated in the ground of a temple, we had opportunity of seeing at Sataiira in Satzuma, when anchored there in the ship *Morrison*, where an extensive graveyard was seen near the seashore, far removed from any dwelling.

The ceremonies of interment are the same when the corpse is buried; it is then, however, carried to the family temple and not to the grave, where the priest reads and chants the prescribed forms. Burning is more prevalent in large cities and places where land is expensive; in the suburbs of *Obosaka* are many burning pits, near which *ombo* live, who procure their livelihood by burning the dead. The mode of burning is thus described by M. Titsingh, with whose account our information mainly coincides.

"The *kwan* or bier is previously carried, with all the ceremonies enumerated above, to the temple, where, after the reading of the last hymn, it is taken up by the bearers, and carried to the *okubo*, followed by the relatives and friends. In the centre of this hut is a large well of freestone; outside of the door the tub or coffin is taken out of the *kwan* by the servants of the deceased, or by the bearers, and placed over this well, in which the *ombo*, a class of people very little better than beggars, keep up a great fire with wood till the body is consumed. Each of them has two poles of bamboo, with which he picks the bones out of the ashes. The first bone is taken up by two of these *ombo* with four sticks, which is called *aribasami*, or, to lift up on opposite sides. For this reason two persons will never lift up together any meat or food whatever with the sticks, they use for eating: it would be an omen of

ill luck. The ombo deliver this bone with their four sticks to the eldest son, or the nearest relation, who is provided with an earthly urn, into which he puts the bone with his right hand. The other bones are collected by the servants or the porters, and poured with the ashes into the urn, the mouth of which is closed up with plaster.

“ While the body is consuming a priest reads hymns; the friends remain outside the okubo in the road. The bearers then take up the urn, and carry it in their hands to the grave, to which flowers, the sioko, and the kwan are likewise carried; but the flags and lanterns are thrown away, or given to beggars. The parents, the friends, and the priest who reads the hymns, follow the urn to the grave, in which it is immediately deposited. It is filled with earth, on which is laid a flat stone; this is also covered with earth, and after it has been well stamped down and levelled, the kwan is placed over it. At the expiration of forty-nine days, the kwan is removed, and the si-seki or grave-stone put in its stead.”

In former times, obsequies were, in many various ways, far more onerous; for it seems that, even in secluded and immutable Japan, lapse of years has wrought its ordinary, softening effect, and lessened the propensity to make great sacrifices, either of life or property. In the early times alluded to, the dead man's house was burnt, except so much of it as was used in constructing his monument. Now it is merely purified, by kindling before it a great fire, in which odoriferous oils and spirits are burnt. At that period, servants were buried with their masters, originally, alive; then, as gentler manner arose, they were permitted to kill themselves first; and that they should be thus buried, was, in both cases, expressly stipulated when they were hired. Now, effigies are happily substituted for the living men.

The mourning is said by some of our writers to last forty-nine days; but this must mean the general mourning of the whole family, inasmuch as Dr. Von Siebold expressly says that very near relations remain impure—which, in Japan, is the same thing—as much as thirteen months. It appears, also, that there are two periods of mourning in Japan, as with us a deeper, and a subsequently lighter, which may help to explain the discrepancy. During the specified forty-nine days, all the kindred of the deceased repair daily to the tomb, there to pray and offer cakes of a peculiar kind, as many in number as days have elapsed since the funeral; thus presenting forty-nine on the forty-ninth day. On the fiftieth day, the men shave their heads and beards, which had remained unshorn and untrimmed during the seven weeks. All signs of mourning are laid aside, and men and women resume the ordinary business of life, their first duty being to pay visits of thanks to all who attended the funeral. It should be added, however, that for half a century, the children and grandchildren of the deceased continue to make offerings upon the tomb.

*(To be continued.)*

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### PROPOSED FLOATING BREAKWATER.

THE different floating breakwaters which have been proposed, since they only sink in the water a certain distance, 15 or 20 feet, will not I consider stop the action of high waves, as the undulation will pass under the floating body as it does under a vessel at sea.

This has led me to consider how such a breakwater might be brought almost in contact with the bottom, and I propose to effect it by forming a strong framework of fir, anchored by stout chains attached to moorings or Mitchell's screws.

The specific gravity of fir timber would keep the frame in smooth water nearly perpendicular, and in a gale it would lean over; but as the sea must break upon it, even if it passed over it, the wave would be sufficiently lulled to give almost smooth water behind it.

The annexed sketch, Fig. 1 and 2, will be sufficient to explain the proposed plan.

Fig. 1.—Elevation.

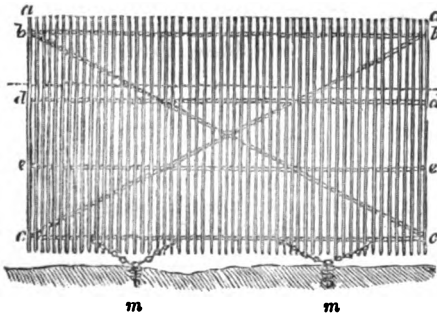


Fig. 2.—Section in a Gale.

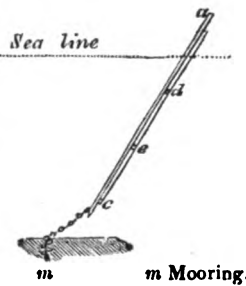
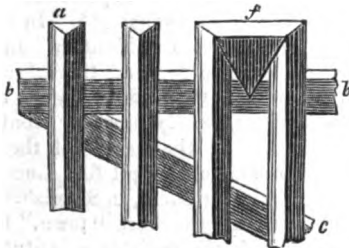


Fig. 3.—Part of Elevation enlarged.



The construction of the framework is shewn in Fig. 3; viz. 12-inch logs cut diagonally and framed strongly together *bc, dd, ee, cc*. It is evident however, that common English fir would answer the purpose.

The insertion of a triangular piece between the logs, as shown at *f* Fig. 3, would give strength, and throw the water up on reaching that point.

Each frame to be 100 feet in length, and in height five-fourths of the depth of water at high tide, say 60 to 80 feet. The number of these frames will depend on the shelter required. They would not be brought into contact, which would I consider, be an advantage since an accident to one would not affect the others. But if connection were found advisable this might be effected by a pliable substance, as choir rope, and the same loaded with weights might be attached to the bottom of

the frame, if the ground from rocks, &c., did not allow the frame to come sufficiently near to the bottom.

The beam of a vessel of war being about 50 feet, if one anchor enables her to ride with her masts, &c., two should be ample for a frame work of 100 feet, particularly if a space of one-third or one-fourth is left between the timber Fig. 3 to allow a passage for a portion of the water. Indeed, under circumstances, one mooring with two chains would probably be quite sufficient for each frame.

The timber might be protected from the worm by Mr. Payne's invention, and if the frame lost its buoyancy, as by an accumulation of weeds, &c., it might be restored by placing a buoy or hollow iron cylinder at *d*, in the section Fig. 2.

By a rough calculation I consider the experiment might be tried with one frame, for £700.

I need not contrast the expense of such a work with the millions proposed for each harbour of refuge, by the commissioners appointed some years ago to report on the south-east coast.

This also could scarcely cause any accumulation of deposit, which in any stone work to be erected is always to be found, and if it did not answer in one situation it could be removed to another.

45, Pall Mall, Feb. 2, 1843.

J. W. PRINGLE,  
Captain Royal Engineers.

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#### NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR. *Port Royal and its Associations.*

(Continued from p. 100.)

THE names of the harbours, bays, and other inlets of this island have been greatly altered since we gained possession of it about 187 years ago; not only have most of the Spanish names been superceded by English, but these also, in some cases, have been exchanged. In an old map of the island, I find Montego Bay written "Montica," and sixty or seventy years ago it was called "Mondego." Had there been an isolated, or, conspicuous mountain, we might with some degree of probability have considered that it had been originally named "Monte Jago," as the Spaniards were fond of bestowing the names of their saints to the lands they discovered. In the same old map I find Lucea termed "St. Lucy," which is altogether English, (Lucia, in Spanish.)

The inhabitants of these two places never use the word "town," to the collection of houses which constitutes one, but invariably substitute the hydrographical term "bay." If you ask any person, whether white or black, who may be descending from the mountains to either place, Where he is going? he will answer, "To the bay;" that is, to Montego bay, or, to Lucea bay, as the case may be; but never to the "town" of either one or the other. This mode of designation seems to be peculiar to these two places along the coast. The houses of these towns, and, indeed, throughout the island, are principally constructed with

wood; some, however, have the basement of stone; but there are few entirely built of that material. The windows are jalousied, by which contrivance the air is admitted freely, or, excluded, at the option of the inmates of the house, with the slightest effort of the hand. When the blind is placed in a horizontal position, external objects can be readily viewed from within a room; and there is, generally, a telescope poised between two of the vanes of the blind, for the purpose of more minute observation. The jalousie is a large sort of Venetian blind which is simply and ingeniously contrived to assume a vertical or horizontal position at pleasure. Some of the dwellings, which are situated on elevated land, exposed to the norths, are provided with a few glass windows; but the majority are without them.

The rooms in the generality of houses are all upon one floor, which is often raised from the ground; but there are a very few which have the bed-rooms upon a second story. The floors, whether of mahogany or other wood, are neatly polished; the operation is performed by the young negroes, with roasted Seville oranges, (locally called "bitter and sweet,") and bees'-wax, early in the morning, under the superintendance of an old domestic matron, whom the girls call "granny." The old dame keeps up strict discipline among the youthful fry, and exercises a complete control over her maidens. The beds, generally of feathers, which is extraordinary in so warm a clime, are furnished with fine gauze curtains, termed "Musquito-nets," as they are designed to keep out the tormenting insect-fly of that name, without excluding the air, if any should be in motion; which, indeed, is seldom the case.

There is no possibility of excluding the musquito from the bed-rooms; but, centipedes and scorpions—equally as offensive as the former—from the extreme care and cleanliness observed, seldom intrude, in the more respectable dwellings; where, however, the floors are laid close to the ground, these, and other insects, and even reptiles will occasionally obtrude. If the four heels of the bed-posts were each placed in a bowl half filled with oil, the smaller crawling insects would be effectually excluded from entering the beds.

It appeared to me that the houses of the French West India isles were much cooler than those of Jamaica, from having the floors laid with flat dead tiles, *i.e.* not glazed or polished; and both that nation and the Spaniards use more stone in the construction of their dwellings than the English do in this part of the world. I do not know whether the same law existed here as in our North American possessions, which compelled the earlier settlers to build their houses of wood, in order to clear the forests. The probability is, there was such a law. But there is another reason assigned for the general adoption of wood; that of the fabric being less liable to be thrown down or deranged by the shocks of earthquake than buildings constructed entirely of stone. One circumstance having some connection with the universal application of wood in the construction of dwellings has always appeared to me as extraordinary; and which, notwithstanding the immense quantities of spirituous liquor manufactured in the islands annually, is a strong proof of the temperance of the inhabitants. I allude to the infrequency of towns or dwellings being destroyed by fire. When we consider that there is no organized police, and no regulations in force with respect to

the use of fire, or, of lighted candles, we may pronounce it as remarkable that accidents from that element do not oftener occur.

The houses of the independent part of the community, whether in town or country, are detached; and generally surrounded by a plot of ground, ornamented with handsome fruit trees, and beautiful flowering shrubs, which give to these villas a very picturesque appearance; and almost all, even the negro cottages, have a poultry-yard attached. Nature has certainly been prodigal of her favors here, with respect to the vegetable creation; nothing like an unsightly or ugly tree or shrub, being met with; indeed they are all in some way or other agreeable objects to the eye; and some are remarkably graceful in the disposition of their foliage,—such as the palm tribe, the tree ferns, the acacias, &c.

Cleanliness is a virtue, particularly necessary in a warm climate, and certainly it is in every particular most scrupulously regarded here. Nothing, indeed, can exceed the care with which this duty is attended. The observance has become habitual, and hence it is one of the circumstances which first strikes a stranger on his landing; and certainly affords a favorable impression of the people. There is, too, a degree of neatness and simplicity every where observable in the interior of the dwellings that is admirable; their rooms are not crowded with furniture, or, loaded with ornaments; there is enough and nothing more. At the same time there is an inviting air of comfort pervading the whole, that is really very agreeable to the feelings. As if, too, in keeping with every thing around, there is a good deal of what the French term “*bon hommie*” about the inmates of the dwellings, whether white, brown, or black, that always at once disarms reserve, and makes one feel at home in their presence; and among the females there is a gentleness and feminine modesty, a soft voice, and an agreeable langour, superinduced by the warmth of the clime, that make them very attractive.

Many delightful hours I have passed in the society of some of the most captivating nymphs of the north side, which I now remember as among the most happy of my existence. Having conducted a prize into Lucea, when I was detained many weeks, I had plenty of leisure to look about me, and to enjoy the kind hospitality of my amiable friends there, and in its vicinity. Changes have, indeed, since “*come over the land*,” and circumstances as I knew them, have been materially altered; the delightful society which once flourished there is known no more; the white face has shrunk back, and almost faded from the sight, and the brown has usurped its place; and it is by no means an improbable event, yet in embryo, that the latter in its turn will yield precedence to the black! I recollect to have heard an old resident, formerly an officer of the army, predict many years ago, that Lucea would, in the fulness of time, become a “*nankeen town*,” (occupied by coloured people); his words have been nearly verified. Many of the ladies who were, in my day, but mere girls, just arrived from England after having completed their education, and others who had been instructed in the island, have since become mothers, and even granddames, and most of these have passed away from life altogether! A new era has arisen. The state of social society has been completely altered, unconnected, and altogether separate from those changes which time in its unceasing flight brings about,—the sun of Liberty has

spread over the entire area of its dazzling rays,—may the glorious event prove a blessing to all! But, however bright the prospect may be at this time from that circumstance, it cannot chase the thoughts away from the happy past. The ladies alluded to, were all charming as girls—pretty, and some handsome;—nay, two or three were assuredly beautiful. Of these, the Rose and the Lily, of the Forest, and of Prosper Penn, were most lovely! Both gentle in the extreme, and in truth almost too perfect for such a rough world as this,—no fairer works in God's creation have my eyes ever beheld than these two angelic nymphs; they have lived throughout life in the fondness of my memory,—they were both Elizas: could I be young and not love them? Not alone for their unrivalled beauty, but for the purity of their innocent souls, and the warmth and chasteness of their unsophisticated hearts. These

“ Friendships that now in death are hushed,  
Affection's token chain;  
And hopes that Fate too quickly crushed,  
In Memory live again.”

There is, indeed, somewhat of melancholy in the revival, but it is softened by the balm of that pleasure which once was.

The town of Montego is situated close to the beach of the bay, in a valley which is bounded to the westward by Great River; to the east and south-east the land is hilly, with mountains rising in the back ground. The town itself is irregularly built, like most of the others in the island; in the centre there is a large open area, where the markets are held,—a plan which should be adopted in all tropical towns. In the immediate vicinity there are many pleasant villas where the characteristic hospitality of the inhabitants is exercised in the most unreserved manner, claiming at once the admiration and gratitude of the stranger; more especially the naval man, whose uniform is a passport for him of admittance into the best society here. I have been hospitably entertained at the Retirement, by the worthy owner Sir Simon Clerk, Bart.; at Pitfour, by my old school-fellow John Hay; and many others in the town. It may be truly said that in no part of the world, is the intercourse among each class, in its proper sphere, more unrestrained, and the social qualities of the heart more universally exercised, than in this beautiful island. A stranger who has been accustomed to the exclusive forms, and cold restrained manners of the Mother country, is quite astonished at the general and unbounded practice of hospitality followed by the inhabitants; alike by those who are not, as those who are natives. It would seem, indeed, as if the very air, balmy and soft, imparted to the heart of man, dwellers in this favoured land, those warm feelings of disinterested benevolence, and genuine kindness, which are so much an honor to his nature. And most certainly the considerate attention bestowed upon dependents, on those who are placed by the will of Providence in the class of domestic servants, here, cannot be exceeded in any other part of the British empire, assuredly not in England; yet, those of whom I speak, are the people upon whom unqualified abuse was heaped by the pamphleteers and popularity-hunters of the great modern “*Babylon*.”

The bay as an anchorage, cannot strictly be considered a good one; it lies open to the norths, which often blow powerfully from November



to April; and during a hurricane it offers no security; the fate of a vessel, on such occasions, which does not gain an offing, being inevitable destruction. The merchant ships lie close in, huddled together, as the bank is limited and steep to; and, for the purpose of being nearer to the wharves from which the produce is shipped. The Fort point affords some shelter from the strong sea-breezes. There is at the elbow of the bay, a small close harbour, unfinished; it is used principally by the Colonial vessels. The men-of-war, which visit the port, anchor outside of the merchant ships; but, as the bank slopes precipitately, they sometimes drag off. The smaller vessels of war, unless requiring supplies, generally heave to abreast of the Fort, and from this circumstance the place obtained the name of "Jib-sheet Bay."

Lucea harbour is a complete bason, and one of the finest as well as securest anchorages in the island; but even enclosed as it is by hilly land, and possessing a narrow entrance, these offer no security to the vessels at anchor when the furious hurricane blows from the north or north-east; but as the bottom is soft, vessels that are driven on shore during such storms, may be hove off again without being materially damaged. I have heard of ships being dismasted, in port, by the extreme violence of the wind, but there was an instance here of a sloop of war upsetting whilst at anchor, during the hurricane of the 3rd of October, 1780; and she would have sunk had not the masts been cut away. This vessel was the *Badger* then commanded by the late Admiral Lord Collingwood; it occurred near the Marley Hill, between the church and the town, and she ultimately drove on shore on the soft mud and sand at the south-west end of the harbour.

From the ship's log, which is given in the valuable work on the "Law of Storms," it appears that the centre of the circle passed immediately over the harbour; the meteor, at the same time, progressing to the north-west. There was but one shift of wind, from the north-east to the south-west, with an intervening calm of half an hour; the meteor was nine hours in passing over the locality.

At the time I was on the station, twenty-three years after the occurrence of this storm, its destructive effects were still held in remembrance by the inhabitants, and with reason, for the town was nearly destroyed, as was also the case with Montego, and Savana-la-Mar; the latter place having been nearly swept away by the sea.

I may, perhaps, be excused for offering a few remarks here on the direction of the wind as given in the account of this storm at Bluefields. There is reason for believing it erroneous, independent of its not agreeing with theory.

The account states the wind, at the onset, to have been from the south-east; and that it afterwards veered to the south. It is highly probable that the error was typographical; and, if we substitute N.E. (precisely N.E.b.N.) for S.E., the south wind, which appears so anomalous, may be accounted for.

I may observe that, nearly midway between Lucea and Bluefields bay, on the shore of which, Savana-la-Mar has been built, there is an isolated mountain, or rather an insulated ridge, or mountainet, called the Dolphin Head. The eastern extreme, or depression of this mountain bears from Lucea, about south, or, S.b.E.; and from Savana-la-Mar, north, or,

N.b.W. From the position of the mountain, it seems evident that there could not have been any deflection of the wind, so that it should blow from the south-east, as there is no obstruction to the north-east, the directions from which we should expect the wind, and from which I have little doubt it came. To any person acquainted with the locality this will appear a correct view of the case. Indeed, as the meteor advanced from sea-ward there could have been no deflection of the first wind; and to assume that it was from south-east is in direct opposition to facts with respect to the action of these circular storms; and, in truth, appears to be an impossibility in the instance alluded to. As the storm was felt off Port Antonio, which is near the north-east end of the island; it would seem that the right-hand semi-circle spread over the length of the land, from the Dolphin Head in the west, to Morant Point on the eastern extreme, a distance of about 130 miles, so that we may estimate the diameter of this noted storm at 260 or 270 miles, which may be considered a medium size.

I am quite convinced that the seaman who has once experienced the ordeal of a ferocious and "down right" terrific hurricane in the west, will never lose the impression of its effects from his mind. It is a subject peculiarly suited to the flight of poetic fancy, and with the pen of a master-spirit, may almost realize, in idea, the sublimity and awful grandeur of such a scene.

There were some female relatives of Lord Collingwood residing at Lucea, immediately over the scene of his disaster in the Badger. The house was conspicuous, as standing alone, and higher than others, upon the ridge to the westward. One of these ladies was married to Doctor Corral, a physician practicing in the place; it is probable that not a remnant of the family remains at this day, in the island.

Before quitting the subject of the hurricane, I may notice a circumstance which, although striking enough, has not been alluded to by any writer:—the disposition of the waves during the continuance of a storm.

It is evident that as the wind gyrates round a centre, the seas risen by its force, will follow the same course, bounding along as it were in a circular trough; there is no apparent change in the waves, as they hold their position always on the broadside of a ship lying to; the wind, the wave, and the vessel all move in unison by one impulse; and it should follow that the nearer a ship approached towards the centre, the shorter the seas would be found; from the circuit of the wind being progressively reduced inwards, and *vice versa*, precisely in the same way that the changes of wind vary in elapsed time according as the centre, or, the margin of the circle is approached. There seems, too, to be little doubt of an existing current being turned in its direction by the force and course of the wind.

(To be continued.)

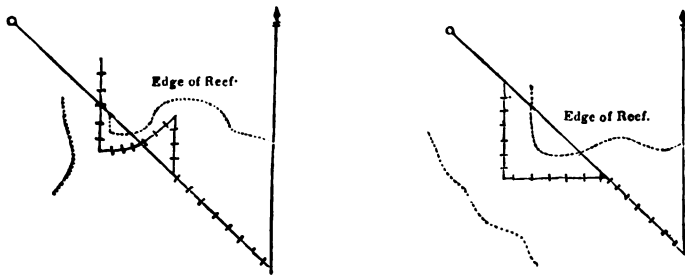
PORTO PRAYA, *St. Jago*.—A spirited individual has, at considerable expense, conducted the water to the beach at this place, so that it can be filled with great facility, and be obtained in a good state for ships' use. Formerly it was a service of much difficulty and toil to water a vessel at Porto Praya, as the casks had to be rolled up to a well, not the cleanest in the world, and the water had to be baled up in buckets. The *Vindictive*, of 50 guns, in April last, obtained 60 tons, and she was only in the anchorage 48 hours. Merchant vessels are supplied by rafting by the boatmen, who charge 3d. for a large cask.

## THE REEFS AND TIDES ON THE NORTH-EAST COAST OF AUSTRALIA.

UNCOVERED reefs are seen better from on deck than aloft, from their being within the horizon of the latter. Reefs of this kind are also easily seen in the direction of the sun, (sunwards,) the lumps of black coral rock projected on the dazzling silvery water,—a smooth appearance in the latter is a sure indication of a shoal. Covered shoals of this kind are of course, sooner and better seen from aloft, where a most trustworthy person should always be stationed.

Pass eastward of reefs in the morning, and westward in the evening. If, however, obliged to pass the shady side, (the reef between you and the sun,) and circumstances will allow it, steer so as to bring the end of the reef open of the sun.

For instance, suppose a ship passing along the north-east coast of Australia, steering north-west in the afternoon, with the sun ahead, and looking out for a covered reef. When near it steer north, bringing the reef to the westward of the sun, the southern part of it will then be easily seen, when a course may be shaped along it. Again, should there be a space to the westward, steer in that direction, bringing the reef northward of the sun; but a glance at the following sketch will convey at once what I mean.



It is difficult to discern the leeward edges of well covered reefs, the water being discoloured some distance off, by the sand, mud, and shells washing from them. This occurs particularly between Fitzroy's Island and Cape Tribulation.

Attention to the tides will often save much anxiety. High and low water alters the appearance of the reefs more than is generally believed, although the rise of tide is not more than from 4 to 8 feet. Hence arises the different reports of the same reefs being covered and uncovered.

High water takes place on the full and change day, when the tides are tolerably regular, between 10h. and 11h. 30m., along the whole range of the coast. The flood comes from the southward (main stream), there are branch tides flowing into the deep bays trending southward in some parts of the coast.

In the *Beagle* we always noticed a current setting between N.N.W.

and N.W. from  $\frac{1}{2}$  to  $1\frac{1}{4}$  knot hourly; its direction is greatly influenced by the trend of the coast, and uncovered reefs, and its strength by wind, flood, or ebb stream of tide, and according to the confined or open space of sea.

J. L. STOKES.

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BOTTLE PAPERS.

(Continued from p. 184.)

The numbers refer to the table and the tracks on the chart in the March number. The contents of the papers have been strictly preserved in all their particulars.

(No. 2.)

The following has been received at Lloyd's:—On the 23rd of November, 1841, a sealed bottle was picked up on the western coast of the Commune d'Ais, Ile de Re, in which was found a letter in English, of which the following is a copy:—

“ On board the *Lydie*, of Liverpool, Capt. Petree,  
“ bound to Bahia, Oct. 7, 1841.

“ We have had during the last few days, in the Bay of Biscay, strong winds from W.N.W., and heavy seas.

“ We apprehended that our voyage might be protracted on approaching the southern coasts of this bay, in which there is reason to fear meeting with strong currents. How desirable it would be, under such circumstances, to have a knowledge of the true set of the currents, in order to know how long one might follow them in standing to the southward with the helm a starboard. We are at this present time in lat.  $46^{\circ} 57' N.$ , and long.  $7^{\circ}$  by chronometer, meridian of Greenwich, having struggled against currents, which indicate either the approximation of the coast or the junction of the two currents.

“ Whoever shall find this bottle is requested to make known to the public the place where, and the time when, it may have been picked up, so that it may come to the knowledge of the Scientific Society in England, and that it may be known we were in these latitudes.”—*Times*, Dec. 23, 1841.

(No. 3.)

A bottle from the ship *Graham Moore*, 6th of July, 1821, in latitude  $47^{\circ} 47' N.$ , longitude  $7^{\circ} 51' W.$ : Found 15th of September, 1821, on the coast of St. Jean de Mont, arrondissement of Sables d'Olonne, department of La Vendée; and made known by the *Journal de Paris*.

(No. 3a.)

Londres, le 21 Juilles, 1842.

MONSIEUR.—J'ai l'honneur de vous transmettre, conformément aux directions de M. l'Amiral Duperré, Ministre de la Marine en France, le billet ci joint, extrait d'une bouteille provenant du Vaisseau de Sa Majesté Britannique le “ Benbow,” et qui a été trouvée sur la cote de St. Gilles, dans l'arrondissement maritime de Rochefort.

J'ai l'honneur d'être, Monsieur,

Votre tres Obt. Servr.,

DURANT ST. ANDRE.

To the Hon. S. Herbert, Admiralty.

“ Her Britannic Majesty's ship *Benbow*, lat.  $46^{\circ} 49' N.$ , long.  $7^{\circ} 46' 15'' W.$  at noon; all well—bound for England.

“ A. C.—May 2, 1842.”

“ BY GUNROOM OFFICERS.”

(No. 4.)

On the 11th inst. a bottle was picked up at Porlease Bay, about two miles west of Padstow, containing the following written on paper with a pencil:—

“Ship Britannia, of New York, at sea, two days off Cape Clear, outward bound, Sept. 5, 1835. W. R.”—*Plymouth & Devon. Herald, Oct. 25, 1835.*

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*H.M. Brig Hope, Noon, Mar. 31, 1838.*

(No. 5.)

Lat. 50° 10' N., long. 9° 43' W., per chron.

“Sailed from Havana on the 28th of Feb., and have 1,172,642 dollars on board on freight, up to this time all well. The wind has been strong from the eastward for three days. Should this ever be taken up I request it may be made public, in some of the prints of England (*The Nautical Magazine*). The intention of this is to ascertain the direction and velocity of the current, &c.

“D. PENDER, *Master R.N.*”

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(No. 6.)

“H.M.S. Arrow, 14th of July, 1838, lat. 48° 30' N., long. 9° 25' W. The wind has been south-west for five days, occasionally blowing strong; the last few hours a fresh gale which has now drawn round to the north-west.

“B. J. SULLIVAN,

“*Lieut.-Commander.*”

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(No. 7.)

GIBRALTAR, Feb. 9.—Copy of a paper found within a bottle, by a Moor, on the 8th of January, 1839, upon the sea beach, about half way between Arzyla and Laraiche:—

“*East India ship, Malabar,*

“*Outward bound, Aug. 6, 1838.*

“Whoever finds this will be so good as to put an announcement into the English newspapers to that effect. The passengers on board are all well. Our latitude to-day 43° 27' minutes, and longitude 9° 3'. We saw land this morning and from our chart it proves to be Cape Ortegal.”

(True copy) E. W. A DRUMMOND HAY,

*Tangier, Feb. 2, 1839.*

*British Consulate General.*

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(No. 8.)

*H.M. Schooner Pike, Falmouth, 20th Oct., 1834*

SIR,—Much having been said about the strength of currents on the coast of Portugal, I beg to submit the following statement, which occurred in May last, on my passage from Lisbon to Falmouth, in His Majesty's Schooner Pike:—

May 8th.—Light breezes, Mount Tecla (a remarkable hill on the borders of Spain and Portugal) bearing N.E.b.E.  $\frac{1}{2}$  E. sixteen or seventeen miles, observed a dead whale floating: when we got close to it, the wind died away, and I was enabled to get it alongside, and succeeded in cutting out one of its lower jaw-bones. The breeze springing up, obliged me to cast it adrift, before I could get the other. On my return to Lisbon, on the 7th of June, mentioning the case to Mr. Phillips, acting agent for the Consul at Belem, he informed me that a whale, answering the description, had been towed by the fishermen into the Tagus on the 6th of June. He agreed to accompany me next morning to ascertain the fact, and, from the marks, (my initials A. B., and a king's broad arrow, I cut on its head,) found it to be the same. On my giving the fishermen a small sum, they allowed me to take out the fellow bone to the one I had. From the time of my falling in with it to the time the fishermen saw it off Cape Espechel, was twenty-eight days. During that time it had drifted 220 miles, or about eight miles a day; the wind during that time from the northward and

eastward, the distance off shore nearly the same as when we saw it. The last two years I have made nearly forty passages backward and forward from Fal-mouth to Lisbon, and, unless with a heavy swell and light winds, we have had little occasion to make allowance for currents, either on, or alongshore; with the wind dead on end, we have never taken more than three days and a half to beat from Lisbon to Oporto; and on the 22d of July last I weighed from the Tagus at 5 P.M., and at midnight, 25th July, hove to off Oporto, delivered a mail, and was anchored in the Tagus at 10 P.M., next day. We started from the Tagus, blowing a gale from north-east, and during that time the wind did not vary two points, close reefed sails, and the greatest part of the time with our topsail furl'd: had there been any current, it was impossible for any vessel, steamer, or others, to have done it in that time.

I am, Sir, your very humble servant,  
ARTHUR BROOKING.

(No. 9.)

On the 25th of October, 1810, a gun-boat for the service of Cadiz, being in tow of the Rebuff gun-brig, broke adrift in a gale of wind, in latitude  $39^{\circ} 44'$ , and longitude  $9^{\circ} 38' W$ . On the 19th of November following, his Majesty's sloop of war Columbine, when cruising 8 or 9 miles to the westward of Cadiz lighthouse, observed a gun-boat to leeward, which proved to be the identical boat that twenty-five days before had broken adrift from the Rebuff. The distance traversed by the boat was about 350 miles, or 14 miles a day, chiefly by the current, the wind in the mean time being so various as nearly to render the drift negative, or, if any thing, against the set of the current.

(No. 10.)

A bottle from the Carshalton Park, Lieut. J. Steele Park, 27th July, 1827, in lat.  $48^{\circ} 39'$ , long.  $10^{\circ} 21'$ ; taken up 21st Dec., 1827, on the shore of Penbron Road, near the Loire, in the Bay of Biscay, lat.  $47^{\circ} 19'$ , long.  $2^{\circ} 30' W$ .

(No. 11.)

Coruna, November 19, 1831.

SIR.—The accompanying paper was transmitted to me from Vivero, a small port on the north coast of Galicia by the courier who arrived from that place on the 16th inst. It appears to have been found on the shore, about four miles from the town by a peasant, as far back as the 12th of last September, and to have remained in his possession until its object was discovered by the person who forwarded it to me. The direction to which the cylinder was carried indicates a south-easterly current off this coast.

I have the honor, &c.,

T. S. SARELL,  
Consul.

To the Secretary, Admiralty.

"H.M.S. Chanticleer, May 3, 1831,

"Lat.  $31^{\circ} 44' 38-30'' N$ . obs., long.  $11^{\circ} 4' 00'' W$ . chron.

"This cylinder was thrown overboard with the view of ascertaining the current. Moderate breezes from northward; fine weather. All well up to the present.

"H. T. AUSTIN, Acting Commander.

"Whoever finds this paper is requested to forward it to the Secretary of the Admiralty, London, with a note of the time and place at which it was found."

This advice has been found by a countryman at the occidental entrance of this port of Vivero, on the 12th of Sept., 1831.—J. A. VILLAPOL.

(No. 12.)

*Trinidad, 10th August, 1822.*

SIR.—I have the honor to transmit to you the enclosed document, taken out of a bottle thrown on the coast of Mayaro in this island, on the 28th ult.

I have, &amp;c.,

A. W. YOUNG,  
A. G.

*J. W. Croker, Esq., Admiralty.*

"The bottle which contains this card was thrown into the sea in lat.  $6^{\circ} 13'$  S., long.  $15^{\circ} 35'$  W., at noon, on the 17th of January, 1822, from the ship *Ospray*, of Glasgow, which sailed from Greenock, on the 20th of February, 1820, on a trading voyage round the world.

"Whoever finds this is requested to insert a notice of the time and place in some Literary or Political Publication, with a view of establishing facts relative to the currents of the ocean. Eighty-seven days from Calcutta towards Greenock.—All well."

(No. 13.)

"The bottle containing this paper was thrown overboard from H.M.S. *Erebus*, on the 14th Oct., 1839, in lat.  $39^{\circ} 20'$  N., long.  $12^{\circ} 40'$  W. Whoever may find it is requested to forward this paper to the Secretary of the Admiralty, London, together with a notice of the latitude and longitude of the spot where found.—Wind moderate, west—all well.

"J. C Ross, *Captain.*"

Found yesterday on shore by two fishermen at Cape St. Mary.

*Faro, 19th Dec., 1839.*THOMAS PINDER, *British Consular Agent.*

(No. 14.)

A bottle from the *Emerald*, Captain Nockells, bound to Jamaica, 17th Dec. 1831, in lat.  $36^{\circ} 40'$ , long. per chron.,  $12^{\circ} 32'$ . Found on the north side of Anegada, 8th January, 1833. The winds for the last three Days, previous to the 17th of December, were from North and N.W. to S.W. For eight years preceding these it blew a continued and heavy gale from S.W. and W.N.b.W. the bark lying-to the whole time, and drifting from lat.  $41^{\circ} 38'$ , 237 miles to the northward.

(No. 15.)

SIR.—Noticing the interest you take respecting bottles thrown into the sea, for the purpose of ascertaining the currents of the ocean, I beg to transmit the following particulars of a bottle thrown overboard by me, when on a voyage to St. Michaels, in 1830, and which was picked up on the French coast near Bayonne, as appears by the following letter:—

*London, 20th December, 1830.*

"A sealed bottle was found on the coast of Lit, department of Landes, province of Bayonne, on the 14th October last. It contained a paper written in the English language of which the following is a translation:—

"Monday, 2d February, 1830, at 3 P.M., on board the *Lady Louisa*, Captain Pallant, bound to St. Michaels, longitude  $13^{\circ} 45'$  west, meridian of London, latitude  $45^{\circ}$  north. All well on board.

"N.B. It is particularly requested that the following information may be transmitted to Mr. Robert Blundy, Woolwich, Kent, viz., the exact time and place where this bottle was picked up."

"His Excellency the Minister of Marine in France, has instructed me, Sir, to transmit you this information, for the satisfaction of the person who threw the bottle into the sea."

(Signed) "BARON SEGUIER."

It was calculated by the French authorities that the bottle floated at the rate of one league per day.

I am, &c.,

CHARLES BLUNDY.

Erratum in the table.—For “14th Oct., 1839,” read “14th Oct., 1830;” and in the column of interval for “9 years 254 days,” read “254 days.”

(No. 16.)

*Santiago de Galicia, Dec. 6, 1817.*

SIR.—This is to inform Your Excellency of the following success. On the Bay of Carnota in this kingdom of Galicia, three leagues south of the Cape Finisterre, was picked up on the 10th of November last, a corked and sealed bottle, which, after opened, it was found the following letter:—

“This bottle was thrown overboard from the Catherine of London, in lat. 44° N., longitude by account 13° 49', on Wednesday, June 25, 1817.

“O. B. WALLER, *Master.*”

“This is intended to ascertain the set of the Current. Whoever picks it up is requested to acknowledge it by publication.”

I think it necessary and also worth of curiosity to inform Your Excellency that on the very same spot it has being picked up about the end of May, another bottle, containing a letter, addressed to “John Williamson Shik, Esq., Georgia, written by Captain W. Baugh, in the 43° longitude, and 49° latitude, from on board the ship Georgia, in his voyage to Liverpool,”—without date. I believe the idea of the master of the Catherine being intended to ascertain the set of the current, it will be valued by the other discovery.

The originals of both letters which were presented to me for translation have been sent to Madrid, with the idea of receiving publication in our newspapers; but I hope Your Excellency will be kind enough as to excuse the liberty I take of addressing myself directly on both subjects.

I remain, &c.

To Hon. First Lord of Admiralty.

MANUEL FLOREZ.

(No. 17.) is from a chart which does not give the authority.

(No. 18.)

*Consulate of the Canary Islands.*

*Tenerife, 29th July, 1836.*

SIR.—I have the honor to transmit to you enclosed a paper, which I received in an official note from the Commandant de Marina of this Province, stating that it was cast ashore the 28th of June last, on the beach of Adeje in this island, in lat. 28° 8' N., long. 10° 31' W. of Cadiz.

I have, &c.

L. G. HAMILTON,

To C. Wood, Esq., Secretary, Admiralty.

*Acting Consul.*

“Ship Kinnear of London, 26th of July, 1838, lat. 44° 32' N., long. 13° 57' W., on a voyage to Hobart Town and Sydney, New South Wales.—All hands well.”

“CHARLES MALLARD, R.N., *Commander.*”

(No. 19.)

A bottle from the brig Freeland, Captain T. Midgley, (from Liverpool to Africa,) in lat. 41° 50' N., long. 14° 23' W., 11th of February, 1833; picked up close to the shore, off the Harbour of Vigo, on the 1st of March following; having traversed, in a true E.  $\frac{1}{2}$  N. direction, about 80 leagues.

ENLARGED SERIES.—NO. 4.—VOL. FOR 1843.

2 K



(No. 19a.)

Jamaica, Oct. 28th, 1815.

The following has been published by Capt. Coulson, late of the ship Port Royal.

"This bottle was thrown overboard from the William Manning, of London, in lat. 35° N., long. 14° 26' W., on Sept. 9, 1810.

"THOMAS HUSKISSON.

"This is intended to ascertain the current; whoever picks it up is requested to acknowledge it by publication."

Capt. Coulson picked up the above bottle on the 19th of the present month, on the south-east point of H——. (Probably Hispaniola.—Ed. N.M.)—*Naval Chron.*, vol. 1835, p. 31.

(No. 20.)

"Capt. Marshall, commander, ship Barretto, jun., 9th Dec., 1839, lat. 44° 50', long. 14° 19'; from Portsmouth to Gibraltar, with detachments of the 1st Royals, 81st and 82d regiments. Officers names—Major Pinckney, 82d; Capt. Jeffery and Lieut. Powell, 81st; Lieut. Diggle, 82d; Ensign C. W. Thompson, 81st; Ensign Isaac and Ensign Lambert, 82d; Assistant-Surgeon Atkinson, 82d regiments. Mrs. Atkinson and child. Left Portsmouth 28th November, 1839. At sea—all well.

"Whoever picks up this paper is requested to publish it in the first newspaper, British or Foreign, in order to show the course of the currents."

"Ayez la bonté de publier ceci dans le journaux Français ou Anglais."

"Tenga V. M. la bondad de publicar este papel en las gacetas Espanolas, Inglesas, 6 Americanas."—*M.S.*

Picked up on the 12th of February, 1840, near 50 tower, Coast Guard Station.  
W. R. ASHBY, Lieut. R.N., Chief Officer.

(To be continued.)

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 MODERN WORKS ON NAVIGATION.

(Notes and Mems. "for the use of Seamen."—First Series.)

## BOWDITCH.\*

THE *Astronomy* relating to navigation is not sufficiently explanatory; no beginner can carry it in his head without a constant appeal to figures. Such words as nonagesimal, ascensional difference, &c., only confuse a learner, and their occasional use does not justify their appearance in a book for every day purposes. Again, the explanations of Nutation, Precession, cannot possibly be understood by a beginner. *Mem.* all such matters should be expunged to make room for what he wants, and which he will probably take the pains to learn.

*Mem.* What has *Compound interest* to do with navigation?

At p. 52 in a note it is stated that allowance is to be made for the *variation* "by rules which will be given in this work". *Mem.*: want of order and arrangement. A beginner refers to the contents, occupying, (without any indication of subjects, or classification) three pages, and which of course he must, to find any thing, read regularly through.

\* "The New American Practical Navigator;" being an Epitome of Navigation, containing all the Tables necessary to be used with the Nautical Almanac, in determining the latitude and the longitude by Lunar Observations, and keeping a complete reckoning at sea, &c.—By Nathaniel Bowditch, L.L.D., New York, 1842.

*Mem.* What has a sailor to do with *measuring heights by barometer*? Out of the thousands of seamen, how many have ever carried a barometer to the top of a mountain to find its height? What have sailors to do with gauging,—the work of excisemen? and what exciseman would buy a great book of navigation to teach him how to gauge a cask? *Mem.* Want of perception of the use or object of a navigation book; and in order to give these and many other such things—(which, though connected with a seaman's duties under peculiar circumstances, are not navigation,)—the real subjects of navigation, as latitude, longitude, and time, are confined to limits not sufficient to contain the necessary information.

In *mid. lat. sailing*, Bowditch makes, like some other writers, (for want of a principle of classification) seven cases. But as *mid. lat. sailing* relates to *diff. long.* there are only two cases, one in which the *diff. long.* is given, and the other in which it is to be found, and the seven cases are made up by mixing up considerations which belong properly to *plane sailing*. *Mem.* confounding and puzzling the beginner.

It is a custom, adopted in this book, to treat certain questions as *problems useful in navigation and surveying*. But these problems must, if of any use, relate to some special case or branch of the subject, under which they should be treated, as their proper place; and if not, they should be omitted, as only occupying space which should be better employed: *Mem.* bad taste.

In the *tides*, Lubbock and Whewell are mentioned; but no notice or enumeration of their important researches taken; and, while not a word is said of the semi-menstrual inequality, allusion is made to the comparatively trifling corrections for declination.—*Mem.* inconsistent.

*Mem.* The *current sailing* is very meagrely treated; no information of a really practical character is given upon its immediate effects on the course and distance of the ship. The word *drift* is used for *rate*, and the information given is chiefly of that kind which belongs to the sailing directions, and is sure to be found there.

Note.—Bowditch gives a good account of the *repeating reflecting circle*, an instrument unknown to our inferior order of navigators, owing to the despotic influence of Troughton over the taste in instruments, and who did not like it.

In the *lat. by mer. alt. of the moon*, p. 171, a foot note, Bowditch says, "when great accuracy is required." How can great accuracy be got from the moon? The *lat.* being unknown, the *long.* is of course unknown, and the moon's declin. cannot be found. *Mem.* unpractical character again.)

In the *double alt.* Bowditch does not once allude to the *diff. of azimuth* as the *criterion* of the value of the observation. Yet this was pointed out by Dr. Inman many years ago. *Mem.* a very serious omission.

In *equal alts.* Bowditch's method employs the daily *diff.* instead of the 2 daily; and his logarithms are less conveniently adapted than any other modern work.

Bowditch treats *lunars* before chronometers; and under the head of *lunars*, he enumerates all the other methods. Also under this head

(lunars,) he first gives the rules for finding the stars. *Mem.* want of order and perspicuity.

Bowditch actually says, p. 170, that the lat. may be found at sea by the 3's *mer. alt.* more accurately than by any other method, except the *mer. alt.* of the sun! forgetting 1st. that the moon's declin. cannot be found; 2nd. that her *mer. alt.* is not her *maximum alt.* by a sensible quantity; and 3rd. overlooking a bright star or planet in the twilight! *Mem.* very bad indeed!

Bowditch gives no case of the lat. by *mer. alt. of a star*, and yet he does of the *double alt.* of a star, an observation not taken once in a whole servitude. *Mem.* practical inconsistencies again.

*Mem.* The want of *perspicuity and order*, and of separating the different considerations such as observation, calculation, minor corrections, &c., are nowhere more remarkable than in the introduction of the subject of *double alt.*, which is such, that any one, not well practised in this particular chapter, and requiring *sur le champ* to take and work a double alt. must give it up in despair.

In the *reduction of the merid.* which naturally follows the *mer. alt.* and which he puts after double altitudes, he finds the alt. at the given time, instead of the ready and convenient method of computing the small quantity or correction required to reduce the observed to the *mer. altitude.* *Mem.* inconsistent again:—tiresome,—enough.

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#### CHINESE INTELLIGENCE.

ON the 23rd of November, Sir H. Pottinger published a proclamation, declaring that he had, since his arrival at Amoy, learned with extreme horror and astonishment, that many more than 100 British subjects, who had been wrecked in the ship *Nerbudda* and brig *Ann*, in September, 1841, and March 1842, on the coast of the island of Formosa, had been recently put to death by the Chinese authorities there, who alleged that this cold-blooded act had been perpetrated by order of the Emperor. This proclamation goes on to describe the atrocity of this sanguinary and inhuman crime, and concludes with stating that the British Plenipotentiary was resolved to demand from the Emperor that the local authorities, who, by false representations, had led to the commission of the enormity, should be degraded and condignly punished, and that their property should be confiscated, and the proceeds handed over to the officers of the British government for the relief and support of the families of those who had been thus mercilessly put to death. A threat of a renewal of hostilities was held out in case the demand should not be complied with. It was, however, supposed that the Emperor would not refuse compliance.

On the 7th of December a formidable riot broke out in the neighbourhood of Canton, which soon extended itself to the foreign factories. The immediate cause is stated to be the irregular conduct of the crews of some ships, and in particular of that of the *Fort William*, who were allowed to go ashore in numbers, without any proper officer to control them. The mob had, it is said, been excited previously by certain anti-British partisans; they soon quitted the sailors, who had, by retreating from the original place of combat, led them towards the factories. The first great object of attack was the British factory; they burned the flagstaff and the flag, and soon afterwards the windows and

doors of the buildings were forced open, the mob entered, and the work of pillage commenced. Fire was then set to the edifice, which was consumed. Luckily the steamer *Prosperine*, having on board Sir Hugh Gough, arrived at Canton, and the rioting ceased. The merchants at Canton began a correspondence with Sir Hugh Gough, who remained there until the 14th, and also with Sir Henry Pottinger, who was at Hongkong, requesting the latter to order a protective force, to be sent to Canton, in order that they might carry on their commerce in security. This application received a decided refusal from Sir H. Pottinger, who, in his reply, made some severe comments on the conduct of the merchants. The latter then made a replication in their defence. All the correspondence has been remitted to the British Government. Sir H. Pottinger, in his last letter to the merchants, dated December 24, states that the Viceroy at Canton had in reply to the letter addressed to him, declared his great anxiety, as well as his perfect ability, to protect all foreigners; and has also expressed his readiness to repay such losses as might have been incurred during the late riots, after they should have been correctly ascertained, and submitted through her Majesty's Government.

#### TERMINATION OF THE CHINESE WAR.

[We have occasionally inserted the contents of some private letters on this subject, and although the events alluded to in the following have passed by, there are facts in them worthy of record.]

THE dispatches will tell you more than I can about the taking of this place Shang, or, Ching-kiang-foo at the southern entrance of the Grand Canal. It was not intended that the navy should have had anything to do beyond landing the troops, but the Blonde's boats, while going down the canal to land the artillery, met with such a warm reception, that our boats were sent to assist them, and our marines landed with *Modeste's*. I accompanied them with a rocket party, and saw some fun scaling the walls, &c.; and late in the day when we were resting on the walls we heard some heavy firing in the town, which turned out to be an attack on the 49th; we came on the rear of the Tartars down a street, which was barricaded, and from which we were received with a shower of balls. The rocket which I intended should demolish their defence missed fire twice, and the consequence was, I received a ball, which passed through my arm, entered the back of the arm-pit, and passing round my ribs stuck at the back bone, whence it was cut out when I got on board. I was able to walk a mile or two, though at first I was floored! since then I have of course been confined, but have astonished the doctors by not having had fever, nor have even the wounds inflamed, though I fear I shall not be able to do anything at Nankin, where we go to-morrow, leaving a garrison here.

The day was intensely hot, therm. 96°; our poor old Major Uniacke died at once, and about seventeen of the 98th, who were not accustomed to such weather and fatigue. The Tartars who were of the Emperor's guard made a most determined resistance, they fought well, and were large fine men. Our loss has been heavy as you will see. The river is here about one mile wide, and 26 fathoms deep. The scenery is very beautiful,—from Woosung to this it is one continued scene of the richest wood and cultivation.

We owe every thing to our two indefatigable surveyors Kellet and Collinson, who have taken us safely over flats with only 27 feet water in the deep parts, and through some very difficult navigation.

By this packet goes home the news that the Chinese have at last been brought to their senses; and in a manner worthy of England's power and enterprize.

I wrote you a few lines from Ching-kiang-foo, where as you may remember I got four holes drilled in me; it is now not a month since, and I am already off the sick list. In a fortnight I was walking about, and in three weeks three

holes out of the four were stopped up, and I have astonished every body by not having had fever. I entered Ching-kiang over the walls and having lost the scabbard was literally sword in hand, and while calling to mind "Cæsar having passed the Rubicon," &c., a marine behind me was shot through the head and effectually knocked all thoughts of Cæsar out of mine.

Soon after the taking of Ching-kiang-foo (called by some Shiang and Tchang, &c.) we moved up here with a splendid breeze right aft. The walls for some miles were manned with Tartars, and well defended with their usual immense numbers of ginjalls and matchlocks and some few guns. A small canal leading under the walls was blocked up, junks having been sunk in the entrance and every thing looked most determined. The General landed his forces and took possession of some hills on the land side of the walls and set forty pieces of cannon with four 68-pounder howitzers in position within two hundred yards of the Tartar city. On the river side six miles from the General's position, the Cornwallis, the Blonde, and all the large steamers were hauled close in to the shore, to breach the wall and throw shells over the hills, inside the walls, while some vessels up the river blockaded five thousand troops, who posted on an Island were going into the town. The existence of this place was found out by an intercepted letter, for so completely have we cut off the communication between the northern and southern banks of the Yang-tse-keang, that nearly all the reports to the Emperor, and accounts of our progress upwards have fallen into our hands, forming a complete history of the Expedition from Chapoo to the taking of Ching-kiang. For according to the Chinese view in which is nearly the truth, it appears that the Governor of the province had considered the ascent of this river impossible, from the natural obstacles which present themselves, and would not erect batteries or take any means for defending it. The Tartar General who commanded at Ching-kiang and who appears to have been a shrewd sensible man, was continually urging the Emperor to defend the river, mentioning three points where we must have gone close to the banks and where the current is rapid, the very places that we should have fixed on had we been in his position. He defended his post to the last, and when he found that the city was taken, collected his family and goods in his house, and like another Sardanapalus burnt himself with the whole, having first written to the Emperor, by his Secretary, expressing his devotion, and earnestly advising him not to contend any more with us. This Secretary fell into our hands, but was sent on with his letter.

They began here by displaying white flags along the walls and sent off two mandarins, whose rank might answer to our subaltern, with letters from Elepoo offering to ransom the city and allow us to occupy the walls, but Sir H. Pottinger answered that he would only treat with a person who could shew his credentials from the Emperor, and then only on the main points of the war. Elepoo's letter appears to have been a master piece of sound sense; but the Plenipo's high tone astonished them all, and at last he gave them twenty-four hours to consider, at the expiration of which time the town would have been taken by storm.

Other Chiefs and Commissioners have appeared on the stage, and at last the Emperor's Uncle, Key-Ying, armed with full powers, made himself known.

All the negotiations have hitherto been carried on by letter, Major Malcolm having met mandarins of his own rank assisted by Mr. Morrison the interpreter. At one of these interviews, the mandarins, anxious to prove that the Emperor was in earnest, shewed a private letter from him, in which he said that without lowering the dignity of the Celestial Empire the time was come when they must bend to the foreigners will. Elepoo in one of his former letters admitted that his provinces were fast melting from him, and certainly if the blockade were to last all the winter and prevent the grain junks from passing upwards, next year the distress would be so great that the whole country would rise against the Tartars. But that is not our object.

They have now acceded to all our demands, viz 21 millions of dollars to defray the expences of the war, satisfy the opium claims and Hong merchants

debts. We are to have a free trade to the following ports, viz. Canton, Amoy, Foo-Choo-foo, Ningpo, and Shang-hai, up the Woosung river. Consuls to reside at all these places, and we are to keep Hong-kong as a compensation for the indignities offered to the Queen of England. We have also made them insert her name as equal to that of the Emperor, intimating, I believe, that if it were worth the trouble we should make them acknowledge the superiority. They stared at this, but gave in; observing that war is like gambling, the losers have to pay.

The treaty is now being drawn up and Sir Henry intends to insist that it be signed on board the flag ship, where of course the Commissioners will be received with all honours due to their rank, the treaty will then go to Peking, to be ratified, which will probably take 12 days, and then a Steamer will be sent with the news to Aden to catch the Bombay mail going home. All this you must recollect is merely what I have heard, and what we all hear on board, but we know nothing, for the Plenipotentiary carries on the business on board the Queen steamer, besides, having been confined to my bed for a little time, I have not been able to get about picking up information as usual.

The following are the names of the Chiefs and Commissioners :—  
Gnu or New or New King, Governor of the two Provinces.

Key-Ying,—Emperor's Uncle, General of Canton Forces, and Chief High Commissioner.

Elepoo,—Lieutenant General of Chapoo and High Commissioner.

Tik,—Tartar General commanding at Nankin.

Hai-Ling,—Tartar General commanding at Ching-Kiang, (who burnt himself and all his family.)

Shang-hai is the greatest emporium for trade in China, being the port of her richest towns; viz. Hang-chow-foo, Sou-choo-foo, and the silk districts: Foo-choo-foo, is on the Min river in Fokien an outlet for black tea.

It may be said that had we come up this river earlier, the business would have been finished, but I beg to differ. In the first place large bodies of Tartars would have been annihilated or entirely routed as at Chusan, Ningpo, Tæ-kee and Chapoo, to say nothing of Canton and Amoy. They can scarcely now form an army at Nankin, and some of those at Ching-kiang are said to have been raised in the country of the Elaths in the north-west corner of Chinese Tartary. We met Manchaws at Chapoo and at Tæ-kee the remnant of those that attacked Ningpo from the independent tribes of Maiva-tse.

Besides all this, had we come here with a small force (as we had last year and till May of this) we should have been unable effectually to have blockaded the canals,—garrisoned Hong-kong, Chusan, Amoy, Ching-hai, and Ching-kiang and have brought 7 or 8 thousand men with a formidable fleet to Nankin, as has been done at present. In the mean time we keep our position till all is settled and the treaty ratified at Peking.

The river is here 900 yards broad with 23 to 27 fathoms water. There is not a shoal nor a rock for many miles down, and from what we can see and hear I doubt not that Cornwallis might get up to the Poyang Lake.

August 21st.—Yesterday the Commissioners Key-Ying and New paid, a visit on board this ship, where they were received by the Plenipotentiary, Admiral, General and almost all the officers of the Squadron, and some of the Army in full uniform. A Tartar Lieut.-General whose name I have been unable to get, came also, and was very anxious to see every thing connected with the guns, locks, &c., I think this visit will do more towards undeceiving them as to our being barbarians than almost all our victories. This term "Barbarian" is now exchanged for Honourable Foreigners even in their intercepted letters.

To-morrow the 22nd the visit will be returned on shore, and next day they come off here again, I believe to sign the treaty, the dispatches will then be sent by our Commander direct to the Red Sea, and England. When the treaty

comes back from Peking (ratified) it will be sent to England in charge of Major Malcolm which will be in about fourteen days.

This goes by the Auckland which takes Major Malcolm the Secretary of Legation, with the treaty signed and sealed by the Emperor, two or three millions have been already shipped here, and six will be given before we leave the river. The troops are all embarked, and we go up in large parties to the Porcelain Tower, the most glorious structure I have seen, beautiful in its proportions and situation, it rears its head over the city of Nankin, and certainly from the top one has a most splendid view of the whole city and surrounding country, we have not been allowed to go within the walls.

The Plenipotentiary and suite once visited the Viceroy in the centre of the City, but no one else has seen the inside.

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### THE MERCHANT SERVICE.

*To the Underwriters at Lloyd's London, the Association of Underwriters at Liverpool, and the Underwriters at Glasgow.*

*Bombay Chamber of Commerce.*

GENTLEMEN.—I am directed by the committee of the Chamber of Commerce, to bring to your notice the opinion entertained by the members of the association, as to the incapacity of many of the masters and officers of the vessels trading between Great Britain and this port.

With regard to commanders, the committee would observe, that it is not on the score of professional incompetency they have to complain for, without possessing the qualifications necessary to the management and navigation of a ship, few ever obtain a command: but they think these qualifications are not the only ones required by the master, and that some assurance of his prudence, humanity, and ability to govern, and, above all, of his sobriety, should be obtained from those who could speak as to these points, previous to his assuming so important a position.

The frequency with which riots and disturbances occur on board ship is no doubt attributable, in a great measure, to the despotic and tyrannical conduct of some commanders, who, although they may be good seamen and navigators, are altogether unfitted properly to manage and control their inferior officers and crew. An unfortunate addiction to habits of intemperance on the part of captains is also not unfrequently the cause of insubordination. There are, of course, exceptions, and the committee have no wish to pass a sweeping censure; but the instances of incapacity that have come to their knowledge are so numerous that they cannot remain silent on the subject.

When a merchant ship is at sea, the captain is necessarily invested with limited powers; he is without control, and though he is just as much amenable to the law for any acts of cruelty or crime he may commit as though he was resident on shore, yet the nature of his situation offers many facilities for concealment, or for suppression of evidence, and punishment appears remote and uncertain. These considerations do not prompt the commission of crime; but they doubtless exercise con-

siderable influence over commanders who have earned for themselves the epithet of "severe." Discipline on board a vessel is undoubtedly essential to the preservation of order, and the captain who, by laxity and carelessness, should tempt his crew to commit disturbances, would be just as culpable as the commander, who, by opposite conduct, produced the same result; but power, sees no bounds to its exercise, and loves to display authority on every petty occasion; those who, by acts of insult, oppression, and ill usage, outrage the feelings of their officers and crew, and who, weakening by those means the obedience of those beneath them, contribute to the creation of serious riots and mutinies, which often endanger the safety of all concerned.

The committee have not alluded to the unhappy condition of passengers when placed in a vessel of this description; for, fortunately, few ships carrying passengers are ever thus commanded. Still, when it does so happen, it will be acknowledged that their situation must be miserable in the extreme.

To point out the remedy for the evils existing would be supererogatory; the committee merely desire to represent these evils, which must be felt by you in a far greater degree than by the merchants in this country.

With respect to officers they would beg to state, that several cases have recently come to their knowledge, where, in consequence of the death of the commander of the vessel, the charge of navigating has devolved upon the chief mate, who has been found utterly incapable of undertaking such charge. In few of these, fortunately, was any considerable injury sustained; but it is hardly necessary to point out the serious risk to which life and property are always exposed under such circumstances; and they would hope that some measure will be taken to insure for the future the shipment on board vessels of at least one officer competent to navigate and take charge of the ship in the event of any accident to the commander.

The committee have deemed it their duty to bring the subject prominently to your notice, in the strong hope that it will obtain the serious consideration of all interested in the commercial prosperity and honour of our common country, for they cannot but feel that from the increase of the evils adverted to, property is exposed to increased dangers, and the character of our seamen and countrymen to the unfavourable comments of foreigners.

I have the honour to be, &c.,

T. J. A. SCOTT,  
*Acting Secretary.*

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#### CAPTAIN FITZROY'S BILL.

In the leading points of Capt. FitzRoy's Bill, probably most of your readers, Mr. Editor, will concur; indeed, I should hardly think that many voices would be found objecting to the necessity which exists for some such measure, to insure due qualification of masters and mates in the Merchant Service.



To some of the details, however, I think, there are objections:— First, with respect to the “fees,” to be paid previous to examination. These appear to me to be too heavy;—they number six,—we will take them seriatim, and place against each sum what I believe to be a more reasonable charge:—

|    |        |           |    |    |   |     |    |    |   |
|----|--------|-----------|----|----|---|-----|----|----|---|
| 1. | Master | 1st class | £4 | 0  | 0 | say | £2 | 0  | 0 |
| 2. | Ditto  | 2nd “     | 2  | 0  | 0 | “   | 1  | 0  | 0 |
| 3. | Ditto  | 3rd “     | 1  | 0  | 0 | “   | 0  | 10 | 0 |
| 4. | Mate   | 1st “     | 1  | 0  | 0 | “   | 0  | 10 | 0 |
| 5. | Ditto  | 2nd “     | 0  | 10 | 0 | “   | 0  | 5  | 0 |
| 6. | Ditto  | 3rd “     | 0  | 5  | 0 | “   | 0  | 2  | 6 |

It does appear to me, obviously, upon exercising the feeling of consideration with reference to the state of life, and that of the pockets of the interested parties, a hard case to compel a man to undergo a strict examination, for which he must qualify himself at, to him, a considerable expense, and make him otherwise pay heavily for it.\* I do not, Sir, mean to tax the framers of this bill with a want of consideration; but this, I will say, that men in affluent circumstances assuredly are not the best judges, giving them credit for every desire to do justice, of a tax upon the needy, or he whose savings come in slowly, and are moderate in amount. Let it be remembered that, many masters and mates have families, some, large ones, to support upon very slender means.

If the feeling of benevolence were consulted, it would dictate that the imposition altogether was improper. A much more equitable mode of proceeding would be to put the burthen on the shipowner, or merchant, who, all perhaps, will admit, is far more capable of sustaining it; and the more especially so, as the effect of the measure will be to his advantage, or, at all events, ought to be.

Perhaps that may be objected to (I mean the advantage) as there are Insurance Offices, which, as a matter of course, neutralize his anxiety on the score of the safety of his vessels! Well, let him at least bear half the charge, which, if granted, would bring the sums nearer to my mark.

But, I do not see any reason why the insurers should not be made to share in the expense; for, if by the measure they sustain fewer losses, they will be reaping positive benefit without having assisted in its consummation. “Oh!” it may be exclaimed, “the risk being lessened (would they let this secret transpire?) the charges for underwriting would necessarily fall.” That rests to be proved; but admitting it, the fraternity can very well afford to pay; and, I think, in equity, should be made to assist in the expense of an operation that is to be beneficial to its interests.

\* The Abbe Raynal has expressed the following remark in speaking of the planters of St. Domingo:—“It is hard to conceive how the Treasury should have thought of taxing an object that is already chargeable to the owner.” The observation has reference to a different circumstance to that of which we are contemplating; but it is not the less applicable to the ship-master and mate’s case, on that account. And I have little doubt, but that such an impost as contemplated in the bill, will very generally be considered as unreasonable, and may bear the complexion of an oppressive act, when such was unthought of by the framers of the measure.

Secondly.—The compound “By-laws,” has a disagreeable sound in the ears of an Englishman. The purpose is sound, and the Privy Council, wise, no doubt; and, therefore, we can only hope that, whatever measures may be deemed necessary, from time to time, would be enforced. “In terrorem” laws are worse than useless; they bring authority into contempt.

Thirdly.—I should have thought it would have been unnecessary to deform the bill with an allusion to “informers.” He must be an ingenious fellow, a regular “sea-lawyer” indeed, who succeeds in acting upon false certificates, or, those which may be borrowed, if proper caution be observed at the different boards.

Fourthly.—The licence to those who are to levy distress, seems distressingly severe. It gives too great a power to a mere “executive.” We all know that even restricted power is often abused. Is it “constitutionally?” as the phrase is. And why, pray, should not an aggrieved party not gain summary redress? Why send him to the Quarter Sessions at a considerable expense? What is the meaning of getting the case summarily entertained at the Quarter Sessions? That court may be held eight or ten weeks after the grievance has occurred. Why not let a sitting magistrate settle the affair off hand? That would but be “even handed justice.”

An “Interpretation clause” is a novelty. Surely the Lawyers had no hand in that! Indeed it seems to be, not altogether unnecessary, as a new grammatical feature that would make Lindley Murray stare, were he on earth, is to be exhibited—or, rather to be conceived.

It would be convenient if all the sentences were numbered.

I heartily wish the Bill success, and have great pleasure in complimenting Captain FitzRoy on its appearance.

A SEAMAN.

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#### MASTERS AND MATES OF MERCHANT SHIPS.

(From the Shipping Gazette.)

SIR.—If you think the following, which are merely extracts of remarks made in my journal at sea in 1840, are of any service, now that the subject they refer to has become a topic of general discussion, you are at liberty to give them insertion.

I am inclined to believe, from experience, that three-fourths of the accidents that happen at sea are caused by neglect. Our maritime laws are of little use; they are very defective, and in many points not at all appropriate to the real wants of the service.

Our seamen, after a long servitude, are more ignorant of their duty than a lad would be after two years' practice under able officers who are, unfortunately, now-a-days, scarce; too many of the latter are more in need of being taught themselves, and, of course, unfit to teach others.

Ignorance, assurance, pride, are chiefly the qualifications to be met

with on the quarter-deck of a merchant ship. Can such men instruct an apprentice the duty of an able seaman or that of a faithful servant? This is the question. Let those who answer No!

“ Blame the sleeping authors of our laws,  
That thus neglect their guardian sailors cause.”

Should the legislature ever enact a law to examine mates and masters it will be a boon to humanity.

Many of our wretched seamen are led like sheep to the slaughter, being placed (very often) under the guidance of the most abandoned and ignorant men. The seamen's loss is deplored as an unavoidable misfortune, whereas eight times out of ten their destruction might be traced to the positive neglect or insufficiency of those in command.

I am much surprised *that our underwriters*, who are the pecuniary sufferers in the main, do not, in a body, endeavour to obtain such a desirable end. If once an impartial examination took place, and none but qualified men held such responsible situations, shipwrecks and other disasters would be fewer, and young, clever, friendless sailors would meet with encouragement; for, once possessed of a certificate of ability, it would be to them a letter of introduction and recommendation. I have often *smiled* at the idea of our government not allowing a vessel to carry above a certain number of passengers without a surgeon to take care of their health, and at the same time with perfect *nonchalance* suffering a vessel, doctor, passengers, and all to be sent adrift under the conduct of an individual who cannot guide himself, and whose should-be assistants are as often incapable of rendering any support, by reason of their ignorance and other deficiencies. To this must be attributed that want of tact, energy, and vigilance which is noticed in two-thirds of the sailors of the day. We seldom fall in with that honest, hardy, obedient, thorough-bred, jack-of-all-trades seaman we were wont to meet with, and the reason is, that most of our young seamen are placed for instruction under men uninstructed themselves—'tis the blind leading the blind.

As to the examination of masters and mates, I believe it would be of paramount importance to hint, previous to such examination, at those requisites which should be expected; *not that I deem it necessary in the least* to supply question and answer; quite the contrary, that would but furnish a passing-made-easy sort of affair, that would do all damage and no good.

To begin with the chief mate. He is expected on joining his ship coming from dry dock to superintend her outfit, and to do this with any degree of credit, he must know how to rig the sheers for taking in her lower masts and bowsprit; how to cut the rigging without waste, and how to fit it with propriety and dispatch; then begin his common duties. He should know how to measure, take in, and stow different kinds of cargo, that the owners may not incur loss; how to dunnage the vessel, and how to dispose of heavy and light goods so as to prevent the labouring of the vessel; how hatches, boats, spars, &c., should be secured previous to leaving port, that the vessel may be prepared to encounter rough weather without causing confusion. He should know

how to set and carry canvas, and when to take it in. He should also be familiar with the proper way of repairing sails, and of making new ones, if necessary. Upon the serviceable state of the sails all frequently depends; and I would by no means neglect inquiry upon so important a point of the chief mate's duty. There is not one mate in fifty able to cut out a sail, and very few belonging to ships in the foreign trade who could put a patch on with tolerable neatness. I have known ships which have been months idle in a foreign harbour, to quit it without attempting to repair canvas which was lying split below, when they came to anchor. A good mate should know how to unbend and send down sails in a gale of wind, and how to send up and bend others, without hazarding their loss, or placing the men in unnecessary danger.

The chief mate should know how to act with promptitude and effect, in the event of a man falling overboard, when the ship is going fast through the water under a press of canvas. How to wear a ship when she will not stay in little sea-room. How to mark the several lines, and to regulate the length of the knots on the log to the log glasses. How to send a lower yard up or down, blowing hard; to rig a jurymast, and make and fit a temporary rudder. How often pumps should be tried with a perishable cargo, especially on leaving port. Having a constant leak, how best to keep the pumps going without discouraging the men. How to manage a ship at single anchor, and keep her from fouling it. How to moor a vessel with expedition in a crowded anchorage, and how to unmoor and take her to sea again. What should be done when on discharging a cargo it is discovered that by leakage or other cause damage has taken place.

A chief mate should be able to explain, without hesitation, any question put to him on chart sailing, and about tides, soundings, head-lands, and lights. He should be acquainted with every method and appliance for finding the latitude and longitude, so as to take advantage of making observation of any celestial object which may happily be available in case of need. All these things, besides the common board-a-ship routine duty, a chief mate should understand.

Of the master, it should be further ascertained if he was fully aware of all the responsibilities which would devolve upon him in the prosecution of a voyage. I would have him explain how he would conduct his outfit, how supply spars, sails, rope, stores, water, provisions, &c., for the voyage, according to its contemplated duration. What documents are to be inspected before bills of lading are signed for cargo received. What memorandums should be appended to these bills generally, in order to exonerate the master, who is in most cases a stranger to the quality and value of the goods shipped. What are the chief requisites in a charter-party which should be examined before signature, to protect the interests of the ship.

The above knowledge is indispensable to those masters who have the power and liberty of doing the best for their owners. The mere ship driver only can do without. What document does a master require at the port of sailing to avoid difficulty at the port of destination. What the quickest and safest way to save your spars and sails in a sudden squall, having sea-room. Arrived at the port of delivery, what is to be

done before breaking bulk. What is to be observed in making certain passages to various ports within the limits of the trades and monsoons. Should the vessel be stranded before arrival at the port of destination, what duty is involved by the master. What will vitiate a policy of insurance on a stated voyage. If detained by arbitrary authority or caprice at a foreign port, what should be done for the interest of the owner that he may not be without the means of obtaining redress. When the vessel stands in need of repair abroad, what must be done to obtain the necessary funds in case of need, and what the precaution to be observed in obtaining them. A portion of the cargo is damaged by stress of weather, how is the vessel to be protected when the said goods are to be delivered. What is to be observed with regard to the employment, services, victualling, and control of the crew, in berthing them, keeping them clean, and in regard to Sunday at sea. What are the powers vested in the master to rule his crew, how are they to be exercised, and what is at the same time expected of him.

I have set these requisites down without much order, just as they occurred to me, and I hope the time will come when even mates of ships will be able to show that they are well acquainted with them.

I am, &c.,

*Liverpool.*

A MASTER MARINER.

P.S. As to ships, I think that Lloyd's should, instead of employing only a few surveyors to attend to the business exclusively, have all their surveyors exclusively engaged, and that their number should be consistent with the size or tonnage of the various ports. If it is really for the interest of the shipowner that his vessel should be well examined and thoroughly repaired, and that he should confide in the rectitude, zeal, diligence and judgment of his captain, if he is a respectable and clever man, as much as in the disinterestedness and business-habits of agents abroad. Perhaps, sir, I may write you again on this subject.

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#### ON THE NEW STANFORD CHANNEL, *Lowestoft Roads.*

*H.M.S. Shearwater, Lowestoft Roads, Nov. 29th, 1842.*

SIR.—It is with much gratification I acquaint you, that a new and available channel, carrying 20 feet throughout at low water springs, has recently opened itself directly through the body of the Holm Sand into Lowestoft roads.

Having heard from the pilots in the course of the autumn that a 12 feet channel existed in a certain direction over the sands, which they termed the "Fishermen's Gat," we proceeded to sound this passage, in order that we might take advantage of it in running in and out of the roads, while employed surveying on this part of the coast; but before the first day's examination was over, we found evident symptoms of a deeper and wider opening in a different direction; and a more complete examination has fully proved the existence of the above named channel lying in a south-west direction from the Stanford light vessel.

You will, probably, remember that in 1834, or, perhaps, sooner, the Old Stanford channel had begun to fill up, and that the only entrance into Lowestoft roads was by the in-shore passage through the Pakefield Gat, in consequence of

which Capt. Hewett was directed to re-survey this roadstead, the result of which was published by the Admiralty in 1836, and it is by comparison with that chart that I can better make you aware of the amount of the present extraordinary changes, all of which have taken place since that time.

First, then, Lowestoft Ness, which I believe to be the chief cause of the change in the sand, has grown out 70 yards since November 1836, the date of the last survey, and this sandy Ness now projects rather more than 800 yards from the foot of the cliff forming an invaluable breakwater against northerly and southerly gales.

Secondly.—The Inner Shoal, as it is called, just to the southward of the south Ness, has spread considerably in breadth, and moved bodily to the eastward towards the Newcome sand, and has now only 12 feet water on it at a distance of little more than half a cable from the light vessel, thereby almost blocking up the eastern channel.

Thirdly.—The western edge of the south-west Corton sand, some distance north of the Ness, has advanced to the westward, the 12 feet line in some places occupying the position of the 24 feet line in 1836, thereby narrowing the north roads.

These three causes combined appear, then, to have forced the current, most likely when increased by a high spring tide and a northerly gale, to burst through the barrier of the Holm sand and to excavate for itself a channel now five and thirty feet deep where before was a sand-bank with only one fathom of water on it.

One effect (or perhaps indeed a cause) of this disturbance has been that the northern part of the Newcome sand, from a width of one cable, (within the 12 feet line) has spread itself out into a flat nearly half a mile wide, and has moved bodily to the eastward so as entirely to fill up the Old Stanford Channel, so that where ships sailed in with occasionally a depth of six fathoms only so far back as the year 1830 is now an extensive shoal in places only 8 feet below the surface of the water.

Another great change is in the southern part of what must now be called the Holm sand; here immediately opposite the Ness the current has cut away a large slice from the western edge of the shoal, and in some parts there are now 12 feet water where in 1836 was a sand-bank dry six feet above the surface; generally too this shoal does not dry over above half the space it formerly did.

But all these changes are more than compensated by the opening to which I have before alluded, here is a passage which perhaps I may venture to name the New Stanford or Shearwater Channel nearly one-third of a mile wide with 20 feet throughout at low water springs; leading direct to the light vessel and enabling ships that may be caught to the southward in a S.W. gale, and cannot fetch into the Pakefield Gat, to run with a fair wind on a N.  $\frac{1}{2}$  E. course into Lowestoft Roads; it will also enable vessels which break or slip from their anchors in Yarmouth Roads in a N.N.E. gale, instead of running to leeward for the Pakefield Gat and thereby risking the being carried on the Barnard, to stand clear out to sea with a fair offing from the shoal under their lee, with the additional advantage of not having to make a circuitous course, and to run the gauntlet through all the shipping that in blowing weather always fill this roadstead.

Herewith I have the honour to forward a chart on the scale of 8 inches to a nautic mile, shewing the changes that have taken place in these sands, and the channel leading direct on a N.  $\frac{1}{2}$  E. course to the Stanford Light vessel, and as I have the whole subject now before me, I have ventured to place on the chart three buoys, marking out the Channel, which I submit to the greater experience of the Elder Brethren of the Trinity House. The 1st is a black buoy on the southern extremity of the Holm Sand. 2nd a white buoy on the western elbow or hook of the Holm. 3rd a red buoy on the eastern spit of the Newcome. I would also suggest that the Stanford light vessel be moved about two cables' length farther south; and placed at the north spit of the

Newcome, thus leaving a channel into Lowestoft south roads, from the north, between her and the Inner Shoal. The N.W. Newcome buoy also requires moving out to the westward.

It only remains to add that the examination of this channel and the drawing of the accompanying plan, was the work of Mr. E. K. Calver, Master and Assistant surveyor of this ship, in the short intervals of fair weather which have occurred during the last stormy fortnight.

I am, &c., JOHN WASHINGTON, *Captain, R.N.*  
*To Captain Beaufort, R.N., F.R.S., Corr. Inst. Fr.*

P.S.—I have felt it my duty to point out this Channel to the Pilots at Lowestoft, and shall make it generally known to the Revenue cruisers, and among Sea-faring men on my return to Harwich.

[We are gratified in being able to state that the Corporation of the Trinity have promptly buoyed this New Stanford Channel, and issued a notice of it; and that the plan of Lowestoft Roads, shewing these dangers, has been published at the Hydrographic Office of the Admiralty. It may be observed, however, that the Stanford light vessel has not been moved to the North Newcome Spit, as recommended, therefore, all vessels, whether coming up or going down, must take care to pass her to the eastward.—ED. N.M.]

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#### NAUTICAL NOTICES.

NAVIGATION OF THE CHANNEL.—The following petition has been presented to the House of Commons, and ordered to be referred to the committee on shipwrecks.

To the Honourable the Commons of the United Kingdom of Great Britain and Ireland in Parliament assembled, humbly sheweth.

That your petitioners being merchants, shipowners, and traders, belonging to the several places set against our respective names, have a great interest in the safe navigation of the English Channel, and most humbly represent to your honourable house that the many disasters which have taken place in the channel during the past year would, in a great degree, be avoided by the erection of permanent light-houses upon the Ridge, situate midway between Dungeness and Boulogne, or the Varne, situate between Folkestone and Boulogne, and upon the Goodwin upon the coast of Kent.

Your petitioners are apprised that Mr. William Bush, civil engineer, of Union street, Deptford, is possessed of a patent right, whereby such important works could be constructed at a small comparative cost; and although his efforts upon the Goodwin Sands during the last summer were frustrated by a variety of unfortunate disasters, inseparable from new undertakings, and ultimately destroyed by a large ship called the Nancy, having run in upon the caisson before it was completed; your petitioners, notwithstanding such casualty, are positively informed that the plan is good, and can be effected.

And your petitioners, therefore, most humbly suggest to your honourable house the propriety of instituting an inquiry on the subject before a select committee of your honourable house.

And your petitioners pray that such committee may be appointed accordingly.

Signed by 80 signatures of the principal London merchants.

[We are glad to find that there is some probability of these projects being carried into effect, and should they be so, the above notice will place seamen on their guard when running up channel. A light on the Ridge will be a good thing in many respects, and this dangerous shoal as well as its neighbour the Varne will then be robbed of its terrors to the ships navigating the most dangerous part of the English Channel.]

*Trinity-house, London, Jan. 24th, 1843.*

**STANFORD CHANNEL, Lowestoft Roads.**—The alterations which have been in progress for a considerable time past in and about the Newcome and Holm Sands, having rendered the old Stanford Channel again navigable,—

Notice thereof is hereby given, and that this Corporation has accordingly caused the said Channel to be buoyed out, and the buoys within and at the southern entrance thereof to be placed in the following positions, viz.—

A red buoy on the east spit of the Newcome, marked "East Newcome," in  $3\frac{1}{2}$  Fathoms, with the following marks and bearings, viz.—

The channel end of Lowestoft church in line with the large White House next west of Lowestoft Preventive Station House, N.b.W.  $\frac{1}{2}$  W.

Carlton Colville church, midway between Pakefield church and Pakefield windmill, W.b.N.  $\frac{1}{2}$  N.

Stanford light vessel, N.b.E.  $\frac{1}{2}$  E.

Holm hook buoy, N.E.  $\frac{1}{2}$  N.

South Holm buoy, E.b.S.  $\frac{1}{2}$  S.

South Newcome buoy, S.W.b.W.  $\frac{1}{2}$  W.

A black buoy on the south spit of the Holm Sand, marked "South Holm," in  $3\frac{1}{2}$  Fathoms, with Lowestoft windmill in line with the west end of St. Peter's church at Lowestoft, N.b.W.  $\frac{1}{2}$  W.

Pakefield church, midway between Carlton Colville church and Pakefield windmill, W.b.N.  $\frac{1}{2}$  N.

Stanford light vessel, North.

Holm Hook buoy, N.b.E.

South Newcome buoy, W.b.S.  $\frac{1}{2}$  S.

Middle Holm buoy, N.E.h.E.  $\frac{1}{2}$  E.

The above Buoys mark the southern entrance of the Channel, and lie one-third of a nautical mile apart.

A white buoy on the West Hook of the Holm, marked "Holm Hook," in 6 Fathoms, with Lowestoft church tower in line with Lowestoft low light-house, N.W.b.N.

A Six Vane Windmill West of Kirkley, in line with Kirkley North Windmill, N.W.b.W.  $\frac{1}{2}$  W.

Stanford light vessel, N.b.W.  $\frac{1}{2}$  W.

South-west Corton buoy, N.b.E.  $\frac{1}{2}$  E.

Mariners are to observe, that the tides in the Stanford Channel set N.E. and S.W., and that the light vessel must always be passed to the eastward.

Note.—The above bearings are magnetic, and the depths those of low water spring tides.

By Order,

J. HERBERT, *Secretary.*

*Trinity-house, London, Jan. 24th, 1843.*

**HARWICH HARBOUR**—The Shoals in and about the entrance of the Harwich Harbour having materially changed their positions.

Notice is hereby given, that the following alterations in the Buoyage thereof have consequently been made by direction of this Corporation, viz: The Red Buoy, formerly placed off the S.W. end of Landguard Beach, has been removed, and a Black Buoy, marked "Beach End," placed off the South Spit thereof, in  $2\frac{1}{2}$  fathoms, with the following marks and bearings, viz :

The Mortella Tower on the Mound of Felixstow, in line with the S.E. angle of Landguard Fort, N.E.b.E.

Harwich High Light Tower, it's apparent width open West of the low light House, N.N.W.  $\frac{1}{2}$  W.

Andrews Buoy, S.E.

The Black Buoy on the Altar has been removed about a Cable's length S.E. b.S. of its former position, and now lies in 3 fathoms, with The Mortella Tower

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on the Mound of Felixstow, in a line with the Northernmost Boat House next North of Landguard Fort, N.E.b.E.  $\frac{1}{4}$  E.

Harwich high light tower, just open North of the low light house, N.W.b.N.

Beach end buoy, S.b.E.  $\frac{1}{4}$  E.

Cliff foot Rock buoy, N.W.b.W.

Glutton buoy, N.N.E.  $\frac{1}{4}$  E.

And in order to point out the western boundary of the proper Channel to Harwich after passing the above Buoys, Two Red Buoys have been placed as under; viz.

One on the East part of the Shoal marked "Glutton," in 9 feet, with Harwich church spire, N.W.b.W.  $\frac{1}{4}$  W.

Harwich cliff end, W.  $\frac{1}{4}$  S.

Felixstow Mortella tower, E.b.N.

The other on the north end of the shoal, marked "Gristle," in 2 fathoms, with Landguard fort cupola, it's width open East of the flagstaff on the fort S.b.E.

Harwich low light house, it's apparent width on with the North angle of Harwich citadel, W.b.S.  $\frac{1}{4}$  S.

Glutton buoy, S.  $\frac{1}{4}$  E.

Ships and vessels using the Harwich Lights to enter the Harbour, must, to avoid Landguard Beach, after passing the Ridge keep the High Light well open West of the Low Light until Landguard Fort bears East, when they may haul in for the Beach and anchor.

N.B. The above Bearings are Magnetic, and the Depths, those of Low Water Spring Tides.

By Order,

J. HERBERT, *Secretary.*

**PILOTAGE DEPARTMENT.—Belgium.**—The minister for foreign affairs of H. M. the King of Belgium has given notice, that in compliance with the general request of the merchants, shipowners, masters of vessels, and other persons interested in the navigation of the river Scheldt, that a new service of Pilotage, has been established by the Belgium government from Flushing, in and out to sea, and from Flushing, up and down to Antwerp or Ghent, for the use of all ships bound to, or from Belgium.

The new Belgium pilot-boats will be found cruising outside of all dangers, between Westkappel and Schouwen, for the north-east channel; and between Blankenberg and Nieuport for the Wielingen, or French channel. They are cutter-rigged, painted all black, and wear the name Antwerpen in their mainsail. They carry at the mast head a red flag, with their number in white.

The Belgium pilots may be known by a silver medal, containing the arms of the kingdom, their number, and the station to which they belong; they are also provided with a license from the government.

Masters making use of a Belgium pilot will be enabled to pay the pilotage dues in Antwerp or Ghent, their place of destination, by which they will avoid any stoppage at Flushing, and free themselves from the expensive employment of an agent in that place.—*Shipping Gazette.*

*Hydrographic-Office, Admiralty, March 10, 1843.*

**DUNKERQUE AND GRAVELINES LIGHTS.**—Notice has been given by the French government that the following lighthouses at Dunkerque and Gravelines, on the Coast of France, in the Departement du Nord, have been completed, and will be lighted on the 1st of May next.

**Dunkerque Revolving light.**—The new lighthouse stands in lat.  $51^{\circ} 3' N.$ , and long.  $2^{\circ} 22' E.$ , on the head of the pier, between the harbour and Fort Risban, and 1531 yards in a N.W. direction from l'Heuguenar tower.

To a vessel distant, 4 or 5 leagues, the light will appear to revolve, being eclipsed once every minute; but within that distance a faint steady light will always be visible between the periods of the strong glare.

The building is 180 feet high, and the light being 193 feet above the level of the sea, will be visible from a ship's deck at the distance of 6 leagues.

On the first appearance of this light, the present temporary light will be discontinued.

**Gravelines Fixed light.**—The new lighthouse from which a fixed light will be shewn, stands in lat.  $51^{\circ} 0' 18''$  N., and long.  $2^{\circ} 6' 48''$  E., to the eastward of the pier heads, at the entrance to the harbour. The building is 83 feet high, and the light being 193 feet above the level of the sea, will be visible from a ship's deck at the distance of 6 leagues.

**HONFLEUR LIGHTS.**—Information has been received by her Majesty's government, that on the 1st of this month the outer light at Honfleur, on the outer extremity of the Western Jetty, was changed from the natural colour to a Red light.

**ENGLISH HARBOUR, Antigua.**—We are enabled, on the highest authority, to contradict the report that the entrance of this harbour has been rendered impassable for ships of any considerable burthen, by the falling in of portions of the two hills by which the entrance was protected. Fears have been entertained that such might be the case, from the effects of the recent earthquake, but we are happy to find that, on the depths being examined on the day after it took place, no alteration was discovered either at the entrance or in any part of the harbour whatever.

*Folkestone, March 4th, 1843.*

**FOLKESTONE LIGHT.**—Notice is hereby given to Master Mariners, and others, that, in consequence of the town of Folkestone being lighted with gas, it is intended to hoist a Red Light at the West Pier of the harbour, instead of a White Light, on and after the 1st day of April next.

CHARLES GOLDER, *Harbour Master.*

**ISLAND OF PALMA, Canaries Jan. 10.**—Several English vessels having lately sent ashore their boats at Tersacute, in the west side of this island, without receiving the succour they required, I beg, through you, to inform the shipping interest in general, that the orders from the Spanish government are that no communication be held, or refreshment given, at any other place, except this and the town of Santa Cruz, on the N.E. side of Palma.—*Shipping Gazette.*

**TOBAGO LIGHT.**—A lighthouse is built at the entrance of Scarborough Bay, Tobago, not yet lighted, painted red and white. Remarks of H.M.S. Griffon Lieut. C. Jenkin.

**THE ROVER SHOAL.—Mozambique Channel.**—"Extract of a letter received at Liverpool, dated Mauritius, Dec. 20th, 1842.

"The Shannon was wrecked on the 7th of October, on a reef not laid down in the English charts, lat.  $12^{\circ} 24'$  S., long.  $46^{\circ} 30'$  E. The crew were obliged to take to the boats immediately, with the only clothing they had on; and were exposed to the elements for six days and nights, in want of provisions and water, when on the 12th of October they reached Passandora (Passandava) Bay in the Island of Madagascar, whence they were taken on the 13th October by the French corvette of war Fortune. Remained on board that vessel 52 days, where they received the kindest treatment, and were then landed on the island of Bourbon, whence they were taken in the Isis, British frigate, to the Mauritius, and arrived there on the 14th of December all safe and well with the exception of one man sick in the Hospital." The master (Luckett) states that he should leave for Liverpool a day or two after the date of his letter.

The foregoing appeared in the *Shipping Gazette* of the 20th of March, and we have transferred it here, with the *serious charge* against the English charts in italics, for the purpose of informing the Master of the Shannon that he will

find the shoal on which he lost his vessel in Captain Owen's chart of the Mozambique Channel: and for an account of it, we may refer him to the *Nautical Magazine* for 1832, as well as that for 1833; where in p. 3 of the latter he will find the account repeated, as communicated to this journal by the late Captain Horsburgh. We suppose the "*English Charts*" above alluded to are some of those "tobacco charts" of English publishers of which there are far too many afloat.

The loss of this vessel adds another proof to the many already given of the necessity of enquiring into how and why a wreck takes place, and exposing every instance of that false economy which supplies our Merchant shipping with the poorest instead of the best charts that are published.

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**LIGHTS.**—*Workington, Feb. 21.*—The trustees of Workington harbour are about to substitute stained glass (red) in the lantern on St. John's Pier, instead of the present plain white, in order that it may be the more readily distinguished from the neighbouring tide lights. They are at present so much alike that in hazy weather the most experienced are often led astray, particularly when intersected with the lights from the coal pits. It is intended that the stained glass be placed so as to form half a circle, and be seen to the seaward along the coast of Cumberland, and as far north as Salterness, on the Scotch side of the Firth. This distinction of the lights is expected will be a general good to those frequenting the Solway navigation.—*Shipping Gazette.*

**DANTZIC LIGHTS.**—Of two standing lights at the harbour of Dantzic, at Neufahrwasser, the lesser one, which has been hitherto lighted as a beacon, a short distance from the great light tower, will, on the fifteenth of April of the present year, be discontinued, and on the sixteenth be replaced by a light of the Fresnel invention, fixed in a small iron lighthouse, on the summit of the Eastern Harbour mole, and, along with the large light, be kept burning every night from sunset to sunrise. This new light is situated N. by compass 4,800 Rhinland feet\* distant from the great light tower, is 43 feet† above the level of the sea, and may be seen in all points of the compass from W.S.W. to S.E. and from sea, by clear weather, if the eye of the observer is about 10 feet above the level of the sea, at a distance of more than 2½ German miles.

Ships leaving Dantzic Roads in the night, and having arrived as far as Old Weichselmunde (the mouth of the Old Vistula) must bring the higher, or S.W. light, not more westerly than S.W., and the light of the Eastern mole not more northerly than west, in order to avoid the shoals and flats of the Old Vistula, which extend to a great distance at its outlet.

The light on the Eastern mole, bearing S.b.E. or S.S.E., with the soundings of five fathoms water, offers safe anchorage in the roads.

Both lights, which observed in a south direction appear one, are at a considerable distance from each other, and the great high tower is westerly of the one at the Mole.

In laying down the bearings, the variation of the compass has not been considered.—Dantzic, Feb. 21, 1843. Royal Prussian Administration.—*Ship. Gaz.*

\* 1647 yards.

† 44·2. English feet.

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**DIRECTIONS FOR SHIPS MAKING MARANHAM:**—1st. Every vessel arriving off Salinas, either foreign or native, will hoist a red flag, independent of any particular place with the exception of the Gaffend of the mizen, which is to request a pilot.

2nd. At Salinas or the pilot-station there will always be hoisted during the day a white flag, which intimates the residence of the pilots being there.

3rd. The same white flag accompanied by a red one, hoisted on either the right or left side, is to say that there is a pilot at the station, and he has a boat.

4th. After this signal there will follow the one to indicate to the vessel the

time the pilot can go off, and for this reason the persons on board ought to pay the greatest attention; therefore, if from the shore a blue burgee or pendant is hoisted, it is to indicate that the vessel must await the pilot, who will go off immediately; but if instead of the blue pendant a red one is hoisted, it is to inform the vessel that it is not a proper time to go off, but that the vessel must be kept under easy sail, or lay-to at sea with the ebb, and in shore with the flood tide, so as to be near the shore at high-water, which the masters must bear in mind takes place at half-past one or two o'clock at new moon, and at full, in shore at half-past seven to eight, A.M., and half-past seven to eight, P.M., at the quarters of the moon, at twelve to half-past in the day, and same at night; and it is only at high water that the pilot can go off.

5th. If the signals are made before mid-day, and if after the signal for waiting is made two pendants are hoisted, red above and blue below, it is to inform the vessel that the pilot will go off before twelve o'clock. If the blue pendant is above and the red underneath, he can go off only after twelve o'clock.

6th. If the signals are made in the afternoon, the red flag intimates that the pilot will go off before midnight; if the blue flag is hoisted, after midnight. Respecting the fires that were lit at night to indicate that there was a pilot, but no boat, and that there was neither—this practice is annulled, in consequence of the vessel that is now getting ready, and to be constantly kept at the orders of the pilots at Salinas. *Maranham, Feb. 4, 1843.—Shipping Gazette.*

SIR.—In answer to your note appended to my communication headed Mindoro Sea. I was off the Point Cabeza Redonda on July 28th, the longitude of which was determined by chronometer, measured from Manila, which I was obliged to do, having only Spanish Charts with me, which are laid down for that meridian. When the observations were taken the point bore due south not quite half a mile off.

The latitude was found by double altitude corroborated by meridian distances, the ship having been steered upon a parallel from the first observation until noon.

With respect to Tablas, the hills are not flat-topped, nor is there the least appearance of Table land in any part I saw. So totally different is the Island from what I expected, when I first saw it, (having your number for July 1841 by me, wherein, it is stated to be Table land), that I tacked ship and stood over to Mindoro, fully supposing I had got wrong, (not being able to get observations) and that the land was not Tablas, but some other Island between it and Panay.

I suspect as Tablas is very narrow, say about 8 miles, and at least 40 miles long, the hills nearly all about the same height, and not being able, (when in the proper channel of Straits of St. Bernardino) to sight it until nearly end on, it may then appear very like Table Land although so very different when abreast, either close to or well in the offing.

The intention of my first letter was merely to state that there was such a passage into the Pacific, (without going round by Point Calavite) which I think was not generally known (and as Tablas forms one side of the passage to warn those who may be similarly situated and bear up, that it is not Table Land) and not that the Point Cabeza Redonda laid in any exact position, although I consider it quite near enough to enable a person to steer for, without endangering the ship.

I am, &c.,

March 21st 1843.

JOHN HALL, JUN.

MORANT LIGHT.—The situation of the Morant lighthouse on the eastern end of the Island of Jamaica is lat.  $17^{\circ} 55' 45''$  N., and long.  $0^{\circ} 40' 0''$  E. of the flag-staff at Port Royal dockyard, variation  $3^{\circ} 50'$  East.

The easternmost point of the island bears from the lighthouse S.  $31^{\circ} 35'$  E.

distance about 500 yards, the N.E. end bears N. 33° 6' W., and the elbow of the point to the southward bears S. 4° 5' W. (true.)

The light which is very brilliant revolves every minute, (with a continued dim light between the interval of the strong flashes) and can be seen distinctly at an elevation of 12 feet above the horizon, 19 miles in the circle described from the N.E. end of the Island to the direction of S.W.b.W. magnetic, consequently vessels working to the eastward should never lose sight of the lighthouse until it bears N.W. which would avoid any chance of their falling in with the dangerous Morant Kays; and when bound to the westward after passing Port Morant by keeping the light in sight they will avoid any chance of coming near the shoals on the southern shore, as the light is lost sight of when bearing to the eastward of N.E.b.E. magnetic.

G. BIDDLECOMBE, *Master H.M.S. Imaum.*

[See notice in our last volume.—Ed.]

PEHR SÖNS SHOAL, *Sweden.*—Extract from the Swedish Gazette *Stats-Tidning*, Feb. 3rd, 1843.—The Commissioners for the maritime affairs hereby give notice that near Bredskäret at the south entrance of Umea in lat. 63° 36' 50" N., and long. 38° 30' 45" East of Ferro., the shoal called Pehr Söns on which, in the late Admiral Klint's Chart, is marked to have 30 feet of water on it—has now been found to have only 8 feet\* (Swedish) on the shoalest part, Stockholm Jan. 31st 1843.

\* About 7½ English feet.

JOHN ROSS, *Captain, R.N.*

#### NIGHT LIFE BUOY.

*Addiscombe, Croydon, Feb. 10, 1843.*

SIR.—Permit me to state, through the medium of your journal, that I shall feel very grateful to any officer who may be in England, or who, on his arrival in England, will take the trouble to inform me, of any well authenticated instance, in which the Night Life Buoy of my invention has been the means, under Providence, of saving life.

It is now nearly twenty-five years since the Admiralty ordered it to be supplied to every ship in the Royal Navy. One of the first to which it was fitted was the *Vengeur*, commanded by the late Sir Frederick Maitland, who informed me by letter, that in a voyage of nineteen months, four men had been saved by it, two of them by night. Several officers of rank have obliged me by letters of a similar nature; and in one I received this morning, the writer (after stating that two men had been rescued from a watery grave by means of the buoy in a ship which he recently commanded—one of them on a dark tempestuous night,) adds, "I believe every officer, lately under my command, had instances to relate which they had witnessed, and I hardly remember broaching the subject to any brother officer, who had not cases to mention of lives being saved by your Life Buoy."

Such being the case, I naturally feel a very strong desire to ascertain, as far as possible, the aggregate number of instances in which it has been successfully tried; and I shall feel thankful to any officer who will afford me the gratification I now solicit, requesting that names and dates, as far as practicable, may be given, and whether the instance occurred by night or by day.

I am, &c.

THOMAS COOK, *Lieut. R.N.*

## LLOYD'S SURVEYORS AND SHIPOWNERS.

SIR.—Observing that in your last number you inserted, p. 201, a letter, signed “A Shipowner,” preferring a charge both against the Society for Lloyd’s Register of British and Foreign Shipping, and against their surveyors, especially those on the Wear, in respect of a ship, *the name* of which the writer thought proper *most carefully* to conceal, I cannot help thinking that, by giving encouragement to anonymous productions, utterly destitute of truth, as this statement has been proved to be, you are, at least, suffering yourself to be grossly imposed upon, and, perhaps, running the risk of your useful and interesting work losing some part of its value. With sentiments such as these, you will, I would fain hope, believe that I am one of its well-wishers.

How then stands the fact? Will Mr. Nater of South Shields, who, from his allusion to a chancery suit, has since turned out to be the writer, undertake to prove, as he asserts, that “about three years ago 364 ships were launched in one year” on the Wear? Will he shew that at that time, or at any other, there have been any complaints made to Lloyd’s Register Committee, of the want of an additional surveyor at that port? If the vessel to which he alludes, which proves to be the “Dorothy,” really required “every voyage she has had to go into dock, or wanted repairs in the hull,” will he give a direct reference to the builders by whom she was docked or repaired, so that his statement may be corroborated? Will he shew that he ever made this apparently gross violation of his contract by the builder of the Dorothy, the subject of complaint to Lloyd’s Register Committee, either as it affected the conduct of the surveyor, or the classification of the vessel? He asserts that “Lloyd’s surveyor at Hamburgh,” pronounced that “it was a disgrace that *so fine a looking vessel* should have been so badly put together.” Lloyd’s Register Committee have no surveyor at Hamburgh. Where then is the person alluded to?

I have, sir, endeavoured to confine myself, in this appeal to your well known candour and impartiality, to the subject matter of complaint of the anonymous writer, so far as his interests alone may be supposed to be concerned, and, I doubt not that, in your next number, you will be good enough to give this a place. I am the more anxious that this should promptly appear, that your readers may see that charges, such as are imputed to those who have the management of Lloyd’s Register, will not be permitted to pass unnoticed.

The shipowner’s letter had previously appeared in a daily journal, and the editor, with somewhat more zeal than discretion, too readily giving implicit credence to the facts set forth, had stringently commented upon them. By this time, however, he is, I hope, quite satisfied that the assertion that “on her last voyage from Hamburgh to the Tyne, she had new waterways,” is directly the reverse of the truth. The respectable surveyor on the Tyne, Mr. Poppelwell has proved that such was not the fact:—the remainder of the assertion as to the substitution of spike nails for bolts, must, therefore, be equally discreditable.

I am quite at a loss to discover what the motive of the writer has been. Had he really sustained any damage, and had limited his com-

plaint to a just but startling statement of injuries to which he might have considered he had been exposed from the want of a proper superintendence on the part of Lloyd's surveyor, he might, for many reasons, have wished to conceal his name, in attempting to bring about a public benefit. As the case stands, however, the unworthy resort to an anonymous and unfounded slander, is most unpardonable under every view that can be taken of it.

I am, &c.

A FRIEND TO TRUTH.

RETROSPECTION.—*By an old gray-headed Sea-Lieutenant.*

(A BIRTH-DAY ODE.)

Where are those joys clinging the heart around—  
Like flow'rets of morn with dew-drops bound,  
Those light thoughts—truant as the fleecy clouds of May  
Lit up with fairy forms, that fleet away—away.

Where—where are they?

Dreams of a day!

The time—when I laugh'd in the middys' berth,  
That temple of gay-hearted joyous mirth.  
The time—when I gambol'd o'er the golden sand,  
With steps so light as scarcely touched the strand;

And smiling look'd to the sky above,

That spread o'er me its blue alcove:

When my heart was buoyant as gossamer wing,  
And I dream'd not that time its sorrows would bring,—

When my eyes undimm'd by a tear drop, shone—

Where is that blessed time?—'Tis gone—'tis gone!

The hour—when I lov'd to watch the billows rise,  
List'ning with wild delight to the petrel's cries  
As she shot like a meteor o'er the wave;  
Or, ocean phantom guarding the seaman's grave:  
When my spirit in fancy, floated along,  
And around my young heart was a dream of song—  
Such as these, which time and remembrance awake,  
Of voices and words, which no sorrow partake:  
That time—when I stood by the river's side,  
As the sound of the gun boom'd o'er the tide,—  
When my life, like the wave of the flood, went on  
Bright, and sparkling—for ever is gone—is gone!

And what have been the joys, and sorrows of life?

Unmixed? Nay! pleasure and pain—peace and strife.

Various—and varying like the fittings of a taper—

Now lighting up the heart—now shadowing it as a vapour.

Oh! how mysterious doth appear the things that round us throng;

Short sighted mortal! Can thy guardian Providence do wrong?

The tears of grief, which shadow our brightest joys, and dim the sight.

Are these wise dispensations? "Whatever is, is right!"

Yet hope, and joy, and fear; each sad and mournful tone

Are present still, but our young sunny days are gone!

Dec. 2, 1842.—*Ætab.* 55.

## ROCKS OF THE EASTERN ATLANTIC.

SIR.—The year 1842 appears to have been fertile in adding to the vigias of the ocean. I can hardly say confirming the existence of any because no pains were taken to do so.

It is to be regretted that the masters of merchant vessels do not feel themselves justified in delaying, even for a short time, to do away with all doubt on such occasions.

Considering the importance to navigation, that such dangers should be verified, we may believe that no owner of good sense would object, when circumstances are favorable, to the captain of his ship delaying for an hour or two to satisfy himself whether an object seen was, or was not, a rock, shoal, &c.

The notices which have appeared lately, may be recapitulated here for the purpose of bringing the whole of the positions of the supposed dangers under one view.

|                              |                   |              |             |
|------------------------------|-------------------|--------------|-------------|
| 1. Grace Darling, Aug. 1842, | rock              | 47° 43' 0 N. | 8° 43' 0 W. |
| 2. Mary                      | “ shoal           | 46 20 0      | 11 29 0     |
| 3. H.M.S. Brisk              | “ ditto           | 46 12 0      | 15 5 30     |
| 4. Hertyly                   | “ rock            | 45 40 0      | 19 17 0     |
| 5. Eagle                     | July, 1842, ditto | 47 37 22     | 28 51 0     |

All these appearances, real or otherwise lie in the tracks of ships bound south-westward from Britain; and between the meridians of Ushant and the Azores; and the parallels of 45° and 48° N; and, of course, in a direction from north to south of the fires of Iceland and the Azores.

Upon the presumption that the rocks and shoals seen, are in reality such, we may infer that a sub-marine mountain ridge exists within the area described, from east to west; and that the visible points are the isolated peaks, which, being of solid rock, resist the violence of the waves, and hold their place.

It should be borne in mind that the tidal wave in its transit, may entirely hide these dangers from view; and this will account for their being seen at one time, and not at another.

The most remarkable among these recent sights is, No. 5; the rock being of a tri-peaked form; corresponding in description to the long doubtful vigia called the “Three Chimnies,” which appears to have been last seen in the year 1824.

I think it scarcely possible that, it could have been an ice-berg; as those floating bodies are rarely seen, if ever, so far east as the twenty-ninth degree west.

On the other hand it seems extraordinary that a danger of such elevation, 80 feet, should not have been often observed by the thousands of vessels which follow the track in which it is said to lie.

I trust that if the Styx is again employed in research about the Azores, that, Captain Vidal will use his vigilance in settling its existence, or not. And further, that ship-owners will give their captains a discretionary order to examine all appearances of danger which may fall in their way during their voyages.

I am, &c.,

VIGIA.

2 K



## SUGGESTIONS FOR THE BETTER REGULATION OF SHIP-MASTERS, ETC.

(Continued from p. 207.)

SIR.—I consider that Capt. FitzRoy, in his proposed bill, contemplated too great an indulgence for *existing* masters and mates, by *exempting* them from examinations; doubtless through good feeling and sympathy towards the many he well knew it would otherwise affect, yet deservedly and necessarily so, no practical man can doubt, and which he has himself exemplified by one or two ocular cases (of otherwise incredibility) set forth in his excellent publication from the surveys in the *Beagle*.

Now, no one will deny that the success, security, profit, or, loss on ship, cargo, &c., are mainly dependent on the master, who is omnipotent at sea, and nearly so in port, not the residence of his owner; whilst even there he will coalesce with the tradesmen, to the injury of his owner.

It is needless for me to detail upon the points suggested in your last month's Magazine. I will, therefore, proceed to Capt. F's proposed "Exemption certificates," which, I premise will nearly nullify the bill or, mainly, for a quarter of a century at least; therefore, let that clause be expunged, and if the private interests of the few must be considered in lieu of those of the many, let my suggested class certificates be substituted; and if a master cannot obtain a No. 2 or 3, (the latter for coasting only,) it is a fraud on the public, and on the uninitiated, to permit him to command, even though he can be so employed. If ever likely to be competent, a short period of study will enable him to obtain a No. 3; and then self-interest will stimulate him to merit a No. 2.

There need be no apprehension for want of masters under this plan of distinctive enactments, abundance of lieutenants and sailing masters from the navy (now on half-pay) would offer themselves; but from the total absence of any such distinctions, they will not go in a merchantman, to be deemed one of the present herd of merchant masters, notwithstanding there are some excellent worthy men amongst the latter. (I have one such in my employ, whilst I have others whose proceedings and general conduct I would feel bound to place before the boards for their information.)

That seven tenths of the masters, more particularly in smaller craft, knowing the absence of all easy means of exposé and redress, rob, cheat, neglect, and violate the orders and interests of their owners, is too notorious, and the disastrous results, from villany and ignorance are of daily occurrence, though rarely represented. The recent colonial cases to which I referred, as coming under my own knowledge in possession of the details and proofs, from being interested therein, are the brig *Susan*, and brigantine *Mary Ann*; the conduct of the masters whereof appeared in the *Times* of the 30th of March, 1842, (a report of the trial of one of them, sentenced to transportation; the other would certainly be similarly punished, but the like trouble and expense I will never again incur,) the brig *New Holland*, the brig *Enterprise*, the *Courier* and *Corsair* steamers; the results whereof I will condense into the brief facts that, all these vessels as well as portions of their cargoes,

freights, and stores, have been piractically dealt with by the masters, heavy liabilities wantonly incurred in addition to their being infamously bottomred, &c., and to the extent that to the original owners, every farthing of their first cost, value, and subsequent outlay shamefully sacrificed in the most barefaced manner; whereas had common zeal and honesty been evinced, though, they had thus set their owners and agents at defiance, by suppressing papers, violating positive instructions, and running away with the ships, &c., the issue might even then have been different to the present, which is an actual loss in the aggregate of £50,000, as can be shown.

Several of these vessels were sold in the colonies, and judges' warrants granted against the masters, but they had fled elsewhere with the ships, &c.

A heavy insurance, I hear, is now in the course of payment in London, for a supposed loss, which I have good reason for believing is without foundation. These are the men to whom Capt. FitzRoy's well intentioned, but erroneous kindness would grant a license, or sanction, or apology by his proposed exemption clause.

I will now cite only two cases in support of my proposed form of log with journal, &c. combined, to be sworn or declared to, and deposited at the Custom House.

One, of the above named ships, had *six different logs*, which are now before a Court of Law, under a Chancery suit, &c., against me, and upon which I (the ship owner) am to be further prejudiced, as the document of proof against me, I suppose the plaintiffs alone will determine, by the selection of any one thereof which may best suit their purpose; whilst if I required their use as a matter of proof of the ship's proceedings, &c., it is morally impossible I could so employ either.

The other case is more simple, but equally evident. In 1841 I shipped some cattle by the "Daniel Wheeler," for Australia, and insured them against all risks save that of mortality, from the ordinary course of nature, *only*, making *no freight* to be payable except on those delivered alive, with a gratuity, per head, to the captain, for care and attention; but they were lost. The ship, 18 months after, returns to Hull, and the captain furnishes me with extracts from the log, certified to by the owner, shewing that three-fourths were drowned during a heavy gale in the Bay of Biscay; the remaining bull, in a gale off the Cape of Good Hope, was pitched out of his berth, and breaking two legs, &c., was ordered by the captain to be destroyed. The ship's notarial protest is by neglect left in Adelaide, and the captain having again sailed from England, no attestation can be procured from him, so that hereupon the underwriters refuse to pay, notwithstanding that such protest could only be made from the log-book which is here, but not being sworn or declared to, is not deemed a sufficient voucher!

The new measures, I have suggested, would tend also to terminate the system of taking fees for obtaining appointments for masters and mates, who are worthless!

Further comment in support of my suggestions, I deem as a work supererogatory from  
Yours, &c.,

G. T. W.

## STORMS OF THE EASTERN ATLANTIC.

[We have received the following from Colonel Reid, the author of "An Attempt to develop the Law of Storms, &c."]

THE difficulty of procuring exact information from the Coasts of Spain and Portugal, has hitherto rendered it impossible to track the courses which storms follow on the eastern side of the Atlantic. The floods of rain which recently occurred at Madeira, followed by a hurricane of wind, serve as a point, whence to proceed in this investigation, and afford an opportunity of tracing one storm at least, for a short distance.

Its supposed direction may be laid down upon a Marine chart, by describing a circle from a centre a little to the westward of Madeira, with a radius equal to  $6^{\circ}$  of latitude. From lat.  $30^{\circ}$ , long.  $19^{\circ}$ , describing a second circle; and from Cadiz describing a third, with intermediate circles to shew the gradual progress of the storm. These circles will give an approximation to the track which the Madeira hurricane of the 26th October, 1842, followed.

At Madeira, the heavy rains which had lasted eight days had ceased, and the weather was fine on the 25th October, at noon. The greatest violence of the wind being there at 3 P.M. on the 26th. The wind on that day veered from south-east to south and south-west, as reported by Lloyd's list.

*West India Steamer Dee.*—At noon of the 25th October, the log-book of the Dee reports the weather as very fine. That vessel leaving Madeira at half-past 11 A.M., "set a-head full speed" with all sail set, on a W.b.S. course, wind N.E. By half-past 5 P.M. the barometer began to sink, the weather to look bad, with the wind very variable; by 8 P.M. they had hard squalls with thunder and lightning, the barometer having sunk to 29.69. At midnight "getting worse." In the morning of the 26th the steamer experienced tremendous gales from south by east and rolled deeply. At half-past six A.M. she had a sudden shift of wind to the north-east in an exceedingly heavy squall. At eight A.M. the wind was N.N.E. with the barometer at 28.5 and at a quarter past nine the ship was brought up head to north-west. At this period the steamer was probably but a very little west of the centre of the storm, being six hours before the time that the storm was at its greatest height at Madeira. By ten A.M. the barometer was rising, the weather moderating and the Dee bore up again on a course W.b.S.  $\frac{1}{2}$  S. At noon on the 26th Dee's lat. by account  $31^{\circ} 1'$  long.  $19^{\circ} 46'$  and by midnight she had fine weather.

*Brig Falcon.*—The brig Falcon, of Bermuda, had sailed from Madeira, on the 21st of October. By noon on the 24th of October she had reached lat.  $31^{\circ} 10'$ , long.  $19^{\circ} 45'$ , and the wind at that time was light and variable; but by ten at night the brig was put under storm canvas, the wind at south-east. At noon next day the 25th the log-book records the weather as blowing a perfect hurricane, with the barometer marked 28.3 in lat.  $30^{\circ} 45'$ , long.  $20^{\circ}$ . At half past one in the afternoon the Falcon was hove on her beam ends, but soon righted. The log-book reports the wind as blowing hard gales for 12 hours from the east and north-east. By midnight the wind was north, inclining westerly, and afterwards became more moderate and north-west.

The Falcon was probably but very little westward of the storms centre, when thrown on her beam ends, which happened about 25 hours before the time at which the severest part of the gale was felt at Madeira. It is possible that this vessel may have been further to the south than her reckoning by account on that day made her.

*Numa, Transport.*—The Numa transport was in lat.  $29^{\circ} 29'$ , long.  $24^{\circ} 28'$ , at noon on October 24th standing on a course N.W.b.N., with strong winds, but which are not stated. They fell light at eight o'clock, P.M.; the barometer had sunk as low as 28.6. At nine P.M. the wind suddenly hauled round to the north, and blew a perfect hurricane blowing hardest at eleven at night. On the morning of the 25th, it was still blowing heavy gales at the place of the Numa, with the wind at northwest; but by eight it is reported more moderate, and the wind variable. At noon lat. by obs.  $29^{\circ} 39'$ , long.  $24^{\circ} 48'$ .

We have as yet no record of the storm on the 28th of October, though it may have been felt at Tangiers, blowing southerly on that day. Off Cadiz the marine reports shew, that many ships were damaged on the 29th, and on that day some houses were blown down in Seville, trees uprooted, and the Cathedral considerably damaged.

Off Cape St. Vincent, and a little to the south of it, H.M.S. Warspite, Lord John Hay, had a sudden and violent change of wind to north-west. The direction of the storm was probably along the Eastern Coast of Spain, over the Gulf of Lyons and the north of Italy.

If enquiry be made at Tenerife, there can be little doubt but that it will be found that this hurricane passed over the Canary Islands, and it may have originated in the neighbourhood of the Cape de Verds. The great hurricane of October 1780, occurred about the same season of the year; and it was eight days in moving from Barbados to Bermuda, which it reached on the 18th of October. The Madeira hurricane was five days in its progress from the place of the Numa to Seville, so that the rate of progress of the two storms is about the same.

It is probable that revolving winds by no means always amount to gales, and it deserves observation how far the trade winds are disturbed during the winter season. The Commander of the *Dee* states that in her late voyage from Madeira, he arrived at Antigua on the 7th of November, and that he had "no trade winds, but only variable winds throughout the whole voyage."

It would be curious to ascertain whether continued and heavy rains preceded the storm at Seville as they did at Madeira; and if the dense clouds from which they came followed the same track towards the south-east of Spain as the whirlwind.

This notice has been published in the hope that it may lead our Consuls, and other residents upon the Coasts of Spain and Portugal, to ascertain the course which gales in the Eastern Atlantic follow; and that they will unite their efforts to those of the British Consul at the Azores, who is attempting to track the storms which pass over the Western islands, and to connect them with the gales of the European Coast.

The longitudes here given are computed from the meridian of Greenwich.

*Bermuda, January 25, 1843.*

#### EARTHQUAKE IN THE WEST INDIES.

*Royal Mail Steam-packet Dee, Barbados, Feb. 13, 1843.*

SIR.—Having been master of the *Pique* frigate in June, 1835, when your excellency took a passage in her to Quebec, and being now the Commander of this steam-packet, passing through the West India Islands, which have been recently visited by an earthquake, I beg leave most respectfully to give you a brief account of what information I have obtained from each island, remaining from one to one hour and a half at each place.

On reaching St. Thomas on the 9th inst., from Jamaica and St. Jago de Cuba, I learnt that the shock of an earthquake had been felt there, 10h. 30m. of the 8th inst., but fortunately without doing any damage; from thence I proceeded through the islands as follows:—

**TORTOLA.**—At 10h. 30m. a.m. a severe shock, but not injured; lasted four minutes.

**ST. KITTS.**—Houses much shaken, but not materially injured lasted three minutes.

**NEVIS.**—Charlotte Town court-house to the ground; Bath house much damaged; Custom-house partly down, and all the mills in the islands more or less injured—nearly the whole of the town destroyed; most of the wood-built houses are left standing; all the stone buildings are so injured that they must

be taken down and rebuilt; estimated damage at 50,000*l.*; only two mills on the island that can be worked.

**MONTSERRAT.**—Wesleyan meeting-house so much injured must be taken down; the whole of the mills on the sugar estates unfit for use; several large fissures (from land slip) appear on the side of the hills; lasted two minutes; six lives lost, the whole of the stone buildings more or less injured, and at present uninhabitable.

**ANTIQUA.**—This island has suffered most severely, the whole of the churches and mills throughout the island being a heap of ruins. The organ in the church of St. John's totally destroyed; the dock-yard at the English harbour is sunk considerably, many parts being under water, the whole of the storehouses in a complete ruinous state, the walls partly or wholly down, and the water tanks containing nearly 11,000 tons of water, burst with an awful crash. The earthquake lasted about four minutes. Mr. Hart, clerk in charge of the dock-yard, English harbour, states that three clocks in the neighbourhood stopped at 10h, 40m. a.m. It is ascertained forty lives had been lost. The governor's house, Dows-hill, is partially destroyed, with nearly all the furniture; the Ridge barracks much damaged; the Custom-house, Court-house, and Wesleyan meeting house destroyed.—(See notice in a former page concerning the harbour.)

**GUADALOUPE.**—The next island visited was Guadeloupe, the accounts from which are truly appalling and heartrending. The whole of the town Point-a-Pitre is no more. It appears this was the centre of the dreadful calamity. I relate as near as possible the account given me by an eye-witness of the scene (Mr. Risley, of Philadelphia). At about 10h. 30m. a.m., on the 8th, in company with 150 or 160 persons, I was breakfasting at the hotel situate in the large square, when all of sudden a dreadful noise, not to be described, with a rocking movement was felt. Being near the door, I instantly rushed out, and perceived the buildings falling in every direction. I perfectly recollect what happened for the first 15 or 20 seconds, and saw many persons either wounded or killed. The whole of my fellow-companions at breakfast I never saw again. In the midst of all this calamity, the earth, in several parts of the town, opened to a considerable extent, when volumes of water spouted forth with awful fury to the extent of one hundred feet perpendicular, in columns of several feet in thickness, most entirely, and most awfully swallowing up hundreds of the inhabitants, when the earth closed again. What followed for 20 seconds after I have no recollection of. On recovering I found myself beside three dead bodies, in the midst of a heap of ruins, my clothes torn and my hat broken. My son, a child of six years of age, most providentially escaped unhurt, finding him shortly after on a heap of ruins. The scene which presented itself was more than words can express. Thousands were buried among the ruins still living, and raising their voices for succour; many were saved, but, alas! the work of destruction was not yet finished; a cry of fire was heard, which proved to be too true; what the earthquake and water had begun the fire finished.

The survivors are left in a most destitute state, being without food, clothing, and houseless. Despatches were immediately sent to the neighbouring towns and islands, informing them of the state of the town, who promptly responded to the call, and immediately the Governor of Martinique ordered the steam-ship Gomez to load with provisions and clothing, and forthwith proceed to Point-a-Pitre. All vessels in harbour at the same time were detained, and not allowed to leave the port; a proclamation was immediately issued by the governor, declaring all ports in the island of Guadeloupe free for all commodities, and also for timber for building purposes.

At the time of the fire the heat was so intense, that the iron safes, with gold and silver in them, melted, and became consolidated masses. The work of plunder commenced by some of the negroes, when it was found expedient to call out the military, and report says many of the negroes were shot in endeavouring to resist the military. Several French ships of war repaired to the spot, and on Sunday, the 12th inst., were to bombard the remaining standing

walls. How the fire originated has not been ascertained. Some suppose it was from the earth, others that it was from the stores. Loss of life cannot yet be ascertained; variously reported at 4,000 to 5,000 and some say 6,000 souls. Basse Terre has not sustained any injury.

DOMINICA.—Violently shaken; no real mischief done. Refugees arriving from Guadaloupe.

MARTINIQUE.—Shaken, but no injury in town; sugar mills a little damaged.

St. LUCIA.—A little shaken, but no injury.

At the time of the earthquake the ship was off the island of Porto Rico; no shock was felt on board.

Your most obedient humble servant,

(Signed)

WM. HELMSLEY, Captain.

To His Excellency the Right Hon. Sir Charles E. Grey, &c.

Dr. Bascom introduced a bill, which was seconded by Mr. Rogers, to grant the sum of 10,000 dollars for the relief of the sufferers, which sum, on the motion of Mr. Packer, seconded by Mr. Foderingham, was made 15,000 dollars, and with this alteration the bill passed unanimously, and was sent up to the Council Chamber.

The reply of the committee to the Governor's communication was then presented by Dr. Bascom, and unanimously adopted.

The house was then adjourned *sine die*.

ERRATA.—Page 237, line 14, from bottom for "bc," read "bb," and after cc, insert (Fig. 1.)

238, line 6, for "timber" read "timbers;" line 8, for "under circumstances," read "under such circumstances;" and line 20, for "found," read "feared."

#### ERRATA IN THE SECOND EDITION OF THE PRACTICE OF NAVIGATION,

By Lieut. Raper, R.N., continued from p. 65.

Page 117, 1st Table, last course, or S.  $\frac{1}{2}$  E., the D. Lat. and Dep. are taken out by mistake for S. by E.  $\frac{1}{2}$  E. As this is merely an example, the further corrections need not be made.

Under the Tables, true course alter S. 70° E. to S. 7° E.

218, Ex. 3, third paragraph, alter 1° to 1'.

378, Ex. 2, at the lower part of the page, alter 0·3573 to 0·8573.

462, col. (6), div. 3, C. Grisez It., alter R. 1<sup>m</sup>. to R.  $\frac{1}{2}$ <sup>m</sup>.

468, col. (18), div. 4, C. Brabant, alter 20° 7' to 20° 27'.

470, col. (21), div. 1, Bintang hill, alter 54 l. to 14 l. This name is misspelled in the Index, p. 709.

471, col. (24), div. 1, alter Ternate to Ternate; and in div. 4, alter Rendezvous to Rendezvous.

546, log. of 3600, the figure dropped out is 0.

549, log. of 5389, alter the first figure of 631508 to 7.

617, log. sine sq. of 1h. 12m. alter 8·4 to 8.

28, Grove Street, Leamington, Jan. 19th, 1843.

SIR.—A naval friend here having lent me some volumes of the *Nautical Magazine* to amuse me, I stumbled upon the "Remarks of the Samarang" while under my command. The longitude you have given for the north-west point of Christmas Island in vol. X, p. 590, ought to have been 157° 38' 03" W., instead of 157° 30' 03" W., the last two lines of the remarks relative thereto, will shew that the north-west and south-west points of the Island are nearly north and south of each other. It may not be of any consequence, but as I am aware that you aim at accuracy I have noticed the error.

While I am writing I may as well point out another of minor importance. I observe at p. 332 of the same volume, a transcript of the erroneous account as given in the Canton Register, detailing the attack on Tykok-Tow-Fort. The Editor of which in a subsequent number acknowledged his error. A reference to my despatch p. 414 will exhibit a true statement of what took place. Druid as therein stated, did not lead in, but was third. The officer who grappled with the mandarin in the breach, was Mr. Luard, mate of the Samarang, now lieutenant of the Isis, and for which he was particularly mentioned in my letter upon that occasion.

I am, &c.,

J. SCOTT, Captain R.N.

**EDWARDS' PRESERVED POTATO.**—Messrs. Edwards' have just received the following additional testimony of the excellence of their Preserved Potato, fully confirming the good opinion we have all along entertained of it.

*"H.M.S. Cornwallis, Chusan, 6th Nov. 1842.*

"SIRS.—Although from the moment I first saw the Preserved Potato I never had a doubt of its excellence, but deferred giving an opinion on the subject, until it had a fair trial, which has now been the case, it having been shipped nearly two years, and passed through every variety of climate,—the summer months of China being particularly destructive to all kinds of stores; notwithstanding which, the Preserved Potato, is not only good when opened, but by keeping it in a canister, remains so until all is used. We get the best kind of sweet potatoes here, also two sorts of yams in China; but his Excellency the Commander-in-chief, with most others in the expedition, prefer the Preserved Potato at this day; it being quite as good, as when shipped; and, as to the expense, I am satisfied, it is more economical than the fresh potatoes, quantities of which always decay, and are thrown overboard. It is my intention, should I return to England in this ship, to bring home a small canister of the Preserved Potato."

(Signed)

W. NORMAN, Steward to

Vice-Admiral Sir W. PARKER,

Commander-in-Chief China and East Indies.

## NEW BOOKS.

**NARRATIVE OF A VOYAGE ROUND THE WORLD.**—*Performed in H.M.S. Sulphur, during the years 1836—1842. By Captain Sir Edward Belcher, C.B. F.R.A.S &c.*—Colburn, Marlborough Street, London.

The following is an outline of the Sulphur's Voyage, given by the author in his introduction.

"Her Majesty's ship Sulphur was commissioned in September, 1835, by Capt. Beechey, and, accompanied by her consort the Starling, Lieut. Commander Kellett, quitted England in the following December. Captain Beechey invalided at Valparaiso, and was succeeded by Acting Commander Kellett, who was again superseded by the author of the present narrative, who took the command at Panama, in February, 1837, having crossed the Isthmus of Darien for that purpose, and retained it till the conclusion of her protracted voyage. After some little delay in completing certain necessary operations, the two vessel, proceeded northerly, touching at Realejo and Libertad in Central America, and reached San Blas in June, 1837, whence she sailed for the Sandwich Islands which she reached the following month.

"Port Etches, in King William's Sound, in 60° 30' N. was the next destination of the Expedition. Point Riou and Port Mulgrave were chosen as base stations for determining the position of Mount St. Elias, and further settling the question of longitude between Cook and Vancouver. The Sulphur then proceeded to Sitka or New Archangel, in Norfolk Sound, where the officers received

very courteous treatment from Captain Koupreanoff, the Russian governor. She next visited Friendly Cove, in Nootka Sound, and thence sailed to San Francisco, when the examination of the river Sacramento, one hundred and fifty-six miles from her anchorage, occupied the party in open boats for thirty-one days. Thence the Sulphur successively visited Monterey, San Blas, Acapulco, and Libertad, on her way to Realejo, where the author, for the recovery of his health, undertook a land survey of the principal mountains overlooking his future ground in the Gulf of Papagayo, and fixed the principal features of the Lake of Managua, to its fall into that of Nicaragua at Tepitapa. After surveying the Gulf of Papagayo and Port Culebra, the Sulphur quitted Central America, touched at, and fixed Cocos Island, and reached Callao in June, 1838, for the purpose of refit, and the completion of stores and provisions. Having examined the coast between Cerro Azul and Callao, (about sixty miles,) she left Callao in August, calling at Paita and Guayaquil, and returned to Panama in the following October.

"Here may be said to have ended her first cruize; but between October and March a survey was made of the Gulfs of Fonseca and Nicoya, Pueblo Nueva, and Baia Honda, after which the ship moved northerly, repeating her cruize of 1837. She was detained at the Columbia river till September; Bodega, the Russian position near San Francisco, was then surveyed, and subsequently San Francisco, Monterey, Santa Barbara, San Pedro, San Juan, San Diego, San Quentin, San Bartolemè, the Gulf of Magdalena, and Cape San Lucas. The Sulphur then proceeded to San Blas and Mazatlan, where orders for a westerly return awaited her. Having shipped supplies for fourteen months from a transport which had been sent to meet her, she commenced her homeward voyage in January, 1840; *en route* the author landed on the islands of Socorro and Clarion, and secured their positions. She reached the Marquesas the same month, and after a short visit to Port Anna Maria, Nuhuhiva, moved on to Bow Island, where the operation was performed of boring for the volcanic foundation on which these coral islands are suspected to stand. She then visited Tahiti, Huaheine, Raratonga, Vavao, (Tonga group,) Nukulau, (Feejees,) Tanna, (New Hebrides,) Port Carteret, (New Ireland,) Britannia Island, New Guinea, coasting that island to Arimoa and as far as Jobie, where she remained to rate and survey; then to Amsterdam, Pigeon Island, (Dampier Straits,) Bouru and Amboina, moving thence to Macassar, Great Solombo, and Pulo Kumpal, off the Borneo coast; and reached Singapore in October of the same year.

"Orders here awaited her to proceed instantly to China, where she was detained, and took an active part in the operations against the Chinese, till nearly the close of the year 1841, when she sailed for England. After leaving Singapore, and touching at Malacca, Penang, Acheen, Sumatra, Point de Galle, (Ceylon,) Seychelles, Madagascar, Cape of Good Hope, St. Helena, and Ascension, she at last returned to Spithead.

We shall commence our Extracts with the following account of the *Port of Libertad*.—"One would naturally expect from this title that something pretending to a bay or deep indentation at least, would have warranted the appellation. But a straight sandy beach, between two slightly projecting ledges of rock about one mile asunder, forms the *plaza* of Libertad: it is *law* and *interest* only that have made it a *port*.

"At times the bay is smooth, but the substratum at the beach being of large smooth boulders of compact basalt, the instant the surf rises they are freed from their sandy covering, and a dangerous *moving* strong bottom left, on which the boat grounded. We were informed that it is generally violent for three or four days, at full and change, which corresponded to the time of our visits.

"The village contains about twelve huts, with a family of about six in each. There is also a long Government building constructed of adobes, in which the tackle of the bongos used for landing cargoes is usually stored, and a cabin for the commandant at its further extremity, served for parlour, bedroom, kitchen,



&c. The only pet birds were fighting cocks, perched under the chairs, or probably tethered in the corners. Cock fighting is a complete passion in Spanish America.

"This is all that can be hoped for at Libertad.

"The rollers which set in on this beach, curl and break at times in four or five fathoms, at least a quarter of a mile off. Those within, which are the most dangerous, are caused by the offset or efflux.

"The sand beach is composed chiefly of magnetic iron sand, the dried superstratum, about one inch in thickness, caking in flakes free from admixture.

"The anchorage is uneasy, and, I should think, unsafe, and should be avoided near the full moon. Sudden rollers come in, which are apt to snap chain cables, unless with a long range.

"Poultry, bullocks, &c., are to be obtained, but compared with those of San Salvador or Realejo, the prices are exorbitant. Bullocks can only be embarked in one of these bongos."

**AN EPITOME OF PRACTICAL NAVIGATION AND NAUTICAL ASTRONOMY; sanctioned by G. B. Airy, Esq., Astronomer-Royal; and dedicated, by permission, to the Right Hon. the Lords Commissioners of the Admiralty.—By J. Griffin, teacher of Navigation and Nautical Astronomy.—London Blaciford and Imray, Minories.**

The foregoing appears as the title of a book, which has just been thrown into the track of seamen, as they pass up the Minories; from the Docks to 'Change. Now, we are far from saying that a good book cannot find its way into the world, from a house in the Minories, but we do mean to say, that to call this work "A complete Epitome of Practical Navigation and Nautical Astronomy," is a downright, deliberate misnomer! It is a treatise on nautical astronomy with some explanations of the method of keeping a journal at sea. The author in his preface informs his readers that, his book is really intended to teach those to navigate their ships who only know the common rules of arithmetic. This appears almost as enticing as adapting his work to the "meanest capacity," as John Hamilton Moore of olden time was wont to do. But how Mr. Griffin effects his purpose while the *saillings* are entirely omitted is no where explained. We then find some letters from Mr. Airy, the Astronomer-Royal, to Mr. Griffin, or, (as they are styled) "*testimonials*." The first letter states that, Mr Griffin's method of reducing lunars *appears* easier in practice than many others that Mr. Airy has seen, and can be made *sufficiently accurate* by attention in the construction of the table for the last correction. After this no one can doubt that Mr. Griffin's method is correct, but we cannot help thinking that few will bear witness to its applicability to practice.

The truth is, that all approximate methods for clearing the lunar distance, however short they may appear, are far less suited for actual work than many of the direct methods. The latter part of this letter and the whole of the third refers to some plan for finding the sun's right ascension, and has *nothing to do with Navigation!*

The fourth letter relates to a method of working the double altitude that Mr. Griffin appears to have communicated to the Astronomer-Royal, and of which he evidently does not approve. Why this letter should be called a testimonial is beyond our solution. But we hope for the sake of those seamen who pick up this book, should any of them do so, that this is not the method given for solving the important problem of finding the latitude by two altitudes.

In the directions for finding the index error of the sextant, the learner is *not* told how he is to obtain this important element when both readings are on, or, both off the arc! We once met with an excellent instrument which had been originally constructed with a very large error, both readings being on the arc.

It is stated that the best plan for observing in the artificial horizon is to make one reflected image of the sun *cover the other*. This may be all very well for Mr. Griffin; but those who know any thing about the matter have had sufficient

experience to know that this is a kind of observation which cannot be depended on,—in fact is no observation at all! the most approved way, (by observing opposite limbs morning and afternoon) being to make the reflected images overlap each other and at the instant of their separation to call “stop.”

But by way of assisting the author in making known to our readers, from his advertisement, the extraordinary claims which his book holds out to secure their patronage, we will preserve here for them (lest so much worth should be lost,) the high recommendations which it has already received, and with them our translation.

*Recommendations and Explanations.*

“This volume comes before the public with at least four strong recommendations.”

1. “Its author is evidently a practical man.”

2. “It is printed, and, technically speaking, it has been read with extraordinary care and accuracy.”

3. “It is honoured by the high sanction of G. B. Airy, Esq., the Astronomer Royal.”

4. “And it is dedicated, by permission, to the Right Honourable the Lords Commissioners of the Admiralty. Thus it may be regarded almost as an official publication. At all events, we can unhesitatingly pronounce it to be the best work of its class extant.”

This volume comes before seamen with at least four strong recommendations!

1. Of the author's practice we have given proof above!

2. A very “extraordinary” recommendation indeed, technically considered!

2. See the references to the Astronomer-Royal's letters above-mentioned!

4. Several works have been dedicated to their Lordships,—their merits remaining unimproved, and their official character unestablished thereby. Therefore, this cannot be regarded as an official publication. At all events we cannot unhesitatingly pronounce it to be the best work of its class extant.

**CHRONICLES OF THE CAREWORN, or Walks and Wanderings.**—By Edward West. Parts 1 and 2.—Cunningham and Mortimer.

The object of the author is evidently that of doing good. He has succeeded in depicting scenes of existing misery, with the view of directing to them, the attention of the benevolent; so that the reader of his chronicles, be he stricken with the sorrows they relate, not only knows that he is reading no tale of fiction, but may forthwith through the author contribute to alleviate them.

**THE EMIGRANTS HAND-BOOK OF FACTS.**—Concerning Canada, New Zealand, Australia, Cape of Good Hope, &c., with the relative advantages which each of the Colonies offer for Emigration, and Practical advice to Emigrants;—By Samuel Butler, Esq.,

The foregoing title will at once convey to the reader the great value of the matter in the pages to which it is prefixed. Facts on such a subject are of vital importance to Emigrants, and the author cites too many instances where a want of the knowledge of them, has ended in disappointment and death. It should be consulted by all emigrants.

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NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

NORTH AMERICA, East Coast, sheet 1.—Newfoundland, from surveys by James Cook, 1764-7, M. Lane, 1772-5, Lieut. F. Bullock, 1823-6, and Capt. H. W. Bayfield, 1834-5.

Extends to the meridian of 58° W., and includes St. Lewis Sound on the Coast of Labrador.

WOOSUNG RIVER, China.—*From the Lake of Tiew Shan to Shang and Woosung, by Commanders Kellett and Collinson, 1842.*

CHAPOO ROADS, China.—*By Commanders Kellett and Collinson, 1842.*

BUSH'S SAFETY BEACON.—We have received a lithograph sketch, from which we extract the following:—

“View of a Safety Beacon intended to be erected upon Shoals and Sand banks for the preservation of lives from shipwreck, submitted by Mr. William Bush, civil engineer, to a committee of the House of Commons, to the Commissioners of the Admiralty, and to the Trinity Board in the year 1836; being the prototype of the beacon erected by Capt. Bullock in September 1840.”

We also find the following “Extract from a letter to Mr. William Bush from the Secretary of the Trinity Board, dated 20th December, 1842,” beneath the sketch. “Sir I am this day in receipt of your letter, and having laid the same before the Board, I am directed to acquaint you that it appears that you attended this Board on the 19th July, 1836, and submitted a model, descriptive of a method by which you propose to erect Beacons upon sand-banks, and permission was then given you to send in an estimate of the cost of making such erection.”

J. HERBERT.

N.B.—The beacon would weigh about 12 tons and could be floated to its destination. The whole cost would not have exceeded £300.

BOUNDARY LINE.—America.—We perceive Mr. Wyld has published a useful little map of the late disputed territory shewing the direction of the new boundary line, as settled by Lord Ashburton and Mr. Webster.

ADMIRALTY ORDERS.

Admiralty, Dec. 21st, 1842.

The Lords Commissioners of the Admiralty are pleased to direct that the annexed Memorandum which has been transmitted from the Colonial Department, be promulgated for the information of Officers of the Royal Navy and Marines, proposing to settle in the Australian Colonies.

All former notices on the subject of Officers settling in the Colonies, are to be considered as obsolete.

By Command of their Lordships,
JOHN BARROW.

Information for the use of Military and Naval Officers purposing to settle in the British Colonies.

1. Under the existing regulations for the disposal of Lands in the British Colonies, Military and Naval Officers cannot receive free grants of land; but, in those Colonies in which a privilege in the acquisition of land has been heretofore accorded to them, they are allowed a remission of the purchase money, according to the unmentioned scale:—

Field Officers, of 25 years service and upwards, in the whole 300l.

Field Officers, of 20 years service and upwards, in the whole 250l.

Field Officers, of 15 or less years service, in the whole 200l.

Captains, of 20 years service and upwards, in the whole 200l.

Captains, of 15 years service or less, in the whole 150l.

Subalterns, of 20 years service and upwards, in the whole 150l.

Subalterns of 7 years service and upwards, in the whole 100l.

Subalterns, under 7 years standing, are not entitled to any remission in the purchase of land.

Regimental staff Officers, and Medical Officers of the Army and Navy, will be deemed to come within the benefit of this Rule.

2. Officers of the Army or Navy, who propose to proceed to the Colonies in order to take advantage of this indulgence, should provide themselves with Certificates from the Office of the General Commanding in Chief, or of the Lords Commissioners of the Admiralty, showing that their emigration has been sanctioned, and stating exactly their rank and length of service. No document from the office of the Secretary of State is necessary.

3. Officers on half pay, residing in the Colony where they propose to settle, may be admitted to the privileges of Military and Naval Settlers, without referring to this country for testimonio

nials, provided they can satisfy the Governor that there is no objection to their being allowed the indulgence, and that their return of their rank and length of service is accurate, and provided, if they belong to the Navy, that they produce their letter of leave of absence from the Admiralty.

4. Military Chaplains, Commissariat Officers and Officers of any of the Civil Departments connected with the Army, cannot be allowed any privileges on the subject of land. Pursers, Chaplains, Midshipmen, Warrant Officers of every description, and Officers of any of the Civil Departments connected with the Navy, must also be considered as not qualified for those privileges. Although members of these classes may have been admitted formerly, and under a different state of circumstances, they must now be excluded. Mates in the Royal Navy, will in future rank with Ensigns in the Army, and Mates of 3 years standing, with Lieutenants in the Army, and will be entitled respectively to corresponding privileges in the acquisition of Lands in the Colonies.

5. Gentlemen who have ceased to belong to Her Majesty's Service cannot be allowed the advantage to which they were entitled while in the Army or Navy. It is not however, proposed to affect by this rule, Officers who desire to quit the service for the express purpose of settling in the Colonies: it is only required, that when they resign their Commissions, they should apply for a certificate from the General Commanding in Chief, or from the Lords Commissioners of the Admiralty, that they do so with the view of emigrating, and such certificate, if produced to the Governor of any Colony within one year from its date, but not otherwise, will be a sufficient warrant for allowing the bearer the same advantages as Officers still in Her Majesty's Service.

6. An actual residence of two years in the Colonies, must be proved before the Title can be granted, except in case in which death may have occurred before the expiration of that period.

The following is, in general terms, the nature of the conditions on which Public Lands can be acquired in the Colonies adverted to in different General Orders of previous dates on the present subject.

In the Colonies of New South Wales, (including the Sydney, and Port Phillip Districts, and any other Districts that may hereafter be opened) Van Diemen's Land, South Australia, Western Australia, and New Zealand.

All Lands will be disposed of by sale alone, and must have once at least been exposed to public auction.

The lowest upset price will be not less than £1. per acre; but the Government will have power to raise the same by Proclamation, though not again to reduce it.

The Lands will be distinguished into three different classes; viz. Town Lots, Suburban Lots, and Country Lots.

Upon Town and Suburban Lots as well as upon a proportion not exceeding one tenth of the whole of the Country Lots offered for sale at any auction; the Governor will have the power of naming a higher than the general or lowest upset price: the country lots on which such power is exercised to be designated "Special Country Lots."

Town and Suburban Lots, will in no case be disposed of except by public auction, but Country Lots, which have already been put up to public auction and not sold, may be disposed of afterwards by private contract at the upset price.

No lands will be sold by private contract, except for ready money. When sold by public auction, one tenth at least of the whole purchase money must be put down, and the remainder within one calendar month, or the deposit will be forfeited.

Lands will be put up for sale in lots not exceeding one square mile in extent.

In Ceylon, land is sold by auction at an upset price of 5s. per acre, generally in lots of 100 acres each.

In Nova Scotia and Cape Breton, allotments of land will be granted to Officers on the same scale and conditions as before the general introduction of the system of selling the Crown Lands, viz.

To a Lieut. Colonel.....	1200 acres.
To a Major.....	1000 acres.
To a Captain.....	800 acres.
To a Subaltern.....	500 acres.

In Prince Edward's Island officers cannot be allowed any privileges in the acquisition of land.

The several prices above mentioned will of course be subject at any time to revision by the proper Authorities, and the pecuniary amount of the Officer's remission cannot be increased on account of an increased value set upon the lands.

Note.—For Canada and New Brunswick further information is necessary, and has been called for, on the effect which recent Colonial Laws may have upon the privileges of Military and Naval settlers.

THE PENELOPE.—She was one of the old 46-gun frigates, built after the French Hebe class, and which has recently been lengthened and converted into a steam-frigate, will be undocked at Chatham on the 29th inst., and towed to the river to Messrs. Seawards', to receive her engines, which are now ready. She was originally 152 feet long, and is now 215, having been lengthened 65 feet in midships. She is to have two engines, upon the new direct, or Gorgon, principle, 650 (collective) horse-power. She will be able to stow five hundred tons of coals in her boxes, and one hundred tons elsewhere—sufficient fuel to last her fifteen days. Her armament will consist of two 10-inch guns, and ten 32-pound carronades on the quarter-deck and fore-castle, and eight 68-pounders of 65 cwt each, on the main-deck. Her complement will be 300 men, in addition to which she will have sufficient room and accommodation to carry with convenience a whole regiment of soldiers, and convey them to the Cape of Good Hope in about 30 days. When she has taken her engines on board she will return to Chatham, to be fitted with her masts, yards, and spars. She will be ship-rigged, and spread as much canvas as she did originally as a frigate. She will have the wire rope rigging, and will have Capt. Smith's paddle-box boats. It is expected she will be ready for sea by the middle of June.—*Hants Standard.*

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

Downing Street, Mar. 6.—The Queen has been pleased to appoint **H. W. Hill**, Esq., Commander in the Royal Navy, to be Lieut.-Governor of Her Majesty's Forts and Settlements on the Gold Coast.

PROMOTIONS.

COMMANDERS—**R. C. Mould**, **T. Simpson**, **G. C. Briggs** (1841).

LIEUTENANTS—**R. Dalton**, **H. Bullock**, **C. B. Strong**.

MASTERS—**G. Allen**, **J. Ball**.

SURGEON—**A. J. Pilmor**.

APPOINTMENTS.

CAPTAIN—**Sir T. S. Pasley**, **Bart.**, (1831) to *Curacoa*.

COMMANDERS—**Hon. G. Hope** (1840), to *Sappho*—**H. R. Sturt** (1830) to *Rose*.

LIEUTENANTS—**A. C. Key** (1842), **F. Denison** (1838), and **T. Carmichael** to *Curacoa*—**R. S. Moore** (1841) to *Wilberforce*—**W. Critchell** (1819) and **J. A. P. Price** to *Hecla*—**J. Hickman** (1812) to the Ordinary, *Portsmouth*—**W. Y. Gill** (1824) to *Styx*—**R. Curtis** (1838) to be flag lieut. to **Sir L. Curtis**, at *Malta*—**C. B. Strong** (1843) to *Queen*—**Smith** to *Comet*—**W. H. Dobbie** to (1837) to *Rose*—**R. A. Powell** to *Excellent*.

MASTERS—**G. Allen** to *Fanny* tender—**J. Ball** to *Rhadamanthus*.

MATES—**Hon. F. Curzon**, and **S. T. Dickens** to *St. Vincent*—**C. W. Bonham** to *Calderonia*—**H. De Lisle** and **W. L. Mackenzie** to *Hecla*—**E. L. Brown** to *Spiteful*—**J. H. Furneaux** and **C. M. Aynesley** to *Excellent*.

SECOND-MASTERS—**W. Pennington** to *Wilberforce*—**W. G. Sturgess** to *Tartarus*—**W. H. Green** to *Fearless*—**D. N. Welsh** to *St. Vincent*.

SURGEON—**J. J. D. Burns** to *Sappho*.

MASTERS-ASSISTANTS—**S. T. W. Moriarty** to *Queen*—**W. N. Newell** to *Shearwater*.

ASSISTANT SURGEONS—**C. Coffey** to *Sappho*—**J. Davidson** to *Tartarus*—**E. Groves** to *Wilberforce*—**J. P. Lawrence** (act.) to *Rodney*.

MIDSHIPMEN—**Hon. H. Coke** to *Dublin*—**C. G. Grylls** to *Spiteful*—**O. M. C. Read** and **J. O. Johnson** to *St. Vincent*—**E. J. Lock** to *Excellent*.

VOLUNTEERS 1st Class—**E. Lodder** to *Hecla*—**A. W. White** to *St. Vincent*.

PURSERS—**J. F. Russell** (add.) to *Victory*—**T. Hookey** to *Endymion*—**K. L. Sutherland** to *North Star*—**Giles** to *Harlequin*—**Cunningham** to *Wolverine*—**H. S. Collins** (act.) to *Pelican*—**R. Loney** to *Rose*.

CLERKS—**Jas. Winstanley** to *Royal George*—**Ellis** to *Plover*—**H. R. Cole** to *Ceylon*—**King** to *Royalist*—**W. D. Rowe** to *Wilberforce*.

COAST GUARD.

Appointments—Commanders **J. C. Bennett** and **G. C. Mends**, to be Inspecting-Commanders—Lieutenants **C. R. Johnson**, **H. Crocker**, **J. Slaughter**, **C. A. Thorndike**, and **C. Seaver**—Lieut. **J. S. M. Watson** to command *Victoria*, a.c.—Lieut. **R. W. Charleson** to command *Royal George*, r.c.—**Mr. J. Carter** to be chief mate to *Badger*, a.c.—Lieut. **W. Butler** to *Crookhaven*—Lieut. **W. Lory** to *Lydden Spout*.

Renovals—Lieut. **G. Elliot** to *Oyster Haven*—Lieut. **J. C. Evison** to *Robin Hood Bay*—Lieut. **W. A. Ferrar** to *Axmouthe*—Lieut. **W. Henry** to *Haven hole*—Lieut. **H. R. Raye** to *Dunany Point*—**M. T. Tippet** to *Ballacastle*—**Mr. F. A. Weiss** to *Pullendiva*.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ANDROMACHE, 26, Capt. **R. L. Baynes** c.b. Feb. 23 arr. at *Plymouth* from the *Cape*, March 8, paid off.

BLENHEIM, 72, Capt. **Herbert**, March 11, arr. at *Portsmouth* from *China*, 18th at *Sheerness* to be paid off.

BLONDE, 42, Capt. **T. Bouchier**, 10th March arr. at *Portsmouth* from *China*.

CALLIOPE, 16, Capt. A. L. Cupar, 2nd March arr. at Plymouth from China, 15th paid off.

COLUMBINE, 16, Com. G. Elliott, 3rd March arr. at Portsmouth, 16th paid off at Sheerness.

CRUIZER, 16, Com. H. W. Giffard, 7th March arr. at Plymouth from China, 13th at Chatham to be paid off.

CURACOA, 24, 1st March commissioned at Chatham.

HERALD, 26, Capt. J. Nias, March 10th arr. at Portsmouth from China.

MODESTE, 18, Com. H. Eyres, March 2nd arr. at Portsmouth, 3rd sailed for Sheerness, 10th paid off.

NAUTILUS, 10, Lieut. S. Thomas, 5th March at Portsmouth, Channel station.

RHADAMANTHUS, (st. v.) 12th March arr. at Portsmouth with troops.

ROSE, Com. H. R. Stuart, March 13th commissioned at Portsmouth.

STYX, (st. v.) Capt. A. Vidal, March 14th at Plymouth to proceed to the Azores, 18th sailed.

THUNDERBOLT, (st. v.) Com. G. N. Broke, Feb. 20th left Plymouth for the Cape.

VOLCANO, (st. v.) will leave the river for the Coast of Africa, early next week, with presents for the Chiefs and Kroomen who brought home the Wilberforce.

WOOLWICH, Mar. 20th—H.M.S. Hecla, Capt. Duffill, sailed to-day for Greenhithe, where she will wait to ascertain the local deviation of her compasses, and then proceed to Portsmouth to embark Rear-Admiral Sir Lucius Curtis, appointed to relieve Rear-Admiral Sir John Louis, as Commissioner at Malta.

ABROAD.

CLIO, 16, Com. S. G. Freemantle, 3rd Feb. at Bombay.

DIDO, 18, Capt. Hon. H. Keppel, 80th Dec arr. at Singapore.

ENDYMION, 38, Capt. Hon. F. W. Grey, 14th Dec. arr. at Singapore.

FANTOME, 16, Com. E. Butterfield 20th Dec. left Monte Video with the mails for Rio.

FLY, Capt. H. P. Blackwood, Oct. 18th arr. at Sydney from Hobart Town.

RESISTANCE, 42, Com. G. E. Patey, March 2nd left Gibraltar for Jamaica.

SALAMANDER, (st. v.) Com. A. S. Hammond, Dec. 20th left Rio for Falkland Isles.

SAVAGE, 10, Lieut. J. H. Bowker, 27th Feb. at Barcelona from Gibraltar.

SPARTAN, 26, Hon. Capt. Elliott, Jan. 2nd at Jamaica, 4th sailed for Chagres and Carthage.

VIXEN, (st. v.) Dec. 14th at Singapore.

VOLAGE, 26, Capt. Sir W. Dickson, Jan. 11 at Trinidad, and sailed same day.

WATERWITCH, 10, Lieut.-Com. H. J. Matson, Dec. 18th arr. at St. Helena from Coast of Africa.

WINCHESTER, 50, Capt. J. Parker, Dec. 22nd at the Cape of Good Hope.

WOLF, 10, Com. O. Hayes, Dec. 13th arr. at Singapore.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Landport on the 21st Feb. the wife of Mr. J. Aylen, master R.N. of a daughter.

On the 16th March London, the lady of Capt. J. W. Montagu, R.N. of a son.

Marriages.

Mar. 22nd at Christchurch, C. Raper, Esq., son of Admiral Raper, to Mrs Buchanan.

Deaths.

At Auckland (New Zealand) on the 10th of Sept. Captain W. Hobson, first Governor of that settlement, of paralysis which from his youth appears to have made great inroad upon his constitution. His burial was attended by a vast concourse of the natives, who on the morning of that last sad ceremony performed the "uhunga" (funeral dirge) as if for one of their own most valued chiefs, and in their general behaviour on the occasion

evinced the respect they entertained for the deceased.

At Fareham on the 10th of March Admiral F. Alexander.

In the Yang-tze-Keang river, on board the H. E. I. C. steamer Medusa, on the 6th October, 1842, of dysentery, Arthur third son of Capt. R. Smith, R.N., in the 20th year of his age.

At Sydney, (New South Wales), on the 11th of October 1842, Elizabeth Ann, the wife of John Goddon Colyer Esq., and only daughter of W. Elyard Esq., Surgeon, R.N. aged 33 years.

At Deptford, Mr. J. Copland, purser, (1781).

Lieut. John Evans, (b), 1826, on board the Polyphemus steamer.

Mr. T. Giles, purser, (1826), on board the Carysfort.

On the 26th Feb., at Bath, Mr. J. R. Arnold, Chronometer Maker of the Strand, and formerly a partner with Mr. Dent.

COURT MARTIAL.—The Honourable Captain Elliot of H.M.S. Spartan, has been severely reprimanded by the sentence of a Court Martial, for having assaulted Mr. D. M. Gleig, midshipman, by causing corporal punishment to be inflicted on him with a rope, thereby disobeying the orders of H. R. H. the late Lord High Admiral, bearing date the 15th of June, 1827.

A Court-martial was held on 26th January on board H.M.S. Camperdown, for the trial of Lieut. H. Winthrop, the commanding officer, and the officers and crew of H.M. Steamer Spitfire, for losing that vessel on the Half Moon Keys Rock, on the northern part of the Lighthouse reef, off Belize, on the night of the 10th of September last, by which he was acquitted.

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, 1843.

Month	Day.	BAROMETER.		FAHRENHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	WIND	WIND	Quarter.		Streng.		A.M.	P.M.
								A.M.	P.M.	A.M.	P.M.		
21	Tu.	In. Dec.	In. Dec.	o	o	o	o	SE	SE	2	2	bc	bc
22	W.	29-26	29-30	42	48	38	49	S	S	2	2	bc (1) (2)	bc
23	Th.	29-44	29-50	43	48	40	50	S	E	2	3	bc	bc
24	F.	29-60	29-62	37	40	36	42	E	NE	4	4	o	o
25	S.	29-60	29-58	35	37	33	38	NE	E	3	4	os (2)	os (4)
26	Su.	29-58	29-51	33	37	32	38	NE	E	1	1	os (1) (2)	os (3)
27	M.	28-93	28-85	36	38	33	39	E	E	3	3	gor (1) (2)	or (3) (4)
28	Tu.	29-00	29-18	37	39	36	40	N	N	6	6	o	o
1	W.	29-64	29-72	34	37	32	38	N	NE	4	4	bcps (2)	bcps (3)
2	Th.	29-92	29-96	32	38	28	39	NW	N.	2	5	bc	bc
3	F.	30-02	30-06	31	38	28	39	NE	N.	4	4	bc	bc
4	S.	30-26	30-32	33	39	30	40	NE	E	2	2	o	o
5	Su.	30-35	30-35	30	40	26	42	SW	SW	2	2	b	bc
6	M.	30-24	30-24	38	42	32	43	SW	S	2	2	o	o
7	Tu.	30-18	30-20	28	42	25	43	NE	E	1	3	b	b
8	W.	30-54	30-30	34	43	27	44	E	NE	2	4	bc	bc
9	Th.	30-35	30-32	35	38	30	39	E	S	3	4	o	o
10	F.	30-18	30-06	37	43	31	44	S	S	3	4	o	o
11	S.	30-09	30-16	37	44	32	45	S	SW	2	2	bc	bc
12	Su.	29-94	29-82	43	47	40	48	SW	SW	3	3	o	o
13	M.	29-71	29-70	41	50	35	51	SW	W	2	4	b	bc
14	Tu.	29-45	29-54	49	54	43	55	W	W	3	4	bc (1)	bc
15	W.	29-76	29-88	44	48	43	49	N	NW	3	1	o	o
16	Th.	30-00	30-00	49	54	46	56	W	NE	2	1	od (1)	od (4)
17	F.	29-88	29-90	40	59	35	60	S	S	2	2	bf	b
18	S.	29-85	29-87	41	60	35	61	NW	NW	1	1	bm	bm
19	Su.	29-88	29-86	43	47	38	50	NE	NE	2	2	of	of
20	M.	29-70	29-62	46	56	40	57	E	E	3	3	bc	bc

FEBRUARY—Mean height of the Barometer = 29-572 inches; mean temperature = 36-0 depth of rain, and snow (melted) fallen = 2-68 inches.

GOVERNOR OF NEW ZEALAND.—Captain R. FitzRoy R.N. and M.P. who has conferred so much benefit on Navigation by his recent surveys on the South American shores in H.M.S. Beagle, we understand is appointed to succeed Captain Hobson, in governing the important Colony of New Zealand.

TO OUR FRIENDS AND CORRESPONDENTS.

SIR JOHN Ross's communication respecting our bottle chart has reached us, and shall appear in our next.

IMPORTANT TO THE MESS TABLE.



The Patentees request the particular attention of the Royal Navy, the Mercantile Marine, Voyagers, and the public in general to the following statement.

The keeping qualities of the Patent Preserved Potato in every variety of climate having now been fully tested and approved of, and its desirableness as a fresh vegetable generally acknowledged and appreciated during long voyages to distant parts of the world, its merits are established as an excellent and invaluable article of food, unequalled in cheapness and portability, and defying the effects of time in any climate to injure its inherent nutritious quality and flavour.

A quarter of a pound of the concentrated vegetable, by merely pouring over it a little boiling water, is at once converted into more than one pound of mashed potato, and that of a quality and flavour superior to, and more nutritious than, the best potato in its natural state, its being cooked in a few minutes, and no fire heat required, a great saving of time and fuel is effected by its use.

These great advantages, combined with the high opinions expressed in the certificates of Professors Brande, Daniell, Ure, Dr. Paris, &c., which are a guarantee as to its wholesomeness, are amply confirmed by the numerous testimonials the Patentees have received from all quarters of the globe, as also by special reports made to the Government and the Hon. East India Company, approving of it in the highest terms. Its practical utility is not confined to the mere production of an excellent dish of vegetable food; for, by the Preserved Potato being mixed with flour and well boiled, it produces without suet or eggs, a light and wholesome pudding; also, in bread making, pastry, soups, and a variety of other useful combinations it is alike valuable, while its great economy, portability, and facility of cooking, render it peculiarly suitable to the hurried meal of the tempest-driven mariner, the soldier on his march, or the emigrant on his voyage; in fact, all classes of persons in all situations and times, either at sea or on shore, may obtain in a few seconds a ready dish of excellent relishing food from the Patent Preserved Potato.

In addition to these advantages, the cost of the Patent Preserved Potato will be less than that of any other description of food; the Patentees, under the conviction of its extensive use, having determined to offer it to the public at a price (*delivered in London*) which does not exceed ONE PENNY PER POUND as the cooked Vegetable.

Among the numerous Testimonials, &c. in possession of the Patentees are the following:—

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 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, sago, or arross root.

July 30th, 1842.

(Signed) ANDREW URE, M.D., F.R.S., &c.

Report from Mr. Welsh, surgeon of the "Northumberland," conveying troops, Sept., 1841.

In compliance with the desire of the Hon. Court of Directors of the East India Company, I have the honour to report on the effects of a quantity of Edwards' Preserved Potato, sent on board the Northumberland for the use of the troops on their passage to Madras. The Preserved Potato has been served out to the men twice a week for the last ten weeks, at the rate of 2½ lbs. of the Preserved Potato to 6½ pints of water, the allowance for a mess of six men; this was found quite sufficient, and the men have enjoyed it as much as the fresh vegetable. I had followed up the directions of the patentees with the first messes served out, allowing 3lb. of the Preserved Potato to 6 pints of boiling water, I found this rather more than the men consumed, and the quantity of water too little to make the vegetable of the consistence of mashed potato. The vessel used was the mess bowl, covered with a platter, and allowed to stand for twelve minutes, when the mashed potato was produced, superior to what was made from the fresh vegetable on board. [Turn over

The Preserved Potato has kept of the same quality throughout the passage, and I feel confident if protected from damp it may be kept for any length of time without change. I consider Edwards' Preserved Potato a very valuable addition to the scale of victuals for the men, as it is equal in nutritious properties to the fresh vegetable, and as the men enjoy it as much, it must assist in keeping them in health.

JAMES WELSH, Surgeon.

MEMO.—The Patent Preserved Potato is now adopted by the Hon. East India Company, on the scale of victualling for the Troops.

Letter from H.M.S. Wilberforce, Niger Expedition, Ascension, 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.

Gentlemen.—I feel a pleasure in being able to forward the favorable result of your Patent Potato, for the benefit of Shipmasters and passengers going long voyages, as an invaluable article of diet at sea or on shore, where the real potato cannot be obtained, during my voyage from London to the Mauritius and Bombay, I made use of your potato upon a very limited scale, and on my voyage homewards, (having a long passage) slight symptoms of scurvy amongst the crew appeared, I immediately gave them your potato, three times a week, and I am happy to say the result was most favourable, without the use of Medicine.

I arrived in the port of London with a healthy crew, not having a man off duty with sickness, during eleven months, and I owe the greatest praise, to your Patent Potato, and I can recommend them as the most economical article of food as possibly can be obtained; and at the same time affording an excellent dish, after being a voyage to India, not losing its quality, and only requiring ordinary precaution of being kept dry; and occupying a very small space.—GEORGE CLARK, Commander of the "Vigilant," dated July 1842.

Extract of Letter from Capt. W. Allen, R.N., of H.M.S. Wilberforce, Niger Expedition.

Gentlemen.—I am happy to be able to give you my testimony in favour of the Preserved Potato, which I found to be quite as good as the fresh Vegetable, after having been on board H.M. steam-vessel Wilberforce more than a year, at least that which was packed in tin, I had some in barrels, which, owing to the excessive dampness of the Coast of Africa, and perhaps, to carelessness in the exposure, had lost its colour, &c., though its nutritious qualities, remained in a great degree. I would strongly recommend it to be always taken in Metal cases, as the most economical way.

For Ships' crews, I think that the Preserved Potato would be found of great service, as part substitute for bread, it being usually the practice of the men, not to take up the whole of their allowance, and to exchange it for Vegetables, in harbour, they would thus have the means, if they chose, of obtaining a good Vegetable at sea, at all times, and in all climates.

(Signed)

WILLIAM ALLEN.

MEMO.—Two cases of the Preserved Potato that were taken out per H.M. Steam-vessel Wilberforce are now in the possession of the Patentees, and the quality of the potato is the same as when shipped in April, 1841, for the Niger Expedition.

Gentlemen.—I have much pleasure in informing you, that I tried your Patent Preserved Potato during my passage from England to Madras, and it was the universal opinion of myself and passengers, that it was a most excellent substitute for potatoes.

Signed J. HAMILTON, Commander of the "Anna Robertson," Madras, July 20th, 1842.

Herewith are the signatures of my passengers to the above.—A. F. BRUCE, Madras civil Service; M. H. BRUCE, MARIA GILLESPIE, FREDERICA WARNER, W. H. WARNER, Lieut. Bengal Artillery; H. ROSS, Lieut.-col. Madras Army; H. P. HILL, Lieut. do. T. V. MOORE, Lieut. do. J. W. ARNOLD, W. M. HOWDEN, Surgeon, G. T. MIGLE, J. ROSS, Bengal Army; H. READ, E. J. HARDY, D. SANDERSON.

Extract of a letter, dated H.M.S. Cornwallis, Chusan, 6th Nov. 1842.

Sirs.—Although from the moment I first saw the Preserved Potato I never had a doubt of its excellence, but deferred giving an opinion on the subject, until it had a fair trial, which has now been the case, it having been shipped nearly two years, and passed through every variety of climate,—the summer months of China being particularly destructive to all kinds of stores; notwithstanding which, the Preserved Potato, is not only good when opened, but by keeping it in canister, remains so until all is used. We get the best kind of sweet potatoes here, also two sorts of yams in China; but His Excellency the Commander-in-Chief, with most others in the expedition, prefer the Preserved Potato at this day; it being quite as good, as when shipped; and, as to the expense, I am satisfied, it is more economical than the fresh potatoes, quantities of which always decay, and are thrown overboard. It is my intention, should I return to England in this ship, to bring home a small canister of the Preserved Potato.

(Signed)

W. NORMAN, Steward to

Vice-Admiral Sir W. PARKER,
Commander-in-Chief China and East Indies.

FOR CASH, and not less than one cwt. supplied, packed in Metal cases.

Samples and particulars to be had of the Patentees, EDWARDS, BROTHERS, & Co.
1, BISHOPSGATE STREET, corner of Leadenhall Street, London; and of their agents
at Liverpool, Bristol, Portsmouth, Devonport, and other sea-port towns.

DESCRIPTION OF THE COAST NEAR SWAN RIVER WITH DIRECTIONS FOR REACHING THE ANCHORAGE.—By *Commander J. W. Wickham, late of H.M.S. Beagle.*

VESSELS bound to Swan River from the westward, should not get to the northward of 33° S., until they have reached the 114th degree of east longitude, as the current on the west coast of New Holland generally runs to the northward; and between Cape Leuwin and Swan River, sometimes as much as two miles an hour. During the summer months this is almost invariably the case, but in winter this current is occasionally checked by northerly winds; and will be found at times, during strong breezes from that quarter to run fully as strong to the southward:

Soundings may generally be obtained off this part of the coast, at a distance of from thirty to forty miles from the shore; but the water is deeper over a rocky bottom, between west and south-west from Rottenest than elsewhere;—eighteen miles W.S.W. from Cape Vlaming the depth is 75 fathoms, rocky; and a mile and three-quarters south-west from the same cape it is 29 fathoms, coarse sand. In the parallel of $24^{\circ} 30'$ S., and about forty miles west from Cape Bouvard, the depth is 120 fathoms, fine sand, and at the distance of twenty-five miles W.b.S. from the same Cape it is 30 fathoms, rocky. It would appear that the soundings to the northward of Cape Naturaliste, decrease rapidly after passing to the eastward of the meridian of that cape.

Between Capes Naturaliste and Bouvard, the soundings are generally over a bottom of fine white sand, with occasional rocky patches, but to the westward of the latter the ground is more rocky, and soundings irregular. Between this cape and Rottenest the bottom is mostly coarse sand, until the island is brought to bear north-easterly, when it becomes rocky.

Rottenest Island when first seen appears to be a cluster of small hillocks rising from the sea, and at a distance cannot be distinguished from Garden Island, as no part is sufficiently conspicuous to serve as a mark by which it may be recognized. A small obelisk has lately been built on the summit of Lighthouse Hill, 155 feet above the sea; that, in clear weather may be seen from a ship's deck about five leagues:—this hill is the highest part of the island, and is in latitude $32^{\circ} 0\frac{1}{4}'$ S., and longitude $115^{\circ} 29' 06''$ E.

To the southward of Swan River the coast is low and sandy, and as far as Cape Peron is fronted by islands, rocks, and reefs, through which the only good passage is that south of Rottenest.

From Cape Peron to Geographe Bay, the coast is fronted by sand hills, between which, and the range of high land about twenty or thirty miles back, the country is low and well wooded. There is a remarkable hill on this range that is very conspicuous, and is the first land seen in coming from the westward; it is a gradually sloping peaked hill, with a shoulder on its northern slope; and when seen bearing S.E.b.E. appears with a white patch. It is near the parallel of 38° , and may serve as a guide, in making this part of the coast.

Point Casuarina is the southern point of a small opening, known as Port Leschenault, from which a reef extends about a third of a mile to the N.N.W., and shelters the anchorage from the westward. This does not appear to be a very secure port, as when we passed in the *Beagle*, at a mile distant from Point Casuarina, two American whale ships were lying on the beach, having been driven from their anchorages a short time before, during a north-westerly gale.

Point Casuarina may be known by a remarkable sand patch, near the extreme, and two pap-like hillocks on the ridge of sand hills about a mile and a half south of it. On the north side of Port Leschenault the coast sand hills have a very white appearance, being in most places void of vegetation; but to the southward of Point Casuarina they are well clothed with bushes, and the coast merely shews a white sandy beach. Here the vegetation approaches the sea, much nearer than to the northward of the point, and towards the southern part of Geographe Bay is close to the water, from which it would appear that there is rarely any sea upon this part of the coast after bringing Cape Naturaliste to bear to the westward of south-west.

Between Capes Bouvard and Naturaliste the shore appears to be clear. A ship working to the southward, may gain much by keeping in with the land, as she will not only be in smooth water, and very much out of the current, while to the eastward of Cape Naturaliste; but in the evening the wind will most likely draw off the land, and enable her to round Cape Leuwin with a leading wind. There is said to be good anchorage in the south-western corner of Geographe Bay at all seasons of the year:—it is frequented by American whalers.*

* Mr Nairn in his account of the *Nornalup*, which appeared in our last volume, makes the following important remarks on the subject of the whaling grounds, of this part of the Australian Coast.

“Perhaps the British government are not exactly aware that upwards of 150 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 refreshment, consisting of potatoes, 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.”

The following also have appeared in the columns of the *Shipping Gazette*. What are our whalers about?

“**WHALING.**—It is worthy of notice that the Americans continue to make the bay whaling at Swan River a profitable speculation; and as the *Perth Inquirer* contains some interesting statistics connected with their operations during the first half year of 1842, it is as well to give the facts, in order to lay before the public an idea of the wealth the whale fishers the United States are draw-

From Cape Naturaliste the land trends nearly due south for about forty-five miles to Cape Hamelin; the immediate shore of this piece of coast is rocky, and rises abruptly to downs of moderate elevation that are well covered with vegetation. There is a remarkable large white sand patch six or seven miles to the northward of Cape Hamelin, that rises to the summit of the land, and points out this part of the coast.

Cape Naturaliste appears to be laid down in the charts, nearly six miles too far to the northward. By observations at sea, it was found to be in lat. $33^{\circ} 31\frac{3}{4}'$ S., and long. $0^{\circ} 47' 20''$ W. of Swan River.

The Rambler does not appear to be in the position assigned to it, viz. nine miles west from Cape Hamelin, as the Beagle passed very close to

ing on the sea board of one of our colonies. Port Augusta, a place yet but little known, is the favourite resort for the American fleet to be supplied with vegetables, fruit, milk, fresh meat, and other necessaries for a long voyage; and here, it is stated, the vessels also undergo the repair of damage they may have received either from the usual chances of the trade, or the effect of bad weather. The vessels that had called in at this port up to June were twelve in number, ten of which were American, while the other two were from the Cape of Good Hope and Hobart Town. The quantity of oil these vessels had secured is a sufficient test of the resources of the fishery of the neighbourhood. The *Iris* had 60 barrels of sperm; the *Chelsea* 850 barrels black oil; the *Montezuma*, 1,500 barrels of oil; the *Connecticut*, 1,190 barrels of oil and 200 barrels of sperm; the *Mentor*, 2,100 barrels of oil; the *William*, 100 barrels of sperm oil; the *Julius Cæsar*, 1,175 barrels of black oil; and the *Addison*, 500 barrels of sperm. These were all American whalers. The ship from the Cape had not, up to that date, been successful, and the *Camilla*, from Hobart Town, had but 60 barrels of sperm. It appears, however, that many of the vessels had not completed their runs, but had put into Port Augusta for what the crews wanted. It is further stated, in proof of the quantity of fish in the bay, that in the winter of 1839 two vessels from the States captured no less than 30 whales; and in 1840 two other vessels were equally successful. In the winter 1841, 27 whales were killed in the bay, by the *Camilla*, from Hobart Town, and the *John Parry*, an American ship; and this, it is said, is a small sample of the success that might be obtained all along the coast, if the fishery were pushed in the manner it deserves. There are already, it appears American visitants at King George Sound, Two-people Bay, and the *Vasse*, on the same expedition, and they have also profited largely by the good fisheries found in those places."

"SIR.—Being aware that your valuable paper is widely circulated by our colonists, and yourself in England, I beg leave to call the attention of English capitalists to the wide field for investment open before them in our seas. At present the only whales taken here, which are at all advantageous to England, are such as are caught by the crews belonging to the land establishments of our enterprising colonists, and while foreigners in abundance find here an ample field for exertion, our own English merchants either do not know of, or do not sufficiently value, the golden opportunities for a rich harvest which the great numbers of fish that throng every bay on our coast present for their enterprise. Only the last trip of the Governor Gawler to Port Lincoln, the captain saw three fine fellows tumbling about in his road; and on the return of the *Guiana*, they saw five fish near Cape Jervis, and several other schools of large fish near our coasts. At Port Lincoln, it is quite a common sight for a whale to be blowing and tossing about, and several attempts have been made to take them in small boats, without success. In the hope that you will do the subject more justice, I am &c., A SAILOR.—*Southern Australian*, Sept. 2."

that spot, without seeing any thing of it; and, although night, it would have been easily distinguished more than a mile off; as there was a good deal of sea at the time. It does not appear improbable that the Rambler is no other than the Geographe Rock, six miles S.b.W. of Cape Hamelin.

Naturaliste Reef,—which is laid down fifteen or eighteen miles north from the cape of the same name, was not seen from the Beagle.

DIRECTIONS FOR PASSING ROTTENEST ISLAND; *and reaching the anchorage of Swan River.*

THE best passage for a stranger into Gage Road, is to the northward of Rottenest Island, and, if coming from the southward, Cape Vlaming (which is the western point of the island) should not be passed at a less distance than a mile. It will be advisable to stand on to the northward until the north point of the island bears E. $\frac{1}{2}$ N. (mag.), when a more easterly course may be steered, still taking care not to approach within a mile of the shore, as the Horseshoe Rock, which lies off the north-west point, is nearly that distance from the shore; its exact position is not ascertained, but it bears nearly N. 56° W. from Lighthouse Hill, and about N. 40° E., two miles and a quarter from Cape Vlaming.

Roes Reef lies off the north point of the island, and is nearly a mile N.b.W. $\frac{1}{2}$ W. from the Duck Rock; it is a patch of rocks, over which there does not appear to be less than $2\frac{1}{2}$ fathoms. During the usually smooth state of the sea in the summer months it is not very readily distinguished, but with the deep westerly swell that frequently rolls upon the coast during winter, its position is pointed out by a heavy breaker. In rounding the eastern part of the island, a ship should not haul to the southward of east, until Fisherman Rock bears to the southward of S. 28° E., and the north-western part of Cape Vlaming is shut in by the north point,—she will then be full a quarter of a mile to the N.N.E. of Roes Reef, and may steer for the white sand patch on the main land, bearing about E. $\frac{1}{2}$ S., until Seal Islet is open to the southward of the islets off Bickley points, and bearing S. 47° W. nearly, from whence a course about south-east may be steered, or, if the jail is well made out, by keeping that building about a point on the larboard bow, which, although small, is a conspicuous white object on the south head of the river. It is necessary to stand thus far to the eastward before shaping a course for Gage Road, in consequence of the Kingston Spit, which is a great extent of foul ground and rocky patches, reaching full two miles off shore from the north-eastern part of Rottenest.

Duck Rock, is a small rocky islet, a short distance from the northern part of Point Bathurst, and is marked by a beacon on its highest part.

Fisherman Rock is also marked by a beacon, and may be easily distinguished, being a rugged rocky islet of considerable height a little to the north-east of Point Phillip, which is the easternmost point of Rottenest, and is low and sandy, with a small sand hillock a very little within the extreme.

Point Bickley, about half a mile to the south-west of Point Philip, is a high sand hill point sloping gradually to the southward; it is covered with brushwood, and there is a conspicuous white patch on the northern part of it. Wallace islet lies close to the south-east part of this point, and is a small gray-coloured rocky islet, with a very rugged exterior.

Point Parker, which is the south point of Rottenest, is a very remarkable round rocky lump, and at a distance appears to be isolated, being joined to the island by a very low ledge of rocks.

Seal Islet is the largest and highest of all the islets and rocks off Rottenest, and is capped with vegetation; it lies nearly half a mile off the shore of Porpoise Bay, on the south-east part of the island.

Gage Road is but an indifferent anchorage, owing to the bad quality of the bottom, which is mostly very hard; and appears to be in many places merely a flat of rock covered with a thin coating of sand, upon which there is a thick growth of weed, that appears to have the effect of preventing an anchor from taking hold again, after it has once commenced to drag, in consequence of the immense quantity that accumulates under the shank, and thereby prevents the fluke from penetrating the sand.

The best ground is in a line between the jail and Mewstone, or with the former bearing N. 72° E. (mag.), and the south end of the White Patch N. 26° E., in 7 and 8 fathoms, *f. w. s.*, and a mile from the mole; there is a rocky patch a little more than three-quarters of a mile off shore, with the jail on the same bearing, when there is very little more than 3 fathoms, between which and the shore, about half a mile off the mole, is fair anchorage in 3½ and 4 fathoms; but the holding ground is not so good as in the deeper water; a ship will be clear to the eastward of this patch of rocks, as soon as Buckland Hill is shut in by the extreme of the North Head.

South Channel.—There is a good channel about two miles and a half wide, into Gage Road, on the south side of Rottenest, called the Southern Passage; and, with the exception of the Middle Bank, there does not appear to be any danger beyond half a mile from the shore, particularly after getting to the eastward of Point Parker.

The Middle Bank is a patch of what appeared to be sand and weeds, lying in a direct line between Point Philip and Champion Rock, upon which we did not find less than 3 fathoms water. When the sea is smooth it may be passed over in safety; but during, and after, westerly gales; the heavy long south-west swell is met by that from the north-west, round the eastern end of Rottenest, and causes the sea to break heavily in places where there is as great a depth as 4 and 5 fathoms.

(*Note.*—I have been told that, upon more than one occasion, after continued heavy westerly gales, breakers have been seen to extend from the Stragglers quite to Rottenest, at such times this passage has no very inviting appearance.)

The Middle Bank may be avoided by keeping close to this island, and there are no dangers beyond an eighth of a mile from the rocky islets that front its south-eastern shore, leaving a clear passage

between them and the bank, a mile and a quarter wide, with an uniform depth of from $5\frac{1}{2}$ to 7 fathoms. This bank bears S. 50° E. (mag.) a mile and a half from Point Philip: a ship will be to the eastward of it when the beacon on Duck Rock opens to the eastward of that on the Fisherman Rock.

Champion Rock is three miles S. 50° E. from Point Philip, and although covered to a depth of 9 feet, is generally marked by a breaker. The marks that point out when a ship is to the eastward of the Middle Bank, also serve to shew that she is to the eastward of this.

There is good anchorage and shelter from the winter gales, under the south-east point of Rottenest, off the small bay between Points Philip and Bickley, the Beagle anchored there, with the south point (Point Parker,) and Wallace islet on, bearing S. 62° W. Fisherman Rock and Point Bathurst on, bearing N. 56° W., and the south end of Seal islet S. 50° W.: but an anchorage affording better shelter from the southward, may be taken a third of a mile nearer to the white cliff, with the extreme of Point Parker on with the northern part of Wallace islet, bearing S. 60° W., and the Duck rock midway between Fisherman Rock, and the low sandy extreme of Point Philip, bearing N. 44° W., the south Point of Seal islet will then bear south-west. High water, F. & C. takes place at the eastern part of Rottenest at 7h. 50m. P.M., and the range is from 1 to $2\frac{1}{2}$ feet. The flood runs, or rather the tide flows fourteen hours, and ebbs ten.

In working towards this anchorage from the eastward, with westerly winds, a ship should not stand on the Port Tack (to the northward), longer than just to shut in Point Parker with Point Bickley.

In working from the southward, under Rottenest with a northerly wind, it would be advisable not to stand at all to the westward of Cape Vlaming, as in all probability with such a wind, the current will be running to the southward, and in standing on the larboard tack, (to the eastward) care should be taken not to shut in the Mewstone with the highest Straggler, or if too far to the northward to distinguish those rocks satisfactorily, a ship should tack when Fisherman Rock bears N. 32° W. (mag.) and not bring it to bear more westerly until Point Parker comes on with the most southern part of Cape Vlaming, bearing about W. $\frac{1}{4}$ N. These marks lead a very little to the northward of Champion Rock, therefore by shutting them in until the same part of Cape Vlaming becomes visible over the rocky ledge that joins Point Parker to Rottenest, or when that point bears about W. $\frac{1}{4}$ N. an east course will carry a ship clear between the Middle Bank and Champion Rock. Then when the Mewstone and Haycock on Garden island are on, a course to the south-east may be steered for Gage Road.

The Stragglers are bold of approach, and the soundings are regular on their western side. In working to the southward in the Beagle, we found the depth to be 8 fathoms, about half a mile west from the largest.

During the winter months Owens anchorage is undoubtedly the safest, and although rather more than two miles from the mole, affords an easier communication than any other where a ship will be secure during that season of the year. Ships using Gage Road in the winter should

be ready to way upon the first appearance of a northerly wind, and take shelter in Beagle anchorage, under the south-east end of Rottenest.

Ships going into Owens anchorage after having passed north or south of Rottenest should stand on towards the jail, or upon a south-easterly course, until the Mewstone bears S.W. $\frac{1}{2}$ W., and then steer for that rock, until the small rocky islet close to the southward of Carnac Island, is a little open of the Haycock, on Garden Island, bearing S.b.W., the highest Straggler will then bear W. 14° N. The depth in this place is 3 fathoms, from whence a ship may either stand on to pass between the Mewstone and Seal rock, keeping a good look-out for a small rock, a little below the surface, that lies a quarter of a mile N. $\frac{1}{2}$ E. from the latter, or she may pass a quarter of a mile to the westward of the Mewstone, depending upon the wind, which if southerly, the latter will be the best, but she should not stand more than three-quarters of a mile to the westward of the Mewstone before tacking.

If the wind will permit, the shortest way across the bank is, after bringing on the above marks, to pass to the eastward of the Seal rocks, by steering south until the Mewstone comes on with the largest Straggler, then steer E.b.S. for the centre one of the three small rocky patches on the beach, this course will carry a ship over a shoal patch of hard ground, where the least water is 3 fathoms. She will be close to its western edge when the Jail bears N.b.E. and will have passed it when the same object bears N. $\frac{1}{2}$ W. An anchorage may then be taken, if wishing to be near the shore, but the ground is of a sandy nature. It would be better as soon as the Fish Rock opens out to the westward of the rocky heads at the entrance of the river, particularly the North Head, bearing N.b.E. $\frac{1}{2}$ E. to haul up N.E. and pass to the northward of the patch, and anchor in 9 fathoms, sandy mud, when Middle Cliff bears S. 70° E.

The Beagle ran into Owens anchorage by passing to the westward of Mewstone, and steering S. $\frac{1}{2}$ E., keeping the outer rock to the westward of Carnac Island, on with the eastern high part of a white patch on the north end of Garden Island, in that bearing, until the middle cliff bore E.b.S.

The following are the compass bearings of conspicuous objects from the Beagle's berth at Owens anchorage:—

Jail	.	.	.	N. $8\frac{1}{2}^{\circ}$ E.
Mewstone	.	.	.	N. $75\frac{1}{2}$ W.
Haycock	.	.	.	S. 48 W.
Middle Cliff	.	.	.	S. 65 E.

The ship was moored with half a cable each way; the best bower to the north-east in 7 fathoms, mud and sand; and the small bower in $8\frac{1}{2}$ fathoms, same bottom. The lead showed soft sandy mud; but, on waying the anchors they were found firmly embedded in white clay.

A better anchorage than this may be taken about a cable's length farther to the north-west, with the Mewstone just clear to the southward of the Seal rocks, bearing N. 76° W. The highest part of North Head on with the extreme of Arthurs Head, bearing N. 7° E., jail

N.b.E., and Middle Cliff S. 63° E., in 9 to 11 fathoms, over a mixture of sand and mud.

The jetty at Freemantle is in lat. 32° 03' 18" S., and long. 115° 43' 40", (by meridian distance 97° 17' 37" from the Cape of Good Hope,) variation 5° 11' westerly; high water, F. & C., takes place at 8h. P.M. and the rise is from 1 to 2 feet. The tide flows fourteen hours, and ebbs ten.

REMARKS ON SHIPS SAILING IN CIRCULAR STORMS.

(Written during the years 1840 and 1842.)

1. HOWEVER desirable it may be for navigators to take whatever advantage they can of the wind of a hurricane to pursue their voyages, I am apprehensive, so far as we are enabled to look into the nature and operation of those violent tempests, that their presence would seldom afford more than a very trifling assistance to a ship, on account of the adverse circumstances generally attending them.

2. As practical results are generally more conducive in settling doubts upon a question, than anything which may be said in support or disapproval of such, it is to be desired that, whenever attempts to run in a hurricane may be made in future, the accounts, embracing all circumstances, be made public for the benefit of navigation.

3. To those seamen who have not studied the law of circular storms, it may be proper to observe that, it is not always that the line of path pursued by a meteor will admit of a ship taking advantage of the direction of the marginal wind, to follow a course towards her place of destination, when its force may not be an obstacle to her making such an attempt.

4. It would appear as a point necessary, whilst a vessel is striving to hold a steady course in a hurricane, when she cannot preserve her station with reference to the bearing of the centre of rotation of the storm, so as to ensure the wind remaining in one quarter, that she should have some sail set to keep her under command. Perhaps, it will be admitted that, with the force of the gale at 11 of the scale, and from any point before the quarter, the masts would be in danger of being carried away; and, should the wind rise as high as 12, the sails would be blown to rags, and the ship probably hove on her beam-ends. Should the movement of the meteor be oblique, it would frustrate the desire of advancing on a given course. And, if after starting under sail, the captain should find that the pressure is too great for his vessel, and that he dare not attempt to relieve her of the sails, he must either conform to the veering of the wind, and keep his ship before it, or suffer the canvass to be torn from the yards, with the chance of being dismasted, or of upsetting. If he follows the course of the wind, which would be the safest plan, it is quite clear that the ship will describe a curve, and this may lead her away from her destined path. On deciding, in such an emergency, the question to be considered seems to be—which of two

alternatives is best—to heave to with a probability of not being driven very far out of our road; or, to take the wings of the wind, if fair, and run the chance of the adverse circumstances above spoken of. Seamen will decide for themselves; but, I think it proper to remark, as a necessary caution that, the uninformed, with respect to the law of these storms, must necessarily embrace the first.

5. The great difficulty in the performance of the second evolution, seems to be that of a ship keeping a steady course, or one which will lead her towards her destination, in defiance of the veering of the wind. In theory, nothing appears easier than for a ship to take advantage of the direction of the wind, in one of these storms, to pursue her voyage; but, when actually feeling the violence of the blast, we may find it impracticable, though there should be no other obstacle. We are not to consider that there is little risk in scudding in a hurricane, because ships have done so with impunity. In desperate undertakings it is best to be sensible of the amount of danger we run, in order that a proper caution and vigilance shall be observed. Any seaman who has tried it, would, no doubt, readily assent to the risk being great, with the force of the wind as high as 11 or 12 of the scale; and lofty, breaking and lashing seas following. The most perilous point, however, is, with the wind quartering, on account of the effect produced upon the rudder, and consequently upon the steerage; from which, and from the pressure of the seas upon the quarter, the vessel has a tendency to broach to. Even in ordinary gales under this point of sailing, most ships gripe; and extra hands are required at the wheel; topping seas have fallen inboard over the quarter, and have swept away the round-house with some of the crew and passengers, on the Australian return voyage. Undoubtedly care, vigilance, and good seamanship, are great aids of security; but, in this very matter, every experienced seaman knows that, having no control over the waves, when steering a steady course, he can do little to avert the effect of their action, which, in an instant may defeat his hopes of security. The timid, and the rash seaman, to use a vulgar phrase, may be “shaken in a bag.” Indecision is, however, if any thing, worse than a blind contempt of danger. Temerity will sometimes help itself out of a dilemma by its boldness and promptitude; but, the wavering of a faint heart, or one without confidence in itself, seldom breaks a gap for escape in the circumvallation of peril it has fallen into. But there is a desirable medium character,—one that is neither timid nor foolhardy. I lay my thoughts before those of this latter class.

6. I need not insist upon what must be obvious enough to the reader, that, no captain of a ship should run the hazard of destroying life for the sake of the owner's interest, or for his own éclat; nor risk the loss of the vessel because she is insured. If the captain of a ship seizes the opportunity “hap-hazard” of a fair wind in a hurricane, merely because the gale blows in the direction he wishes to go, without a thought of what the result may be, supposing him ignorant of the theory of circular storms, he will adopt a very perilous course. I make these remarks for the purpose of urging the captains of ships to study the law of circular storms, that they may not blindly act their part when assailed by one. Sufficient discussion has already been published on

the subject to afford them a tolerably clear idea of their nature and operation, and, if the examples which have occurred of ships, even in harbour, being upset, or losing their masts from the force of the wind, during hurricanes, are not strong enough to warn them to be very cautious in attempting to carry sail whilst exposed to their fury, they must be left to gain wisdom by their own experience. They all, however, ought to know from their qualifications as seamen, that the idea of regulating the speed of a running ship under such powerful pressure as she would be subjected to, will generally be found fallacious, when the ability to increase, and I may safely add, to reduce sail, with the wind as high as 12, is a point scarcely practicable after once the ship has started in the race, until the storm has passed.

7. From published accounts which may seem to negative the opinion I have felt it right to express on this head, those who have no practical knowledge of the operation of a circular storm, may be inclined to think that I exaggerate the risk. Be that as it may, I repeat my conviction that, with the wind from any point further forward than the quarter, and its force as high as 12, a ship could not show an inch of canvass without its being torn into shreds. To make a given course, it is my belief, therefore, except with the wind aft, or quartering, is impracticable, however reasonable the contrary may appear theoretically.

8. In the *Nautical* for 1839, p. 12, there is an account of the ship "Lady Hayes," running in a typhoon upon a S.E.b.E. course, starting with a wind from the north (on the quarter) obliquely through the left hand semi-circle, under a press of sail; the wind, as she proceeded, veering to the westward, and ultimately to the south. It is inferred by the talented writer who gives the account from the *Canton Register*, that the ship fell off from the action of the heavy sea running from the eastward; if so, how could she have kept upon a S.E.b.E. course? As it is stated that the wind veered round to west and south, such a course would appear to be impossible; and, we gather from the captain's words that the ship became unmanageable; indeed, it is probable that she was obliged to conform to the changes of wind, and that so far from keeping a direct course, she described a curve. The imperfect, and often erroneous accounts found in newspapers, cannot be relied on; the only safe mode which the captain of a ship can adopt to afford others a clear view of what occurs, is, to give a true copy of the ship's log, in civil time.

9. It would appear that, from the force of the wind being so great, the idea of a ship drawing her yards forward to meet the changes in a progressive hurricane, whilst under sail, cannot be realized; if attempted, one of three things is likely to follow:—First, the sails being blown out of the bolt-ropes;—Second, the fall of the masts;—Third, the upsetting of the vessel. In the open ocean the waves rise in proportion to the strength of the wind; and the motion of a ship becomes so extreme that she is liable to the loss of spars; if not from that cause alone, from the combined action of wind and sea. The subject is of some importance to navigators, and should be studied by them diligently. But the difficulty of taking advantage of the *marginal wind* of the circle, which alone can serve them to any good purpose, seems to be to meet a favorable concurrence of circumstances; and these are beyond man's ability

to create or control. What these circumstances are will be made apparent in the sequel.

10. A great check to the desire of reducing such navigation to a system is, that, we know of no means by which we could obtain the hourly rate of a meteor; and, unless the ship's rate of sailing be regulated to the speed of the storm, it is obvious that it would be a mere matter of chance the result proving favorable; for if the ship's rate exceeds that of the meteor, she must run away from it; and, if it falls short, she would be left behind. Let either happen, undoubtedly we should soon be aware of it; but the difficulty is how to remedy it. We cannot make and shorten sail as we please, in a furious hurricane, so as to regulate the ship's place with reference to the centre of rotation; and without accomplishing this, we cannot maintain a direct course in company with the meteor. Besides, a ship may go too rapidly without any sail; for instance, if her speed be ten knots, and the meteor be moving at the rate of seven miles an hour. The progressive rate of these storms appears to vary from 0 to 7, 15, and 20 miles an hour; indeed, it has been calculated at considerably more. The progressive course varies as well as the velocity; and the general curved line which these storms follow, would be disadvantageous whenever a ship's course happens to be at all transverse to the line, though she were able to keep up with the meteor; because, if she persisted in keeping her point, she would experience a change in the direction of the wind, and must conform to it, or, take the consequences. Upon a general view of the subject, it would appear that, no ship can gain by running in a hurricane unless her desired course lies upon a parallel with the progressive course of the storm, and consequently with a wind blowing towards the same direction. In attempting, unwittingly, transverse sailing in a hurricane, it is highly probable that there has not yet been one vessel that escaped foundering, or some other disaster that speedily compelled her to round to, or go before the gale. The "Blanche" frigate, I believe, tried it, but was obliged to succumb; and I have met with some vessels, bottom up off the Chesapeake, having the remains of sails upon their yards, every one of which were, probably, capsized when trying to run on a transverse course. Occurrences of this distressing sort are frequent in this part of the ocean. The want of forethought, and a disregard of precaution have, no doubt, led to the loss of many a vessel, and this because there was not an axe or a hatchet at hand, to cut away the rigging, or the masts, when a vessel has been thrown on her beam-ends.

11. The foregoing remarks may be considered as offering points not unworthy of the seaman's careful attention, and not as expressing opinion of the impracticability of the Captains of ships availing themselves of the fair wind of a hurricane to pursue their voyage. By a fortunate concurrence of circumstances, it is by no means impossible for a vessel to do so; but, I apprehend except under the general condition, given above, that little advantage could be derived from such attempts. In the ocean, for instance, breasting the North American continent, the advantage to a ship would be so trifling, were she to take the east or the west wind of a meteor to run towards, or from the coast in prosecution of her voyage, as to be hardly worth the risk of losing spars, &c.

In a meteor of 300 miles diameter, and 925 miles circumference, the span of the east or any other given wind of the circle, would be under 29 miles; but this distance with regard to the vessel bound to the coast, would be shortened as the storm receded, to the north-east from her position.

12. I may perhaps be serving the seaman by giving a case or two, hypothetically, wherein a probability of success would lie, if the conditions, which are *imperatively* necessary, should be fulfilled. If one of these storms progressing to the *north-west*, in the parallel of the Bermudas, should involve a ship within its north-east verge, where the wind blows from the south-east, if bound to the Coast of America, she may run in with the storm, taking care to heave to in time to prevent shipwreck. This is theory; but in practice the Captain of a ship would be at a loss to know which way the meteor was moving, as these storms sometimes are found still pursuing a north-westerly course above thirty degrees north. He may heave to and wait the first shift of wind, which would at once tell him the route, whether north-east or north-west. The result, in either case, would be this; *first*: with the meteor moving north-east, he would not have a change of wind until the centre had passed over his ship; it would then come from the north-west, and of course he would be defeated; *second*, storm moving north-west, the first shift would be S.E.b.E; he may then dash away before it. But there are contingences that may involve him in extreme peril: 1st the meteor may change its route, and thus subject him to the changes of wind with the full force of 12! 2nd he may find it *impracticable*, when he gets into bottle-green coloured water, to round to; he is already *before* the wind—what is he to do? I need not answer! a *balloon* that would carry a boat with the crew in, towards the land, would be extremely useful upon such an occasion, perhaps it may be applied to such a purpose in the course of time.

A ship falling into a storm after clearing the Florida Channel, and bound to the Bermudas, if she happen to get into the circle at the south-east verge, where the wind blows from the south-west, circumstances being propitious, and admitting (what often happens) that the meteor was turning gradually, at the time, from a north to a north-east course, she would be carried towards her destination. But difficulties beset the attempt; the marginal wind though often no higher than 9, 10, and 11, is sometimes as high as 12; and in this particular case it would probably be so, as the vessel would be moving on a parallel with the progressive course. Besides, it would be an awful reflection—a very “bitter cud,” indeed, for the enterprising skipper to chew—to think, *after* starting, what the case may be on approaching such terrific breakers as present themselves around the islands, when the angry winds are blowing, if he should find that he dare not attempt to round his vessel to, without a certainty of being overwhelmed, or losing all his masts, and which would bring the same calamity—a “watery grave”!

Again, if a hurricane were found moving to the north from the

* I am not penning a romance of terror; but describing circumstances as they may occur. Seamen are not to be scared by the narration of peril; but caution may be equally serviceable to them as to others.

thirtieth to the forty-fourth degree of latitude, a vessel from the Bermudas, bound to Halifax, getting into the east limb, where the wind blows from the south, and of course, being able to retain it by keeping up with the storm, would be carried up to the Coast of Nova Scotia. But, she would run the hazard of the meteor turning more to the east, and settling her doom after arriving at the threshold of her port. It is always dangerous to be in the vicinity of land during a hurricane; and it may not be safe to round to, with a heavy breaking sea running, at a proper distance from it; this is the main difficulty in scudding with the parallel wind of a circular storm.

According to Mr. Redfield's chart, the storms appear to follow a remarkably uniform route from about the thirtieth degree, to the Banks of Newfoundland, along the current of the ocean stream of Florida. A ship happening to fall into the south-east limb of one of these meteors, where the wind blows from the south-west, and could preserve her station, she would have the benefit of a fair gale all the way up to the banks; and if the meteor then turned to the east, she might go on with it to the European side of the Atlantic. But, although this seems very satisfactory according to theory, can it be fulfilled in practice? That is the proper question to be decided. However desirable it cannot be accomplished at will. The conditions necessary are these:—

1. The ship must get into the storm precisely where the wind blows fair for the prosecution of her voyage—which is quite a matter of chance. 2. If she happen to do so, she must, to derive benefit, regulate her speed exactly to that of the meteor. Can she do that at pleasure? There would be no difficulty in ascertaining the fact of her preserving her station, or not, by the wind remaining steady, or veering; but there is a necessity that would bind her, and which cannot be evaded with impunity when a high sea follows;—she must carry a certain proportion of sail to prevent her from being pooped. Now, this sail may give her a velocity greater than that of the meteor, at the time—hence she would run ahead of it. Again, the rate of the meteor may be greater than her utmost speed—hence she would be ejected. I have entered into these minute details, that the seaman may obtain a clear conception of the difficulties attending any attempt to take advantage of the presence of these storms to shorten his voyage; and, as they require no efforts of reasoning, or of study to be comprehended, they may not be unworthy of his attention. I see distinctly that the performance can only be accomplished by a nice adjustment of circumstances, and that over these circumstances we can have little or no control. I should not have done justice to my motive, or to the importance of the subject, if I had neglected to point out the difficulties attending the accomplishment of the object.

13. The North Atlantic, between America and Northern Europe, is, the high road of these circular storms, and it is probable they may there offer the most favourable opportunities for a ship taking advantage of their presence, to carry a fair wind with her, if she had not one before; provided, of course, that she happened to be overtaken by the south verge, or ran into it; but it is evident, in either case, she must be able to regulate her speed to retain her advantage. It is the fact, however, that in this very route, there is little need of the assist-

ance from a hurricane to impel a ship to the eastward, as the winds blow from the westward the greater part of the year, and especially during the autumn and winter, when these meteors prevail. At present with all the knowledge I possess of these storms, the Captain of a ship, taking advantage of the direction of the wind to expedite his voyage, does so entirely at a venture; his progress depending upon the equality of his rate of sailing, with the rate of the progression which the meteor makes; and other circumstances over which he has no control. The uncertainty under which the seaman will be placed, there is no remedy for—the meteor cannot accommodate its velocity to suit his purpose; neither can his ship be made to exceed a certain speed; and, although on ordinary occasions he may regulate the rate of his vessel's sailing, he must fail in any attempt to do so in a hurricane. In fact he can do no more than take his chance. It should be remembered, too, that on this route, ships with the favour of a rectilinear gale, often make the voyage to Europe from America in, from, 13 to 20 days;* would the hurricane wind urge a ship forward more speedily than that?

Besides, we all know that, with a quartering north-west or south-west gale, a vessel would make as quick, if not a quicker passage, though the strength of the wind should not be so great as one directly aft.

14. Although in this lengthened discussion I may have satisfied the reader that there is a possibility, with a remote probability that a ship may shorten her voyage more or less, by running with a hurricane; perhaps, if he has thought but little on the subject he will not be altogether prepared for the startling fact that a vessel which does so, if she be more than a few days involved in the commotion, loses her reckoning! For, as long as she continues in the hurricane, the sun, moon, and stars will be invisible. This circumstance, to be sure, would be of no moment in a run across the ocean, to a skilful navigator provided with proper instruments, if he could venture when his judgement warned him, to round to and allow the sombre meteor to pass on.

15. Upon the whole, it would seem that, as yet, we are comparatively ignorant of the adaptation of the circular storm to the aid of navigation, that is to say;—we have no practical proofs, that I am aware of, of such being the case; but a great many instances to show that hurricanes have ever been detrimental to it; and by this investigation, if the labours of the writer should be deemed worthy of confidence, it would appear that little advantage can be gained by their presence, and that accidental, and not unattended with risk, at least in the North Atlantic. Within the Tropic the trade-wind holding its course throughout the year, with slight interruptions, and the hurricanes being usually more severe therein than in the northern latitudes, the great anxiety of navigators has been to get clear of them as speedily as possible, as they are pretty sure of a return of the easterly breeze when the meteors have passed; and, as the general route of these storms is to the westward, those vessels bound to the eastward would derive but little advantage from running with the westerly wind of the southern margin.

* The "Lapwing" man-of-war, Capt. Skene, came home from Charleston in 15 days! The "Brunswick," 74, and other ships of the line, in 21 days from St. Domingo; others in 19 days from the Bahamas. I have made the run from Bermuda in 21 days; and a transport from Quebec in 10 days!

I think that some remarks on the line of conduct advisable to be pursued by the Captain of a vessel involved in a hurricane, under different circumstances, (which I have called, perhaps improperly—"circle sailing,") should be given in the popular works of Navigation. It would be proper, however, that more than one individual should be employed in drawing up such remarks, for the purpose of making them as correct as possible. But, it behoves every seaman to study carefully the "Law of Storms," and for this purpose the invaluable work* of Colonel Reid is the best guide.

In conclusion I may add that, if it should be found that circular "winds blow without violence, which there are reasons for believing, then in all probability the old adage that the longest way round, (apparently) would prove the shortest way home" may be realized, with respect to the voyages of ships. If such meteors should be found to be progressive, they would offer some of the impediments attached to the violent circular winds; but should they remain stationary, and present a diameter extending from Europe to America, then the polar sweep of the circle, would be the shortest route across the Atlantic, upon the principle of great circle sailing.

Addenda.

A few words may be permitted on the account given in the October number of the *Nautical* (1842) of a severe *Typhoon* experienced by Captain Miller, of the "William Wilson" on the Coast of Coromandel. I offer the remarks with the hope of making the subject more familiar to seamen, so that on any future occasion they may be enabled to act with a degree of confidence that could not be expected of them when entirely uninformed.

It may be inferred that, the path of the storm was about west—northerly, perhaps. The ship appears to have entered the circle nearly on the line upon which the meteor was proceeding; the first of the gale commencing from the *north*; and it is presumed to have ended with the wind from the opposite quarter; and, it is obvious from the few changes which occurred, and the intervention of the calm, that the centre of the storm passed at no great distance *northerly* of the ship.

The anterior semi-diameter occupied ten hours and a half in passing over the vessel, giving only two changes of wind N.b.W. and N.N.W. succeeded by the central calm, which was about half an hour present; at the expiration of this brief interval of rest, the storm was renewed with great fury from the S.S.W; and it appears to have ended at 7h. A.M. of the second day, with the wind from the *south*; and thus the ship passed through the entire diameter without experiencing more than *five* changes in the direction of the wind; a circumstance which though it may have occurred before, and may again, I do not recollect another instance of to have been recorded. The combined evolutions of the ship, the intervention of the calm central circle, and the particular line of path followed by the meteor, and perhaps the *set* of a current, produced the effect. Had the storm been moving to the north-west, and the ship

* "An attempt to develop the Law of Storms, &c." published by J. Weale, 59, High Holborn, London.

had cleared the calm, her changes of wind would have amounted to eight or ten, if not more.

Admitting that *south* was the last wind of the circle, then the posterior semi-diameter passed over the ship in ten hours; and the entire storm occupied a period of about twenty-one hours, including the half hour of calm. A glance at the table will show that the ship during this time made about twenty-seven miles of northing, and about a degree and a half (or, rather more $1^{\circ} 53'$) of easting, which would barely account for her experiencing the south wind, if that pertained to the east verge. If the meteor were turning more northerly in its course, that would have the effect, it is probable, of bringing down the south wind to the ship's position; but, if it be inferred that the storm ended with a south-east wind as named in the tabulated form, (which, however, I am inclined to believe was not the case,) then that circumstance may be due to the curl.* This south-east wind may have been the recession gale.

Now that we have the map of the storm, as it were, before us, and considering that the ship was light, if, when the gale commenced, the captain had put *before* the wind, and continued so to run, his ship would have described a curve convexly to the southward, (which would have been smaller or larger, according to the amount of the progressive rate and the size of the meteor, as the wind veered,) and have swept through the left hand semi-circle, and thus probably, have saved his masts; and, as the force of the wind, except at the *crisis*, is less in this half of the circle than in the other, he would, probably, have been enabled, going *before* the gale, to have carried a close-reefed main-top-sail, and reefed fore-sail, as a security against the impetuous rush of the following seas, and been ejected in a shorter time than if he had laid to, because his vessel would have been running in an opposite direction to the course of the storm.

That the seaman may become familiar with the subject, I deem it right to be diffuse rather than niggardly in my explanatory remarks, and, therefore, add that, a great deal as a means of security, though unknown in the present case, with reference to the position of Ceylon, would depend upon the rate of the progression of the meteor. This may appear strange, but it is nevertheless a fact. If it was travelling rapidly, that is, above ten miles an hour, the points of intersection, or, changes of wind, would be accelerated, and the curve, described by the ship, shortened; and it must be recollected that the curve is regulated by the distance the vessel is from the centre of rotation and the rate of progression. But, supposing this meteor to have been suddenly checked (a circumstance very likely to happen) on the anterior verge striking the Coromandel coast, and to have become stationary for a time, or moving slowly onwards, the case would be altered; for, as the ship

* I may note here that it is quite within probability to conceive that a meteor, when meeting with resistance on the anterior portion passing over land, to be so far altered from its circular form as to have the posterior verge indented, because, that portion being over the ocean, and its velocity unchecked, it would press inwards. By the same parity of reasoning, when the posterior part of the circle hangs on the land, and the anterior is clear of it, the meteor would be likely to assume the shape of an egg, the contracted portion being over the sea.

started with the *marginal* wind, she would, under either of the latter conditions, be moving round the outer verge of a great circle; and, if the meteor continued thus inert, the ship, perhaps, would be speeding on towards a close approximation to the north shore of the said island, distant from her starting point, about 200 miles. At the rate of 12 knots an hour, she would run the distance in less than 17 hours; but, the probability is, if there were any onward motion of the meteor, that she would have cleared the island.

It is safest, when circumstances do not press, to wait until the centre of the storm has passed the vessel's position, before attempting to put her with the wind; but, in some cases, as in this, there may be no other alternative; and, I think, the captain of the *William Wilson* may, now that he is acquainted with the nature of these storms, congratulate himself on having escaped, with a light ship, as well as he did out of the mess.

There is generally little difficulty in ascertaining when the centre of a meteor has passed a ship's place, if the general direction of its route be known; and that is a point which the indefatigable labours of the two talented leaders on the law of circular storms, have determined, with reference to some parts of the ocean over which the meteors seasonally make their transits, in both hemispheres; but this is a branch of the subject which still remains incomplete.*

The propriety of not starting before the centre passes, may apply with more force to the right hand semi-circle, because the movement will be made subsequently to the *crisis*. In performing the evolution in the left hand semi-circle, the seaman will recollect that the meridian occurs *after* the centre has passed, and he will take his precautions, accordingly for meeting it.

STORMY JACK.

TIGER ISLAND.—The above island, which is contiguous to the Sunderbunds, and is known by the name of Saugor Island, was but a very few years since infested with tigers and other wild beasts; and to so alarming a pitch had this nuisance arrived, that it was dangerous for ships' crews to land upon the spot. Even whilst the men were engaged in paying the last mark of respect to some departed comrade by inhuming his remains in the sand, they have on several occasions been carried off by tigers. An instance occurred in which one of these ferocious animals, pressed by hunger, actually made off to a boat in which two natives were rowing, and swamped it, bearing away one of the men into the jungle. Tiger Island was always looked upon by ships' companies as being a formidable place, and it was seldom, after a time, that any one could be found bold enough to put his foot on it. Within the last few years the apprehensions formerly entertained of this place have been effectually removed. During a violent hurricane, which occurred in the month of May, the whole of this island was laid completely under water, the sea of the Bay of Bengal making a breach into the main land of 17 miles in extent. During this frightful inundation, the wild beasts perished, and a tiger, awed by the tempest, actually entered the hut of a native, wherein the family were sitting, and offered no molestation, but seemed to seek a temporary asylum in the habitation of man. The above island was, at one period, overrun with hyænas, jackalls, and other beasts of prey; and the yells they emitted during the still hours of night, whilst prowling in quest of their quarry, filled the crews of vessels lying off the place with horror.

* The recent storm which desolated Madeira, and during which the wind veered from south-east to south and south-west, was moving due north. Whence came it?

TYPHOON OF JULY 1842, IN THE CANTON RIVER.

London, March 31st, 1843.

SIR.—I beg to lay before you some account and remarks upon two Typhoons, which the squadron in the China Sea encountered in 1841, at Hong-kong. As I was then at the time first-lieutenant of H.M. Sloop Pylades, and on deck during the whole of both, it will be sufficient to warrant the correctness of the occurrences. The remarks being theoretical are of course open to stricture, but let any one examine them well and compare them with the observations, and I think he will be convinced of their agreement with actual facts. The observations at Macao were copied from a monthly publication there, by, I believe, the Missionary Society. I have no doubt of their correctness.

Before each of the typhoons, but particularly the first, the barometer was very unsteady, so much so as to put us all on the alert some days before, in expectation of some severe weather. And on both occasions the previous day was very fine, in fact much finer than usual, with light north-west and northerly winds, falling to a calm about noon. The clouds lowering gradually and covering the whole sky, a drizzling rain then commenced and continued at intervals.

The barometer during its descent was taken with the greatest care, and also occasionally on its rise. The observations by a sympiesometer were taken at the same time. The latter set 0.12 lower than the former, but agreeing perfectly together in their motion.

Typhoon at Macao, Wednesday, July 21st, 1841.

Time.	Barometer	Wind.	Remarks.
8 OAM.	29.42	N.W.	Showery,—fresh.
9 30	29.32		Fresh wind.
10 0	29.25	North	Rainy.
11 0	29.15		Rainy,—squally.
12 0	29.30	N.E.	Strong wind.
1 OPM.	28.96		Hard gusts.
2 0	28.92	E.N.E.	Harder gusts.
3 0	28.94	East	
3 30	29.04		
4 0	29.10		Misty.
5 0	29.21	S.E.	Rain,—gusty.
6 0	29.27	South	Hard puffs.
7 0	29.34		Rain,—moderating.
8 0	29.38		
9 0	29.45		Rain,—high breeze.
10 0	29.53		Rain,—strong breeze.
11 0	29.54		Rain.
12 0	29.54		Fresh breeze.

I am not quite sure that it came from the south. What became of it? It is deserving of investigation. Another account states the wind to have been from south to south-west. In this case about N.N.E. would be the line of path.

The wind from the northward in this typhoon was remarkable for its strength and duration. The effect upon vegetation in Macao was very destructive, every thing appearing as if it had been scorched. The air was filled with salt spray.

Typhoon at Hong-Kong, Wednesday July 21st, 1841.

Time.	Barometer	Wind.	Remarks.	Pylades.
4 AM.	29.46	N.E.	Strong breezes; commenced raining hard; got the top-gallant-masts on deck.	
6 0	29.30		Fresh gales; struck lower yards and topmasts; let go second anchor.	
8 0	29.20		Hard gales and heavy rain; let go sheet anchor; ship dragging small bower, till brought up with 8 fathoms best ditto, and 50 sheet.	
9 0	29.10		Tremendous squalls and rain; merchant ships all driving.	
10 0	29.04	East	The heaviest of the typhoon, with very heavy rain; blowing a tremendous hurricane in the squalls.	
10 30	29.02			
11 0	29.10	E.S.E. S.E.	Wind moderating.	
12 0	rising			
12 30				
1 0 P.M.				
3 0			Strong gales; rain ceased.	

The glass now continued rising; but blowing a fresh gale all night; little rain. 23rd, moderate.

As four hours elapsed between the commencement at Hong-Kong and Macao; and also about the same time from the typhoon being at its height, I consider as the distance is about 35 miles between the two places, that the average rate of motion of the centre must have been about $7\frac{1}{2}$ miles an hour. Now as the typhoon from its commencement to its termination, lasted about twelve hours, and making allowance for a chord of a circle being shorter than its diameter, I have taken for a radius 45 miles as the extent of the whirlwind from its centre. Now as the wind was north-east at Hong-Kong when commencing, that is about the middle of the north-west quarter (as may be seen in fig. 2), the centre must have borne about south-east 45 miles from us: and as it continued some hours from the same quarter, it must have moved pretty nearly north-west, which will agree within a point or two of its commencement at Macao at north-west. But this last being observed in a town where it would be subject to local changes, might very easily be out a few points. At 10h. 30m. the typhoon was at its height at Hong-Kong, the barometer then lowest, and the wind east; as we might expect when nearest the centre, and on any part of the line between north and the centre of the circle: but at the same time at Macao the wind was north, showing that it was to the westward of the centre.

Between 12 and 1 P.M. the centre had passed Hong-Kong, as the wind then came from south-east, but at Macao the wind had drawn to north-east and E.N.E. showing that the centre was then going in a W.S.W. direction, and that it would pass to the southward of the town.

Between 2h. and 3h. the barometer then was lowest and the wind east; the line between north and south of the centre being on with the town, and consequently at that time nearest the centre. Shortly afterwards it was pretty well over at Hong-Kong. The centre must then have moved about west, as at 8 P.M. the typhoon was about over at Macao, with the wind at south, which it had remained at for some hours.

The two diagrams* are meant to illustrate what has just been stated upon the principles of the rotatory motion of hurricanes and at the same time a progressive motion. It will be found on examination that every point in these typhoons will agree with that theory.

Fig. 1 shows the progress of the centre, which would pass about 20 miles south of Hong-Kong anchorage, and about 5 of Macao. These two places are laid down at 35 miles apart. The land sketched in is merely rough from memory, but will not affect the argument.

Fig. 2 shows the direction of the wind at the various times, and the probable line in which the typhoon passed over each place, or rather the part of the whirlwind that was encountered at each place. This is not meant to show either the size of the whirlwind, or the position of its centre, as the circles are much too small for that purpose.

Typhoon at Macao, Monday, July 26th, 1841.

Time.	Barometer	Wind.	Remarks.
7 30 AM.	29.17	N.W.	Rain.
9 0	28.94		Heavy rain.
10 0	28.94	West.	High wind.
10 40	29.00	S.W.	Rain and high wind.
11 0	29.08		Ditto.
0 25 PM.	29.25		Ditto.
1 0	29.33	S.S.W.	Moderating.
2 0	29.37	S.	Gusty.
3 0	29.40		Less wind.
4 0	29.44		Heavy rain.
5 0	29.49		Ditto.
6 0	29.53		Ditto, from wind.
7 0	29.58		High breeze.
8 0	29.58		Rain.
9 0	29.64		Ditto.
10 0	29.68		Ditto.
11 0	29.70		Fresh breeze.
12 0	29.70		Ditto.

Typhoon at Hong-Kong, Monday, July 26th, 1841.

A heavy squall with rain, thunder and lightning. At 7 P.M. on the 25th, barometer 29.60; struck lower yards and top masts.

* We have purposely omitted these diagrams, for reasons we have shown further on.—Ed. N.M.

Typhoon commenced at 4 A.M. on the 26th, wind N.N.W., fresh breeze and heavy rain, let go second anchor

6h. strong breeze, wind north, with heavy rain, barometer 29.10. let go sheet anchor; 7h. barometer 28.90, wind north; 7h. 30m. bar. 28.70; 7h. 50m. bar. 28.64, wind shifted to east, barometer now began to rise, blowing only a strong gale with heavy rain; 8h. bar. 28.80 rising fast, wind before nine o'clock shifted to south, where it remained till typhoon was over.

During the forenoon the glass rising, but wind stronger in the squalls, with heavy rain; P.M. moderate, but rain did not cease till 8 A.M. on the 27th.

In the second typhoon, it is more difficult to get a radius for representing it by diagrams.

It will, however, be observed that at 7h. 50m. A.M. the barometer was lowest at Hong-Kong, and that the wind at that time shifted suddenly from north to east. At Macao the barometer was lowest at 10h., and at that time the wind shifted from north-west to west, showing on each occasion that the respective places at these times must have been on the line between north and south of the whirlwind, the former a little north of the centre, the latter a good deal south. The centre must therefore have gone that distance in nearly a westerly direction, which taking the distance as 35 miles between the two places in a S.W.b.W. direction, true bearing, would give a distance of 27 miles for the centre to travel in the interval. Now the interval between the centre being in those positions is 2h. 10m., but as the times of the commencement and ending, would give a longer interval, I have taken 2h. 30m. as the time in which the hurricane moved 27 miles.

By referring to the two tables of observation it would appear that, from beginning to ending at each place was not more than eight hours. And at Hong-Kong as the centre must have passed very close, the distance would be the diameter of the whirlwind, that is, that at the rate of 27 miles for 2½ hours, there would be 86 for 8 hours. I have, therefore, taken 43 for a radius, and commenced at that distance from Hong-Kong in an E.N.E. direction, as the wind was N.N.W.* at first, and therefore a tangent to a diameter from W.S.W. to E.N.E.

At 6 o'clock the centre would appear to have been due east from Hong-Kong; at 7h. 50m. due south, and the position very close to the anchorage. As the transitions from north to east and then south, were very rapid. The length of radius will here agree very well with the commencement at Macao, which appeared to have felt it first at 7h. 30m. wind north-west, agreeing exactly with the circle described a little south of the anchorage of Hong-Kong with 43 miles radius.

The centre must then have continued in a westerly direction, passing Macao about twelve miles north of it. At 1 P.M. it was over at Hong-Kong and the wind at Macao S.S.W., as its position in the diagram would show. Shortly afterwards as the whirlwind moved on, the wind at Macao was south, at which direction it remained. And by reference to the figure would necessarily remain till over.

Fig. 3 and 4 are meant to represent this typhoon, and the same

* The wind appears to be north-west in the table.

remarks appended to Fig. 1 and 2 will answer for them, observing that the centre passes south of Hong-Kong, and the changes of wind are round by north, whereas at Macao the centre passes to the north, and the changes of wind are round by the south.

Remarks on both Typhoons.

In the first typhoon the wind only veered at Hong-Kong from north-east to south-east, or S.E. by S.; but blew a complete hurricane; barometer not lower than 29.03. Ships up the river did not feel it so much as second. The northern half must have passed over us, to which the strength of the wind must be partly attributable.

In the second typhoon the centre must have passed very close to the southward of us at Hong-Kong, and as the body of the whirlwind was moving rapidly to the westward, about eleven miles an hour, the wind in the northern half having easting would be increased so much, whilst those in the southern half would be diminished in the same proportion. This agrees with what was experienced, viz., that up the river (that is to the northward,) this typhoon was much more severe than the first, but at Macao much less so. At Hong-Kong being near the centre and having only an easterly wind for a few minutes, the second typhoon was not nearly so heavy as the first.

The barometer at the change of wind between 7.30 and 7.50 fell very rapidly, and as quickly rose. That was according to the theory of hurricanes, whilst the vortex was near us.

I remain, &c.,

JOHN HAY, *Commander R.N.*

Having referred Captain Hay to the account of the first of these typhoons in our last year's volume, we have received the following from him.

No. 1, Whittlebury Street, Euston Square, April 3rd.

I may mention here, that the subject engaged my attention principally from reading your valuable Magazine, in which the account and theory of hurricanes is a prominent subject. I felt anxious to prove its correctness, and paid the more attention, and I may safely say that the accordance of theory and fact was perfect to my mind on both occasions.

I have read over with great attention the account of the hurricane of the 21st in the August number of the *Nautical*. But although agreeing on the main points with the observations I have sent you, there are one or two differences which are not easily reconciled. But as I rest my own account on personal observation I cannot help thinking it correct.

The following is a statement of the differences:—

Observations of your Correspondent.	My observations.
4 0 A.M. wind N.W.b.N.	4 0 A.M. wind N.E.
7 30 ditto N.N.W.	8 0 ditto N.E.
10 0 ditto N.N.E.	Between 10 and 11 wind changed
11 0 ditto N.E.b.E.	to East.
11 0 barometer lowest 28.50	About 10h. 30m. bar. lowest 29.02
11 42 began to rise	And had risen at 11h. to 22.10

The only other difference is in the time of ending, which besides being arbitrary is of no material consequence, as you may observe by the outer circle of fig. 1, which has ninety-two miles radius, and supposing the centre to move on the line marked there, and at the same rate as before, it will not alter the winds represented at the different times, at the two places. It may also be observed that the changes of wind will be very trifling at either edge, and the resistance of the surrounding air would check its force very much, so that nothing of the force of the hurricane could be expected there. The inner circles as before are drawn with forty-five miles radius, as that in which it became a decided typhoon.

But how to account for the differences of the wind, I cannot at all make out, as I do not know the vessel your correspondent was on board of. I cannot tell what part of the harbour she was lying in, but if close under the island of Hong-Kong, or even over on the other shore, it might be affected by the high lands, although distant in the latter case.

The difference, viz., 00.52 in the height of the mercurial column, may have arisen from one of the barometers being out of order, which it appears to me your correspondent's was, being 29.10 the evening before, when as far as I remember none of the men-of-war in the harbour had theirs under 29.50. At that time there was a difference also in the time, viz., at 10h. 30m. it was lowest in the Pylades, both with the barometer and sympiesometer, the former of which was taken by the master, and the latter by myself. By your correspondent at 11h. it was lowest, and did not begin to rise till 11h. 42m., whereas it had risen with us at 11 o'clock from 29.02 to 29.10. There may have been a difference in the watches from which the times were taken; but mine was set and kept to the commodore's time, which you know was absolutely necessary for a first-lieutenant to have, for following properly the manœuvres of the fleet.

As the remaining occurrences are pretty nearly alike, I have endeavoured to reconcile their discrepancies in fig. 1, by commencing at 4 A.M. with the wind at north, as a mean between your correspondent's and mine, which will make the wind at 8 A.M. about N.N.E., also a middle point between the two. The rest will be the same as before.

This line of the centre more nearly resembles the course of the second typhoon, only a considerable distance to the south of it; and probably on that account may be more correct. But I will leave it in your hands, as it cannot be in better, and will be happy to attend to any suggestions you may make.

If the place of the Good Success mentioned by your correspondent, could be laid down accurately at any particular time, it would be of great benefit in forming an opinion of the diameter of the whirlwind, and perhaps of the course of its centre latterly.

It is only by recorded observations that a thorough knowledge of hurricanes can be attained, and it would be of immense advantage to ships navigating those seas, where they prevail, to know certainly that they always follow a certain course in a circle, and that, that circle has a progressive motion in a particular direction. Its extent also would be of consequence, but the first two are the most material, as when once it is known by the barometer and other indications that it is a hurricane, the position of the ship in the circle may be fixed by the direction of the wind and its changes, and it will remain with the judgment of the officers whether to run or lay to.

If the opinion be correct that hurricanes in the northern hemisphere are whirlwinds, blowing from east to west, in northern half, and from west to east in southern, and at the same time moving to the westward at a certain rate; it follows that the northern half must have its own force plus that rate and the southern half minus that. Should a ship therefore, be taken in the north-west quarter, near the east and west line, or when the wind would be from north to north-east, it would be much easier and quicker running before it into the southern half, than by lying to for fear of getting too near the centre, and probably drift right into that dreaded point.

I remain, &c.,

JOHN HAY, *Commander, R.N.*

With regard to the diagrams alluded to by Captain Hay, we think that those of our readers who are interested in the subject, may make them more to their own satisfaction than we could possibly give them. In all cases of this kind the most satisfactory way is to refer to the chart with the observations before us, and with regard to those under discussion, if we disregard the first or north-west wind at Macao, there would appear to be that accordance with the theory of hurricanes in the observations at Macao and Canton, on the 21st July, which goes far towards establishing its truth.

The direction of the centre of the hurricane from the place of observation, may be laid down from the direction of the wind. Referring to the chart of the entrance of the Canton River in our volume for 1841, p. 473, with the Macao observations, the direction of the centre of the hurricane may be laid down thus: If the wind be north at Macao the centre would be in the direction of east from that place; when north-east it was south-east of it; when E.N.E. it was S.S.E.; when east it was south of it; when south-east it was south-west of it; and when south it was west of it. Now by drawing these successive lines of bearing of the centre from Macao, it will be at once seen that according to the revolving theory, the centre of the hurricane passed round to the southward, south-west, and eventually west, as shown by the last wind being at south.

And referring to the Hong-Kong observations we find a fair accordance with this. The first wind at Hong-Kong was north-east, shewing that the centre of the hurricane was south-east of that place, and therefore outside the coast.

At 10h. the wind changes to east shewing that the centre must be due south of Hong-Kong, and as at the same time the wind is due north at Macao, we have at once the means of determining its position, because at this time the centre is due east of Macao. The intersection of these bearings will place it just outside, or to the southward of the southern point of the island.

At 12h. the centre will be S.S.W. of Hong-Kong, the wind being E.S.E. at which time we also have it south-east of Hong-Kong, placing it just inside the Island of Yung-sai, at which time it had travelled about twenty miles. We again have the centre south-west from Hong-Kong, the wind being south-east and S.S.E. from Macao, after which the Hong-Kong observations cease, but those of Macao show that it travelled round southerly to west of that place. Considering the course of the focus in a general point of view, it would appear that coming down the coast it passed between Hong-Kong and Pootoy Islands, then about mid-way down the channel between the Lema and Sammoon islands, and thence to the westward.

At 10h. or thereabouts, when the wind was east at Hong-Kong, we have ample proof before us that the focus was nearest to Hong-Kong, and the barometer corroborates the fact. The centre being south of Hong-Kong, and the brush of it felt from north at Macao, established the radius of the revolving wind at about forty miles. We recommend this mode of considering the subject. By laying down the direction of the centre from different points of observation of the changes of the wind as often as they occur, and noting the times of those changes, the position of the centre of the revolving wind will be readily found.

We must not omit to express our gratification at seeing the example set to naval officers by Captain Hay and Captain Dundas, in a former number; as there can be no doubt, that this is a subject which belongs peculiarly to them, for investigation as to the truth of the theory, and if this be established as appears more than probable, they will gain instruction thereby which may prove of essential benefit to them in the hour of trial.—ED. N.M.

BOTTLE PAPERS.

(Continued from pages 184 and 250.)

[The numbers refer to the table in page 182 of our March Number.]

(No. 21.)

The annexed is a copy of a paper found in a bottle which was picked up by a French vessel on the 21st ultimo, about five miles off Ushant, an island near the extreme west point of France:—

“April 12, 1835.—This is written on board the barque Wallace, of Alloa, Captain James Robertson, latitude 52° 13' longitude 15°, bound for Van Diemens Land. All well. A dead calm to day. Encountered a strong gale

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of wind in latitude 55°, longitude 15° from the westward. Please send this to any Newspaper Office.—John Adamson, Mrs Eliza Russell, Helen Kingham, Archibald Russell, W. Moira, J. R. Gordon, E. S. Hudepeth, T. Hudepeth, W. Russell."—*Times*, September, 4, 1835.

(No. 22.)

LEITH, April 15.—A bottle in which a paper, containing the following notice, was enclosed, was picked up on the shore at Balmore, on the east side of North Uist, on the 3rd inst., by Archibald Macaulay, and transmitted through Lloyd's agent to the agents for the London *S. & M. G.* at Leith; the lat. of the place where the bottle was found is 57° 35' N., long. 7° 40' W. :—

"At sea, in lat. 50° 50' N., and long. 16° W., brig Thetis, of Leith, from Leith for Sydney, all well, 18th Jan., 1841. Whoever should happen to find the enclosed will great oblige Capt. Bisset by forwarding it to the offices of the *S. & M. G.*, for the purpose of acquainting navigators of the course of the currents of the Western Ocean, and please to mention the time and place that the same is picked up.

(Signed)

" F. G. BISSET."

(No. 23.)

Custom House, Westport, July 22nd, 1840.

SIR.—This day the enclosed paper was handed me by Robert Mealey, who picked it up at Clare Island, and brought it to Westport, a distance of 18 miles, for the purpose of being transmitted to your office. He has requested me to bring his claim before you for some remuneration for his trouble. Should the reward sought be a usual thing, I beg to recommend him to your favourable notice.

I have the honour, &c.,

RICHARD DOWLEY,

Secretary of the Admiralty,

Collector.

"This Bottle was thrown overboard from the British Bark *Mary*, of Halifax James H. Godfrey, Master, in latitude 47° 20' N, and longitude 27° 25' W., on a voyage from Savanna to Liverpool this 22nd day of March 1840.—Wind S.E."

This Paper found 11th day of July, 1840, by me, at Clare Island Lt. House, in lat. 53° 45' N., and lon. 10° 36' W.

ROBERT MEALEY.

(No. 24.)

Coast Guard Office, March 25th, 1834.

SIR.—Enclosed I have the honour to transmit for the information of the Lords Commissioners of the Admiralty, copies of two letters this day received, from Commander Thomas Edward Cole, R.N., Inspecting Commander at Dartmouth; and Lieutenant John Bulley, R.N., chief officer of the Coast Guard Station at Torcross, together with the document referred to therein, which appears to have been thrown overboard in a bottle on the 4th of January last, from His Majesty's ship *Tyne*, in latitude 46° 37' N., longitude 16° 53' 15" W., and was picked up by the latter officer at 5h. P.M. on the 16th instant, in the surf on the beach at Hallsands, about one mile north of the Start Point.

I have the honour, &c.,

WILLIAM BOWLES,

Comptroller General.

Dartmouth, March 22nd, 1834.

SIR.—I beg leave to enclose a letter from the chief officer at Torcross, with a paper found in a bottle on the beach of that station, and which is directed to be forwarded to the Admiralty.

I am, &c.,

THOMAS EDWARD COLE, I.C.,

Comptroller General, Coast Guard, London.

Torcross, March 17th, 1834.

SIR.—The enclosed paper having been found in a bottle picked up in the surf on the beach, at Hallsands, about one mile north of the Start Point, at 5h. P.M. yesterday, 16th instant, I therefore beg to forward it to you, to be disposed of as therein requested. It has been blowing since the 11th inst., at times strong from the eastward.

I remain, Sir, &c.,

JOHN BULLEY.

To Captain T. E. Cole, R.N., Inspecting Commander, Dartmouth.

"This Bottle was thrown overboard from his Britannic Majesty's Ship Tyne, in latitude $46^{\circ} 37' N.$, longitude $16^{\circ} 53' 15'' W.$ by mean of three Chronometers on the 4th of January, 1834. Strong Breezes and Squally Weather at the time, wind S.W.b.S.

"As the object is to ascertain the force and direction of the Current it is particularly requested, if it is picked up, that the place and day of the Month on which it is found may be communicated to the Secretary of the Admiralty London, the Captain of any of His Britannic Majesty's Ships, or to the nearest British Consul.

"His Britannic Majesty's ship Tyne, January 4th, 1834.

"CHARLES HOPE, Captain."

(No. 25.)

A bottle from the ship *Symmetry*, of Scarborough, Captain Smith, on her way from Leith to Buenos-Ayres, off Madeira, 9th June, 1825. Picked up at Salt Kay, Turk's Islands, after a lapse of ten years, 9th June, 1835.—*Atlantic Memoir.*

(No. 26.)

"H.M. transport Maitland, sailed from Port Royal, Jamaica, 10th of March, 1838, with the head-quarters of the 14th regiment on board. This bottle was thrown over on the 22nd April, 1838, in lat. $46^{\circ} 5' N.$, long. $18^{\circ} 19' W.$

(Signed)

"CHAS. HODGSON."

(No. 27.)

Foreign Office, January 4th, 1837.

SIR.—I am directed by Viscount Palmerston, to transmit to you, for the information of the Lords Commissioners of the Admiralty, the copy of a dispatch, from his Majesty's Consul at Boulogne, inclosing the copy of a paper found in a bottle, which was picked up at sea, a few miles to the eastward of that port, and which purports to have been thrown overboard in lat. $50^{\circ} 20' N.$, long. $19^{\circ} W.$, from the British troop-ship "Kent," bound for Quebec, with a view of ascertaining the direction of the current in the Atlantic.

I am, &c.,

J. BACKHOUSE.

British Consulate, Boulogne, December 24th, 1836.

SIR.—I beg leave to transmit to you the enclosed copy of a writing found in a bottle which was picked up near to Cape Blanc Nez, a few miles to the

eastward of Boulogne, on the 20th instant, and as the insertion of it in the public prints is requested, and may be of service to nautical men, I have forwarded it to you for that purpose, should you deem it expedient.

I have the honour, &c.,
(Signed) W. HAMILTON.

“Troop Ship “Kent” with detachments of the Royal Artillery, Royals, and 66th regiment on board, bound for Quebec, all well.

“This bottle is thrown overboard for the purpose of ascertaining the direction of the current for the benefit of all sea-going men, the ship having been, for several days past, found considerably to the southward of her reckoning, and it is particularly requested that the finder of this, in whatever quarter of the world, will cause the same to be inserted in the newspapers.

W. L.

Ship Kent, lat. 50° 20' N.
August 29th, 1836. long. 19° 0' W.”

I certify the above to be a true and faithful copy of the original picked up near to Cape Blanc Nez, a few miles to the eastward of Boulogne, on the 20th instant.

Boulogne, Dec. 23rd, 1836.
(Signed) W. HAMILTON,
H. B. M. Consul at Boulogne.

(No. 28.)

PARIS, Feb. 12.—A bottle containing a note with the following memorandum written in English, has been picked up on the coast of Quiberon:—

“To the Editor of the *Atlantic Memorial*.—N 1 barque Niger, Captain J. L. Merret, from Africa (Cape Coast), latitude by observation 48° 13' N., longitude 18° 56' W., wind west for the last 4 days.—7th Aug., 1839.”

(No. 28a.)

The following has been received at Lloyd's, dated London, Dec. 11:—

SIR.—I have the honour to forward you at foot a letter found in a bottle picked up near the coast of the Barre de Mont (Vendee), by the Customs superintendent of this locality, and who sent it to me through his Excellency the Minister of Marine.

I have the honour to be Sir,
Your humble and obedient servant,
F. GAUTIER,

Chancellor of the Consulate-General.

To Mr. W. Dobson, Secretary at Lloyd's.

“August 29, 1840.—Brig Bolivar, of the port of London, last from the Cape of Good Hope, out 68 days; had fine weather up to the present time, but now we are in a heavy gale of wind from the S.W., lat. 46° 53' N., long. 18° 46' W., all hands well on board, only short of bread. Spoke four vessels, and were supplied with said articles. The vessels were the American brigs the Joseph and Mary, from Cadiz to New York; the Poultney, from Liverpool to Baltimore; the Spanish polacca (name forgot), she was from Santa Cruz to Coruna; the schooner Castleray, of London, from St. Michael's, bound to Newfoundland, loaded with potatoes and onions: got a quantity of each from her. We have passed several vessels in ballast, and spoke the Isabella, from London to the Isle of France.

“I am, Sir, yours truly,
“A son of Old Neptune, T. R. M.
“Honi soit qui mal y pense.”

•• The Bolivar arrived at Gravesend on the 29th of August.

(No. 29.)

A bottle from the bark *Mary*, of London, Abyah Locke, master, 12th April, 1832, in lat. $48^{\circ} 30'$, long. $16^{\circ} 15'$, found on the coast of Jart, lat. $36^{\circ} 25'$, on the 4th of March, 1833.

(No. 30.)

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*.

“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. $43^{\circ} 55'$ N., and long. $18^{\circ} 4'$ 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.—

W. M. HEASTIE.

Errata $18^{\circ} 6'$ should be $18^{\circ} 1'$ in the Table.—

(No. 31.)

A stone bottle from the Ibbetsons, of Stockton, on its passage from Pictou to Peterhead, 5th Nov. 1826, in lat. $55^{\circ} 30'$, long. $18^{\circ} 20'$. Picked up on the coast near Killala, 3rd Jan., 1827.—*Atlantic Memoir*.

(No. 32.)

A bottle was picked up by the crew of the boat *Hero* of Bryher (Scilly,) being then 6 miles W.N.W. from St. Agnes lighthouse, containing a paper, of which the following is a transcript.

“New York Packet Ship *Leeds*, Captain Sprague. At sea, June 25th, 1828, lat. $49^{\circ} 49'$ N., long. $20^{\circ} 25'$ W., from London, bound to New York, which place she left on the 15th instant. Died on board this morning at 11h. A.M. T. P. York, the well known and much respected philosopher. He was held in the highest esteem by all who knew him, and his loss will be most sincerely felt. His remains were consigned to the turbulent ocean with every mark of respect and regret at 3h. P.M. by his fellow passengers. He was justly celebrated as a philanthropist, and his sole motive in undertaking the passage was, to enlighten with his profound learning, the inhabitants of the United States, to whom he was much attached.

“Any person finding this, will please to send an account of the time it is picked up, and the place where it is found, to Lloyd’s London, or to the nearest newspaper for the information of the friends of the deceased, and also for the benefit of the Board of Longitude, London.

“W. I. STANINGTON.”

[My memorandum does not give the date when it was picked up.—E. S.]

(No. 33.)

H.M.S. President, 26th day of May, 1836, lat. $48^{\circ} 31'$ North long. $19^{\circ} 38'$ West, light breezes from S.S.W. with a heavy head sea from the E.S.E.

JAMES SCOTT, *Captain*.

Thrown overboard at 1 P.M.

Trouvé a la cote de Quiberon, le 1r xbv, 1836, dans une bouteille cacheteé.

L.B. *Capitaine* L.C.

(No. 34.)

CORK, Aug. 7.—A tin canister closely sealed, was thrown in at Miltown Malbay in the last week, and the following memorandum found within it:—“New York packet Virginia, lat. $42^{\circ} 12'$ N., long. $19^{\circ} 15'$ W., June 16, 1838.”

(No. 35.)

A bottle from the ship Kate, Captain F. F. Cresswell, in lat. 24° , long. 19° , on the 27th of June, 1825; found on the coast of Cuba, 30 leagues to leeward of Baracoa, in about lat. 22° , and long. 76° , 28th of Nov. 1826.

(No. 36.)

A bottle from the ship Gambia, in the River Gambia, lat. $13\frac{1}{2}^{\circ}$ N., in the latter part of 1831. Picked up on the southern side of Virgin Gorda, lat. $18^{\circ} 30'$.

(No. 37.)

The enclosed was found about 6 o'clock on the morning of Friday, February 13th, in the entrance of Locruss Beg Bay, E.S.E. of Glen Head, County Donegal, by a poor fisherman in a bottle. Any reward would be thankfully received by J. Evans, for the finder, whose direction is Ardara, County Donegal, Ireland.

“Barque Persian, of London, 23rd of Oct., 1834; lat. $47^{\circ} 5'$ N., long. $20^{\circ} 27'$ W.

“CHARLES MALLARD, *Commander*.”

(No. 38.)

A bottle from the brig Albert, R. L. Robertson, master, latitude $47^{\circ} 20'$ N., longitude 22° W., 24th January, 1822, on the passage from Virginia to England, the wind then about W.N.W., and had so prevailed for two or three days. Found in Rockham Bay, about 4 miles west from Ilfracombe, 29th July, 1822, and attested by the agents to Lloyd's.

(No. 38a.)

“One of our fishing-boats,” says a Penzance letter, dated the 5th March, “picked up yesterday a bottle at sea, covered over with barnacles, in which was a letter, addressed to whoever might find it. In the inside of the letter was as follows:—“Ship Fanny, Captain Palmer, lat. 30° N., long. 23° W.; passengers on board—John M'Nale, James Russell, William Cooper, and William Barnwell, from New York, bound to Liverpool, out 30 days, all well; wind S.b.E. 16 February, 1812.” It is calculated that the bottle has travelled 688 miles, and been in the water nearly a year.—The Fanny arrived at Liverpool on the 10th of May following.—*Naval Chronicle* 1813.

(No. 39.)

A bottle from the brig *Ardent*, John Duncan, master, from Hamburg to Newfoundland, 22nd of September, 1824, lat. $56^{\circ} 58'$, long. $24^{\circ} 30'$. Found 12th of March, 1825, on the sands of Dell, near the Butt of the Lewis, and the notice transmitted by the agents to Lloyd's at Stornaway, 17th of March.

(No. 39a.)

A COINCIDENCE.—On Sunday last a bottle was picked up by some boys on the sands of Dunnet, in which was a paper containing the following:—

"May 13, 1842, on board the brig *Superior*. This morning a male child was born; mother and infant are in a fair way. Passengers all in a healthy state. We have experienced some heavy weather. Our latitude at this time is $53^{\circ} 48' N.$, long. $24^{\circ} W.$ On a voyage from Thurso to Pictou and Quebec. Donald Manson, commander." It is a very singular circumstance that the bottle should have traversed the ocean a distance of nearly 1,500 miles, and have been cast ashore within two miles from the place whence the vessel had started upwards of five months previous. The bottle in its travels must have rounded the Hebrides, and also, perhaps, the north-west coast of Ireland, provided the currents ran in that direction. We reported in our paper, some time since, the safe arrival of the above emigrant vessel at her destination.—*John o' Groat Journal*.

(No. 40.)

On the 17th of April, a bottle was found on the coast of Dax, with a paper enclosed, containing the following:—

"Barque *Enterprise*, from Jamaica to London, June 5th, 1832, lat. $45^{\circ} 5' N.$, long. $24^{\circ} 20' W.$; all well. We have spoken the brig *Alchemist*, of Dublin, with emigrants to Quebec. Out seventeen days; all well on board of her."

(No. 41.)

H.M.S. Thunder, Nassau, 19th Dec., 1834.

Sir.—The enclosed paper I received from the Editor of the *Nassau Gazette*, to whom it had been forwarded from Watlings Island by Mr. Farquharson.

I have the honour to be, Sir,

Your very humble servant.

To Capt. the Hon. George Elliot, C.B., &c.

ROBERT OWEN, Commander.

"H.M. Surveying Ship *Thunder*, 24th July, 1833, 1 P.M. lat. $28^{\circ} 3' N.$, long. $26^{\circ} 39' W.$ A steady breeze with royals and studding sails, going 7 knots, wind E.S.E. and clear weather. Barometer 30.34 , Thermometer in air 76° , in water, 74 .

"ROBERT OWEN, Commander."

Found on Watlings Island, on Friday, 12th December, 1834, by Mr. Charles Farquharson.

(No. 41a.)

"Neptune, St. John's Road, Antigua, June 29, 1809.

The following letter furnishes an excellent illustration of a well-known fact, that the general tendency of currents in the ocean is from the East towards the West:

"SIR.—As the enclosed letter, picked up in a bottle, on the windward part of the island of Martinique, on the 18th of April last, tends to elucidate the state of the current in the Atlantic Ocean, I enclose it to you, with a request that you will be pleased to make the circumstance known to the Lords Commissioners of the Admiralty.

The bottle appears to have been thrown overboard by the Princess Elizabeth packet, going to the Brazils, on the 6th of September, 1808, in lat. $14^{\circ} 45'$ and

long. 25°, and it must have been carried about 2020 miles in 224 days, which gives nine miles per day on a west course.

"Hon. W. W. Pole."

"I am &c.

ALEX. COCHRANE."

(No. 42.)

Paradise, Quarter of Sacarigua,

Trinidad, 22nd September, 1838.

DEAR SIR.—The enclosed was picked up in a bottle within one of the reefs of the Union I., Grenadines, West Indies, on the 10th July last, (by certificate of my manager Mr. Frederick,) having been thrown overboard from the ship William Lockerby, in longitude 25° 10' W., on the previous 22nd of January. As a long reef extends N. and S. about eight miles to windward of Union Island, the bottle may have been laying there for some days before it came on shore at the place where it was picked up. Union Island is situated in about 61° 18' W. longitude, and 12° 37' N. latitude, showing a direction of the current nearly W.

I remain, Dear Sir,

Very faithfully yours,

O. W. SPAN,

Com. Washington, R.N.

Capt. Bengal Army on Furlough.

"The ship William Lockerby, Capt Parker, sailed from Liverpool for the Cape and Isle of France, on Thursday, 28th December, 1837. Was detained in the Irish Channel by adverse gales and boisterous weather until the 6th of January, when a south-westerly course was shaped from Cape Clear, with a head-wind, and heavy sea. The wind gradually veered round to the eastward, so that the ship preserved a direct course until the 32° north latitude, or the parallel of Madeira, and to the westward of that island about 8°, when the wind, though still fair, became light till the 16th inst., when in the parallel of Palma, the N.E. trade commenced hanging northward at first, and then becoming more easterly than usual, blowing strong and in heavy squalls till the parallel of Brava and Fogo. When in mid-channel, between the Azores and Portugal, a heavy sea stove in the starboard deadlights, and destroyed a bookcase on the opposite side of the after cabin, tearing up the chronometer case, which was screwed securely to the top of a chest of drawers. On making the island of St. Antonio in the north-west range of the Cape Verds, we found the timepiece had not altered its rate. The trade had been more squally than usual, even sometimes boisterous. Within its limits the sky has frequently presented a very wild and fantastic appearance, halos round the moon and Jupiter; short morning rainbows, &c. In making St. Antonio it is advisable to keep some miles to leeward, as a vessel may be becalmed under the high land of the island. Have not been influenced by currents from the west during the voyage. Thermometer within the trade at 70°, weather cold: warmth only now beginning to increase, barometer has stood since we reached 30° N. at about 30. Troops of the flying fish, *exoctus exiliens*, seen to day for the first time: one dropped on board, length of the pectoral fins very remarkable. Temperature of sea 74°.

"PAT. ROLLAND, M.D.,

"*Passenger per William Lockerby.*"

"This bottle was thrown overboard from the ship William Lockerby of Liverpool, bound to the Cape of Good Hope, &c., in latitude 14° 7' N., longitude 25° 10' W., Monday, 22nd January, 1838. This is intended to ascertain the set of the North Atlantic currents: whoever picks up this bottle is requested to acknowledge it by publication."

"J. PARKER, Master."

Picked up on the Union Island eastward Bay, on the morning of the 10th July, 1838. The bottle must have been over a rough reef of coral from the spot in which it was seen floating near the shore.

F. O. FREDERICK, *Manager of said Island.*

THE BOTTLE CHART.

Stockholm, 14th March, 1843.

SIR.—I have observed from time to time reports in the *Nautical Magazine*, of bottles which had been thrown overboard from ships at sea, to ascertain the direction and velocity of currents in the ocean, having been found at various places. I took no notice of these, as being harmless, when carried no farther than the simple report; but in the *Nautical Magazine* for this month there has appeared a "*Bottle Chart*," calculated to do serious injury by misleading the navigator, and an attempt being made in an appended note, thereby to account for the late losses on the French coast, I have felt it my duty to expose this *bottle fallacy*; and I trust that the facts I shall mention will sufficiently prove the absurdity of this practice, while the losses alluded to can be satisfactorily accounted for by the inattention of masters of merchant ships to the *deviation* of compass when steering a channel course.

When I commanded H.M.S. *Briseis* in winter, 1813, I anchored two miles off Dover, at the beginning of a flood to stop tide, being bound to my station off Dungeness. The wind, which was south-west, increased to a gale, which obliged me to veer to two cables. Determined to ride out the gale until the strong spring tide of ebb made, which would enable me to way and turn to windward under close-reefed topsails, when the ship was tending to the weather tide, I threw a bottle overboard, expecting, of course, that it would float to windward with the current. But the sea or swell having increased with the weather tide, I saw the bottle on every wave rolling to leeward, and taking the directions of the Downs, denoted that of the wind instead of the tide which was going two knots by the log. This accidental circumstance, and subsequent reports of bottles having been thrown overboard to ascertain the direction of currents in the ocean, induced me to make experiments on the actual drift of a bottle thrown into the sea, under various circumstances. I shaped a flat piece of wood, exactly the length and diameter of a bottle, through the centre of which was a cross piece one inch thick, and also the diameter of the bottle; this being loaded with lead (so that the neck part only was visible when immersed,) was thrown overboard in 1815, from the *Actæon*, which I then commanded, and at the same time a bottle, in a gale of westerly wind, about where No. 12 is in the chart, when it was immediately manifest that the bottle was drifting with the wind, while the immersed wood of the same dimensions remained comparatively fixed.

On the same cruise I fell in with, and picked up, the top-mast of His Majesty's ship *Defence*, in lat. 49° N., and long. 20° W., not far from the spot where that ship carried her top-masts away when in chase of the French fleet in Nov. 1793, where it must consequently have been 21½ years! Part of the topmast shrouds were still attached, and by hanging down about 4 fathoms, effectually kept the after part of the mast above water, on which the name, "*Defence*," was perfectly legible; excepting the upper side, the mast was covered with barnacles, and when hoisted on board was found to be completely worm eaten, these facts proving that this mast so immersed by the rigging, had been

21½ years stationary at the very place where the chart denotes that scores of bottles had in the same time drifted to the eastward.

My next experiment was a bottle, into which I poured such a quantity of liquid pitch as sufficient to sink the bottle up to the neck, when the pitch became cool it hardened at the bottom of the bottle, and was, therefore, secure from moving by the motion of the sea, this and another bottle, empty, were thrown overboard at the same time, when it was proved that the empty bottle separated to leeward of the other at the rate of a quarter of a mile per hour.

Those who have been in the spring of the year at St. Johns, Newfoundland, must have seen masses of ice, five-sixths of which are under water, passing the harbour's mouth, steadily making their way at from 1 to 2 miles an hour against a strong south-west gale, when a bottle, as I have proved by experiment, would take the direction of the wind at nearly the same rate.

Being convinced of the fallacy of throwing bottles overboard to obtain the direction and strength of currents; on my voyage of discovery, in 1818, I had a number of copper cylinders made, and so loaded that the one end appeared from one to two inches above water, and in reference to the "Bottle Chart," I find that two bottles were thrown overboard from the *Alexander*, on the 27th and 29th of May, in Davis Straits; and that by my journal, a copper cylinder was thrown overboard from the *Isabella*, then in company with the *Alexander*, on the 28th, with the remark that it appeared to be carried to westward. Now the *Alexander's* bottles have been found, the former at Staffa, and the latter at Donegal; in direct opposition to the well-known and constant current which carries numerous trees from the eastward round Cape Farewell, as high as 64° N., in which direction the cylinder was to drift, and consequently none of the twenty-five copper cylinders I threw overboard during that voyage have ever made their appearance on the European side of the Atlantic.

I have now only to add that, I was twelve years cruising in the Channel, that I have anchored in all weathers on the French coast, and often exactly off where the *Conqueror* was lost, and, I can testify, from actual experience that there is no indraught on that part of the French coast, and it therefore, cannot be on that account that the late shipwrecks have taken place, and that the determination of a current setting on that coast, by empty bottles having drifted on it is a fallacy.

I do not, however, mean to say that the practice of throwing overboard bottles, is of no use. For instance, if a bottle denoting the fate of the *President*, had been thrown overboard, and found, it would have been a melancholy satisfaction; but it must be taken into account that when she was last seen it was in a storm, when every one but the watch would be below, that every thing that could be washed by the sea off the deck would be secured, and, if the ship, impelled by steam, struck on a heavy mass of ice, her destruction and disappearance would be instantaneous. And, there are, no doubt, many cases where bottles may be useful in that way; but my object is to point out, not only the fallacy of attempting to determine the direction and strength of the currents in the ocean by that means, but to guard navigators against putting any faith in the conclusions made there anent; but to turn their

misled attention to the deviation which is more or less found in every ship, when steering an easterly, westerly, or Channel course, which is occasioned by the materials of which the ship and cargoes are composed, complete instructions and rules for obtaining the necessary corrections for which were published by me, in the second edition of my Voyage to Baffin's Bay in 1818, but are, notwithstanding, almost totally unknown to the masters of merchant ships.

I am to request that you will be pleased to make this communication public, and to take such steps as it may appear proper to you, on this occasion.

I am, &c.

JOHN ROSS,
Captain R.N.

To Captain Beaufort, R.N.

THE BOTTLE CHART.*

If most persons are pleased with "a bottle of good wine," I may assert that every person who has looked at the "bottle chart" of the *Nautical* in my possession, has been pleased to express himself both surprised and delighted, not alone from the represented effect of the surface waters of the North Atlantic being displayed over its entire area, but also from the clear and well defined arrangement of the multitude of lines and figures, and the absence of any thing like confusion in the delineation. To the seaman it must be a great treat; and whilst we do but common justice to the talents and scientific industry of the highly accomplished author of the chart, we must add our meed of praise to the several commanders of ships, who whilst voyaging, and having their minds occupied with the necessary duties of their calling, have, nevertheless, found time to send off their "despatches" for the benefit of navigation.

"The question, '*cui bono*,' to what practical end and advantage do your researches tend?" may be thus answered:—the sending of bottles adrift, with notices within, and the display of their points of departure and arrival, with assumed lines, are substantively demonstrative of the general tendency of the surface waters of the Ocean; and, in this respect may become auxiliary in confirming or refuting theories. But even if the attempts originated in a mere matter of curiosity, such apparently unprofitable essays, might lead to very unexpected results.

Malthus says:—"If science be manifestly incomplete, and yet of the highest importance, it would surely be most unwise to restrain enquiry, conducted on just principles, even where the immediate practical utility of it was not visible."

It seems evident upon the very first inspection that, the surface drift of the North Atlantic accords, in the main, with pre-known theory; that is to say: from the meridian of the Cape Verd Islands to the Caribbean Sea, the tendency of the surface water is from eastward to westward; from the Florida Channel to Newfoundland, toward the north-east; thence to the English Channel, northerly of east; and

* See the March Number of this Magazine.

from the parallel of Cape Ortegale to the Canaries, to the southward ; thus *proving* or I may say *confirming* the fact that, the waters, the *surface* waters, at least, circulate round and round the entire area of that ocean.

As properly observed, the lines on the chart are merely intended to connect the places of departure and termination of the bottles, and not to show (as may be imagined by those who are not seamen,) in every case the true direction which the currents and drifts pursued.

In many of the instances it is probable that a variety of curves were made, which can only be traced in the mind of such viewers of the chart, as are, from a practical knowledge of the *sets* of the various currents and drifts of this ocean, enabled to grapple with the intricacy of the subject. The utility of the data which the chart affords to the young seaman and navigator will be great, if he studies these with attention ; and explanation having been given, he ought neither to be puzzled nor misled.

The idea of the construction of such a chart is a very happy one, for, without it, we are sure that the reading, or even the studying of the lists of the latitudes and longitudes of the departure and landing of the bottles, would not have been attended with the same result, as is afforded by the clear exposition of the facts concentrated, as it were, into one focus, and which, from a single glance at the chart, stamps the whole at once upon the mind ; an impression that will, no doubt, remain indelible, for future use, as occasion may require.

In a few years, perhaps, we may be gratified with a "Hurricane Chart,"* which, if any opinion may be ventured, would be equally, if not more useful than the types which precede its natal hour. Indeed, partially, we may say, this has already been attempted by Mr. Redfield, and Colonel Reid ; but the routes throughout the whole area of the North Atlantic are desirable. It is not at all improbable that the curves which these progressive meteors follow, would appear, when struck off, pretty much in the same directions as most of the lines shown upon the "bottle chart."

The numbers and lines upon the present chart, are far too numerous to admit of conjectures being given by one individual. I shall only venture brief remarks upon a few of the most curious, and merely observe, by the way, that, the bottles thrown overboard near Newfoundland, from their direction being principally to the northward of east, would seem to denote that the main body at least, of the Florida stream proceeds in that direction, and does not turn round off to the south-east, westward of the Azores, as is generally believed ; it is highly probable, however, that a branch does flow in that direction, perhaps on both sides of the group.

Nos. 79 and 96, show plainly enough the south-west, or counter current eastward of the Florida stream ; Nos. 99 and 100, also the southerly tendency of the surface drift. And between the Bermudas and the Caribbean Isles, the westerly set is apparent. Hence those ships which are homeward bound from the latter, unless favoured with a fresh leading wind, would do better by passing westward of the Ber-

* We shall not fail to keep this in mind.—Ed.

mudas, except in the season of hurricanes, than endeavouring to shorten their voyage by as direct a course as they can make eastwardly of that group.

It is still questionable if the central space of the North Atlantic is, or is not in a neutral state. Some consider it to be in a condition analogous to the effect which takes place in the North Sea with referance to the tidal action. We may reasonably believe the winds to be operative in directing portions of a current in a new course, although their force may be insufficient in creating a flow of the waters beyond what is termed a drift current.

In a *confined* space there appears to be a tendency in flowing water to a circular motion, the centre of which circumscribed space may be in a quiescent state, that is to say, without current. But in so extensive an area as the centre of a wide ocean, it is doubtful whether the water would be found uninfluenced by surrounding currents, or the effect of stormy winds acting upon portions of these, would not impart motion in various directions upon its surface throughout.

The subject is one well worthy of investigation, as being of some importance to navigation. The immense *floats* of sea-weed found in the space alluded to is certainly a favourable indication that, therein, the water is comparatively quiescent, and, if this should be confirmed would it not be the best route for ships to follow, when bound to the United States of America.

No. 66, from the 40th degree west to the east coast of Guatemala. We may here gain a clue to the easterly sets often experienced to the southward of Jamaica. The impelled body of water to the westward, striking directly upon the above line of continental coast, may be supposed to be repelled back, or to glance off curving (a natural tendency) to the eastward—northerly—whilst a part passes on round Cape Gracias a Dios.

No. 108, affords the same reason for conjecturing a similar action farther to the northward—Yucatan, and may account for the easterly set curving to the southward, between Cape Antonio, of Cuba, and the abovenamed peninsula.

No. 51, apparently anomalous, "Ship Wellington," Capt. Liddell; very nearly four years (3 y. 346d.) from Cape Verd Islands to the north-westward of the Azores. This bottle probably took the direction of No. 52, towards the Bahamas; thence to Newfoundland, and so round to 39° W; and it might if it had been left to take its course, have been found on one of the isles near which it was dropped.

No. 46, "Lady Montagu," 295 days, dropped in 7° 7' S., 8° 6' W., found on the shore of Guernsey! All reasoning upon this case would prove futile. I cannot admit that it took its round—viâ the Equatorial current, by the West Indies, along the American coast, to the English Channel, in so comparatively a short period of time. Allowing an average of one knot an hour upon the whole time, the distance given is 7080 miles. It is possible that the bottle may have been picked up by some ship, and again dropped near to where it was found; but I cannot pay so bad a compliment to any seaman as to entertain the idea seriously. Those who may have the inclination, can make the calculation according to the courses of the currents known as permanent.

At present I leave it as I find it, an apparent "puzzle," and close as I began

Your obedient servant,

JOHN EVANS,
Lieutenant R.N.

To the Editor, &c.

ADDITIONAL BOTTLE PAPERS.

THE following extracts from papers found in bottles, have reached us, in continuation of those which appeared in our March number.

The first which we have numbered 106*b* as falling in that portion of our chart, appears to have been thrown over near the eastern edge of the Florida stream, and may possibly have been carried to the northward and eastward of Bermuda, curving down to the southward, till it reached the Equatorial current, which carried Nos. 61, 71, and 90, to the westward. No. 96, and 100 would appear to have made the same kind of detour, as well as No. 99, to the north of Bermuda. The interval between its departure and discovery appears to be 1 year 309 days.

No. 47*b* has taken the usual course to the coast of Ireland, and No. 40*a* which has been obligingly communicated by the Editor of the *Athenæum* has taken the usual course from the Cape Verds to the West Indies.

(No. 128—106*b*.)

From the *Shipping Gazette* of 13th of March, 1843.—"The India, Jelett, from N.W. Coast, Sandwich Islands, arrived at New Bedford, Jan. 28, lat. 20° 38' N., long. 66° 04' W., picked up a bottle that reported "barque Wm. Herdman, of Sunderland, Michael master: was thrown overboard March 21, 1811, in lat. 30° 18' N., long. 72° 52' W., while on passage from Bordeaux for Savannah; had tried the current in a calm, and found it setting southward, per compass, $\frac{1}{4}$ mile per hour."—Interval 1 year 309 days.

(No. 129—47*b*.)

The following has been forwarded to us by a correspondent, who dates his letter from Dingle, in the county of Kerry, Ireland:—"This bottle was thrown overboard from the ship *Delia*, S. Adey, master, on her voyage from Plymouth to Quebec, in lat. 50°, and long. 26° 18'. Should it be picked up, the writer will thank it to be made known by publication, or addressed to Captain Adey, Poole.—August 12, 1842. All well on board." The bottle was picked up on the 28th of December, 1842, on Ferriter's Cove Strand, after severe gales, by C. F. Collett, R.N., Lieutenant, Dingle district, county of Kerry. The bottle had been afloat 137 days, and had been carried by currents over 972 miles of sea.—*Hants and Sussex Standard*, Jan. 9, 1843.

(No. 130—40*a*.)

Dear Sir.—It is possible that the following paragraph from *Galignani's Messenger* of the 11th April, (Tuesday), may be worth adding to your collection, and in that hope I send it.

Yours truly,

L. G. P. March,

C. W. DILKE.

On February 12th, there was found on the shore at Basse-Point (Martinique) a sealed bottle, enclosing a visiting card, on which was found the following piece of writing:—" May 19, 1842, at half-past six in the evening, from the Nisus, before Saint-Lucia, one of the Cape Verd Islands. This bottle has just been emptied by the officers and passengers, in full conviviality." This note was signed "REX."

ON FINDING TIME AND LATITUDE.

SIR.—On perusing your useful and widely diffused Magazine, I observe many valuable rules for finding the latitude and time by sea observations. Permit me to contribute "a mite" to the list already published, as I fancy it will be found acceptable to many of your Nautical readers. During the Sulphur's "late Voyage round the World" I have had an opportunity of examining most of the Nautical Tables of the present day, and also in forming an estimate how far those tables are available for the Navigator, to keep pace with the new acquisitions which are daily being added to Astronomical Tables.

In the course of the above examination, I have practically tested numerous rules for finding the *time* and also for *latitude* by altitudes off the meridian. Most of them for latitude are unavailable in practice, because they are dependent on having the apparent time, found by a previous observation. The rule by which the following example is computed, has been tested by observations in various parts of the globe, taken on shore by sextant and artificial horizon, with every possible degree of accuracy. The results compared, are found to agree so closely that the rule appears available for sea observations.

Your most obedient servant,

CHRISTOPHER GEORGE,

Late of H.M.S. Sulphur.

To the Editor, &c.

LATITUDE.

A concise and easy method of finding the latitude by two altitudes, off the meridian.

The *Limits* are the same as in all methods for finding the latitude by altitudes near noon; viz., the *minutes* from noon must not exceed the *degrees* of zenith distance.

RULE.

Take two altitudes and note the times; find the interval between the observations, and the corresponding change in altitude. Enter Table A* with the approximate latitude and declination, and call the corresponding log. A. Then add together

Interval of time, in minutes and decimal parts	log. a c	
Change of alts. in seconds	"	+
A	a c	_____
		Log. _____

Add these three Logarithms together, and find the Nat. number, and with it enter Table B, in line with it will be found two quantities, one in time, which added to the *middle time* of observation, gives the *approximate time* from noon, the other quantity call T. To the Logarithm of T, add the Logarithm A, the Nat. number of their sum

* The formation of this, and tables B, C, D, will be given hereafter.

is the correction in seconds, to be added to the *middle altitude*, and gives the meridian altitude.

METHOD 1.—FOR FINDING THE LATITUDE.

Given $\left\{ \begin{array}{l} \text{Interva of time.} \\ \text{Change of altitude.} \\ \text{Lat.} \\ \text{Declin.} \end{array} \right\}$ To half a degree. To find $\left\{ \begin{array}{l} \text{The latitude.} \\ \text{Approximate time of the day.} \end{array} \right.$

EXAMPLE.

Nicoya, 24th Jan., 1839.—Lat. 9° 56' N.—Sun's Declin. 19° 14' S.

By a watch shewing 6h. 56m. 36s. The sun's alt. was 60° 25' 5''
 " " " 7 3. 58 " " " 60 32 55

6h. 56m. 36s.	60° 25' 5''	Lat. 9° 36' N. } A	
7 3 58	60 32 55	Declin. 19 28 S. } 0.568202	
7 22	7 50		
	60		
	470		

Interval in time 7.366 Log. a c 9.132768
 Change of alt. 470 Log. 2.672098 +

B

h. m. s.

1.236564 17 24 — 0 9 6 and 82.81 T

7 0 17 Middle time.

7 9 23 Error of watch.

A 0.568202 +
 T. 82.81 Log. 1.918082

2.486284 306.4 — 0 5 6

60 29 0 Middle alt.

60 34 6 Meridian alt.

The error of the watch by equal alt. was 7h. 9m. 32s.
 The obs. meridian alt. 60 34 10

TIME.

Under the Latitude, place the Declination, and find the Meridian Zenith Distances corresponding thereto.

Under the Meridian Zenith Distance place the Zenith Distance at the time of observation. Enter table C, with the Latitude and Declination, and the corresponding Logarithm call C. Enter table D with the *Zenith Distances*; and the *Logarithms corresponding thereto*, add to C. The sum of these Logarithms found in table D, is the apparent time.

By the same Tables and Method the Azimuth may be found, by changing places with the Declination and Zenith Distance at the time of observation.

METHOD No. 2.—FOR FINDING THE TIME.

The following is worked by tables found in most Navigation Books, only differently arranged.

Lat.	0 40 0 N.	}	Table C	0·028571	
Declin.	20 32 39		}	“ D	9·020684
Zenith dis.	19 52 39				
Z. D. at time of obs.	43 53 30				
2h. 36m. 25s.			D	9·049255	

The above, requiring only two tables will be found very useful in computing the Latitude from the Time, as proposed by Capt. Owen.

MODERN WORKS ON NAVIGATION

(*Notes and Mems. “for the use of Seamen.”—Second Series.*)

LAX.*

The Rev. Wm. Lax was many years, Professor of Astronomy in the University of Cambridge, in which capacity he distinguished himself, by the untiring zeal with which he discharged his important duties. It was well known that he had devoted much of the latter part of the time he was there to Nautical Astronomy, and calculating tables for the easier working of its different problems. In 1821 appeared the work now before us, in the preface of which he informs us, “that it is no hasty production; that, on the contrary, he had been employed upon it for some years; and that he had spared no pains to render it worthy of the approbation of the British Seamen.” It is on these grounds that we notice it; for we believe, it was published by the Board of Longitude, and it was fully expected that it would entirely supersede all the other tables hitherto used with the Nautical Almanac. In spite however of all these favourable auspices it did not take, and has never been much used; indeed it is hardly known to the generality of Navigators. Yet, this work has many of the requisites, which fit it well for general use, and distinguish it from the Norie’s and Hamilton Moore’s of the day. It is an original work, no mere compilation, written and calculated by a Mathematician, and a finished scholar, well acquainted with all that had been done by those who had preceded him; he carefully avoids their mistakes, and did not, like Mendoza Rio, produce a ponderous quarto, in order to do little more than solve the problem of finding the longitude by the lunar observation. He makes no blunders from ignorance of his subject, his tables are so arranged that almost at night every part can be taken out with sufficient accuracy, and above all a similarity runs through the different methods, that he uses to solve the various problems. Yet, in spite of these requisites, Navigators were right in neglecting this book,—it is not well fitted for general practice,—in short it is not the working man’s book. Paradoxical as it may appear, although the rules used are easy, they are not simple, but unnecessarily complicated.

* “Tables to be used with the Nautical Almanac, for finding the Latitude and Longitude at sea, with easy and accurate methods for performing the computations required.—By the Rev. W. Lax, A.M., F.R.S., Lowndes, Professor of Astronomy and Geometry, at the University of Cambridge.—London, Murray, 1821.”

Thus, in order to render all the proportional parts for seconds *additive*, he is obliged to employ parts for *no seconds*, and thus the computer cannot, if he wishes, work to whole minutes. This artificial system we look upon as a complete mistake, since it directly opposes all our habits of acting and thinking, according to which we naturally take the greatest, or most important first, and come to minutiae afterwards. Lax, though he works his variation, and every thing else to seconds, understood his subject thoroughly, no doubt; but failed for want of a practical view of it. Such words as "Lemma" and "Scholium," are not likely to become familiar among seamen—fortunately.

Mem.—The work contains no Navigation.

The author uses versed sines, which have grown into a kind of fashion of late years, though they were used, in the work of Sir Jonas Moore, in 1681, to 7 places. Against these we have strong objections. The last figures are always put down,—as 7 places are used, the computer cannot work to any other number; if he was to try to work to 6 or 5 places he must count from the last or *seventh* place, unless ciphers are prefixed to make up the 7 places, as in Dr. Inman's Tables; the end of all which is that, the student is told to throw out the first figure; and thus these numbers stand in complete opposition to all other numbers natural and logarithmic, and as soon as a computer has recourse to them he at once runs counter to all his usual habits. For our part we profess ourselves of that school which begins at the beginning, and employ 3, 4, or more places of figures, according as the degree, minute, or further accuracy is wanted. Besides, we dislike increasing the number of Tables, especially the larger ones, for more time is often lost in turning the leaves over than is gained by the additional facility, for the direct end of all tables is merely the saving of time. The perfection of table-work would be to require only one table; but as this is impossible, the smallest number is the next step.

M. CLEMENT'S NAUTICAL INVENTIONS.

On the Sillomètre, Sub-Marine Thermometer, Steam Thermometer, Derivomètre and External and Internal Thermometer.

SUCH are the names given to five instruments lately invented by M. Clement of Rochefort, and which have for some time been adopted in the French Royal Navy.

As a trial has recently been made with some of them, on board H.M.S. "Lightning," and as they have since been fitted to the "Blazer," at Woolwich, we purpose to lay before our brother seamen a brief description of these several instruments, followed by the report of Mr. LARGE, of Woolwich Dock Yard, on the trials in the "Lightning;" reserving for our next number a more detailed account of these ingenious inventions (which we hope to be enabled to illustrate with wood cuts,) together with Captain Washington's Report, of the recent trials of them on board H.M.S. "Blazer."

1st. The *Sillomètre*, as its name denotes, is an instrument to measure the rate of a ship's sailing, which is shewn by a dial on deck, and is intended as a substitute for the common log.

2nd. The *Sub-Marine Thermometer* is a very delicate thermometer, composed of platina and silver, placed at a depth of about ten feet below the surface of the water, and communicating with a dial on deck.

3rd. The *Steam Thermometer*, points out the temperature, and consequent pressure of the steam in the boilers, which is also shewn by a dial on deck.

4th. The *Derivomètre* is an instrument somewhat on the principle of the sillomètre, and intended to measure the drift of a ship.

5th. The *External and Internal Thermometer*, as its name indicates, is a highly sensible thermometer, so placed against the wall of an observatory, or house, as to shew the temperature of the air without and within, the two pointers which mark this are on the face of the same dial.

We now proceed to the trial of the three first of these instruments, in October last, on board the "Lightning," Lieutenant Snell, R.N., on a passage from Woolwich to Portsmouth and back.

MR. LARGE'S REPORT.

I.—Trials with the *Sillomètre*.

(During the passage from Woolwich to Portsmouth.)

Thursday, 13th October, 1842.—About one mile and a quarter below Gravesend, commenced a trial between Massey's patent log and M. Clément's sillomètre. After a run of 2½ hours, (being off Sheerness,)

Distance given by Massey's log 15½ miles.
 " Sillomètre 15 "

Distance from Nore light to Deal.

By Sillomètre 42 miles.
 By tables reckoning from buoy to buoy 41½

At 4h. 25m. P.M., altered the course four points, during which operation the sillomètre showed a diminution of speed, from 8 miles per hour to 7 miles.

At 8h. 50m. P.M., off South Foreland, commenced a trial between Massey's log and the sillomètre. Friday morning, took in Massey's log.

Distance from abreast the South Foreland to about 7 miles to the eastward of the Owers,

By Massey's log 84½ miles
 By sillomètre 82½ "
 By tables, reckoning from buoy to buoy 85 "

Moved sundry weights aft, viz., boat, brass guns, anchor, oars, &c.; for an instant the speed, as shown by the sillomètre diminished to 7·4 miles per hour, but it almost immediately increased to the former speed of 8 miles.

Moved the same weight forward: no sensible difference in the speed of the vessel.

The speed, as shown by the sillomètre varied from 8·1 to 8·2 miles per hour.

Tried the speed of the vessel by the common log which gave . 8½ miles.
 The sillomètre the same, viz. 8½ "

At 10h. A.M., about two miles past the Nab light, tried Massey's log.

Distance to near the entrance of Portsmouth harbour.
 By Massey's log 6 miles nearly.
 By Sillomètre 6 " exactly.

During the passage round to Portsmouth, the speed of the vessel was purposely checked, by blowing off steam, to see the effect on the sillomètre. The speed, as shown by the sillomètre was gradually reduced from 8 miles per hour to 4, at which point it stood steady. On the order being given for full speed, the sillomètre showed a gradual increase of speed, till it came to 8 miles per hour, as before.

On the return voyage, from Portsmouth to Woolwich, the distance performed was

By Massey's log	.	.	.	119 miles.
By the sillomètre	.	.	.	118·6 "

II.—Trials with the Marine Thermometer.

(During the voyage from Woolwich to Portsmouth.)

Time of taking Observations.	Marine Thermometer		REMARKS.
	Centi- grade	Fahr	
Thursday h. m.	0		
11 0AM.	12·0	53·6	At Woolwich.
12 30PM.	13·55	56·4	
2 25	13·55	56·4	
3 25	13·25	55·8	} 5 Fathom Channel; Cant Shoal; depth of water, about 16 feet
	13·15	55·7	
3 30	13·27	55·9	
	13·5	56·3	About 19 feet depth of water.
3 35	13·55	56·4	3½ fathoms
3 40	13·57	56·4	3 " } As called out by the leadsman.
3 50	13·7	56·7	3½ " }
3 55	15·25	59·4	23 feet, as stated by the pilot.
4 0	13·7	56·7	3½ fathoms
4 10	13·7	56·7	3½ " } As called out by the leadsman.
8 30	15·0	59·0	
9 30	16·0	60·8	Off Dover.
Friday			
8 0AM.	16·15	61·1	About 7 miles to the eastward of the Owers.
10 0	14·25	57·6	3 miles from Nab light.
11 0	14·2	57·6	Portsmouth harbour.

It will be seen from the above observations, that at Woolwich the thermometer stood at 12°; as we got into deeper water, it rose to 13·55°; as we approached the Cant Shoal, it fell very rapidly to 13·15°; when off Dover, it had risen to 16°; 7 miles to the eastward of the Owers, it rose to 16·15°; and in Portsmouth Harbour, it fell to 14·2°.

From which it appears, that the marine thermometer, in its variations, followed the inequalities of the bottom of the sea, so far as these inequalities could be ascertained from the heaving of the lead, or from the information of the pilot; that is, on the approach to shoal water, the thermometer fell, and on the approach to deep water, it rose.

It may be inferred, that the marine thermometer would indicate the approach to rocks and icebergs, from the influence these bodies are known to have on the temperature of the sea, for a considerable distance.

III.—*Trials with the Steam Thermometer.*
(During the passage from Woolwich to Portsmouth.)

Thursday, Oct. 15th, 1842.	Temperature of the water just taken from the boilers, as taken by the engineer of the "Lightning."	Height of Steam Gauge.	M. Clément's Steam Thermometer.		REMARKS.	
h. m.	Fahrenheit.	Inches.	Centigrade	Fahr.		
3 0 P.M.	212°	2½	107·4	225·3		
4 0	213	4	109·5	229·1		
5 0	212½	3½	109·3	228·7		
6 0	213	3¾	110·3	230·5		
7 0	213	3½	110·0	230·0		
8 0	213½	4	111·4	232·5		
8 30			110·7	231·3		} Rate of speed by Sillometre 8·35 miles per hour.
Friday, 10 0 A.M.	214	2½	107·55	225·6		
11 4			110·75	231·3	} Just bringing up in Portsmouth harbour.	
			111·1	232·0		
			111·15	232·1		

IV. *Observations from Portsmouth to Woolwich.*

SATURDAY, Oct. 15.	Marine Thermometer.		Sillo- mètre.	Steam Ther- mometer.		Steam Gauge.	Temp. of water just taken from boilers, as given by enginr.	REMARKS.
	P.M. h. m.	Centig. o	Fahr.	Miles, pr hour	Centig.				Fahr.
2 10	13·5	56·3	6·8	104·15	219·3			At the entrance of Ports- mouth harbour.
2 15	14·15	57·4	7·2					
	14·35	57·5	8·0					
	14·1	57·4						
2 20	14·2	57·5						
2 35	14·0	57·3	8·8					
			8·5	106·9	224·4			
			8·2					
3 0	14·2	57·5	8·2	108·5	226·7			
3 10	14·55	57·8	8·3	108·2	226·4			Nab light bearing S.E.b.S. half a mile.—Altered course
3 15	14·8	57·9						
3 30	14·6	57·7						
	15·0	59·0	8·2	107·0	225·0			
	15·3	59·3						
3 50	16·15	60·9	8·2	107·9	226·2			
4 0				108·0	226·4			
	16·20	61·0	8·3	109·85	229·8	2½	213·5	
	16·5	61·4						The marine thermometer, higher than when off the same place in the passage to Portsmouth, owing to our course being more distant from the light vessel.

SUNDAY, Oct. 16.	Marine Thermometer.		Sillo-metre.	Steam Thermometer		Steam Gauge.		Temp. of water just taken from boilers, as given by enginr.	Remarks.
	P.M. h. m.	Centig. o	Fahr.	Miles. prhour	Centig. o	Fahr.	In.			Fahr.
4 30	16.35	61.3	8.4	110.0	230.0				
5 0	16.20	61.2	8.3	110.6	230.5	4	214		
5 45	16.25	61.2	8.3	110.1	230.0				
6 0	16.2	61.2		108.8	227.8	3½	213.8		
6 30	16.2	61.2	8.1	107.8	225.6				
7 0	16.3	61.3	8.3	109.3	229.5	4	214		
7 30	16.25	61.2	8.3	108.5	227.6				
8 0	16.0	61.0	8.3	109.0	228.2	3½	213.8		
8 30	15.4	59.7	8.3	110.0	230.0				
	15.0	59.0							
9 0	15.35	59.4	8.3	107.4	225.4	3	213.5		
9 30	15.45	59.5	8.3	106.4	223.5				
10 0	15.2	59.3	8.3	108.1	227.2	3½	213.8		Off Hastings.
7 OAM	14.35	57.5	8.2	109.15	229.1				
	14.45	57.7		108.5	227.3	4	214		In the Downs.
	14.55	57.8	Speed varied from 7.9 per hour to 8.4	108.7	227.7				Altered the trim of vessel, by placing aft 60 men, with their bags, bedding & chests, anchor, and brass guns, no alteration in the speed of the vessel. North Sand Head light distant S.S.E. ½ mile.
	14.70	58.4							
	14.8	58.5				227.7	4	214	
	14.9	58.6							
	15.0	59.0							
7 30	15.5	59.9	8.3	108.8	227.7				Removed the same weight forward, no difference in the speed. Ramsgate Pier Head bearing 2 miles.
	15.0	59.0		109.1	229.1				
7 50	14.5	Hauled abreast	in Massey's Rams-gate	Log, Pier,	distance by Massey's				from Portsmouth harbour to Massey's log 119 miles. By Sillometre 118.6.
8 0	13.7	57.8	8.4	108.6	226.7				N. Foreland N.b.W. 2 mil.
9 0	13.7	56.4		105.8	222.4				
9 30	13.7	56.4		108.5	226.7				4½ fms. Herne B. & Whitsbl.
10 25	13.8	56.5	8.3	106.7	224.4				
10 30	13.7	56.4	8.3	105.9	223.8				
11 0	13.7	56.4	8.4	108.6	227.5				
11 30	13.6	56.3	8.3	109.1	229.1				
11 45	13.7	56.4		110.3	230.1				
12 0	13.7	56.4	8.9	108.5	227.3				Blew off steam. Brought up abreast the Guard ship, Sheerness.
12 30	13.7	56.4	8.9	109.7	229.2				

V. *Trials with the Steam Thermometer in the Medway.*

Oct. 16th, 1842.	Centi- grade.	Fahr.		Oct. 16th, 1842.	Centi- grade.	Fahr.		
P.M. h. m.				P.M. h. m.				
12 40			Sheerness.		110·8	231·4		
1 45			Upnor.	4 0	110·75	231·3	Abreast Upnor.	
2 0	111·3	232·3	Off Chatham dock		110·7	231·3		
	111·3	232·3	} Vessel stopped. Ordered to go on.		110·4	235·5		
	111·5	232·7			4 10	110·15	230·3	Off Gillingham.
	110·2	230·4				110·1	230·2	} Order to ease her.
	110·1	230·2				110·1	230·2	
	109·95	229·9		4 15	110·20	230·4		
	109·8	229·6			110·5	238·6		
	109·7	229·5			110·2	230·4	} Going full speed	
	109·6	229·3			110·1	230·2		
	109·4	229·0			110·0	230·0		
	109·3	228·7	Order to ease her a little.		109·8	229·6		
	109·7	229·5		4 20	109·2	228·4		
	109·8	229·6		4 25	108·1	226·5		
	109·9	229·8			108·0	226·4		
	110·0	230·0			107·5	225·5		
	110·1	230·2		4 30	107·0	224·6		
	110·2	230·4			106·9	224·4		
	110·3	230·5			107·5	225·5	} Arrived at Sheerness.	
	110·4	230·7		4 40	108·3	228·9		
	110·5	230·9						
	110·9	241·6	Order, go on.					

The observations here taken show how every variation in the temperature of the steam in the boilers is indicated by the steam thermometer of M. Clement. Thus, when the vessel was stopped, the temperature of the steam was 111°·5 (centigrade); on getting under way, it lowered to 100°·3; going easy, it rose to 110°·9; going on again, it lowered to 110°·1; going easy again, it rose to 110°·5; going on at full speed, it gradually lowered to 106°·9.

VI. *Passage up the River Thames to Woolwich.*

MONDAY,	Marine Thermometer.		Sillo- mètre.	Steam Thermometer.		Remarks.
h.m.	Centig. o	Fahr.	Miles.	Centig. o	Fahr	
7 45AM.	13·7	56·5	7·6	107·6	225·0	In the Thames nearly low water.
8 0	13·7	56·4	7·7	108·3	225·4	
8 30	13·7	56·4	8·0	106·3	221·5	Gravesend.
8 40	13·7	56·4	7·6	104·6	220·2	
8 45	13·7	56·4	7·4	105·2	221·5	
8 50	13·7	56·4	6·8	105·2	221·5	
9 0	13·7	56·4	7·8	104·7	220·2	
9 30	13·7	56·4	7·5	107·4	225·4	
9 40	13·7	56·4	7·5	108·4	226·4	Woolwich.
10 10	12·9	55·2	7·6	107·7	225·6	
10 30	12·8	55·0	8·2			

The following remarks may serve to shew the uses for which these instruments are available.

The dial of the marine thermometer is on deck, and shows by inspection merely, the approach to shoal and deep water, also, (as it is inferred,) the approach to land, rocks, and ice-bergs.

The steam thermometer is so placed, that the officer on deck observes the degree of temperature (and pressure) of the steam in the boilers, so that, if from any cause, the temperature of the steam in the boilers becomes higher or lower than it should be, it immediately becomes known; and, in high-pressure engines more especially, the approach to such a degree of temperature and pressure as may be dangerous is easily observed.

The sillomètre has also a dial upon deck, which constantly shows the number of miles per hour that the vessel is going; consequently, it is easy to discover, under all circumstances, what is the best trim of the vessel, and the most advantageous quantity and distribution of the sails, for obtaining the greatest speed. As the sillomètre shows immediately, the effect which every alteration in the sails or trim of the ship has on its velocity, it follows also, that ships fitted with the sillomètre can constantly maintain the speed that may have been agreed upon, and so keep company together, and maintain the same relative position, though, from the darkness of the night, or thickness of the weather, they cannot see each other.

To ascertain the distance run after any number of hours, it is simply to take the number of minutes one of the watches of the sillomètre has gained over the other, and to multiply that number by 6, there results the distance run in miles.

The instruments of Monsr. Clément, fitted on board the "Lightning," appear to be well and securely placed; nor does there appear to be any danger of their being deranged.

When once fitted a simple inspection is all that is necessary to obtain the results.

JOSEPH LARGE,
Foreman of Woolwich Dockyard.

In consequence of this favourable report on M. Clément's own instruments in the "Lightning," the Admiralty directed a set to be made by Mr. Carey; these English instruments have just been fitted to the "Blazer," Captain Washington, whose report we hope to be able to give in our next number.

CAPTAIN NORTON'S CONCUSSION SHELLS.

DEUXIEME SERIE, TOME QUATRIEME, NUMERO 10 OCTOBRE, 1833.

"Ce serait une découverte bien importante dans l'art de la guerre, que celle d'une méthode infaillible et non dangereuse, de faire éclater les Projectiles creux à l'instant de leur chute contre le but. Malgré tout ce qui a été proposé par les Auteurs (Voyez Segemenowitz, Macdonald, Legris, Montgery, etc.) et tout ce qui a été avancé par les feuilles publiques cette invention est encore à faire, elle aura probablement les corps fulminants pour base.—From *Le Journal des Sciences Militaires*."

R. N. C. Sept. 11th., 8841.

My dear Sir.—The object you propose to attain by your Percussion* Shell, is very desirable, and if such a Spherical Shell can be prepared and used with safety, it will be one of the most important improvements made in Gunnery

* Concussion.

for a century. If any thing should bring you this way, I shall be happy to profit by your obliging offer. Believe me you need not apologise for addressing me, I cannot but respect the zeal you have shewed in prosecuting your investigations into this, and more subjects connected with Naval Gunnery.

I am always most sincerely yours,

To Captain John Norton, late 34th Regiment.

THOMAS HASTINGS.

Dover, 29th Oct., 1841.

Dear Sir.—I received your letter containing a Catalogue of the numerous and important matters to which you have directed your attention and faculties, and I thank you for the interest with which I have read that list, and sincerely hope that the service may be practically benefited by those inventions.

Believe me, dear Sir, yours very faithfully,

To Captain John Norton.

HOWARD DOUGLAS.

J. U. S. Club, Oct. 25th, 1841.

SIR.—Having read in your Paper of Saturday last, an allusion to experiments made at Woolwich, on Friday the 15th inst., with eight-inch shells and fuzes invented by me, I beg leave to state in answer, that although those shells that had a small portion of powder in them did not explode, yet as I now know the cause, I can easily apply the remedy. The experiment was merely a preliminary one. I have discovered the means of attaining the object I have in view, viz., to cause shells of all sizes to explode by the concussion of striking the object against which they are fired. I have explained those means to the proper authorities, and I promise that they must and shall succeed.

I am, Sir, &c.,

JOHN NORTON.

To the Editor, &c.

Concentrating the fires of the Broadides in Concussion Shells.

During the course of experiments in the Marshes at Woolwich, on Friday last, the 26th inst., twelve of Captain Norton's Concussion shells were fired from the ten-inch gun at a wooden frame representing the two sides of a ship, at the utmost range the ground affords, twelve hundred and fifty yards, four shells struck the frame, and instantly exploded by the concussion, penetrating the first side, and scattering their fragments into the second, making a wreck and a ruin of both. Eight shells struck the mound, and five out of the eight exploded the instant of striking, the three shells that struck the mound, and did not explode, produced however all the effects of hollow shot; in the course of experiments since October last, at Woolwich, Portsmouth, Addiscombe and Deal Captain Norton has fired more than thirty charged shells, and not one has exploded nearer the Gun or Mortar's mouth than one thousand yards, thereby shewing the safety as well as the efficiency of his invention. The twelve ten-inch shells used on Friday last contained each a bursting charge of five pounds of powder, the charge of the gun was twelve pounds.

CONCUSSION SHELLS.—Yesterday 2nd September, experiments were renewed in the Marshes at Woolwich with Captain Norton's Concussion Shells. Thirty were fired at a range of eight hundred yards, ten from the ten-inch howitzer, ten from the eight-inch howitzer, and ten from the long thirty-two pounder. All the shells from each of these guns that struck that portion of the wooden frame (not wrecked by the effects of previous firing) instantly exploded; a few

only of those that struck the soft earthen mound exploded. The shells were all prepared in the Battery in the same manner they would be in the face of the enemy. One shell from the thirty-two pounder exploded in the air, at about four hundred yards from the mouth of the gun; the two last shells from the same gun were purposely fired into the mound, and they did not explode, the object of firing these two shells into the mound was to prove that the shells can be prepared so as not to explode on striking water, but after the recôchet, shall explode on entering a ship's side. Altogether the experiments of this day were perfectly satisfactory. To do justice to experiments with Concussion Shells, the wooden frame into which the shells are fired, should be of the solidity of the hull of a ship, from one to three feet in thickness. The most convenient guns for the practice at eight hundred yards, are the eight inch guns, the howitzers are too uncertain for accuracy of aim.

HARWICH HARBOUR.

H.M.S. Shearwater, Harwich, November 1st, 1842.

SIR.—In forwarding to you the plan of Harwich Harbour, on the scale of twelve inches to a mile, which has been completed by Mr. E. K. Calver, Master and Assistant Surveyor of this ship, during the past year, I am desirous of calling your attention to one or two points, for the advantage of the navigation of the port, which have suggested themselves in the course of the survey.

But first I should observe that within these few years the Trinity Board, ever alive to the interests of seamen, have effected great improvements by buoying the approaches to the port, and more recently by placing a buoy on the Cliff Foot Rock, the most dangerous shoal in the harbour, whereas the further alterations to which I allude have chiefly shewn themselves in the course of the present survey.

You are already aware that great changes are taking place in the Suffolk or eastern side of the harbour; Landguard Point has extended to the southward upwards of 500 yards within the last forty years, so much so, that where was the deep water passage through which I sailed as late as the year 1826, is now shingle beach, several feet above high water spring tides. In consequence of this alteration, the best channel now is round the West Altar Buoy, and over the flat of the Altar Shoal, carrying twelve feet at low water springs, but for this channel there are no good leading or beating marks;* I should therefore venture to recommend two small square black beacons to be placed on Landguard west beach, at the spots indicated on the plan: then the conspicuous Mortella Tower on the southern extreme of Bull's Cliff near Felixtow kept on with or between these beacons would be a safe and quick leading and turning mark for entering this part of the harbour.

Again a little farther in, just off Walton Ferry, are two awkward shoals named the *Bone* and the *Gristle*, with only three feet water on them; here it seems advisable that a small buoy should be laid.

The recent survey has shewn that there is another or western passage into Harwich, far more direct than the former, and carrying 12 feet throughout at low water springs. This is a good navigable channel for Steamers, or sailing vessels with a fair wind, and the more valuable as being available during easterly gales, when there is much difficulty in entering by the eastern passage; but for this there are no leading marks. I would propose then two small white triangular beacons under Fagborough Cliff, about 1000 feet apart, and a white

* Those at present in use are the Mortella Tower on Landguard east beach in one with the northernmost cottage on the west beach, and Dover Court South Mill well open of Beacon Cliff.

circular beacon on Shotley Point, as indicated on the plan of the harbour. As you have yourself sailed through this passage in the *Shearwater*, drawing 12 feet, for the purpose of proving its depth, and are so well acquainted with its value, I need only add that latterly we have never used any other channel, and we find it extremely useful.

The white beacon erected in 1837, on Shotley Point, should be taken away, as it leads directly on to the *Glutton* Shoal, instead of clearing it, as I suppose was intended; and the Cliff Foot Rock buoy should be moved 400 yards farther south, as it only leads into error where it is.

The whole expense of the slight additions I have ventured to suggest would not exceed a few pounds, and as it would be of so great benefit to the navigation of this valuable port, I trust that you will consider it right to recommend the subject to the very favourable consideration of the Corporation of the Trinity.

I must now beg your attention to some other points. I have already alluded to the great extension of Landguard Point within the last forty years,* but more especially within the last twenty years; where was formerly a 7 fathom channel is now a shingle beach as many feet above high water mark, and consequently the high and low lights placed in line to lead into the harbour, are no longer available in this direction for the purpose. Again on the western or Harwich side of the harbour, a projecting headland called the Beacon Cliff is daily giving way; owing to the encroachment of the waves, this cliff has lost no less than 500 feet in a direct line from the sea during the last forty years, and upwards of 40 acres of ground have fallen into the sea.

The evil results of this are obvious. Not only has the fallen clay tended to shoalen the harbour; but still more damage is done by the increase of surface, whereby the scouring effect of the flood and ebb streams, in keeping the channel clear, is much weakened; while the chief barrier to the south and south-westerly gales having gone, there is nothing to interrupt the fair sweep of the sea along the eastern face of the town, owing to which the beach has been scoured away along the whole line of the esplanade, to a depth of eight or ten feet within a few years, while the low light-house is only preserved from being swept into the sea by an elaborate and costly defence of groins and outworks which from time to time are obliged to be filled up with shingle brought from a distance.

It is not for me to say who is to blame for the extreme neglect of this port, but that it has been shamefully neglected during the last twenty years is manifest, and thus the best and only harbour on the east coast of England, between the Thames and the Humber,—a harbour in which, in a north-easterly gale, 400 vessels have at one time taken refuge,—is now all but ruined for the want of a little timely precaution. It is the business of an engineer to report upon the best steps to take in order to arrest any farther deterioration, but the more obvious measures would seem to be to put a stop to the daily practice of carrying away the cement stone from the foot of the cliffs, and to adopt at once a vigorous and well considered system of groining along the shores; had this been done twenty years ago, a Mortella Tower, Rainham's battery, and other fortifications on Landguard east-beach, long since washed into the sea, might have been saved:—a deep water channel into the harbour carrying 7 fathoms, where there is now a shingle beach as many feet above high water mark, would have been preserved:—the high and low light would still have been available for navigation in the direction in which they were intended;—the whole strength of the flood and ebb streams for scouring the channels might have been maintained; a shelter from the sea caused by southerly and south-westerly gales would have been preserved; the scouring away of the beach on

* One million of cubic yards of sand and shingle have been transported from here since the year 1804, judging from the accurate plan of that excellent old surveyor Græme Spence, as compared with the present survey.

the eastern face of the town would have been avoided; upwards of forty acres of good ground, excellent pasture land, with tenements and other property, might have been preserved to Her Majesty's Government; but worse than all in a national point of view, a harbour that a few years since would have afforded shelter in an easterly gale to the largest ship in the North Sea fleet, is now barely available for a frigate.

I am, &c.,

JOHN WASHINGTON, *Captain.*

To Captain Beaufort, R.N. Hydrographer.

H.M.S. Shearwater, Harwich, December 10th, 1842.

SIR.—Referring to my letter of the 1st November, containing a general report of the neglected state of Harwich Harbour, and of its daily progressive deterioration, but especially with respect to the erroneous position of the Cliff Foot and Beach buoys, and the danger to navigation, in consequence of the two lights in one, now leading directly upon the shoal, off Landguard Point, I have now to acquaint you that since the date of that letter, four instances have occurred of vessels getting aground, and receiving much injury from the causes above mentioned.

Two of these cases occurred to vessels, turning out of the harbour, which struck on the Cliff Foot Rock, and you must allow me here to repeat that, either a second buoy should be placed on this dangerous shoal, or, that the present buoy be shifted two cable's length further south, and placed off the pitch of the shoal spot which has only three feet water on it.

The other two cases occurred on the 'Andrews' or shoal off Landguard Point. These vessels the *Favorite* of Whitby, and *Atherly* of Ipswich, running in with the lights in one, according to their direction books, both took the ground at the entrance of the harbour. Fortunately the night was fine, and the *Desmond* Revenue Cutter near at hand, and with this assistance the collier was got off, but with great expense to her owners. Here then in the course of six weeks are four cases of wreck caused by evils which admit of an easy remedy.

I need not again advert to the daily loss of Government and other land, owing to the mischievous practice of taking away the cement stone from the foot of Beacon Cliff, (a subject which imperatively calls for legislative interference,) but I may venture again to call your attention to the growing out of Landguard Point. Since the date of our survey of that part, up to the 2nd December, the shingle beach point has increased 37 yards, and now occupies the spot where were 12 feet water in June 1841, while at the same time its 12 feet edge has grown out 80 yards, and now holds the place at which were 20 feet water in October 1841;—a spur of 200 yards has also grown up to the eastward.

This is a great and growing evil, and demands immediate and serious attention, if the port of Harwich is to be preserved; but my duty, as having charge of the survey of the North Sea, is with the more immediate interests of navigation, and these require that the beach buoy be removed a cable's length further south, and that a remedy be found for the two lights in one, leading upon this point.

The great object of these lights when first placed, was to lead between the 'Andrews' and the 'Ridge' and this they do sufficiently well: I cannot therefore recommend the low light to be moved, but with all submission I conceive that a small red harbour light, visible only about three miles, might be advantageously placed 25 yards south of the present low light; vessels would then steer in as usual, but as soon as they had passed the narrows between the 'Andrews' and the 'Ridge' buoys, they should bring the small red light on with the high light, which would lead them quite clear of the beach point, and up to the west Altar buoy.

Landguard Point has now grown out upwards of 550 yards, whereby the best entrance to the harbour is, for the present, entirely lost; where in 1804 was a channel with 7 fathoms at low water, is now a beach 7 feet above high water mark, thus shewing that a bed of sand and shingle 20 yards in depth has gradually formed during the last 40 years, but its more rapid advance has been since the year 1826, or, rather since the time that the cement stone was begun to be taken away from Felixstow ledge.

I am, &c.,

JOHN WASHINGTON, *Captain.*

To Captain Beaufort R.N.

[Knowing as we do from some personal experience, the immense importance of Harwich as a Harbour of Refuge on our Eastern Coast, we are gratified to be able to add that the Trinity Board, ever desirous of forwarding the interests of seamen, have made the necessary changes in the position of the buoys, and have placed two new ones on the shoals named the *Bone* and the *Glutton*, according to the Trinity notice printed in our February number.—Ed. N.M.]

THE LOSS OF THE RELIANCE, CONQUEROR, ETC.

SIR.—Would you favour me by submitting to your readers the following suggestion.

May not the loss of the *Conqueror*, *Reliance*, and other vessels on the coast of France (the cause of which seems never to have been satisfactorily ascertained,) be thus accounted for?

The connection of sudden and violent electric changes of the air, with storms of wind, is well known. The influence of electricity on magnetism, (or the identity according to some of these forces,) is also well known; and a very striking instance of the sudden deflection of the compass accompanying a hurricane is recorded in your Magazine for 1841, p. 103, by Mr. Lawrance, mate of H.M.S. *Thunder*; the variation observed on this occasion was to the extent of three or four points.

It had occurred to me previous to reading this observation, that in this way the unfortunate ships I have alluded to may have been induced to steer too far to the southward; and I am confirmed in this matter to your nautical readers, in the hope that it may tend to diminish conjecture, not only by the instance above referred to, but also by observations on the effects of lightning on the magnet, where vessels have been struck at sea. At p. 344 of the same volume of your Magazine, is mentioned, one such case in which the compass was made to point E. and W.

“Fore-warned is fore-armed;” and I submit the enquiry into this in some respects the “dangers of the seas,” though I am not one of those “Gentlemen of England who live at home at ease,” seeing that I am nothing better than

A COUNTRY DOCTOR.

[Our Correspondent will find sufficient reasons for the loss of the *Reliance* in our March number. No doubt deviation of the Compass had its full share. The subject he has started is well worthy of the attention of our Nautical readers *afloat*, and we shall be glad of their observations on it, which would be easily made during a thunder storm.—Ed. N.M.]

THE SAFETY BEACON.

Greenhithe, April 10th, 1843.

MR. EDITOR.—Having observed in the *Nautical Magazine* the notice of a Beacon of Refuge, which Mr. Bush falsely asserts to be the prototype of that which Capt. Bullock has placed upon the Goodwin Sand, I claim the privilege of a regular subscriber, to call your attention, to the relation of a few facts, with which the public are generally unacquainted.

In the first place, Captain Bullock has received a letter from the Secretary of the Admiralty, confirmatory of his claim to the origin of the Safety Beacon, (a copy of which I enclose) and therefore the Service can no longer doubt it.

2ndly. The Elder Brethren of the Trinity Board, by their Secretary, have given Captain Bullock their testimony, (this letter is also enclosed,) that no such beacon, as that, was ever presented to that Board, by Mr. Bush; and 3rdly, the only Model presented to the Committee of the House of Commons, was that of a "Lighthouse" of solid masonry, at an estimated cost of £100,000, so that his reference to these three public bodies is a fallacy.

Besides, on referring to the *Nautical Magazine* of February, 1842, you will find that Mr. Bush,* has embellished his own plan of a Harbour of Refuge, with Captain Bullock's beacon underneath his caisson, or lighthouse, and that it stands for ever, a recorded testimony of Captain Bullock's right, and a proof that Mr. Bush, never had such an invention, or he would not have forgotten in the early part of 1842, that which he had projected in 1836, and which he deferred claiming till the December following.

In a word, Sir, I conceive this new project of Mr. Bush, calculated to injure Captain Bullock's reputation, and which you, as the Editor of a public *Maritime* work, are bound to expose.

It may also be remarked that the report of the Committee of the House of Commons, and the Trinity Board letter, only recognise "a Model" not "Models", so that Mr. Bush cannot stand upon the plea of a second Model, even if he ever had it, which I deny.

I remain, Sir, yours, &c.,

A REGULAR SUBSCRIBER.

Admiralty, 12th December, 1842.

SIR.—Having laid before the Lords Commissioners of the Admiralty your letter of the 10th inst. relative to Mr. Bush the Engineer, who through the medium of the *Times* Newspaper, accused you of having pirated his invention, I am commanded by their lordships to acquaint you, that My Lords are quite satisfied of the justice of your claim to

* The sketch of Captain Bullock's Beacon was added to the plate of the Refuge Harbour, without any reference whatever to Mr. Bush, and he, therefore, had nothing to do with it.—Ed.

the invention of the Safety Beacon, and of the merits of that structure.

I am, Sir, &c.,

JOHN BARROW,
Secretary.
To Captain Bullock, H.M.S. Fearless,

(A true Copy)

Trinity House, London, March 30th, 1843.

SIR.—Having laid before the Board, your letter of the 24th inst. I am directed to transmit to you, the enclosed copy of the only letter, which subsequently to 1836 has been written to Mr. Bush upon the subject of the “Model,” which he submitted to this Board in July and August of that year, and I am farther directed to remark, that the sum at which he estimated the cost of erecting the Building, viz: £72,000, may, it is considered be received as conclusive evidence that, the “Model,” and plans to which it has reference, were of a very different description to your inexpensive Safety Beacon.

I am Sir, &c.,

J. HERBERT,
Secretary.
(Signed)
Captain Bullock, R.N.

Trinity House, London, 20th December, 1842.

SIR.—I am this day in receipt of your letter (without date) and having laid the same before the Board, I have been directed to acquaint you, that it appears you attended this Board on the 19th July, 1836, and submitted a Model descriptive of a method by which you proposed to erect Beacons upon sandbanks, and permission was then given you to send in an estimate of the cost of making such erections, and it farther appears, that you accordingly again attended on the 23rd of August, 1836, and submitted farther plans in relation thereto with an estimate of the cost of erecting the building in such situation, amounting to the sum of £72,000. Whereupon you were informed by letter bearing date the 25th of August 1836, that this Corporation did not entertain any intention of adopting “your plan.”

I am Sir, &c.,

J. HERBERT.
(Signed)
W. Bush, Esq.

Deal, April 14th, 1843.

SIR.—Pursuant to your wishes, I have searched for the date, when you directed me, as Superintendent of the Naval Yard, to build your Safety Beacon, and I find it was on the 26th of August, 1840, on which day you gave me a sketch of your ideas, which were carried into effect by Mr. Wise, the carpenter of the Yard. Mr. Bush had nothing whatever to do with it, nor, during the time he was erecting his Caisson, when I was continually in communication with him, rendering him every service in my power, did he ever intimate to me, that he had invented a similar Beacon, but, on the contrary, always spoke of it as yours.

I have always considered that the merit of this simple contrivance, was entirely your own, and am only surprised, when I consider its trifling expense (about £60) its stability and usefulness, as a Beacon of Warning, as well as of Refuge, that more of them have not been erected; for I feel convinced, that it has already been the means of preventing many vessels from running upon the Sands, and consequently of saving life, which in spite of the envy of those who seem disposed to rob you of the merit of the invention, entitles you to the gratitude of the community, and must prove to you a never failing source of gratification.

Believe me, yours very faithfully,

(Signed)

EDWARD BOYS, *Commander R.N.*

Late Superintendent of Deal Yard.

P.S.—You see by this, that several ships have been saved and warned off, Captain Martin counts either five or seven.

[This controversy has unfortunately grown out of a subject which it became a point of duty to record in this journal, in common with others of importance to Seamen. Of the invention of Captain Bullock, independent of Mr. Bush, and in entire ignorance of his ideas on the subject, no one can entertain a doubt; and he is therefore justly entitled to all "the merits of that structure."

Both parties however have now been heard, and we do not consider ourselves called on to go any further into the subject.—ED. N.M.]

REPORT ON EAST INDIA ISLANDS.

Victoria, Port Essington, Aug. 30, 1841.

SIR.—I have the honor of reporting to you the information I obtained during my late excursion in her Majesty's ship *Britomart*, to the Arru and Ki Islands, Banda, Amboyna, and the Serwatty Islands. The particulars I gained concerning the customs, &c., of the aborigines, though perhaps interesting, would swell this account so considerably, that I will confine my remarks to those points more immediately connected with the interest of the settlement.

We arrived off the south end of the Arru Islands on the morning of the 21st of June, after a passage of forty-eight hours from Port Essington, and anchored off the town of Dobbe on the following day.

The Arru Islands extend from north to south about 100 miles, but the eastern side of the group not having been surveyed, its limits in that direction are unknown; the land is only a few feet higher than the level of the sea, except in spots where patches of limestone rock rise to the height of about twenty feet; but the immense trees which cover the face of the country give it the appearance of being much more elevated. The inland parts of most of the islands consist of fresh water swamps, and the jungle is so thick that it is seldom penetrated by the natives; the communication between the different villages, all of which are erected on the sea-shore, being carried on by means of boats.

The town of Dobbe, which is built on a sandy point extending from the north side of the Island Warud, is the chief resort of the foreign traders. We found the town, which consisted of about 30 houses, some of considerable size, occupied by a few Dutch traders from Macassar, about a dozen Chinese, and 300 Bughis and Macassars, the greater portion of whom were preparing to visit the island on the east side of the group, to collect produce for the vessels that were expected after the setting in of the westerly monsoon. The only sea-going vessels

we met here were two large Macassar prahus and a Ceramese junk, which were about to sail in a few days. The trade of the place appears to have increased considerably of late years. Four or five ships and brigs, with a number of Macassar and Bughis prahus, whose united crews were said to have consisted of 5,000 men, had sailed with cargoes about two months previous to our visit.

The produce of the Arru Islands consists chiefly of pearls, mother-of-pearl, tortoise-shell, birds of paradise, and trepang; but the trade of Dobbe does not entirely depend upon the produce of the Arru Islands alone. The Bughis prahus import large quantities of British calicoes, iron, hardware, muskets, gunpowder, &c., from Singapore; to obtain which, Dobbe is visited by natives of Ceram, Buru, New Guinea, and all the adjacent islands, it being the only spot in this part of the world where British manufactures can be procured. The tortoise and mother-of-pearl shells, ambergris, birds of paradise, ebony, cloves, and massay-bark, rosamald, and an odoriferous wood, and kaya buku, a wood much prized in Europe for cabinet work. British calicoes and iron are the only articles taken in exchange for these by the prahu of New Guinea.

The closeness with which the native traders conceal their commercial transactions even from each other, rendered it impossible for me to learn the amount of the exports and imports. Each Bughis prahu imports to the amount of from 10,000 to 20,000 dollars, and at least one-half of her cargo consists of British goods. Taking the yearly average at thirty prahus, and the amount of her import cargo at the lowest above stated, this will give 150,000 dollars as the annual value of British goods imported at Dobbe. This appears a large amount, but upon examination I am convinced that it is rather under than above the actual value. In fact, the greater portion of our cotton manufactures sold at Singapore are consumed in the less civilized portion of the Indian Archipelago, where the natives prefer cheap goods and gaudy patterns, while those of Java select or prefer their own or Indian manufacture, which, though dearer, are far more durable than ours.

The value of the return cargo of a Bughis prahu at Singapore will be about 200 per cent. on the outlay. It was with much regret that I observed a notice posted in a conspicuous place in the town, signed by the commander of the Dutch brig of war *Nautilus*, which had visited Dobbe about three months previous to our arrival, ordering the Bughis to depart from Dobbe. The Bughis certainly did not appear to heed it; but this document evinces a spirit of interference, which, if carried out must be severely felt at Singapore.

Of the timber of the Arru Islands there are several varieties highly spoken of by the Bughis, who build and repair prahus here, for its durability and ease with which it is worked. Although of immense size, the trees are almost invariably sound, and as they can be felled within a few yards of the beach, it is not impossible that timber may at some future time form a valuable article of export.

The western islands of this group are thinly inhabited. Wama, although nearly forty miles in circumference, contains only about from 200 to 300 inhabitants, who are scattered along the coast in little villages containing about half a dozen houses.

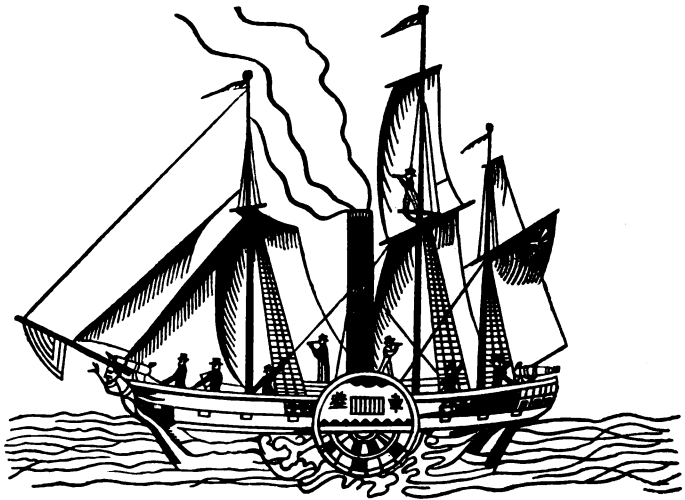
The eastern islands are said to be more thickly inhabited; the natives appear to be a harmless race, and although their country in produce is so rich, the greater portion are in a state of poverty. This is to be attributed to the inconsiderate use of spirituous liquors, large quantities of which are brought by the traders from Java and Macassar; indeed, with rice, it forms the bulk of their cargoes. From their language and personal appearance, the natives appear to be a mixture between the Malayan and the Polynesian negro. They are not many degrees further advanced in civilization than the natives of the north coast of Australia, to whom many of them bear considerable personal resemblance.

In concluding my observations on the Arru Islands, I cannot avoid remarking their favorable position for communication with Port Essington. In both monsoons the passage to and fro can be made with a fair wind, and the passage either way will never be likely to occupy a longer period than three days.

On the evening of June the 24th, we sailed for the Ki Islands, where we arrived on the 26th. The Ki group, sixty miles distant from Arru, consists of two large islands, called the Great and Lesser Ki, and a number of smaller ones lying to the north-west of the latter. The Great Ki is about sixty miles long, high and mountainous; but the Lesser Ki is nowhere more than 50 feet above the level of the sea. The natives of the islands differ very considerably, both in personal appearance and in language, from those of the Arru Islands, and are evidently the same race with that inhabiting the Serwatty and Timor-laut. During our stay at Ki, the inhabitants maintained the high character they have acquired for industry and hospitality to strangers. The population is between 8,000 and 10,000.

(To be continued,)

THE NEMESIS STEAMER — *From a Chinese Drawing.*



TRANSLATION OF THE CHINESE DESCRIPTION OF THE "NEMESIS."

This war steam ship is above 300 cubits long, and more than 30 high, in the hull. Iron is employed to make it strong. The hull is painted black, weaver's shuttle fashion. On each side is a wheel, which by the use of coal fire is made to revolve as fast as a running horse. White cloth sails are used to propel the ship when the wind is favourable. At the vessel's head is a Marine God, and at the head, stern, and sides, are cannon, which give it a terrific appearance. Steam Vessels are a wonderful invention of foreigners, and are calculated to afford delight to many.

On the chimney are the Chinese characters, Yeu tung, smoke passage, and on the paddle box, Chay Kae, wheel covering.

WM. HUTTMAN,

40, Tonbridge Street, New Road.

BIRTH OF A PRINCESS.—The event which has been anticipated regarding our beloved Queen, is announced in the following bulletin, issued at Buckingham Palace, dated the 25th of April, 6 A.M.—

“The Queen was safely delivered of a Princess at five minutes past four o'clock this morning. Her Majesty and the Infant Princess are going on well.

“JAMER CLARK, M.D.

“CHARLES LOCOCK, M.D.

“ROBERT FERGUSON, M.D.”

NAUTICAL NOTICES.

MR. EDITOR.—It is said that the Sun sets ten minutes later to a person on the peak of Tenerife than it would to another at the level of the sea beneath it. I have no doubt of its doing so, but you will oblige a subscriber to your useful work, by informing me whether it is a fact or not.

I am, &c.,

ALBION.

We cannot do better in replying to our correspondent than by giving him the following extract from the 2nd Edition of Raper's Navigation.

“To find the change in the time of apparent rising or setting due to the horizontal refraction and the height of the spectator.

With the lat. and decl. take out M. tab. 3; with M. as Dep. and the hour angle at rising or setting as course, take out dist.

Multiply this dist. by the sum of 34' and the depression to the height, tab. 6; the product divided by 1500 is the portion of time required in min. and decimals.

Ex. 1. Find the difference between the times of sunset at the level of the sea and at the summit of the Peak of Tenerife on May 4th.

Height 12172 f.; depr. 117'.

Lat. 28° and decl. 16° give M. 117·8. Then lat. 28° N. and decl. 16° N. give Hour angle at setting, 6h. 35m. The suppl. of this, as it exceeds 6h. or 5h. 25m. as course and dep. 117·8 give Dist. 119.

Dist. 119 mult. by 34 + 117, or 151, is 17969; which divided by 1500 gives 11·9m. THE DIFFERENCE OF THE TIMES required.

NORTH CORAL BANK, off Great Andaman.—The Robert Henderson, from Liverpool, reports that, on the 23rd of Dec., 1842, at 7 P.M., saw some dangerous breakers on the south end of the North Coral Bank off Great Andaman, tacked to avoid them in 10 fathoms, the north end of Interview Island bearing S.E., 12 miles distant, light northerly winds prevailing. On the 10th October, 1842, in lat. 32° 30' S., long. 73° E., passed the wreck of a large ship, water-logged, dismasted and abandoned.

[These breakers are in the chart published by the Admiralty, which should have been on board the Robert Henderson.—Ed.]

EMBDEN, March 7.—The Hydraulic Administration of this port has, the 5th inst., notified the following:—In order that mariners entering the river Ems may, at the outermost buoy, have a certain mark to ascertain whether they are before the mouth of the western or eastern Ems, it has been determined that from the present date there will be laid down at the mouth of the eastern Ems a large black buoy, painted on both ends, in the form of a ship's anchor buoy.

The situation of this buoy in every other respect, however, is to remain unaltered, at 8 fathoms water at low water mark. The light tower on Borkum, a little westerly of the Great Cape of Borkum.

Trinity-House, London, Mar. 10th, 1843.

HORSE CHANNEL.—Notice is hereby given, that this Corporation has caused a standing Beacon to be placed upon the South Hook or Spit of Margate Sand, near to the red and white chequered buoy which has heretofore marked that spit, and which buoy will now be taken away.

This beacon is placed upon the dry sand at low water neap tides, with the following marks and compass bearings, viz.—Hillborough Church Tower in line with a Barn next west of George's Farm House W.b.S. $\frac{1}{4}$ S; Birchington West Windmill, its apparent length on the west end of Birchington Wood S.S.E. Easterly; South Margate Buoy, E.b.S. $\frac{1}{4}$ S.; Gore Patch Buoy, N.W.b.W.; Horse Buoy, N.W.b.W. $\frac{1}{4}$ W.

By order, J. HERBERT, *Secretary.*

DEATH OF H.R.H. THE DUKE OF SUSSEX.

London Gazette, Friday Evening.—Whitehall, April 21, 1843: This day at a quarter past twelve o'clock, His Royal Highness Augustus Frederick Duke of Sussex, Uncle to Her Most Gracious Majesty, departed this life at Kensington Palace, to the great grief of Her Majesty and all the Royal Family.

Yesterday morning, at eight o'clock, the medical gentlemen found their Royal patient, who had passed another very bad night, in a state which precluded all hope of recovery, and they stated it as their belief that it was now only a question of time as to when death would ensue. His Royal Highness who was still sensible, shortly afterwards expressed a wish that his servants should be called up to take their leave of him; they accordingly repaired to the painful scene—for it was now but too evident that the minutes of the Duke's life were numbered. When the servants entered the room, he made an effort to speak, but the effort failed him—he could not articulate—and in a few seconds was no more. The Duchess of Inverness, the Duke of Cambridge, who had been with his suffering brother all the morning, the four equerries, the medical gentlemen, and the servants, were the persons present when death terminated the scene.

For several days past not the slightest hopes had been entertained of His Royal Highness's ultimate recovery, and the bulletins of the last day or two had prepared the public to expect a fatal termination of the Royal Duke's disease at no distant period. The Duke was through life the constant advocate of liberal principles, the encourager of learning and science, and the patron of all deserving aspirants in the various walks of art—as well as the benevolent supporter of most of the various charities which adorn and distinguish the British metropolis. His Royal Highness was a kind-hearted and excellent master, and the grief which the members of his household evince shows with what poignancy they feel the loss. His favourite Highland piper, who has been in his service 17 years, is inconsolable. The Duke was born Jan. 27, 1773, and was consequently in his 71st year. His Royal Highness was a Fellow of the Royal Society, and for some time President of that learned body; a Doctor of Civil Law; and, in addition to the chief title, was Earl of Inverness and Baron Arklow. He married at Rome, 4th April, 1793, and at St. George's, Hanover Square, 5th Dec. of the same year, Lady Augusta Murray, daughter of John, fourth Earl of Dunmore, by whom he had issue Augustus Frederick d'Este, a Colonel in the Army, born 13th Jan. 1794, and one daughter, Mde. d'Este. The marriage being in violation of the Royal Marriage Act (12th Geo. III., cap. II,) was declared null and void, and accordingly dissolved in Aug., 1794. In 1796 he was installed a Knight of the Garter; and in Nov., 1801, he was created a Peer of the Realm; in 1830, a Knight of the Thistle; and in 1837, acting Grand Master of the Order of the Bath, and Colonel of the Artillery Company; he was also Grand Master of the Freemasons' Society, having succeeded to that honour on his brother George IV. coming to the throne.

The mortal remains of the Duke will be deposited in the Royal mausoleum in St. George's Chapel, Windsor. The body will lie in state either at Kensington Palace or the Waterloo Chamber at Windsor Castle, and the funeral will be conducted in all respects similar to that of the late Duke of York. It is said that, in his will, he desired that his remains might be deposited in the cemetery at Kensall Green.

NAVAL CHRONICLE.

WRECKED OF BRITISH SHIPPING.

(Continued from p. 212.—cs, crew saved; cd, crew drowned.)

VESSELS' NAMES.	BELONG TO.	MASTERS.	FROM.	BOUND TO.	WHERE.	WRECKED.
Agnes		Mather	Havre	Hamburg	by fire	Mar. 24. cs
Alfred	210	Pearce	Swansea		Aldmore B.	Feb. 21. cs
Acasta			Ennore	Calcutta	not heard of	since Sep 22
Ann		Collins			P. Coubre	
Atlantic		Richardson	Newcastle	St. John	Sussex coast	Jan. 21. cs
Arundel		Petty	New York		not heard of	since Oct 21
Belfast					Chatham I.	July 22. cs
Blossom	215	Kennedy	Halifax	Jamaica	abandoned	Feb. 26. cs
Bridget		Young	Newcastle	Stettin	Cattegat	Mar. 13. cs
Ceres		Porter	Matanzas	Cork	foundered	Mar. cs
Chioftain		Sillis	Singapore	Macao	Palawan	Jan. 9. cs
Children		Bell	Liverpool	Maranham	Atacalema	Jan. 13. cs
Cornubia	220	Paekwood	Bathurst	Leith	abandoned	Jan. 18. cs
Diana		Saunders	Hobart Twn	P. Philip	Portland B.	Dec. 1d
Dusty Miller		abandoned	crew landed	at Sunder-	land	Feb. 22. cs
Effort			Shields	London	Whitley	Mar. 27. cs
Electra		Bolk	Wicklow	Gloucester	Skerwithr S.	Mar. 3. cs
Elizabeth	225	Cope	Sydney	Plymouth	N. Scotia	Jan. 10. cs
Elizabeth		Smales	Hartlepool	Bordeaux	North Sea	Mar. 19. cs
Escort		Taylor			C. St. Vinc'	Mar. 6d
Feronia		Corkhill	Dublin	Whitehaven	I. Man	Apr. 2. cs
Flora		Madden	London	Bristol	Dungness	Feb. 18. cd
Frances	230	lost on	Chatham I.			Sept.
Gem		Graham	St. Marys	Cuba	not heard of	since Oc. 25
G. Miller					Warkworth	Mar. 27. cs
George			Newcastle	Grenada	Isle of Wight	Jan. 13. 1s
George			China		Madras	Jan. 25. cs
Gertrude	235	Whiteside	Dundalk	reported	lost	Ap. 4.
Harmony			Newcastle	run down	off Linas	Ap. 1. cs
Hibernia				Calcutta		Mar. 2. cs
Ila		Brown	Aux Cayes	Falmouth	Castle I.	Mar. 4. 'cs
Isabella		Crawford	S. Shields	London	Hasbro'	Mar. 2. cs
Isabella		Moses			Campo Bello	Jan. cs
Isabella			Sydney		Nova Scotia	Jan. cs
Jas. Kerr	240			By fire!	35° N. 18° W.	Mar. 22. cs
Jemima		Erskine	Edinburgh	Montrose	Glasgow	Mar. all d
John and Elis.		M'Gilerag	Sydney	N. Zealand	Cambelton	Feb. 21. cs
Jura						Sept.
Looker In	245	Fannan	Falmouth	Shoreham	Bempton C.	sunk in squall
Lord Ernest		Spencer	Dublin	Dublin	off Drogheda	Ap. 4.
Lord Hawkabery			Sunderland	Montreal	Ratray B.	Mar. 31. cs
Margaret		Patten	Stockton	saved by	Eugene	Feb. 18.
Martha	250	Milianby	Hartlepool	Faversham	abandoned	Mar. 30
Mary		Naylor	picked up	in lat 35°	long. 43°	Feb. 13
Medora		Harrington	Launceston	Ball	Abrothos, A.	Sept. 14. cs
Ocean Child		Green	Windsor	Quebec	London	not heard of
Ocean Queen					Cornwall	since Sp. 15
Orb		Falmouth			Hasbro' S.	Ap. 1. cs
Orient	255	Edwards		Laurvig	Orkney	Ap. 4. cs
Phebe		Neilson		Poole	Pevensy B.	Ap. 5. cs
Pomona		Kimber	benefit of	underwriters	Sker Point	Ap. 8. cs
Russell		sold for	Fox	Truro	Off Rye	Ap. 6. cs
Restless		Jones	Cardiff	Newcastle	Arklow B.	Jan. 3. cs
Salamanca		McKinlay	Greenock	Dublin	supposed	lost on
Sarah		Perry	Havana	abandoned		Jan. 15. cs
Sarah	260	Narchevil	sprung a	leak	and sunk	Ap. 2. cs
Sarah		Murray	Glasgow	Demerara	Ireland	Mar. 25. cs
Stillman		Stanners	Newcastle	Dublin	Duncan B.	Mar. 21. cs
T. Dryden			Liverpool		Maranham	Jan. 25
Thalia	279	Simpson			Manicougan	Nov.
Thetis		Williams			Scomar S.	Jan.
Thomas					Dungness	Ap. 9.
Three Sisters		Duncan	Greenock	Lay B. near	P. Philip	Dec. cs
Truxanini			Liverpool	St. Thomas	Mayo	Jan. 26.
Volant					Maranham	Feb. cs
Wilberforce					Robin H. By	Feb. 10.
William and Ann	270	Hinds	Antwerp	Hartlepool	Hartlepool	Feb. 23. 1d
X. L.						

The Crews of eight of these vessels were forwarded by Agents of the Shipwrecked Fishermen and Mariners' Benevolent Society.

LOSS OF THE STEAMERS SOLWAY AND MEGÆRA.

SINCE the formation of our *usual* table of the havoc made in our Merchant Shipping, the loss of the Solway steamer, one of the vessels of the Royal West India Mail Company has taken place, making the third total loss sustained by them; and no sooner does this sad intelligence reach us by which we learn that about forty lives have been sacrificed, than it is followed by accounts of the loss of H.M.S. Megæra on Bare Bush Cay, Portland Bay, in the Island of Jamaica. The Solway's disaster is amply accounted for by the course she was steering, as will appear in the following extracts from the papers, and there is nothing whatever to occasion surprise further than that such a course was steered before she had got a sufficient offing.

How much longer is human life to be thus jeopardized and sacrificed by blundering navigators. Have we not had enough instances of incompetency on the part of some of our Commanders, or are we to wait for some more along with the destruction of some hundreds, perhaps, thousands of lives! Had the Solway got a proper offing before she shaped her course, this loss would have been spared.

THE Solway sailed from Southampton on Saturday, 1st of April, and reached Coruna all well. On the 7th instant she left Coruna for Madeira, on her voyage to the West Indies, and passed the lighthouse at ten o'clock; at ten minutes past twelve she struck, at full speed, on the Baldayo Shoal, and struck several times going over the shoal, finally going down in 13 fathoms water, between the shoal and main land. Only twenty minutes elapsed after she first struck before she went down. The water soon reached the engine-room, and we are informed the boilers collapsed and blew up. Most of the passengers and crew off duty had turned in. The weather was still, and the night moonlight, otherwise the destruction of life would have been far greater. The pinnacle was launched first, and, as many as it could conveniently hold were lowered into it, but the frail barque was not destined to reach the shore. From some cause still unexplained, it was capsized, and every one on board perished; one paddle-box boat was next launched, and being cut adrift to save time, fell broadside in the water, and half filled; notwithstanding which, it was the fortunate means of saving 52 persons. Captain Duncan died in the courageous act of loosing the second paddle-box boat, to land the remaining persons on board. He was last seen on the paddle-box at this humane duty, when the ill-fated vessel went down, and he was lost. * * *

On going out of the harbour, we passed one of the paddle-box boats apparently full of people; further on we passed one of the quarter boats, with nine men in her. We got to the Solway about half-past twelve o'clock at noon, and to give you an idea of what depth of water she is in, I may state that her mizenmast is just out of the water. She is rolling very much, and is probably to pieces by this time, as it is now blowing a heavy gale north-west. * *

The ship is about three miles from the main; the agent has a guard abreast of her, in order to pick up the dead, or any property that may come ashore; and when the gale abates I will, if the agent deems it necessary, proceed to the spot in a boat. * * *

"Having seen in your paper various accounts relative to the loss of the Solway, and being, I believe, the only passenger at present in London, I feel it particularly incumbent on me to place before the public certain facts connected with the sad catastrophe which has led to so lamentable a loss of life. The task is an ungracious one, nor would I undertake it, but that an imperative sense of duty induces me to do so. Before entering further on the subject, let me bear testimony to Captain Duncan's kindly bearing to all classes on board his ship, and also to his disregard of personal safety—his only anxiety being to save the lives of others. It is due also to the company to state that nothing was

wanting on their part that could conduce to the efficiency of the service or the welfare of the passengers. The elements of comfort were in profusion on board, and the ship was itself a tower of strength and an admirable sea boat. Having stated thus much (and indeed it would have been wrong to have said less) I have now to communicate the fact, which rests upon good authority, that the course the *Solway* pursued on quitting the harbour of Coruna, and until the moment she struck, was W.N.W.; whereas, to clear the island of Sisaraga, I am assured by persons conversant with the matter, her course should have been N.W.b.W.—the difference in the two courses being from four to five miles. On reference to the chart, it will be seen that the course she took would bring her within 200 yards (as she did not move after striking) of the spot where she now lies. There were two compasses for the guidance of the officers on duty and the steersman. Admitting they were both wrong, the land was distinctly visible from the beam and both bows; we were, in fact, completely embayed. If there had been any indraught in the bay, such as to affect the *Solway*, how could it be possible that the boat, with only three oars, and a board, instead of another, between two persons, could have withstood it? I escaped by jumping from the spar-deck overboard in the hope of reaching a small boat crowded with seamen and engineers. I was immersed in the water, and my legs severely contused by the side of the boat. I was nearly suffocated by the smoke and ashes which rushed up from the hold. For a considerable time I could not distinctly observe what was passing on board the ship, but I saw her sinking. The whole period which elapsed from the time she struck until she went down did not exceed 25 minutes, and certainly she did not move 100 yards from the reef on which she originally struck. I would here remark, that although I give Captain Duncan every credit for endeavouring to allay the fears and alarm of the passengers, I am bound to state that had a different course been pursued, and the life-boats instantly lowered after the vessel struck, every soul who could be roused from sleep would have been saved.

When the *Solway* struck there were light airs, inclinable to calm, with swell. It being a few minutes after midnight most of those on board (except those looking out on their usual watch) were asleep. Those saved in the few boats lowered down were almost in a state of nudity. The vessel sank in 25 minutes after she struck. The Spanish consul, *Edwardo Santos*, and the commanders of two French vessels of war (one a steamer, which went alongside the wreck), gave all the assistance in their power. The captain-general, his lady, and daughters, also behaved with the utmost kindness on the melancholy occasion.

With regard to the loss of the *Megæra*, the following extract from a letter, with the sentence of the Court-martial on Lieut. *Oldmison* will inform our readers sufficiently respecting it.

SIR.—As I have just been employed recovering the stores, &c. of Her Majesty's late steamer *Megæra*, I think it likely you would be glad to hear the particulars relative to her loss. She left Port Royal (for Mexico) on the evening of the 4th inst., and having discharged the pilot at the entrance of the South Channel, shaped a course for some time to the southward and S.S.W. after which they hauled up west or W.b.N. and at eleven p.m. found themselves amongst breakers and immediately stopped the engines, but too late; she had struck. The cutter was lowered with a Master's-Assistant and four men to examine the spot, but she was almost instantly capsized, and the Master's-Assistant and three of the men succeeded in getting to the dry part of the reef, one of the boat's crew being lost. At daylight they found themselves on the Bare Bush Cay, about 200 fathoms to the southward of the dry part described in the Chart. The sea broke heavily towards morning, and unfortunately the 5th was one of the strongest breezes from south-east that we had had for some months, (as a proof, one of the *Warspite's* boats and one of the *Pickle's* were capsized in Port Royal,

on the afternoon of the same day ; four of the Warspite's men were drowned,) and the Masters Assistant fortunately got off the reef to leeward, on board a droger which brought him to Port Royal the same evening. At daylight the Acorn steamer, towed one of the dock yard vessels (that I had fitted out in the event of vessels getting on shore on the reefs) down to her assistance, and when we arrived at the reef her main-mast had been cut away, and the crew with the exception of two men had left her. Fortunately a canoe with some black men had come over, in which I ventured to get on board, and after having been capsized twice in the surf succeeded in getting on board, when we got a hawser to the shore, and after getting more people on board, commenced to land the stores, &c., and although the coral reefs are so irregular that the men can scarcely stand, we succeeded in loading a vessel with stores, clothing, &c. the following day, which we took to Port Royal and returned again, and have continued up to this time. But every thing in the shape of wearing apparel, is completely spoiled, having been obliged to throw it into the surf to get it on shore, a part of the Engine has been landed, but the hull of the vessel cannot be removed she had thrown herself broadside on, and the starboard side being perfectly stove.

The survey of this place, Bare Bush Key, &c., by Mr. Leard, 1791 is excellent, and I assure you that although we had what was considered the principal pilot at Port Royal, yet he could not give us half the information the Chart did, as we have been enabled to anchor the vessels on the edge of the reef, under the Island in 4 fathoms about half a mile off shore.

March 20th, 1843.

I remain, &c.,

G BIDDLECOMBE.

A Court-Martial was held on the 16th and 17th March, on board H.M.S. Imaum, on Lieut. George Oldmixon, the officers and ships company of H.M. late steam frigate *Megæra*, recently wrecked on Bare Bush Cay. It appeared by the evidence adduced, that the wreck of the vessel was caused by an extraordinary current, which was setting inshore on the night of the unfortunate disaster; and the Court adjudged Lieut. Oldmixon to be admonished and the second master to be severely reprimanded; the other officers and ship's company to be acquitted.

It appears that in the great gale in the Gulf of Mexico, in September last, three vessels of war were lost, as they were in the gulf at the time, and have not since been heard of. They were the English brig-of-war *Victor*, the French brig-of-war *Dunois*, and the Texan schooner-of-war *San Antonio*. Nearly or quite three hundred men perished with these vessels.

ADMIRALTY ORDER.

Admiralty, April 11th, 1843.

The Lords Commissioners of the Admiralty having had under their consideration the importance of carefully preserving the Standard Compasses supplied to Her Majesty's ships and vessels from the Compass Department, are pleased to direct, that in future they shall be placed under the charge of the Captain, or Commanding officer, similarly to chronometers, who will be required to certify on the Master's final bill for full-pay, "that the Standard Compass has been properly attended to, and duly returned to the dock-yard at—— by the Master."

Whenever it shall be found requisite to move the said Instrument to or from the shore, or from ship to ship, it is always to be done in the presence of the Master or a Commissioned officer.

The Master Attendants of the Dock-yards or their assistants have been directed minutely to inspect each Compass, immediately on its return from the ship or vessel to which it has

been supplied, and to report to the Superintendent of the Compass Department, its state and condition, the number of Cards, Azimuth Circles, &c., in order that he may be advertised of any unusual or unaccounted for dilapidation, and take the necessary steps to ascertain the cause from the Captain or Commanding officer before the certificate for its return shall be given, which certificate from the Superintendent of the Compass Department will be required to be produced by the Captain or Commanding officer, before he can receive his final bill for full-pay,—the same to be lodged in the Hydrographer's office.

Where Marine barometers shall have been issued to Her Majesty's Ships, the charge and return of these Instruments are to be subject to the same regulation, and to be issued with the certificate for Chronometers and Charts.

By command of their Lordships,
SIDNEY HERBERT.

To all Captains, &c.,

82, Strand, 23rd March, 1843.

MR. EDITOR.—Having had the honour of supplying through the highest recommendation, of those acquainted with chronometers, a chronometer to His Royal Highness Prince Adalbert of Prussia, I send you in the Prince's own hand writing, the inscription which he commanded to be engraved on it. I should not consider such a communication of any importance beyond that of announcing the Prince's great liberality and attachment to Science; but, Sir, there is a point connected with it, requiring immediate and extensive publicity, which is, the average value of chronometers at the present period. The Prince wished his present to extend to the *best*, and for which he was desirous of paying one hundred pounds. Now, Sir, you are aware that chronometers which were bought for the Service of the Royal Navy some years since, cost £105 each, even silver pocket chronometers; and it is generally supposed, and particularly among foreigners, that this is still about the cost of a very, very, superior chronometer.

Perhaps, Sir, you will through your valuable pages inform the world of the actual average value of chronometers, paid by Government, and that after nearly twelve months trial at the Royal Observatory.

I believe the case is as follows: Some years since £105 was paid by the Government, to the maker *without any trial*. At present they are subjected to nearly twelve months trial at the Royal Observatory, and if 30 are purchased out of 100 deposited, 25 are bought at forty guineas, the remaining five receiving from five to ten pounds extra as a reward for superior performance. This is the fact, and the sooner the information is spread through every country, the sooner Commerce and Science will be extended. The price paid by His Royal Highness was forty-five guineas, it having my improvements, and fitted up with thermometer, &c.

Now, Mr. Editor, I firmly believe that had not my recommendation to the Prince been as I have before said, of the highest character, I should have lost the sale for the reason that I charged so reasonable a price. I say so with confidence, because I totally lost the supplying of an extensive order to a foreign Government, because I would not charge a higher price, and was even told "that good chronometers could not be purchased at 40 or 45 guineas"; ultimately the order was executed at a higher price, while the maker was charging the Government considerably less.

I am, &c., E. J. DENT.

“Presented by Prince Adalbert of Prussia, to Captain Buckle, R.N., in remembrance of his attention during the voyage on board H.M. Steam Vessel the Growler, along the Coast of Brazil, 1842 and 1843.”

NEW BOOKS.

A VOYAGE OF DISCOVERY TOWARDS THE NORTH POLE, performed in H.M. Ships *Dorothea and Trent*, under the command of Captain David Buchan, R.N., 1818. To which is added a summary of all the early attempts to reach the Pacific by way of the Pole.—By Captain F. W. Beechey, R.N., (one of the Lieutenants of the Expedition.)—R. Bentley.

In submitting to the public the voyage of Captain Buchan towards the North ENLARGED SERIES.—NO. 5.—VOL. FOR 1843. 2 Z

Pole in the year 1818, Captain Beechey states that he should not have given it his attention at this late period, had it not been from a sense of duty, which, as one of the individuals employed upon the service in question, he owes to the public, who naturally expect from the Officers engaged in any national undertaking some account of the manner in which that service has been performed; and he further informs us that, "it appears to him incumbent on the Officers engaged in this expedition to take care that this voyage, which was conducted with great zeal and perseverance, and attended with a result, if not successful, at least honorable to the nation, should be handed down to posterity with the records of others of a similar kind."

Most cordially do we agree with Captain Beechey in these his sentiments, and truly rejoice that he has, though at a late period, placed on record the important voyage of the *Dorothea* and *Trent* towards the North Pole, thus completing the series of Northern Voyages; a relation of which through the industry of Hackluyt and others has fortunately been handed down to us, and carefully arranged (in the year in which the expedition sailed,) into a "Chronological History," by Sir John Barrow, to whom Captain Beechey, with much propriety, dedicates his volume, "as the originator and promoter of Modern Arctic Discovery."

Of the enterprise in question, "it may be truly characterized," observes the above author of the *Chronological History*, "as one of the most liberal and disinterested that was ever undertaken, and every way worthy of a great, a prosperous, and an enlightened nation, having for its primary object that of the advancement of science, for its own sake, without any selfish or interested views. On this account," he continues, "it has justly excited the attention, and called forth the approbation of maritime Europe; for it is well known that whatever new discoveries may be made, will be for the general benefit of mankind, and that if a practicable passage should be found to exist from the Northern Atlantic into the Northern Pacific, the maritime nations of Europe, will equally partake of the advantages, without having incurred either the expense, or the risk of exploring it."

The instructions addressed by the Board of Admiralty to Captain Buchan state that, the Prince Regent having signified his pleasure to Viscount Melville that an attempt should be made to discover a Northern passage by sea from the Atlantic to the Pacific Ocean, their Lordships, in consequence thereof had caused four ships or vessels to be fitted out and appropriated for that purpose, two of which, the *Isabella* and *Alexander*, were intended to proceed together by the north-westward, and through Davis Straits, and two the *Dorothea* and *Trent* in a direction as due north as might be practicable through the Spitzbergen sea.

On the 15th of January, 1818, Captain Buchan was appointed to the command of the Polar Expedition, and hoisted his pendant on board the *Dorothea* of 370 tons burthen; and Lieutenant Franklin (now Captain Sir John Franklin,) was placed under his orders in command of the *Trent*, a brig of 250 tons.

The expedition having been liberally equipped, proceeded down the river on the 25th of April, and arrived at the Shetland Islands on the 1st of May. "We were hardly clear of the river," says Captain Beechey, "before we had the mortification to find that a leak in the *Trent*, which had scarcely shewn itself before, now increased to such a degree as to become an object of serious moment." The brig was placed on shore at high water, and thoroughly examined. Some rents in the planks were found to be open, and were caulked, but the leak still continued, and baffled all their efforts to discover its immediate cause.

"Fortunately it was not of such magnitude as to endanger the safety of the brig, or the expedition must have suffered considerable detention, still it was of sufficient importance to keep the seamen employed nearly half their watch at the pumps; an evil, it must be admitted, sufficiently great under any circumstances, and one, which, in our case in particular, was likely to be increased."

On the 10th May, the Expedition left the Shetland Islands, and standing

towards Spitzbergen, crossed the Arctic Circle on the 14th. On the 24th of May saw Cherie Island "deeply buried in snow, and shortly after observed an extensive accumulation of ice, connected with its northern extremity, sweeping round the horizon in the direction of Spitzbergen in so compact a body as to preclude the possibility of passing between the two islands, had such a measure been required."

Taking advantage of an easterly wind, they stood towards the south cape of Spitzbergen, through a wide belt of loose ice. "The progress of a vessel through such a labyrinth of huge masses is one of the most interesting sights that offer in the Arctic Seas," the endless variety of forms assumed by the ice, seem to offer an endless amusement to those unaccustomed to the navigation of a icy sea. "In directing the route of the vessel from aloft" (says Captain Beechey) "we for a while deviated from our Nautical phraseology, and shaped our course for a Church, a tower, a bridge, or some similar structure instead of for lumps of ice, which were usually designated by less elegant appellations."

On the 26th they came within sight of Spitzbergen, and on the 3rd of June, after encountering a heavy gale of wind, in which the ships parted company, anchored in Magdalena Bay.

"Magdalena Bay was the first port in which we had anchored in the Polar Regions, and there were of course many objects to engage our attention. We were particularly struck with the brilliancy of the atmosphere, the peaceful novelty of the scene, and the grandeur of the various objects with which nature has stored these unfrequented regions. The anchorage is bounded by rugged mountains, which rise precipitously to the height of above 3000 feet. Deep valleys and glens occur between the ranges, the greater part of which are either filled with immense beds of snow, or with glaciers, sloping from the summits of the mountainous margin to the very edge of the sea."

It is impossible in our limited space to give anything but a brief outline of the voyage, and for the numerous interesting anecdotes in *Natural History*, we must refer our readers to the book itself.

Leaving Magdalena Bay the Expedition made many attempts to get to the northward, but were again and again repulsed, and the highest latitude obtained was 80° 34' N.

Captain Buchan now determined to examine the ice towards Greenland, and in the event of finding it equally impracticable, then to proceed round the south cape of Spitzbergen, and make an attempt between that Island and Nova Zembla, but a tremendous gale of wind springing up, forced the ships to take the ice, "the only alternative being either to permit the brig to be drifted broadside against the ice and so take her chance, or of endeavouring to force fairly into it by putting before the wind as the Dorothea had done," they chose the latter and the frightful concussion is well described.

After about four hours of the most anxious solicitude, the gale moderated, and the ships getting released made the best of their way in a leaky state to Fair Harbour in Spitzbergen.

All further attempts to accomplish the object of the Expedition being now abandoned as hopeless, from the state of the ice, the conditions of the ships, and the lateness of the season, the Expedition returned to England, where it arrived on the 22nd October.

"Thus terminated," says Captain Beechey "the third endeavour, made under the auspices of the British Government to reach the Pole, an attempt in which was accomplished every thing that human skill, zeal, and perseverance, under the circumstances could have effected, and in which dangers, difficulties, and hardships were endured, such as have rarely been met with in any preceding or subsequent voyage."

We hope to be able to give some extracts, as well as the concluding remarks of Captain Beechey on the subject of any future attempts to reach the Pole, in our next.

MASTERMAN READY ; or, the wreck of the Pacific, written for Young People.—*By Captain Marryat, Vols. 2 and 3.*—Longman, 1842.

The opinion we gave of the first of these volumes has been amply confirmed. The sound instruction, conveyed in an interesting form, combined with a proper principle of religion met with in every page, renders it a work admirably adapted for young people. It is a pity, however, that Old Ready had not lived to learn that a lightning-conductor does not *attract* lightning. No doubt such was the common opinion of the time in which he lived; but those who have paid any attention to the subject now-a-days, know very well that *attraction* has nothing at all to do with it! This should be corrected in a future edition, and ample apology made for Old Ready's want of information. The work forms a useful and valuable little present.

NARRATIVE OF A VOYAGE ROUND THE WORLD.—*Performed in H.M.S. Sulphur, during the years 1836—1842. By Captain Sir Edward Belcher, C.B., F.R.A.S., &c.*—Colburn, Marlborough Street, London.

PORT OF MANZANILLA.—"This port has a good anchorage, and is well protected against the southerly winds prevalent during the rainy season; but, on account of a very considerable lake of stagnant water in its immediate neighbourhood, is very unhealthy during the summer. Infested by myriads of mosquitoes and sand flies, even in the dry season, it is nearly impossible to reside there.

"This port has been open to foreign commerce for several years, but has not been able to make much progress. The port itself has not a single house, and the first adjacent town is Colima, formerly the capital of the territory bearing the same name, now embodied with the department of Michoacan.

"Colima, it is true, is a large town, of considerable consumption, containing about thirty thousand inhabitants; but the distance from the port (thirty leagues) and the difficulty of communication, the roads being passable in the dry season only, naturally augment the expenses on any mercantile transaction, to such a degree that it scarcely pays, as any cargo which could be introduced, would be merely to supply the district of Colima. Such drawbacks, added to the detention, deter vessels from touching at Manzanilla.

"Another cause which must divert the maritime trade from Colima, and Manzanilla, is the preferable market at the capital of Guadalajara for its produce of sugar, maize, coffee, cocoa, indigo, &c., and as these articles are not eligible for exportation, on account of the high cost prices, the foreign merchants could only deal in cash payments, whilst Guadalajara, which is generally overstocked with goods, via, Tampico on the east, and San Blas on the west, can supply Colima with the necessary merchandize by barter.

"The articles saleable at Colima are linsey, cotton goods, woollens, and a little hardware; but, as already stated, in small quantities, calculated perhaps for the consumption of about ten to fifteen thousand souls."

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

THE RIVER CAMEROON, with the Ambas Islands.—*By Capt. W. Allen, H.M.S. Wilberforce.*

An important portion of the African Coast is included on this little sheet, besides adding considerably as it does to our knowledge of that deceptive river the Cameroon.

LOWESTOFT ROADS.—An important correction has been made to the Chart of these roads, by Capt. Washington, H.M.S. Blazer, which affords an interesting instance of the changes continually going forward on some portions of our coast by the action of prevailing winds and sea.

TABLE LXX.

For reducing Dresden feet to English feet, and English feet to Dresden feet.

1 Dresden foot = 0.929347734 English foot.

1 English foot = 1.076023489 Dresden foot.

Dresden or English feet.	English feet, and Dec. parts.	Dresden feet, and Dec. parts.	Dresden or English feet.	English feet, and Dec. parts.	Dresden feet, and Dec. parts.	Dresden or English feet.	English feet, and Dec. parts.	Dresden feet, and Dec. parts.
1	0.929	1.076	40	37.174	43.041	79	73.418	85.006
2	1.859	2.152	41	38.103	44.117	80	74.348	86.082
3	2.788	3.228	42	39.033	45.193	81	75.277	87.158
4	3.717	4.304	43	39.962	46.269	82	76.206	88.234
5	4.647	5.380	44	40.891	47.345	83	77.136	89.310
6	5.576	6.456	45	41.821	48.421	84	78.065	90.386
7	6.505	7.532	46	42.750	49.497	85	78.995	91.462
8	7.435	8.608	47	43.679	50.573	86	79.924	92.538
9	8.364	9.684	48	44.609	51.649	87	80.853	93.614
10	9.293	10.760	49	45.538	52.725	88	81.783	94.690
11	10.223	11.836	50	46.467	53.801	89	82.712	95.766
12	11.152	12.912	51	47.397	54.877	90	83.641	96.842
13	12.082	13.988	52	48.326	55.953	91	84.571	97.918
14	13.010	15.064	53	49.255	57.029	92	85.500	98.994
15	13.940	16.140	54	50.185	58.105	93	86.429	100.070
16	14.870	17.216	55	51.114	59.181	94	87.359	101.146
17	15.799	18.292	56	52.043	60.257	95	88.288	102.222
18	16.728	19.368	57	52.973	61.333	96	89.217	103.298
19	17.658	20.444	58	53.902	62.409	97	90.147	104.374
20	18.587	21.520	59	54.832	63.485	98	91.076	105.450
21	19.516	22.596	60	55.761	64.561	99	92.005	106.526
22	20.446	23.672	61	56.690	65.637	100	92.935	107.602
23	21.375	24.748	62	57.620	66.713	150	139.402	161.404
24	22.304	25.825	63	58.549	67.789	200	185.870	215.205
25	23.234	26.901	64	59.478	68.865	250	232.331	269.006
26	24.163	27.977	65	60.408	69.941	300	278.804	322.807
27	25.092	29.053	66	61.337	71.017	350	325.272	376.608
28	26.022	30.129	67	62.266	72.094	400	371.739	430.409
29	26.951	31.205	68	63.195	73.170	450	418.206	484.211
30	27.880	32.281	69	64.125	74.246	500	464.674	538.012
31	28.810	33.357	70	65.054	75.322	550	511.141	591.813
32	30.739	34.433	71	65.984	76.398	600	557.609	645.614
33	30.668	35.509	72	66.913	77.474	650	604.076	699.415
34	31.598	36.585	73	67.842	78.550	700	650.543	753.216
35	32.527	37.661	74	68.772	79.626	750	697.011	807.018
36	33.457	38.737	75	69.701	80.702	800	743.478	860.819
37	34.386	39.813	76	70.630	81.778	850	789.946	914.620
38	35.315	40.889	77	71.560	82.854	900	836.413	968.421
39	36.245	41.965	78	72.489	83.930	1000	929.348	1076.023

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

Whitehall, April 3.—The Queen has been pleased to direct letters patent to be passed under the Great Seal, for granting the dignity of a Knight of the United Kingdom of Great Britain and Ireland unto Captain Thomas Maitland, of the Royal Navy, C.B.

Downing Street, April 3.—The Queen has been pleased to appoint Robert Fitzroy, Esq., Captain in the Royal Navy, to be Governor and Commander-in-Chief of the Colony of New Zealand.

PROMOTIONS.

CAPTAIN—G. Ramsay.
LIEUTENANT—Wilson.

APPOINTMENTS.

CAPTAIN—C. G. E. Napier to study at Naval College—W. N. Glascock to *Tyne*.

COMMANDERS—N. J. C. Dunn to *Victory* for service at Weymouth—R. H. Fleming to *Queen*.

LIEUTENANTS—T. Spark (1812) to *Polypheusus*—G. E. Hamond (1835) to *Impregnable*—F. Lowe (1837) to *Prometheus*—W. E. Triscott to *St. Vincent*—F. Kemble (1841) to *Caledonia*—L. G. Halstead (1843) add. to *Cornwallis*—T. Aldridge (1801), R. Reid (1843), and A. Heseltine to *Sappho*—G. H. Gardner to *Excellent*.

MASTER—J. J. Ball to *Sappho*.

MATES—W. Amphlett to *Excellent*—C. M. Luckraft and S. T. Dickens to *Rodney*—G. H. Thomas to *Mastiff*—G. T. S. Winthrop to *Curacoa*—J. O. Johnson to *St. Vincent*—W. Fisher to *Caledonia*—W. B. G. Johnson to *Alban*—Hon. P. E. Pellew to *Cornwallis*—W. B. D. Blaquiére to *Impregnable*—W. C. Geary to *Beacon*.

SECOND-MASTERS—T. E. Pullen to *Rhacamanthus*—F. Hooper to *Cornwallis*.

DEPUTY-INSPECTORS OF HOSPITALS—W. C. Watt, MD., to Malta hospital—W. Lindsey MD., to *Illustrious*—G. King MD., to Bermuda hospital.

SURGEONS—A. S. Allen, MD., to *Queen*—J. W. Elliot to *Howe*—C. Wilkinson to *Devastation*—A. Osborne to *Impregnable*.

ASSISTANT-SURGEONS—W. R. Smart to *Sappho*—J. M. Mustard to *Pelican*.

MIDSHIPMEN—Hon. O. W. M. Lambert and H. F. Lyon to *St. Vincent*—F. Woolcomb and H. A. Reilly to *Rodney*—R. Purvis to *Alfred*—S. Osborn to *Excellent*—F. Bullock to *Tartarus*—Lord J. Brown and R. Oldfield to *Beacon*.

VOLUNTEERS 1st Class—H. Kelham, W. D. Harris, and A. Phillips to *Rodney*—G. J. Malcolm to *Curacoa*.

CHAPLAIN—Rev. S. B. Maughan to to *Minden*.

PURSERS—E. Smith to *Curacoa*—R. A. Clarke to *Sappho*.

CLERKS—J. E. Price and J. D. Parninter to Sir E. Owen's office—Scott to *Impregnable*—C. A. Thorne to *Raven*—G. H. Wise to *Cornwallis*.

COAST GUARD.

Appointments—Commanders S. Bradley, W. T. Taylor, and C. Gayton to be Inspecting Commanders—Mr. I. Saxly to command Scout.

Removals—Commander J. C. Bennett to Montrose—Commander R. Kerr to Ryde—Commander Madden to Lymington—Lieutenant G. T. Smyth to Swale Cliff—Lieut. T. B. Stewart to 31 Tower—Lieut. C. Dangerfield to Seaham—Lieut. E. Smith to 62 Tower—Lieut. J. H. Bellairs to Black Head—Lieut. A. M. Sharp to Portsmouth—Lieut. C. Seager to Wells—Mr. W. Curties to Kilkearn—J. Sterling to Achilberg—R. J. Turner to Greenore Point—W. H. Higden to Cashell Bay—N. D'Alton and T. Lippett to Ballycastle—C. A. La Fargue to Jury Gap.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

BLONDE, 42, Capt. T. Bourchier, 22nd March, paid off at Portsmouth.

BLLENHEIM, 72, Capt. Herbert, March 28th paid off at Sheerness.

DEE, (st. v.) April at Woolwich from West Indies.

DRUID, 44, Capt. Hobson, 9th April, arr. at Portsmouth, from China, 10th sailed for Plymouth.

HECLA, (st. v.) 26th March, left Spithead for Malta, with Admiral Sir L. Curtis, 27th at Plymouth.

HERALD, 26, Capt. J. Nias, 11th April arr. at Portsmouth with treasure from China.

INCONSTANT, 36, 21st March, arr. at Portsmouth from Mediterranean, 30th paid off.

RHADAMANTHUS, (st. v.) Mr. T. Lean, 24th March, sailed for Plymouth.

RODNEY, 92, Capt. R. Maunsell, 21st March, arr. at Portsmouth from Lisbon, 10th April sailed with troops for Cape.

SPITFIRE, (st. v.) Lieut.-Com. J. Evans. 23rd March left Plymouth for China.

STYX, (st. v.) A. T. E. Vidal, Márch 18th left Plymouth for the Azores.

VOLCANO, (st. v.) Lieut. C. Smith, 8th April left Plymouth for Sierra Leone.

AT PORTSMOUTH.—In Port, *St. Vincent, Victory, Excellent, Royal George yacht, Tyne, Cornwall* transport, *Nautilus*.

AT PLYMOUTH.—In Harbour, *Caledonia, San Josef, Druid, Sappho, Alban, Confidence, Diligence*. In the Sound, *Lynx, and Cressy* convict ship.

CHATHAM.—*Herald* paying off; *Hermes*.

WOOLWICH.—*Dee, Virago, Ruby*, two latter going to Chatham, *Gleaner* to go to Bermuda to relieve *Carron*; *Shearwater and Phoenix*.

ABROAD.

ALBATROSS, 16, Com. R. Yorke, Feb. 27th at Nassau, N. P.

AVON, (st. v.) Lieut.-Com. H. Byng, Feb. 27th at Jamaica.

BELVIDERA, 38, Capt. Hon. G. Grey, March 24th, at Gibraltar.

BITTERN, Com. Hon. C. Carey, Feb. 10th at St. Helena.

CROCODILE, 36, Capt. Johnson, Feb. 27th, at Windward Islands.

CURLEW, 10, Lieut.-Com. J. C. Ross, Feb. 21st at Rio.

FAIR ROSAMOND, 2, Lieut.-Com. A. G. Bulman, Feb. 27th Windward Islands.

HORNET, 6, Lieut.-Com. R. Miller, Feb. 27th at Bermuda.

ILLUSTRIOUS, 72, Capt. J. Erskine, Feb. 21st left St. Thomas for Jamaica.

IMAUM, 72, Lieut. J. M. Motley, Feb. 27th at Jamaica.

IMPREGNABLE, 110, Capt. Ferrett, c.b. April 1st, left Malta for England.

IRIS, 23, Capt. H. Nurse, Feb. 10th at St. Helena.

LARK, (st. v.) Feb. 27th at Nassau.

MALABAR, 74, Capt. Sir G. Sartorius, Feb. 21st at Rio.

PICKLE, 5, Lieut. Montresor, Feb. 27th, at Barbados.

PIQUE, 36, Hon. M. Stopford, Feb. 27th at Jamaica.

SATELLITE, Com. Gambier, March 5th left Bermuda for Mobile.

SAVAGE, 10, Lieut. J. H. Bowker, March 4th at Gibraltar.

SCYLLA, 16, Com. R. Sharpe, Feb. 27th at Jamaica.

SNAKE, 16, Com. W. Devereux, 8th March arr. at Smyrna.

SPARTAN, 26, Hon. Capt. Elliott, 27th Feb. at Jamaica.

THUNDER, (st. v.) Com. E. Barnett, 27th Feb. at Nassau.

THUNDERBOLT, (st. v.) Com. G. N. Broke, 8th March at Madeira.

TWEED, 20, Com. H. Douglas, 27th Feb., at Barbados.

VANGUARD, 80, Capt. Sir T. Fellowes, 24th March at Gibraltar.

VINDICTIVE, 50, Capt. J. T. Nicholas, 20th Nov. arr. at Hobart Town.

VOLAGE, 26, Capt. Sir W. Dickson, 27th Feb. at Jamaica.

WARSPITE, 50, Capt. Lord J. Hay, 27th Feb. at Jamaica.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

March 24th, the lady of Lieut. J. H. Norcock, RN., of a son.

At Bruton, Somerset, the lady of Com. Festing, RN., of a daughter.

At Newcastle, Down, the lady of Lieut. Carrol, RN., of a son.

At Chiefswood, Roxburghshire, the lady of Capt. Craigie, RN., of a daughter.

At Monte Notte, Cork, the lady of Capt. Connor, RN., of a son.

At Ballycreeone, March 18th, the lady of Lieut. Robertson.

In Ecclestone-street, the lady of Capt. Montague, RN., of a son.

Marriages.

April 6, at Greenwich, Capt. H. M. Dobbie, son of the late Capt. Dobbie, RN.

to Ellen, daughter of E. H. Locker, Esq. Commissioner of Greenwich Hospital.

March 28th, at Richmond, the Rev. G. G. Guyon, son of Capt. Guyon, RN., to Harriett, daughter of T. Price, Esq., Richmond.

March 5, at Malta, Lieut. Sharpe, RN. to Marianne, daughter of the Rev. E. Montague, of Swaffham.

At Ealing, Mar. 20th, G. Moon, Esq., to Alicia Elizabeth, daughter of R. Parker, Esq., RN.

Deaths.

At Eastry, Kent, Feb. 28th, J. Rae, Esq., surgeon, RN.

Lately in the Pacific, T. Giles, Esq., purser, RN.

At Greenwich, Capt. E. A. Burnaby, RN., son of the late Admiral Sir W. Burnaby, aged 81 years.

Suddenly, Mr. E. Scott, purser, RN.

At Glasgow, J. Stevenson, Esq., RN.

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, 1843.

Month Day.	Week Day.	BAROMETER.		FAREHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9AM	3PM	UMB	SHK	Quarter.		Streng.		A.M.	P.M.
								A.M.	P.M.	A.M.	P.M.		
21	Tu.	In. Dec.	In. Dec.	0	0	0	0	S	S	2	4	b	o
22	W.	29-50	29-46	50	57	45	59	SE	SE	2	3	ber 1)	o
23	Th.	29-40	29-46	51	58	48	60	SE	SE	3	4	o	bc
24	F.	29-42	29-54	52	56	48	58	SW	SW	3	4	bc	bc
25	S.	29-55	29-65	50	59	44	60	E	SE	3	2	bc	bc
26	Su.	29-75	29-75	45	49	42	50	E	E	6	6	qbc	qbc
27	M.	29-75	29-74	41	49	36	50	E	E	6	6	qb	qb
28	Tu.	29-72	29-70	40	42	37	43	E	NE	5	5	o	o
29	W.	29-70	29-75	44	49	37	50	NE	NE	5	4	bc	bc
30	Th.	29-91	29-97	39	50	29	52	F.	E	3	2	bc	bc
31	F.	29-85	29-78	45	53	32	56	S	S	2	4	bcm	or 4)
		29-50	29-43	52	54	46	60	S	S	3	3	o	or 3)
1	S.	29-53	29-51	51	57	47	58	S	SW	6	6	qor (2)	qor (4)
2	Su.	29-50	29-57	53	58	49	59	SW	SW	6	6	qbcp (2)	qbcp (3)
3	M.	29-80	29-80	53	59	48	60	SW	SW	4	3	o	bc
4	Tu.	29-40	29-37	51	48	47	54	S	SW	2	5	or (1)(2)	qor (3)
5	W.	29-71	29-83	48	52	41	55	W	W	5	6	qbcp (2)	qberh (3)
6	Th.	29-86	29-74	50	55	41	56	S	SW	4	5	or (2)	o
7	F.	29-59	29-55	53	60	51	61	SW	SW	4	6	od (2)	qbc
8	S.	29-55	29-58	48	55	46	56	W	W	6	6	qber (1)	bc
9	Su.	29-60	29-60	46	48	41	49	E	NE	3	3	o	o
10	M.	29-88	29-90	39	40	34	46	N	NW	4	4	bc	bcp (3)
11	Tu.	29-95	29-97	36	44	28	45	N	NW	4	4	b	bc
12	W.	29-94	29-91	36	42	27	43	N	N	2	3	bm	bcps 3)
13	Th.	29-76	29-84	37	44	29	45	N	N	3	4	beps 1)	bcps 3)
14	F.	29-88	29-90	44	51	30	52	W	W	5	6	o	qo
15	S.	30-10	30-10	50	56	45	59	W	SW	2	2	o	o
16	Su.	29-95	29-88	53	63	47	64	E	E	3	3	b	b
17	M.	29-90	29-96	50	64	43	65	NE	NE	2	2	bc	bc
18	Tu.	30-13	30-13	47	63	40	64	N	NE	2	2	bm	bm
19	W.	29-96	29-88	47	62	41	63	E	E	2	3	o	o
20	Th.	29-71	29-75	53	67	42	68	SW	SW	3	3	bc	bc

MARCH—Mean height of the Barometer = 29-886 inches ; mean temperature = 42-9degrees ; depth of rain fallen 0-52 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

The papers concerning the voyage of the UNICORN have reached us. Captain Williams' intentions of being useful to his brother seamen shall be seconded as they should be.

We have received several communications too late for our present number, and cannot promise immediate insertion after the 20th of the month.

BY
LETTERS



ROYAL
PATENT.

EDWARDS' PRESERVED POTATO,

TO KEEP IN ALL CLIMATES.

The keeping qualities of the Patent Preserved Potato in every variety of climate having now been fully tested and approved of, and its desirableness as a fresh vegetable generally acknowledged and appreciated during long voyages to distant parts of the world, its merits are established as an excellent and invaluable article of food, unequalled in cheapness and portability, and defying the effects of time in any climate to injure its inherent nutritious quality and flavour.

A quarter of a pound of the concentrated vegetable, by merely pouring over it a little boiling water, is at once converted into more than one pound of mashed potato, and that of a quality and flavour superior to, and more nutritious than, the best potato in its natural state, its being cooked in a few minutes, and no fire heat required, a great saving of time and fuel is effected by its use.

These great advantages, combined with the high opinions expressed in the certificates of Professors Brande, Daniell, Ure, Dr. Paris, &c., which are a guarantee as to its wholesomeness, are amply confirmed by the numerous testimonials the Patentees have received from all quarters of the globe, as also by special reports made to the Government and the Hon. East India Company, approving of it in the highest terms. Its practical utility is not confined to the mere production of an excellent dish of vegetable food; for, by the Preserved Potato being mixed with flour and well boiled, it produces without suet or eggs, a light and wholesome pudding; also, in bread making, pastry, soups, and a variety of other useful combinations it is alike valuable, while its great economy, portability, and facility of cooking, render it peculiarly suitable to the hurried meal of the tempest-driven mariner, the soldier on his march, or the emigrant on his voyage; in fact, all classes of persons in all situations and times, either at sea or on shore, may obtain in a few seconds a ready dish of excellent relishing food from the Patent Preserved Potato.

In addition to these advantages, the cost of the Patent Preserved Potato will be less than that of any other description of food; the Patentees, under the conviction of its extensive use, having determined to offer it to the public at a price (*delivered in London*) which does not exceed ONE PENNY PER POUND as the cooked Vegetable.

Among the numerous Testimonials, &c. in possession of the Patentees are the following:—

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 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, sago, or arrow root.

July 30th, 1842.

(Signed)

ANDREW URE, M.D., F.R.S., &c.

Extract of a letter, dated H.M.S. Cornwallis, Chusan, 6th Nov. 1842.

Although from the moment I first saw the Preserved Potato I never had a doubt of its excellence, but deferred giving an opinion on the subject, until it had a fair trial, which has now been the case, it having been shipped nearly two years, and passed through every variety of climate,—the summer months of China being particularly destructive to all kinds of stores; notwithstanding which, the Preserved Potato, is not only good when opened but by keeping it in canisters, remains so until all is used. His Excellency the Commander-in-Chief, with most others in the expedition, have the Preserved Potato at this day; it being quite as good, as when shipped; and, as to the expense, I am satisfied, it is more economical than the fresh potatoes, quantities of which always decay, and are thrown overboard. It is my intention, should I return to England in this ship, to bring home a small canister of the Preserved Potato.

(Signed)

W. NORMAN, Steward to

Vice-Admiral Sir W. PARKER,
Commander-in-Chief China and East Indies.

tract of Capt. H. I. Naylor, Ship Surry, Hobart Town, Sept. 3rd, 1842.
 Gentlemen.—I have much pleasure in informing you, that I have made repeated trials your Preserved Potato, and found it far exceed my expectations; I consider it a most valuable article to have on a Sea voyage, possessing all the flavour of the Potato, and certainly *much more Economical* than the Potato in its natural state; and I am satisfied if it is put into *air-tight* packages it will keep for any length of Voyage, the Barrel you put on board my Ship was by no means tight, and remained in the Main hold during the whole of my passage from London to Van Diemens Land. Notwithstanding it being so loosely packed, and being in the damp hold the whole passage, on opening it I found it perfectly sweet and good, I have so good an opinion of it, that I think I shall never carry potatoes, to sea in any other way. I found it so little known in Hobart Town, that I have been induced (for the information of my Sea-faring brethren here,) to send a description of it, with some testimonials, to the Editor of one, of the Newspapers, and he has given it a place for several days, in the *Colonial Times*, I have also given samples of it to different persons here, and they all have approved of it much.—H. I. NAYLER, master of the "Surry."

Report from Mr. Welsh, surgeon of the "Northumberland," conveying troops, Sept., 1841.

In compliance with the desire of the Hon. Court of Directors of the East India Company, I have the honour to report on the effects of a quantity of Edwards' Preserved Potato, sent on board the Northumberland for the use of the troops on their passage to Madras. The Preserved Potato has been served out to the men twice a week for the last ten weeks, at the rate of 2½ lbs. of the Preserved Potato to 6½ pints of water, the allowance for a mess of six men; this was found quite sufficient, and the men have enjoyed it as much as the fresh vegetable. I had followed up the directions of the patentees with the first messes served out, allowing 3 lb. of the Preserved Potato to 6 pints of boiling water, I found this rather more than the men consumed, and the quantity of water too little to make the vegetable of the consistence of mashed potato. The vessel used was the mess bowl, covered with a platter, and allowed to stand for twelve minutes, when the mashed potato was produced, superior to what was made from the fresh vegetable on board.

The Preserved Potato has kept of the same quality throughout the passage, and I feel confident if protected from damp it may be kept for any length of time without change. I consider Edwards' Preserved Potato a very valuable addition to the scale of victuals for the men, as it is equal in nutritious properties to the fresh vegetable, and as the men enjoy it as much, it must assist in keeping them in health. JAMES WELSH, Surgeon.

MEMO.—The Patent Preserved Potato is now adopted by the Hon. East India Company, on the scale of victualling for the Troops.

Letter from H.M.S. Wilberforce, Niger Expedition, Ascension, 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.

Extract of Letter from Capt. W. Allen, RN., of H.M.S. Wilberforce, Niger Expedition.

Gentlemen.—I am happy to be able to give you my testimony in favour of the Preserved Potato, which I found to be quite as good as the fresh Vegetable, after having been on board H.M. steam-vessel Wilberforce more than a year, at least that which was packed in tin, I had some in barrels, which, owing to the excessive dampness of the Coast of Africa, and perhaps, to carelessness in the exposure, had lost its colour, &c., though its nutritious qualities, remained in a great degree. I would strongly recommend it to be always taken in Metal cases, as the most economical way.

For Ships' crews, I think that the Preserved Potato would be found of great service, as part substitute for bread, it being usually the practice of the men, not to take up the whole of their allowance, and to exchange it for Vegetables, in harbour, they would thus have the means, if they chose, of obtaining a good Vegetable at sea, at all times, and in all climates.

(Signed) WILLIAM ALLEN.

MEMO.—Two cases of the Preserved Potato that were taken out per H.M. Steam-vessel Wilberforce are now in the possession of the Patentees, and the quality of the potato is the same as when shipped in April, 1841, for the Niger Expedition.

Gentlemen.—I have much pleasure in informing you, that I tried your Patent Preserved Potato during my passage from England to Madras, and it was the universal opinion of myself and passengers, that it was a most excellent substitute for potatoes.

Signed J. HAMILTON, Commander of the "Anna Robertson," Madras, July 20th, 1842.

Herewith are the signatures of my passengers to the above.—A. F. BRUCE, Madras civil Service; M. H. BRUCE, MARIA GILLESPIE, FREDERICA WARNER, W. H. WARNER, Lieut. Bengal Artillery; H. ROSS, Lieut.-col. Madras Army; H. P. HILL, Lieut. do. T. V. NOORE, Lieut. do., J. W. ARNOLD, W. M. HOWDEN, Surgeon, G. T. MIGLE, J. ROSS, Bengal Army; H. READ, E. J. HARDY, D. SANDERSON.

FOR CASH and not less than one cwt. supplied, packed in Metal cases.

Samples and particulars to be had of the Patentees, EDWARDS, BROTHERS, & Co. 1, BISHOPSGATE STREET, corner of Leadenhall Street, London; and of their agents at Liverpool, Bristol, Portsmouth, Devonport, and other sea-port towns.

STRAIT OF SUNDA AND PASSAGE FROM ANJER TO BATAVIA, *with Remarks upon the beacons, perches, &c., placed on the Shoals in the Outer Channel leading to Batavia Roads.*—March 1841.*

[We recommend the reader in perusing this interesting account of Sunda Strait to have before him the chart of it published by the Admiralty.—Ed.]

HEAVY squalls of wind, accompanied by thunder, lightning, and a deluge of rain ushered in the day of our making Java Head. This of course was rather perplexing; the weather during the previous week having been of the same description, almost totally precluding the possibility of our obtaining altitudes either for latitude, or, for the longitude by chronometers, and thereby rendering the chances of a good landfall rather precarious. It was particularly so at this uncertain period of the year, when the shifting of the monsoon, attended by the evils of calms, very variable winds, and a doubtful current often places a ship in the critical position of either getting into Wine-Coopers Bay in Java, and to leeward of the Head; or, with the wind from the south-east risks her being hampered among the islands upon the west coast of Sumatra; and, perhaps, ultimately compels her to bear up for the Strait of Malacca. We, however, fortunately avoided all these predicaments, and at dawn saw Java Head well on the lee bow, and bearing E.b.S., distant eighteen miles. A small Dutch barque was in sight about two miles off on our weather quarter, and by the frequent alterations of her course evidently showed that she had not as yet made the land.

The morning continued to be very squally and threatening; but, except in very severe puffs we carried on through every thing, in consequence of the wind evincing a disposition to fly out from the northward, and which would have driven us to leeward of the Head. About 11 A.M. the dense murky clouds rolled away, gradually unveiling the magnificent scenery of the Strait of Sunda. Broad on the starboard bow lay the high bold promontory of Java Head;—its dark blue crest standing out in strong relief from a sickly sky of a pale yellow tinge, and its base accurately defined by the long line of white foam hurled against the cliffs by the waves of the Indian Ocean. Right ahead the lofty peak of Keyzers Mountain in Sumatra struggled through wreaths of vapour, which, although partially dispersed near the summit of the cone, yet hung in a dense mist around the base, and over the low swamps fringing Keyzers Bay. Neither Lampoon nor Rajah Bassa Peaks were visible until noon, at which time the fogs were entirely dissipated, disclosing the coast of Sumatra and the various islands in the entrance of the Strait. A brisk breeze from north now sprung up, wafting before it that strong odour of the land so very perceptible to those who for months have been lonely wayfarers on the deep. It assailed our olfactory nerves the more strongly, being surcharged with vapours redolent of the smell of the rank vegetation of the tangled

* By J. B. C., City of Dublin Steam Company's Service.

jungles and noisome swamps skirting the northern shores of the Strait of Sunda.

Finding as we approached the dangerous reef projecting from the south-west point of Pulo Pontang-Itang or Princes Island, the wind heading us off so much that it would have been impossible to weather it, we pushed for Princes Strait, called by Dutch navigators the Behouden or Safe Passage, and which runs between Java Head and Princes Island. However, upon nearing it the wind fell light, we being then in the vicinity of the Carpenters Rocks off the point of Tanjong Hangang, and upon which the sea was breaking tremendously. We, therefore, immediately hauled off, and opened the entrance of the Great Channel again, our Dutch friend being now close to us. During the night we had some lightning, and very variable winds, principally from north-east; we, however, managed before morning to get a little way up the Strait. This day (Sunday) was very fine, and a light northerly air barely enabled the ship to hold her own against a strong current. Great numbers of trees and plantain-suckers floating about afforded us much amusement, several large birds being perched upon them, gave them the appearance of prabus full of men, as they undulated upon the long swell. A dose or two of canister shot seemed to astonish their feathered crews. Most of this drift wood being covered with barnacles attracted quantities of fish of various descriptions. The afternoon was agreeably diversified by our falling in with a ship bound from London to Singapore; the night, however, was a dreadful one, it never having ceased from 10 P.M. till daylight of Monday to thunder, lighten, and blow, in a most terrific manner; the squalls flew out from every point of the compass, and were attended by blinding torrents of rain. It was as anxious a night as ever we experienced, it being as black as Erebus, save when the blaze of lightning threw a transient gleam upon the lofty land around us, and, besides giving an idea of our position assisted us in keeping a respectable distance from the English and Dutch ships which were sometimes rather too close.

On Monday the weather was fine, with light airs from west to north, and which enabled the ship to creep slowly on. At two on Tuesday morning we were up to Pulo Crockatoa, and at 7 A.M. being still close to this magnificent island, we had an excellent view of it. A lofty sugar-loaf mountain rises rather abruptly from the S.S. Eastern extremity and slopes gradually to the northern end; the entire island is covered with wood of the most luxuriant growth, and the various tints of the foliage are most beautifully diversified. One or two small islets lie off the eastern end, and are also well wooded. While gazing upon this Oriental gem, our memory in vain endeavoured to conjure up a scene as beautiful. The morning was delightful, and the flood of golden sunshine thrown upon this fairy isle, poised as it were upon the bosom of the placid Strait, together with fitful shadows playing upon its summits as the fleecy clouds flitted past, presented a picture which the imagination of an enthusiastic painter might faintly pourtray; but to which no description ever could do adequate justice.

With a pleasant westerly breeze we passed Fourth Point, near Anjer, at 4 P.M., and at five seeing indications of heavy squalls in the eastward and right in our teeth, brought up with the small bower in 13 $\frac{1}{4}$

fathoms, the flagstaff at Anjer bearing south-east about one mile distant. The instant the anchor was down, the dispatch-boat came alongside; she brings off a large budget of letters, which are all started upon the cuddy table, they are directed to every vessel expected to pass that way, bound to Batavia, Singapore, or China, or, from thence to Europe or India. Upon the skipper selecting his billets the letters are again tossed into their receptacle; and a book is produced in which tonnage, men, armament, destination, loading, and all particulars about the vessel are inserted. It is a very interesting album, as a commander sees therein recorded the movements of many of his "brother chips," who may happen to be in those seas. There is a post from Anjer overland to Batavia, the distance is about fifty-five miles.

Having transacted business with the postman, a busy scene presents itself upon going on deck. Twenty or thirty boats and canoes are round the ship, all laden with ducks, fowls, hogs, turtle, yams, sweet potatoes, rice, joggry (or sugar), and tropical fruit of nearly every description; in addition to all this is a complete menagerie of large apes, demurely sitting upon the gunwales regarding with a melancholy gravity the antics and depredations of a legion of small monkeys of all varieties, who are busily fighting, chattering, and stealing, and for the latter accomplishment receiving monkey's allowance, in the shape of sundry well-earned buffets from their owners, who ensconced amid piles of cages containing racoons, jungle cats, the beautiful little mouse deer, doves, lories, jungle cocks, cockatoos, parroquets, and the merry little twittering Java sparrows, and which placed upon bags of paddy, heaps of pumpkins, baskets of shells, and other *notions*, endeavour to tempt the tars to part with some of their "go-ashore" toggery in exchange; the Anjer merchants knowing by long experience that Jack seldom possesses much of the circulating medium at any time.

The Javanese who board the ships passing Anjer are very sharp shrewd fellows, and generally speak a little English, which is a very bad sign, it being generally understood in the East, that the more English a native speaks, the greater the probability is of his imposing on you when he can. They are a very diminutive and ugly race, their hair is long, coarse, and black, the complexion a dirty yellow, eyes small and sunken, noses flat, and mouths of enormous width, and of a most disgusting appearance, the lips being stained red, and the teeth black by the areca or betel-nut, which they chew in large quantities. Their dress is generally a short frock or jacket of some light material, and the lower garment is generally the Malay sarong, or sometimes a pair of trousers. Some, however, affect the European nautical dandy, being tricked out in old braided jackets, and other portions of apparel discarded from the wardrobes of the spruce young neophytes, who may now be found swelling the ranks of our apprentices in the merchant service. One of our young gentlemen made the notable discovery that a new dress jacket of his had suddenly become too small for him, and by the same convenient hallucination naturally inferred that a monkey would be a fair equivalent. We, however, fortunately looking over the side, saved the fitting garment, at the same time giving the owner a hint that such a system of barter might eventually lead to a speedy marriage with the "gunner's daughter," if persevered in.

Some few years back the current coin at Anjer consisted of old iron hoops, nails, &c. This currency, however, has been most unhappily superseded by hard Spanish dollars, Dutch guilders and quart guilders, Company's rupees, English sovereigns, shillings, and sixpences, all of which are highly prized, their respective values being well understood. A Malay offered us a canoe and its entire cargo, consisting of six turtle, several dozens of fowls and ducks, with fruit, vegetables, eggs, a great number of birds, and a large monkey in exchange for a 25 lb. keg of gunpowder. However, in consequence of our destination being Batavia we declined this great bargain, not wishing to commit ourselves with the Dutch authorities, in event of their discovering the transaction; it being their policy to keep the natives in as defenceless a state as possible, and consequently prohibit their being supplied with either arms or ammunition. A large London ship, however, had been busily employed during the preceding Sunday in driving a brisk trade for ready cash at Rajah Bassa, on the Sumatra side of the Strait. The commander informed us that he sold a large quantity of powder, muskets, cutlasses, and pistols, at a long price to the Rajah and his dependants. This supply was very *apropos*, it being the period of a partial revolt against the Dutch authority in Sumatra, the forces of the Hollanders being then hemmed in at Sunkool, and placed in a very unenviable position.

Next to the high mountain, called Anjer Peak, which hangs over the village, and is very remarkable, the most conspicuous object is the pretty monument erected to the memory of Colonel Cathcart, who died in the Strait of Sunda in 1788, being then on his passage to China, as ambassador from the court of England to that of Pekin. This obelisk is painted white, and contrasts well with the dark green foliage in which it is embosomed.

With regard to the respective merits of the passages by Anjer or Rajah Bassa, being bound either way through the Strait, from personal observation and from conversations held with Commanders of ships on the subject, the preference may be decidedly given to Anjer in consequence of the great rapidity and uncertainty of the tides in the neighbourhood of the Stroom Rock rendering its proximity very dangerous, and unless in a strong breeze a ship is almost unmanageable. The depth of water on the Stroom side is almost double that on the Anjer shore except in a south-west line from the Button to Thwart-the-Way. Instances have lately been known of ships which being drifted dangerously close to the Stroom Rock, let go their anchors and ran their cables out to the clinch; they were of course still whirled on until by a lucky chance they barely went past the rock and no more. The consternation of those on board must have been great to have induced them to endeavour to anchor in sixty or seventy fathoms.*

The reef projecting from the southern end of Thwart-the-Way extends a long way further out than is generally supposed; at low water

* The recent loss a very fine ship, the Copeland of Liverpool, since our arrival in England, is a melancholy corroboration of the dangers of this passage; this ill-fated vessel having struck upon the Stroom Rock, was run upon the beach at Thwart-the-Way, with a view of saving the cargo, &c., she, however, on the ebb fell off into deep water, and instantly went down.

the sea breaks for more than a mile from the island. The ebb tide running out of the Strait of Sunda, seems on the Anjer side to split as it were round the Button Island, one half setting violently upon Thwart-the-Way reef, and the other sweeping in a southerly direction with diminished force through Anjer roads. A vessel getting under weigh from Anjer with a westerly wind and flood tide should cast as quickly as possible with her head off shore and shoot well into the Strait where she will have room and time to pick her anchor up; it being dangerous to keep a ship drifting in the roads after her anchor is out of the ground while heaving it close up, in consequence of a steep rocky point projecting to leeward of the anchorage, called Leeming. A large ship was totally lost upon it about three weeks before we passed; she drifted on while occupied in getting the anchor to the bows.

A light breeze from the westward having sprung up at 10 A.M. (Wednesday) we proceeded, our stay being about seventeen hours. As the day advanced the breeze freshened, bearing upon its wings a large Dutch Indiaman which rapidly overhauled us. This beautiful ship mounted twenty guns and appeared to be in high kelter. She passed Anjer under a crowd of sail, moonsails set and skysail studding-sails. She did not stop but merely yawed while firing a salute in running through the roads. She had a great number of troops on board. At 2 P.M. we passed point St. Nicholas, and were now fairly in the Java Sea. While running along the land we had ample leisure to admire the magnificent scenery which every where presented itself, particularly in the vicinities of Panjoriang roads and Pulo Mesak. The country is fertile in the extreme and well cultivated, plantations of sugar and pepper well laid out and enclosed, groves of cocoa-nut trees, swelling lawns and sunny slopes, with here and there the humble cabins of the Javanese cultivators peeping with a kind of "il faut me chercher" expression, from their leafy hiding places, form attractive features of the picture, which is farther heightened by the effect produced by waving groups of the graceful and feathery bamboo and picturesque clumps of trees placed by nature with almost the same precision with regard to effect, as the same ornamental plantations of our most beautiful pleasure grounds, and upon which so much care and expense are lavished. When to these charms are added a back ground of woody mountains, a fringe of sea beach of dazzling white sand, the Strait of Sunda dotted by its numerous islands, together with the distant peaks in Sumatra piercing the clouds, some faint idea may be formed of the beauties of the sail, from Anjer roads to Point St. Nicholas.

At 6 P.M. the westerly breeze failed, and was succeeded by a faint air from E.N.E. with hazy weather, we accordingly brought up for the night with a kedje and hawser in fourteen fathoms mud, the east end of Pulo Baby bearing N.N.W. four miles distant. At midnight we tried the set of the current, and found it was running to the westward two miles per hour. At noon next day the tide having turned, we got underway with a light breeze from north-east, the weather being fine and clear, while plying to windward the ship holding her own tack for tack with the Dutch Indiaman, and sometimes having the advantage. Having cleared the Pontangh Reef we made long stretches towards the Tan-ara Shoals. We observed a very large building near the mouth of the

Tanara River, apparently appropriated to drying and curing coffee. The coast in this neighbourhood is low, and contrasts strongly with Bantam peak and the high land to the south-west of Bantam Bay. At 7 p.m. brought up with the kedge in $9\frac{1}{2}$ fathoms soft mud, Maneaters Island E.b.S. six miles distant.

Friday, March 12th, tripped our anchor at 5 a.m. and proceeded with a light breeze from west accompanied by torrents of rain. During the morning the weather was so very hazy that we had great difficulty in keeping the beacon off Maneaters island in view. We passed it at 10 a.m. Between ten and eleven the Dutch ship which kept about a mile ahead of us, was two or three times obliged to drop her anchor under foot, being afraid to push on, the rain squalls being so very thick. She was however an excellent mark, and thereby saved us the trouble of anchoring. At noon the weather cleared up, we being then off the west end of the Island of Middleburgh, and had the telegraph at Onrust in sight, as well as the shipping in Batavia Roads. We accordingly reported the ship by Marryat's code. The Dutch vessel in the meantime was pushing in through the Inner Channel to the southward of the Islands of Middleburgh and Amsterdam, and to the northward of Ontong Java Reef. This is the passage generally used by the Dutch ships, and shortens the distance very materially; we entered by the Outer Channel which is to the northward of Middleburgh and Amsterdam, and to the eastward of Hoorn Islands. There is also another passage called the Great Outer Channel. It is to the northward of the Island of Great Cambays, and to the southward of Pulo Dapour.

At 3h. 30m. p.m. it fell calm, the island of Leyden bearing east, Purmerent Island and Shoals west, and the city of Batavia south, seven miles distant; we immediately brought up with the small bower in twelve fathoms mud. The beacons we observed upon the shoals scattered in the neighbourhood of the Outer Channel were, one bearing E.N.E. from the northern point of Maneaters Island, one to the W.S.W. of the Great Cambays, and bearing about N.b.E. from that off Maneaters Island, one to the S.S.W. of the Little Cambays, and another upon a patch bearing E.S.E. from the centre of Middleburgh, and north-west from the Little Cambays being about equi-distant from the two islands. This last beacon forms the starboard boundary of the Outer Channel in running in. The continuation of this passage is between several shoals on the northern side, and two large patches off Middleburgh, one of which bears due north about two miles from the west end of that island, and the other lies on the same bearing about the same distance from the Sound, when open, between Middleburgh and Amsterdam, and which is about three-quarters of a mile in width. *None of those shoals are perched* (March 1841) and which caused us a little uneasiness. The day, however, being clear, we were enabled to make out their positions very accurately from the topsail yard by the discolouration of the water. We observed several beacons in the inner and middle channels by Onrust and Purmerent. All the perches are small rude crosses, the upper part painted white and the lower black. Fishermen are much in the habit of placing long poles in deep water, to denote the positions of their nets, pots, &c., these poles having large bunches of leaves or grass flying from their

ends are very liable to puzzle strangers when in the vicinity of known dangers. The numerous islands scattered about the approaches to Batavia roads are merely small sandy cays covered with trees, and I believe wholly destitute of fresh water. The resemblance they bear to each other is so very great, that one would imagine it to be almost impossible to distinguish one from the other in hazy weather.

[We are compelled by a pressure of other matter to reserve the conclusion of this interesting paper from the pen of the commander of a British merchantman for our next number. In the meantime we recommend those who would inform themselves on Batavia Roads, and its approaches, to refer to the Admiralty chart of those roads, along with our last volume, where they will find some further important information concerning them from the pen of Captain Drinkwater Bethune, R.N.—Ed. N.M.]

CORPORAL PUNISHMENT IN THE MERCANTILE MARINE.

SIR.—In the remarks of your intelligent correspondent “*Mexicano*,” (*Nautical* for April, p. 229,) is the following passage. “Any offence occurring at sea, when it may be necessary, for example and safety of the vessel, to be punished at once; masters to do so only with consent of at least one officer; circumstances to be fully stated in the log-book; and seamen to have recourse [to the law—I suppose,] when on shore if he considers himself aggrieved.”

A man in authority, such as the Captain of a trading ship, with a discreet mind and feelings attuned to the dictates of humanity, writing on this subject, may perhaps, be excused for entertaining a desire to hold the power of summarily punishing a mutinous seaman at sea; but, he should recollect that, unfortunately *all* Masters of ships, or other vessels, are not possessed of that strict integrity of principle that would control the fiery spirit of anger, dislike of a particular individual, or any other unworthy passion of the heart. Every man, in whatever station of life he may be, might just as well desire to be the executor of the law, as a Judge, or as a Magistrate; but, it would be incompatible with reason and common sense to delegate such power to those who, in the ordinary way, have any body of persons under their authority.

The qualification required for the command of a Merchant vessel does not necessarily constitute the possessor a good judge of the mode of punishing subordinate men. Instruction, as well as character, would seem to be necessary to qualify any individual as Arbiter of the law embracing physical chastisement. And even among those who do qualify themselves, and are men of integrity, or—possess the reputation of being such—we find instances of mal-administration. I believe that, we may consistently with truth, contend that the education, the habits, and the little check that there is upon the will of the particular class alluded to, would disqualify very many of the ship-masters for exercising, with that moral control which is absolutely necessary, a power of such latitude.

Is it not notorious that men in command view impropriety of conduct in their subordinates through a very different medium? One will

think the transgression sufficiently punished by verbal correction, and by serious warning—whilst another will fancy it deserving of severe bodily punishment. It is true many persons may entertain opinions very similar; but assuredly *all* do not, in cases of this very nature; and we see instances every day of the inconsistency of human nature, of its capriciousness, and above all, often, how slightly the passions of the heart are held in due subjection by the dictates of reason or of conscience!

I would calmly ask of the disinterested, whether such a responsibility would sit well upon a class in which the conduct of so many of its members have met with deserved reprehension? The voice is from themselves—you cannot discriminate—the power must be general, if allowed—and, if it were possible to find out those who are sober, steady, and humane, in disposition and practice, and to delegate such authority to them—would not such a law be a monstrous and anomalous absurdity?

For my own part, if I was the Master of a ship, I should not feel very comfortable with such a privilege in my possession; because, as such, unqualified in any way for the exercise of so grave a power, I should mistrust my impartiality. Depend upon it, Sir, that the Merchant service would not be improved by such a concession being granted to it.

At present the Captain of a Ship has the power of confining an outrageous mutineer in irons, or “bilboes,” as the sailors term the anti-locomotive instrument; and to bring him to punishment when he arrives in harbour.* Besides if summary chastisement should, in any case, prove to be *absolutely necessary*, by the testimony of creditable witnesses, to check general mutiny, the law of the land will not desert the Captain that inflicts it—on that point nothing more seems to be called for.

But I am of opinion that, few cases can arise when the necessity for extreme coercion would supercede the good effect of a temperate but firm determination, seasonably applied, to be obeyed in every lawful command. Mutiny—such at least as would seem to require only † corporal punishment, seldom displays itself, when the men are governed correctly, and the Commander in every respect supports *his* station. This is my belief; and I think, from all which has appeared in the *Nautical*, it will be subscribed to by most of your readers.

A CAUTIOUS (and therefore a true) FRIEND TO THE SEA-SERVICE.

TYPHOON IN THE CHINA SEA.

*City of Dublin Steam Company's Vessel Liffey,
Liverpool, May 2nd, 1843.*

SIR:—Being restrained by diffidence from obtruding myself upon the notice of the readers of the *Nautical Magazine*, I requested you to affix merely my initials J. B. C. to the account of a typhoon which appeared

* I think the expense of such a proceeding should be paid from the offender's wages, and by the public, if he is condemned; if not so, by the master.

† Comparatively with the last of punishments—Death.

in the August number of your periodical for 1842; I however am now reluctantly compelled to abandon my incognito in consequence of having read in the *Nautical* for this month, an account of the same typhoon written by Commander Hay, R.N., in which some discrepancy appears between our respective registers as to the points from which the wind blew at 4h. 8m. and 10h. to 11h. A.M.: for the information of Captain Hay I beg to state that, the ship I commanded, the *Bencoolen* of Liverpool, lay about half a mile from the battery on the main land, and in which the Bengal volunteers and a party of the 18th regiment were at different periods quartered, and bearing about E.b.S. from the ship; H.M.S. *Druid* being the only man-of-war anchored between the fort and ourselves. All the rest of H.M. ships were to the westward and south-westward of us. With regard to the accuracy of my barometer I have to remark, that it always stood a tenth lower than many others I have met with, but it is a glass upon which the utmost reliance can be placed. I left it in the care of Messrs. Steele, the opticians of Liverpool, for some length of time after my arrival, and they have assured me that a more correct instrument cannot be; and during the late tempestuous winter, I tested it severely upon my passages between Liverpool and Dublin, and must say that its predictions were almost miraculous. The perfect coincidence too between it and the sympiesometer, during the height of the hurricane, and upon the breaking of the gale the steady rise of the barometer, irrespective of the squalls which like the last flashes of the expiring lamp, were the precursors of the stilling of the tempest, and had the due effect of retarding the rise of the more sensitive instrument, are beautiful evidences of the correctness of the mercurial observation. The glasses on board of my ship began to rise at precisely 11h. 42m. by the Commodore, I being very punctilious about keeping my pocket-watch set by the time of one of H.M. ships, it being a compliment which, in my opinion, is due from every merchant ship (while in harbour) to the pendant, and my chief officer and I were most attentive to the first rise of the mercury, on account of the crisis which might be expected at the change, and consequently relieved each other on deck, not leaving the instruments unobserved for one moment after they were at the minimum.

Adverting to my notices of all the circumstances connected with the hurricane of the 21st of July, I beg to say that I showed my slate, having the original remarks on it, written during the height of the gale, to several Naval officers, and Commanders of merchant vessels in Hong-Kong, all of whom were perfectly satisfied of the correctness of my observations. I also furnished copies to several persons, and among them to the Naval instructor of one of the frigates, and throughout made every endeavour to give a matter of fact account of the storm, with the hope of furnishing a link in the advancement of our knowledge of the theory of storms, by giving merely a statement of occurrences as I observed them, leaving the mysteries to be developed by correspondents possessing such scientific attainments as Captain Hay, and other contributors, it being my object as an humble collaborateur in the cause, to search for the raw material, leaving the fashioning of it to persons more "au fait" at the handling of a subject so abstruse as the laws regulating the movements of hurricanes.

I regret that any differences should exist between the respective accounts, and can duly appreciate the gallant officer's disinterested anxiety to reconcile them, but still I must say that no occurrence during my nautical career, engaged so much of my attention as this typhoon, in consequence of my mind being deeply pre occupied on the subject, by the perusal of Colonel Reid's work on storms, and also of the articles from the instructive pens of Stormy Jack and others, from time to time appearing in the *Nautical Magazine*; and also being under the thorough conviction that a typhoon might be expected, I housed everything a fortnight beforehand, and made every other preparation for encountering it, and on the night of the 20th, securely griped the boats, sent the awnings below, &c., and on the morning of the 21st, when the hurricane commenced in earnest, ruled columns for wind and fluctuations of the mercury, on the marble slate upon which I work my time, &c., when at sea, and remarked to my chief officer, a very intelligent man, and now in command of the *Bencoolen*, that it behoved us to watch narrowly all the phenomena that might occur during the progress of the meteor with a view of sending a correct account of it to the editor of the *N. M.*

In conclusion I hope upon a review of my article on the typhoon, that the minuteness of my observations both before and during the gale, as well as the opinion expressed by your valuable correspondent "Stormy Jack," in page 682 of your volume for 1842, of the perfect coincidence of the observations, will substantiate my account of the gale, as I experienced it *in that part of the harbour in which I lay*. I also beg to suggest to Capt. Hay that, the wind which the *Bencoolen*, lying at the north side of the anchorage, experienced at N.W.b.N.; and at 8h. A.M. at N.b.W. (the wind at 7h. 30m. A.M. being N.N.W.,) might after blowing across the harbour, and striking the high land of Hong-Kong with tremendous violence, be deflected, sweeping in a direction eddying parallel to the beach of the island, and rush upon the *Pylades* in a direction from east to west, (that ship to the best of my recollection being at a considerable distance to the south-west of us, and close to Hong-Kong,) until at last the gale veering to east became a true wind down the harbour from the *Ly-e-Moon* passage to both vessels. I leave this to his consideration, and perhaps upon further investigation it may be found we are both correct, and what are, perhaps only apparent discrepancies reconciled. However, being unshaken in the faith of my observations made on the north side of the harbour, I will be guilty of a plagiarism from Captain Hay, and using his words say:— "But I will leave it in your hands as it cannot be in better, and will be happy to attend to any suggestions you may make."

I am, &c.,

JOHN B. CALDBECK,

Late Commander Ship Bencoolen.

P.S. I have to remark that the *Bencoolen* did not start her anchors in the slightest degree whatever during the typhoon; it is recorded in the journal of the *Pylades* that *all* the merchant ships were driving.

We think that our correspondent, the late commander of the *Bencoolen*, who has given satisfactory evidence of his attention to this im-

portant branch of his profession, has amply accounted for the difference in the direction of the winds experienced by his ship and the Pylades. No doubt the immediate presence of high lands must influence to a certain extent the direction of the wind in their vicinity, and the island of Hong-Kong, as well as the adjacent coast, is sufficiently high to do so, as Captain Hay admits.

With regard to the barometer there are so many causes operating to produce a difference between the heights of all barometers, that it would perhaps be difficult to find two always alike. Still the fact of its rising or falling is a sufficient indication for the seaman, but this quality will be vitiated if there should be the least particle of air in the mercury. The difference of level or the absolute height of the mercurial column will be affected by this fault, and also by the different relative capacities between the cisterns and their tubes in different barometers.* We have recently had under our own immediate inspection about 20 barometers of the first makers, some of which shew the difference of a tenth of an inch and more from the standard; some provided with a correction for capacity of the cistern, and some not, to compensate for the difference of level of the mercury in it after any displacement or accumulation of it in the tube. We, therefore, consider both the observations of Captain Hay and Captain Caldbeck to have been correctly made, and in themselves perfectly satisfactory, and we are glad to see officers of the two services thus directing attention to a branch of their profession, to study and acquire a knowledge of which should be the care of every one. Indeed we consider that the captain of a ship without the theory of hurricanes at his fingers' ends, has only half learnt the use of his barometer, for what concerns him more we should like to know, than a knowledge of the changes of wind likely to follow each other in a gale, in order that he may know the best thing he can do while he is in it so as to get soonest out of it, and perhaps save his ship from destruction. It is not surrounded with the difficulties it is imagined to be, and any one following the simple method of laying down the direction of the focus at consecutive times, as we mentioned in our last number, from a point of observation will after a little practice, by a comparison of his observations with others, not only soon master the subject, but acquire an insight to it which will gradually induce a taste for it, that may on some unexpected occasion be of the utmost service to him. We hope both these gentlemen will enable us to record their future observation on this important subject.—ED. N.M.

THE LIFE BOAT EXPERIMENT.—The Beach lately displayed a very animated scene from the concourse of people, of all ranks, who assembled to witness the Life Boat Experiment and Capt. Manby's Rockets. The evening unfortunately, however, was exceedingly wet, and it rained incessantly during the whole of the time,—notwithstanding which the Rockets and Shells were tried and found completely to answer the purpose.

* A paper on this subject by Capt. Milne, R.N., will be found in our volume for 1835, p. 212.

The object of the experiment was to see whether, in case of a ship been wrecked or driven ashore in the outer surf, a rope could not be conveyed to it by means of a shell and mortar, or a rocket, which the people on board might lay hold of, and by means of which they might land with safety, which we are happy to say answered the purpose to perfection. Each shell and rocket fired carried its line to the Dhony representing the wreck, and afforded the most satisfactory proofs that the invention is fully adapted to the purpose.

Nothing we are informed, could exceed the activity of the Assistant-Master Attendant in the preparations making during the whole of the day, while his management of the supposed wreck—of which he represented the Commander during the experiment—was beyond all praise.

With respect to the Life boat we cannot say much. It appears to us that the one tried on Saturday was in no way superior to those which were tried before it. It does not carry power sufficient with it to answer the purpose, having, we believe, but four seats for rowers, and those so confined that Natives occupying them would lose much of their labour: six or eight would certainly be required to enable the Life boat to beat up against the surf and get through it, without which it could but look on and would be perfectly useless. Indeed we think that if a Life boat is at all to be established, it must be manufactured on the spot and its construction left to our own beach authorities—Captain Biden and Captain MacKennie, who are, in our mind, far better qualified to judge of what will suit the coast than any one at home is likely to be.—*Madras Paper.*

M. CLEMENT'S NAUTICAL INVENTIONS.

On the Sillomètre, Sub-Marine Thermometer, Steam Indicator, Derivomètre, and External and Internal Thermometer.—Communicated by CAPTAIN WASHINGTON, R.N.

BEFORE proceeding to give a description of these instruments, and particularly of the Sillomètre of Mons. L. Clément of Rochefort, some account of which appeared in the May number of the *Nautical Magazine*, it may be as well to state briefly what has been done in former times as to finding a substitute for the common log, which, it must be confessed, is a sufficiently primitive method of measuring the speed of a ship.

1. It is said that as far back as the time of Augustus, it was proposed by Vitruvius to pass an axle or shaft through the side of a ship, having a wheel at each extremity; from the inner wheel a stone fell at each revolution and the number of stones determined the rate of the vessel's speed.

2. The Marquis DE POLENI who gained a prize from the French Academy for his invention, about the year 1720, proposed to tow a globe at the end of a long line connected with a lever which raised a weight at its other extremity and pointed out the speed on a graduated arc.

3. M. PITOT proposed a machine composed of two glass tubes, the lower end funnel shaped and bent towards the ship's head, in which the water rose according to the rate of the vessel's going.

4. M. SAVERIEN proposed a globe about four feet below the surface

of the water fixed at the end of a long lever, the upper end to raise weights according to the degree of tension, and thus give the rate.

5. The *Marine Surveyor* of Henry DE SAUMEREZ of Guernsey, on being towed astern of a ship acquired a rotatory motion which was communicated to a machine of clock-work on board, whence the rate was shewn on a dial.

6. RUSSEL'S *Perpetual Log* was a spiral machine towed astern much on the same principle as that of De Saumarez

7. FOXON'S *Log*, also perpetual, was very similar.

8. The *Navivium* by Joseph GILMORE was composed of a wheel and pinion fixed to the keel of a ship; its movement was communicated to clock-work within by means of a metal rod.

9. GOTLIEB'S *Perpetual Log* is an instrument nearly similar, with the addition of a box to guard the exterior wheel-work.

10. The *Nautical Dromometer* of Benjamin MARTIN is an instrument of the same kind, only to be fixed to the side of a ship.

11. HOPKINSON of Philadelphia proposed a metal lever, with a circular plate at the lower end, against which the water acted, and was regulated by a spring, an index shewing the rate of the ship in degrees on a graduated arc.

12. BOUGUER, the companion of De la Condamine in his voyage to Peru, proposed a globe of 6 or 7 inches diameter to be towed astern, the other end of the towing line to be connected with a lever which should raise weights according to the rate of sailing.

13. The *Hydroscope* of Count DE VAUX, proposed in 1803, consists of one or more globes of six inches diameter sunk in the water, level with the keel, passing through a vertical copper pipe, as near the centre of gravity of a ship as may be; the globe is connected by a brass chain with the end of a horizontal lever, the other end of which communicates with a brass slide attached to a spiral spring; this spring is intended to measure exactly the force of the resistance the globe meets with in passing through the water, which is rendered into knots on a dial, and thus shews the rate of a ship's sailing, or the rate of current when at anchor.

14. An addition to this instrument by the Count DE VAUX, was to shew the amount of distance run, by a comparison between two clocks, or, as he preferred, a *clepsydra* or sand glass, which ran out once in 60 miles when it required to be refilled; this machine would give the whole distance run, as well as the rate of sailing.

[Captain Beaufort carried out the former of these two plans, we believe, and had it fitted to his boat during his well known and admirable survey of the Coast of Karamania in 1812.]

15. MASSEY'S *Patent Log*, on the same principle as the *Marine Surveyor* of De Saumarez, is too well known to need a description, and as far as our experience goes shews the distance run correctly.

16. The *Marinodometer* of Captain Arthur BINGHAM, R.N., which in 1824 he fitted to the keel of the *Tourist* steamer, was somewhat similar to the *Navivium* of Gilmore as far as we can learn.

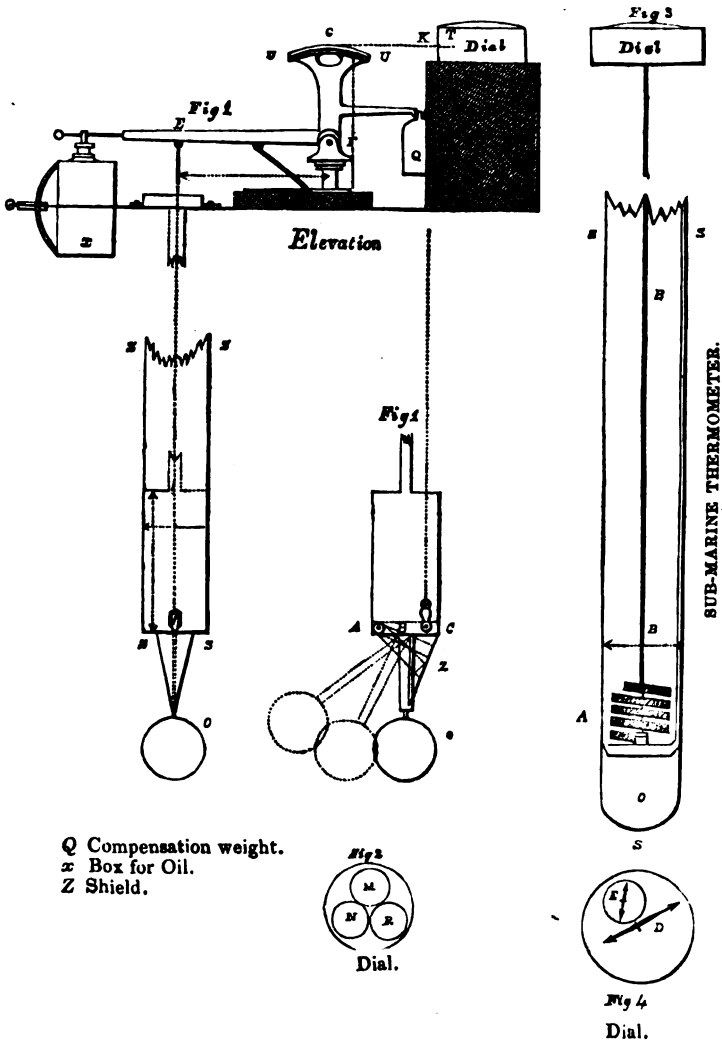
17. A plan not unlike that of M. Pitot (No. 3.) was fitted to the *Rhadamanthus* steamer, Captain George EVANS, R.N., in 1830, we believe, but was not found to answer.

18. Mr. PURCELL of Hamburg, in 1841 proposed a square plate or vane to be fixed under water at the lower end of a metal rod, the upper end connected with a spring; the amount of torsion is shewn on a dial by an index.

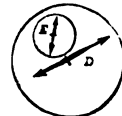
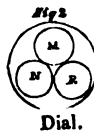
19. AYRE's *Patent Log* consists of a small pear-shaped ball towed astern at the end of a line, the other end is carried over a heavy roller which it turns according to the amount of tension, an index shewing the resistance in knots.

Lastly. The *Sillomètre* of M. CLEMENT, which we now propose to describe in detail.

SILLOMETRE.



Q Compensation weight.
 x Box for Oil.
 Z Shield.



The name *Sillomètre* is composed of the two french words *Sillage* (headway), and *mètre* (measure), and might be well rendered in English Speed-gauge. This instrument consists of a hollow copper ball, *fig 1*, about five inches in diameter, suspended under the ship's bottom, nearly amidships, from the middle of a bent lever A C about five inches long; one end of this lever moves on a joint A, its fulcrum, attached to the lower end of a metal rod which passes vertically through a copper tube carried from the deck through the bottom of the ship near the keel; at the other end of the lever is attached a chain C which leads upwards and acts upon a second horizontal lever E F on deck. This second lever corresponding to the lower one, gives motion, by means of a spring, to an index which marks on a dial the speed of the ship expressed in knots and tenths of a knot.

Such is the whole of the apparatus of the simple *Sillomètre*. It will be readily understood that as the vessel moves through the water, the fluid acts upon the ball, which being circular always presents the same section, and causes it to move aft, thereby depressing the fore end of the lever which by the chain communicates with the dial on deck. The scale by which to graduate the knots on the dial was found by M. Clément after numerous experiments. This instrument in its simple form shews the speed of the vessel, not the amount of distance run.

The Compound *Sillomètre* consists of the same mechanism, with this addition, that the power which moves the index is applied at the same time to a watch, and accelerates its movements in proportion to the intensity of the moving power, or as the vessel quickens her speed.

A second watch is placed by the side of the first, in order to shew how much the former gains upon the latter; and knowing that for every 6 seconds of gain the vessel will have made a mile, it is easy to know the distance run.

It is evident that this compound instrument is very superior to the simple one, but its accuracy depends upon the regular going of two good watches, a result not very easily obtained at sea.

The *Sub-Marine Thermometer* is a very delicate instrument composed of a ribband formed of two metals of unequal contraction and expansion, as platina and silver, and rolled in the form of a helix A, *fig. 3*, round an axis B, which turns as the temperature of the water varies. This motion by a train of wheels and pinions is immediately communicated to two pointers on a graduated dial on deck, and which may be read off easily to hundredths of a degree.

The whole of this apparatus is enclosed in a metal tube, which passes through the bottom well aft in the run of the ship. The helix or thermometer is therefore always at a certain depth in the water, say 10 feet below the surface; and it shews instantly every change in its temperature.

As few observations have been regularly made on the temperature of the water of the sea at a certain depth, this machine may lead to some novel results.

The *Steam Indicator* points out the temperature and consequent pressure of the steam in the boilers; it is composed of a ribband or blade of

two sensitive metals of unequal expansion, turned in a spiral form; one end is fixed to the tube or pipe in which it is contained, the other connected with a spindle bearing the pointers which indicate the temperature of the steam on a dial on deck, in degrees and tenths of a degree. This instrument is connected by a small pipe with the boiler or steam chest through which the steam reaches the spiral, which instantly causes any variation in temperature to be shown by the dial on deck: in high pressure engines this may be found useful.

The *Derivometre* is an instrument somewhat on the principle of the *Sillomètre*, and intended to measure the drift of a ship; this is done by a vane placed on the keel, connected by a rod with a dial—the vane of course takes the opposite position to the drift of the vessel, which is communicated by the turning of the rod to the pointers on the dial on deck.

The *Internal and External Thermometer*, as its name indicates is a highly sensitive thermometer, so placed against the wall of an observatory or house, as to shew the temperature of the air within and without. The two pointers which mark this are on the face of the same dial.

We believe that Her Majesty has ordered such an instrument to be placed in one of the apartments in Buckingham Palace.

We now proceed to the trial of the three first-named of these instruments, as fitted on board H.M.S. *Blazer* in April last.

REPORT.

MONDAY, 3d April, 1843.—H.M. steam vessel *Blazer*, having been fitted with three newly-invented instruments by M. Clément of Rochefort, namely, a *Sillomètre*, to measure the rate of speed,—a *Steam Thermometer*, to indicate the temperature of steam in the boilers,—and a *Sub-marine Thermometer*, to show the temperature of the sea at 10 feet below the surface, was directed to proceed down the river on trial, having on board M. Clément the inventor, Mr. Cary who had constructed the present set of instruments, and Mr. Large of Woolwich Dockyard, who had superintended the fitting of them in the vessel.

Before starting, made a trial under the superintendence of Mr. Lloyd, chief engineer of Woolwich Dockyard, of the temperature of the steam by the steam thermometer, as compared with the elasticity of the steam as shewn by the steam gauge, at each lb. pressure; making due allowance for the height of the barometer, and using the temperature, as given in Dalton's experiments, corresponding to the inches of mercury in the steam gauge. The results obtained were as follows:—

		Steam Ther.		
		Cent.	Inches.	
At 5½ lbs. pressure	1st exp.	110·4	Barometer	29·85
"	2nd do.	110·2	Height of steam gauge	0·25
	Mean	110·3		
Temp. by Dalton's tables		108·7		40·10
Difference		1·6		

At 3lbs. pressure	1st exp.	107·0	Barometer	.	.	29·85
"	2nd do.	107·0	Height of steam gauge	.	.	6·0
	Mean	107·0				
Temp. by Dalton's tables		105·2	.	.	.	35·85
Difference	.	1·8				
<hr/>						
At 1lb. pressure	1st exp.	103·3	Barometer	.	.	29·85
"	2nd do.	103·3	Height of steam gauge	.	.	2·0
	Mean	103·3				
Temp. by Dalton's tables		101·7	.	.	.	31·85
Difference	.	1·6				
<hr/>						
At 4lbs. pressure	1st exp.	108·4	Barometer	.	.	29·85
"	2nd do.	108·4	Height of steam gauge	.	.	8·0
	Mean	108·4				
Temp. by Dalton's tables		106·9	.	.	.	37·85
Difference	.	1·5				
<hr/>						
At 2lbs. pressure	1st exp.	105·4	Barometer	.	.	29·85
"	2nd do.	105·3	Height of steam gauge	.	.	4·0
	Mean	105·3				
Temp. by Dalton's tables		103·4	.	.	.	33·85
Difference	.	1·9				
<hr/>						
At 0 pres. safety valve open		101·3	Barometer	.	.	29·85
Temp. due to height of barom.		99·7				
Difference	.	1·6				

Tested also the Sub-marine Thermometer by sinking one of Newman's Standard Thermometers 10 feet below the surface of the water, and keeping it there half an hour. At high-water the temperature by M. Clément's Sub-marine Thermometer was 45°·9; by Newman's Mercurial Thermometer 46°·0. Temperature of air 47° Fahrenheit.

Tried also on shore in the dockyard, by a quadrant, the angles at which the centre of the ball of the Sillomètre would stand when the index marked different knots on the dial, and found as follows:—

The ball left to hang, with the chain loose, being in the position taken in the water when at rest.

The chain tight	0 deg. on quadrant.	0	knots on dial.
"	10	"	0
"	15	"	2·2
"	20	"	4·5
"	25	"	6·6
"	30	"	8·6
"	35	"	10·3
"	40	"	11·5
"	45	"	12·1
"	50	"	12·8

Passage from Woolwich to the Nore.

Time P.M. h. m.	Rate of going.		Steam Thermometer.		Sub-marine Thermometer.		Dep. wtr fms	Temp air. °	REMARKS, Monday, April 3, 1843.
	Sillom.	log	Centi. °	Fahren. °	Centi. °	Fahr. °			
3 45	5·8		110·5	230·90	9·40	48·92	5½	59	At 3h. 45m. started from Woolwich, moderate breezes and fine; wind W.S.W. 2; barometer 29·80. High-water; draught of water forward 11 ft. 4 ins., aft 11 ft. 8 ins. Boilers filled with fresh water. Sillometre put in action just abreast the Dockyard. Adjusted the chain to the rate shown by the common log. Altered the helm continually to avoid vessels in steaming down the river; at each spoke of the wheel the Sillometre showed a decrease of rate, when put hard over the speed fell from 7 knots to 4. At 4h. 20m. the Sillometre shewed a speed of 8·2 which is certainly beyond the power of the vessel. At 4h. 30m. put over Massey's Log. At 5h. off Greenhithe. Variations of speed as shewn by Sillometre 5·4 while heaving the common log 5·6 " " 5·8 " " 6·0 " " 5·6 " " 5·8 Mean 5·7
4 0	6·7				9·20	48·56			
	6·1				9·25	48·65	6		
	6·4	6·2	110·0	230·00					
	6·2								
	6·6		109·6	229·28					
4 15	6·4				9·02	48·04	5½		
	8·2		110·1	230·18					
	6·0		109·8	229·64					
	5·5				8·85		6¼		
4 30	6·8		110·1	230·18		47·93			
	5·0								
4 45	7·5		110·1	230·18	8·75	47·75	7½		
	6·0		110·7	231·26	8·60	47·48	8		
	6·2								
5 0	6·2	6·2	109·5	229·10	8·55	47·39	8½	56	
	6·6		109·8	229·64					
5 15	5·9		109·0	228·20	8·48	47·25	7¼		
5 30	6·2		108·8	227·84	8·42	47·16			
	6·8	7·0			8·30	46·94			
	6·9								
5 45	5·6		108·5	227·30	8·32	46·98	9		
	6·5								
6 0	6·2		109·5	229·10	8·30	46·94	7	52	
6 15	6·5		108·9	228·02	8·25	46·85	6½		
6 30	6·0	5·8	109·7	229·46	8·20	46·76	7		
	5·8								
6 45	6·8		109·4	228·92	8·22	46·80	5½		
7 0	6·3		109·5	229·10	8·13	46·64	5¼	51	
7 15	6·5		109·7	229·46	8·10	46·58			
	6·4				8·08	46·56			

The Sillomètre throughout this passage was very sensitive, shewing immediately the change of rate due to a single spoke of the wheel.

The Steam Thermometer varied regularly with the temperature of the steam as shewn by the steam gauge, but generally stood 3° of Fahr. in excess.

The Sub-marine Thermometer shewed a gradual decrease of temperature as we approached the sea, which was unexpected, but it agreed exactly with the best mercurial Thermometers.

Passage from the Nore to Sea and back.

Time.	Rate of Going.		Steam Thermometr		Sub-marine Thermometr		Dep. wtr fms	Tem. air °	REMARKS, Tuesday, April 4, 1843.	
	Sillom	log	Centi.	Fahr.	Cent	Fahr				
A.M. h. m.										
5 0	at	an	ch	or	Nore	7·7	45·9	7	47	Moderate breezes and fine, wind W.S.W. 3; barometer 29·50. Temperature of water, at $\frac{1}{4}$ ebb, at 10 feet deep by Newman's Standard Thermometer 46° Fahr. M. Clement's Sub-marine Thermometer 45·9 "
5 15										
5 30						7·6	45·7		47	At 5h. 30m. weighed
5 45	6·4		108·5	227·3	7·4	45·3				Tried the Steam Thermometer at each 1lb. pressure, as shown by the steam gauge as before, and found it to agree nearly, the difference being reduced to 0·8 cent.
6 0	6·2	6·6	108·8	227·8	7·7	45·9	9	17	17	At 6h. 5m. Mouse light vessel N.N. E. $\frac{1}{4}$ a mile. Put Massey's Log overboard, steered E.S.E.
6 15	6·4		108·7	227·7	7·3	45·1	6			Running through the Queen's Channel.
6 30	6·2	6·6	108·2	226·8	7·2	45·0	6	17	17	N.E. Margate sand buoy S.E. $\frac{1}{4}$ S. Hook buoy W.b.S.
6 45	5·6		108·0	227·1	7·3	45·1	4			On approaching this deep hole the thermometer suddenly rose 1° centigrade, or 1·8 Fahr.
7 0	6·0		107·6	225·7	7·67	45·8	3	17	17	At 8h. 20. passed Margate East Spit buoy
7 15	6·5		107·3	225·1	8·3	46·9	5			Moderate breezes and fine, wind S.S.W. 3, barometer 29·48 at Elbow buoy.
7 30	6·4		107·7	225·4	8·3	46·9	10	17	17	At 9h. 40m. at North Sand Head light vessel. Tested the Steam Thermometer again.
7 45	6·0		108·0	227·1	8·05	46·5	20			Distance run by Massey's Log 23·1
8 0	6·2		108·5	227·3	7·7	45·9	5	47	47	" Common do. 24·0
8 15	6·0		108·2	226·8	7·65	45·8	5			" Sillometre 21·7
8 30	6·3		108·0	227·1	7·75	45·9	7	48	48	At 10h. variations of speed as shown by Sillometre while the log line was running out
8 45	6·0		108·5	227·3	7·8	46·0	7			6·2
9 0	5·8		107·2	225·0	7·2	45·0	6	49	49	6·3
9 15	6·0		108·1	226·6	7·4	45·3	7			6·4
9 30	6·2	7·0	108·6	227·5	7·3	45·1	10	49	49	6·3
9 45	6·2		107·6	225·7	7·45	45·4	11			6·3
10 0	6·2	7·1	108·7	227·7	7·3	45·1	12	49	49	6·3
10 15	6·4		108·1	226·6	7·1	44·8	16			
10 30	5·9		109·5	229·1	7·2	45·0	21	49	49	Speed by log 71 Mean 6·3
10 45	6·0		110·0	230·0	7·3	45·1	29			
11 0	4·5		110·0	230·0	7·4	45·3	25	50	50	Order, "Ease her," Sillometre fell to 4 $\frac{1}{2}$. Steam Ther. rose to 230 Fhr.
11 15	5·0		109·3	228·8	7·3	45·1	24			From a depth of 30 fathoms crossed the Fall's Bank in 7 fathoms, and stood on again to 25 fathoms; the Sub-marine Thermometer shewed no change.
11 30	4·4				7·5	45·5	20	50	50	Order "Stop her," Sillometre fell from 4·2, to 3·4, 3·0, 2·4, 1·6, 1·0, 0·0. Tried the temperature of the water by Cary's Standard Thermometer, by Newman's Standard, and by Jones' Self Registering Thermometer. All agreed with M. Clement's Sub-marine Thermometer shewing 46° Fahr. Blew off the steam stopping at each 1 lb pressure when we found the temperature as shown by the Steam Thermometer to agree with the elasticity of the steam as indicated by the Steam Gauge nearly, the difference being only 0·6 Cent.
11 45	5·0				7·6	45·7	9			
Noon	6·1		108·8	227·8	7·4	45·3	15	51	51	
15	6·3				7·6	45·7	18			
30	6·6		109·1	228·5	7·7	45·9	20	51	51	
45	3·0		109·6	229·1	7·8	46·0	23			
1 0	1·0		110·0	230·0	7·8	46·0	22	52	52	
1 45	0·0		109·2	228·6	7·8	46·0	21			

A strong breeze with heavy squalls from the S.W prevented any further observations. Noticed that the Sillomètre when steaming against a strong head wind was much steadier than in light winds and smooth water in the river Thames.

At 9 p.m. anchored off Broadstairs for the night.

Passage from off Broadstairs to Woolwich.

Time		Rate of Going.		Steam Thermometr		Sub-marine Thermometr		Dep. wv	Tem. air	REMARKS, Wednesday, April 5, 1843.
A.M. h. m.	Sillom	log	Centi.	Fahr.	Centi.	Fahr.	fms	°		
7 0	4.5		108.9	228.0	7.34	13.21				Fresh breezes and squally. Wind W.N.W. 5. Barometer 29. Tried the Sub-marine Thermometer against the mercurial standard thermometer and found it to agree. At 7h. weighed at $\frac{1}{2}$ ebb, rounded the North Foreland and steered through the Queen's Channel up the Thames.
	3.9									
	5.0									
	4.0									
	6.0									
8 0	5.3									
	5.1									
	4.0									
	3.9									
8 15	4.0									
	5.0									
8 30	5.2									
8 45	4.0		108.0	226.0	8.40	47.1	8			Abreast of the Pan Patch Buoy. At 9h. 20m. Pan Sand Beacon N. W. Put over Massey's Log. At 9h. 30m. found the chain of Sillometre broken, owing to being made of iron instead of copper or brass, replaced it, probably the latter indications by it are incorrect. At 10h. low water. At East Buoy of Oaze at 10h. 15m. Sillometre very steady. At Nore light vessel. Fresh breezes and fine wind W.N.W. 6.
9 0	4.0	6.2	109.0	228.2	8.20	46.7	5			
9 15	4.0		108.7	227.6	7.70	45.8	4 $\frac{1}{2}$			
9 30			108.3	226.9	7.55	45.6	3			
9 45			108.7	227.6	7.35	45.2	3			
10 0	5.2		109.0	228.2	7.45	45.3	7			
10 15	5.0		108.6	227.4	7.50	45.5	4			
10 30	6.0	5.9	108.5	227.3	7.55	45.6	6			
10 45	6.4		108.9	228.0	7.90	46.2	7 $\frac{1}{2}$			
11 0	6.3	5.6	109.3	228.7	7.95	46.3	9			
11 15	6.5		109.0	228.2	8.03	46.4	6	51 $\frac{1}{2}$		
11 30	5.2	6.1	108.3	226.9	8.20	46.7	5			
11 45	4.7		107.5	225.5	8.27	46.8	5			
12 0	5.1	5.4	108.2	226.7	8.30	46.9	5			
12 15	4.4		108.2	226.7	8.30	46.9	6 $\frac{1}{2}$			
12 30	5.8	7.0	108.9	226.9	8.40	47.1	8 $\frac{1}{2}$			
12 45	6.6		108.7	227.6	8.45	47.2	8			
1 0	6.5	7.1	108.9	228.0	8.30	46.9	8 $\frac{1}{2}$	51 $\frac{1}{2}$		
1 15	6.0		108.7	227.6	8.50	47.3	7			
1 30	5.7	6.3	108.4	227.1	8.70	47.6	7 $\frac{1}{2}$			
1 45	5.9		107.6	225.7	8.75	47.7	8			
2 0	5.5		109.5	229.1	8.78	47.6	7 $\frac{1}{2}$	52		
2 15	5.4		107.9	226.2	8.95	48.1	7 $\frac{1}{2}$			
2 30	5.0	6.0	109.0	228.2	9.00	48.2	3 $\frac{1}{2}$			
2 45	5.5				9.25	48.6	4			
3 0	5.5		108.7	227.6	9.43	48.9	5	52		
3 15	4.2		108.6	227.4	9.93	49.8	4 $\frac{1}{2}$			
3.30	5.0		109.2	228.5	9.95	49.8	5			Arrived at Woolwich.

In all this trial I have derived great assistance from the presence of

M. Clement the inventor, of Mr. Cary the maker of these instruments, and especially from Mr. Large, foreman of Woolwich Dockyard, who fitted them to the ship, and is quite conversant with their use.

Remarks.

It will be seen from the above tables that the sillomètre shewed every variation in the speed of the vessel, even the alteration caused by a single spoke of the helm was perceptible, and putting the helm hard over caused the ship to lose half her way almost immediately; as the dial of the instrument is placed on deck, and the index or pointer very conspicuous, the officer of the watch without any trouble may observe it at every turn he takes on the quarter deck; and it is obvious that none but the most inattentive person can fail to have a much more correct knowledge of the rate of the vessel's going than he can from heaving the common log once or twice an hour. The Sillomètre will also enable an officer easily to ascertain the best trim of a vessel; the difference caused by shaking out a reef or by making or shortening sail; and in a fleet would enable a ship to keep her station by night or by day with great steadiness; and lastly it impresses very strongly on the observer the absolute necessity of good steering and giving very little helm when in chase or on a trial of sailing, or at any other time when speed is of importance.

The Steam Thermometer has also a dial placed on deck so that the officer of the watch can tell at any moment whether there is a sufficiency of steam or the contrary, and can thus check the wasteful expenditure of coal; it would point out too the possible, but highly improbable occurrence of no water in the boilers, or an undue increase of the temperature of steam from any other cause. Its chief value however would be shewn in a high pressure engine when it would give immediate warning of any approach to such a degree of temperature or pressure as might be dangerous.

The Sub-marine Thermometer remains constantly at a depth of about ten feet below the surface of the water, and owing to its being formed of platina and silver is extremely sensitive, and thus every change in the temperature of the sea will be shewn at once on the dial on deck.

As in the Atlantic Ocean and in other deep seas, the deep water is said to be warmer than the shallow; it probably would there shew, by mere inspection, the approach to shoals, rocks, or land, and serve as an excellent warning. At this season of the year however in the shallow waters of the North Sea we observed no such effect, on the contrary the temperature of the water gradually decreased from 50° Fahr. at Woolwich to 44½ at about twenty miles to the eastward of the North Foreland, and as gradually increased on our return to the same point.

Possibly as the summer advances this may be different, and in order to discover when the change of temperature takes place, I have directed the instrument to be registered every two hours night and day. As the Thermometer is highly sensitive and may be read off with ease to hundredths of a degree, and agrees perfectly with the best mercurial thermometers, it may possibly furnish some novel results of value to the

philosopher as well as to the navigator, since I am not aware of the existence of any continued series of observations on the temperature of the sea at all seasons of the year.

I would venture to recommend that the instruments after coming from the hands of the maker should be put to the severest test by competent persons before being finally placed in a ship.

The instruments fitted on board the *Blazer* appear to be carefully made and well finished; they are conveniently and securely placed in the ship, nor does there seem to be any fear of their being deranged.

JOHN WASHINGTON,
Captain.

Harwich, April 12th, 1843.

SHIPWRECKS AND ROBBERIES FACILITATED BY DEFECTIVE LAWS AND REGULATIONS; WITH HINTS FOR AMENDMENT.

It has long been a cause of just complaint, with those interested in British merchant ships, that the legislature should not have considered it necessary to enact more clear and specific laws by which those employed in such service are to be controlled. It is extraordinary that a body of men, who have such immense charge of the property and lives of British subjects, should yet remain, as to their relative duties, (upon a perfect understanding of which the safety of a ship so much depends) so far without legal regulation, that neither the master nor his officers have the necessary authority to conduct their ship with anything like order: nor are the common sailors much better situated, their treatment depending too much upon the caprice of those placed in the equivocal situation of commanders over them. In the event of misunderstanding on the subject of discipline, the consequences are, that the master is entirely at a loss to know the extent of his authority over his crew; and rather than take measures of responsibility upon himself, he is obliged to submit to see his ship conducted in that disorderly manner, that he well knows hazards every moment her safety, as well as being disgraceful and alarming to any passengers he may have on board; a contrary course subjecting him, in nine cases out of ten, to actions at law, which are readily promoted by a pack of low attorneys, whose occupation has arisen out of the very defective and undefined state of the law respecting the duties of British merchant sailors; the system of the Admiralty Court giving them at once the means of seizing a ship, for the most frivolous complaint a sailor may make on the score of wages. I by no means, however, wish to see a seaman deprived of his lien upon a ship for his just claim to his earnings; but it is notorious, that the peremptory manner of proceeding in this court is abused to an alarming extent, and is in its process so oppressive upon owners, that it is on their part almost invariably submitted to without defence; though it is not too much to say, that ninety-nine cases out of a hundred that are brought there by seamen are unjust and vexatious,—the fair inference being, that a seaman's just claims are rarely objected to, especially when it is considered that the

payees (owners) are not the parties who set up the defence or objection to settle the seamen's claims,—these originating with the master, who, it is but fair to presume, being a discontented party generally, must have good and strong grounds to advise resistance to such claims. I may appeal to the experience of all owners and commanders of ships for the truth of this. No honest lawyer ever advising a resistance to a seaman's claims, let his conduct have been ever so infamous, his wages are paid, rather than encounter the expense and annoyance incident upon a suit in Doctor's Commons,—an appeal to which is perfectly certain to end in saddling the owners with heavy costs. This dread of appealing to the laws is a sufficient proof of their inefficacy; and the consequences are, not merely a laxity of the necessary order in a merchant ship, but a direct inducement to oppose everything like order.

That some regulations are necessary to improve the situations of commanders and officers of British merchant ships, is allowed by all who have any experience of the subject. Unless some laws are enacted for this purpose, the objection on the part of respectable persons to such a service will continue. No man of education and proper feeling can possibly command on board a merchant ship at present, without submitting himself to situations hardly to be borne; and if on no other score, some regulations are desirable to induce such a class of men to take charge of merchants' ships—thus rendering the occupation more respectable, and conducing to the safety of the property and persons under their care. For my own part, I must say, that unless some very strong and effectual laws are enacted, to keep in proper check a set of men, of whom, however highly we may think in a national view (and no one esteems their qualities professionally more than myself,) yet it must be admitted they are, uncontrolled, a lawless set of fellows. I say, that unless something like regulations are enforced on board British merchant ships, no man who has had experience therein would think of bringing up a tolerably educated boy in such a service, except from necessity.

Laws that would prove effectual may, I apprehend, be framed to ensure good order. The facility of punishing breaches of duty would, in a short time, bring men to submit to such a reasonable and proper control as is essential to the proper conducting of a ship;—circumstances will, however, necessarily arise, when no immediate correction can be applied; but simple enactments, which seamen are certain will be enforced, will in most cases be sufficient to deter. Corporal punishments can rarely be had recourse to on board merchant ships, nor is it any part of a system I would advocate; though in extreme cases I certainly insist upon a strict right in all commanders of ships to have recourse to this, or any other measure whatever, that may be requisite to put down mutiny; but all such cases must depend upon their own merits.

I would have it clearly enacted as law, that a seaman should not be allowed, under any pretence whatever, to refuse to do his duty, and a prompt compliance with the orders of his superior:—that no equivocation or excuse whatever is to justify him so doing, the penalty being a forfeiture of his wages, and all he may have on board, and the infliction of a punishment, upon conviction before any magistrate, consul, or

commissioned British officer, of from one to three months' imprisonment upon bread and water and hard labour (or solitary). It should be imperative upon these authorities to interfere, upon the application of the master, and to take the man out of the ship, and have no option beyond the apportioning of the term of imprisonment, upon a conviction of a mere refusal of duty, proved by two witnesses. The offender should be then sent home, if no means of imprisoning him is afforded on the spot, with his conviction about him, for punishment in England, and the master released from his contract with him.

Such punishment, if it did not put a stop to knocking off work, (which, however, I think it would soon do,) would, at all events, prevent the unpleasant situation in which commanders and officers of merchant ships are now placed, in witnessing a man, and often a gang of them, and sometimes the whole crew, deliberately walking the decks, and refusing all orders, and that without the law holding out any promise of punishing them.

I am quite aware that at present magistrates have a power, upon representation of a master that his crew refuse to *proceed* upon the voyage, to commit them to hard labour for a month; though I have found their worships either very ignorant of such authority, or unwilling to act upon it. I have, under such circumstances, applied upon one occasion, I believe, to all the magistrates of Portsmouth, and experienced a direct refusal from them all to interfere; at length I was referred over to Gosport, where I found a gentleman of information and determination sufficient to commit the people of whom I complained. But when once away from England, this salutary power is left behind: we are committed to the deep, to navigate all over the world, without being able to find another authority to which to appeal for help. Consuls say their authority is too undefined to interfere; nothing short of protesting that actual danger exists, through the mutinous conduct of seamen, can insure you their interference; they usually decline assisting masters of ships, and will continue to do so until some law clearly defines a line of conduct to them. Ships of war are as unwilling to assist us: indeed during peace, when you find them fully manned, and they do not want any of your people, they take no interest whatever in a merchant ship, and nothing short of downright mutiny ensures you any assistance from them. Neither is your situation found to be much better in British colonies; a magistrate there must attend to the formal complaints of a master of a ship, if he is ready to make affidavit of a breach of the peace; and this is about the extent of their interference: they imprison the man on conviction, during which you are often put to very heavy expenses in supporting him. But in all these cases the mischief remains; you are not released from the engagement with the offender; and after undergoing a slight imprisonment, you must take him on board again: if a desperate bad character, rendered a most dangerous man for the remainder of the voyage, under the master who has been the means of inflicting it. But short of actual breaches of the peace, your whole crew may be in a state of the most complete (and even bordering upon dangerous) insubordination; may abuse the master and his officers from morning to night, work as little as they please, and you are left totally without remedy. I have met with the most extraordinary instances of

ignorance of the laws respecting seamen, as they at present exist, on the part of magistrates abroad, as well as naval officers; and consuls are but little better informed sometimes, and especially as regards the articles of agreement between the master and the seamen; these latter are treated with contempt generally, and are oftener declared to be "nothing better than waste paper," than to have any weight attached to them. I believe, indeed, masters of ships very generally think them little better.

The laws require, in fact, remodelling, simplifying, and to be rendered so plain, that even "a magistrate" can understand them; and, above all, they require to be framed so as to insist upon the prompt and effectual assistance of all the authorities I have suggested as proper to interfere for the support of order on board British merchant ships.

Forfeiture of wages is at present so understood by seamen, as to operate upon them with no dread whatever. I have already shown, indeed, how little in practice they have to fear on that score; the fact is, that they believe that all forfeitures go ultimately to Greenwich Hospital, and, therefore, they rightly enough judge (under this impression) that the owners of the ship have no interest in the matter. This is a point that should be set at rest, and seamen made directly acquainted, *through the articles of agreement*, that if they break their contracts with the master on any point whatever, their wages are forfeited to the owners' use, who would then have credit for a serious intention of inflicting such forfeitures: this is an important point, upon the efficacy of which I place great reliance. Common sense points out that the proper and legitimate end of such forfeitures should be providing the duty which the seaman forfeiting his wages refuses to do.

I think it clear that its supposed application prevents it controlling seamen, and that this mistaken notion exists very generally (as to its application) there is no doubt. The books of Greenwich Hospital, I believe, will prove that the amount received under the head of "seamen's forfeitures" is "nil," or next to it; thus showing the law, as to any forfeitures whatever from merchant-ships being of value to that institution, to be altogether abortive.

I therefore repeat that, I consider the greatest benefit may be expected to follow a proper understanding in this respect, and that it will effect a salutary control over seamen, beyond any other measures that can be devised; the punishment of imprisonment being added for any refusal to comply with the orders of their superiors. It should be clearly enacted that nothing whatever is to justify a seaman, having once entered into an agreement with the master, fulfilling his duty and obeying the orders he receives. If he is oppressed, he must resort to his remedy at law on the conclusion of the voyage; but away from a British port, or not under an English consul abroad, nothing whatever is to justify him refusing the orders of his superiors. Loss of wages and all he has on board, as some compensation to the owners, and imprisonment and hard labour, as due to the public for the consequences it may suffer, being the certain consequence; a commitment for such offence being a bar to all proceedings in the Admiralty Court; cancelling all engagements with him on the part of the master; wherever there is a British consul, or magistrate, or a British man-of-war, it

being imperative upon all these authorities to take up the complaint of the master, and no discretion left them as to awarding punishment, beyond choosing between one, two, or three months' imprisonment. The present law which obliges a master to keep a seaman on board until returned to a British port (port of discharge, I believe,) is absurd. The contract with such a man should be binding upon a master no longer than the man does his duty; and at an English colony or foreign port where there is a British consul, or encountering a man-of-war, he should be delivered up, and charge taken of him as an offender against the laws, and treated accordingly. I believe a seaman thus treated would not be guilty of a second offence; he would be taught to respect his superiors, and the effect would be to train him as a better man, a better member of civilized society, and likely to adapt himself more readily to the discipline of a man-of-war when the public service requires him.

In cases of desertion abroad, the present articles of agreement very properly provide that twenty-four hours' absence without leave shall be considered a total desertion; and the law says that forfeiture of wages, clothes, &c., shall be the consequence. This, although pretty explicit, is not sufficient, as I believe that if a master was peremptorily to refuse a man under such circumstances to return on board, he would run great risk of an Admiralty prosecution, if he left him in a foreign port, supposing the man willing to resume his duties. This should be better understood, as the penalty, upon a master leaving a man unprovided for abroad, is very severe; I do not know by what particular law made so, but I believe it subjects him to six months' imprisonment, and a heavy fine. The articles of agreement, as at present worded, leave a man at liberty to absent himself as many times during a ship's stay in a foreign port as he pleases, provided he returns on each occasion within twenty-four hours: it would be only reasonable, under such circumstances, to allow a mulct of his wages, at all events, during such absence. I would suggest, that whenever a man is not found at his duty on board at the commencement of work in the morning, that his day's pay should be forfeited to the owners, and as much more as may be paid for the lien of a man in his stead, should the business of the ship induce the master to hire a substitute. This abatement of a man's pay no doubt could be made under existing laws, or without any law, is so reasonable, that it could be effectually enforced; and yet I doubt not, if attempted at present, there are hundreds of alongshore attorneys who would readily institute proceedings in the Admiralty Court, upon such deduction being made. It should be specially provided for, as should likewise desertion, namely, that twenty-four hours' absence without leave is sufficient justification in a master refusing, under any circumstances, the man's return on board.

The law should be extended to all voyages whatever, which now only applies to the West India colonies, making all wages a seaman may earn on board a ship he may choose to join abroad, the property of the owners of the ship he deserts from, until his arrival in England; no master being at liberty to ship an English seaman in a foreign port, without he has a written certificate of the man's discharge: the presumption being that, in the absence of such certificate he is a deserter, therefore his wages recoverable from the master so receiving him, upon application to any magistrate, no equivocation being allowed. Even

should the man have agreed to work his passage, the whole amount he may have agreed for, or under any circumstances no less than the current wages, must be refunded; and provided such deserter can be recovered by the master of the ship he leaves, all magistrates, consuls, &c., to aid such recovery, should the master require it, and the interests of the ship induce him to insist upon such man's return.

There remains to notice extreme cases of offence, and such as will sometimes occur from turbulent characters, whom nothing but force can effectually control: these men and their actions no rule can be laid down for; to quell their immediate mutiny and insubordination must be left entirely to the discretion of the commander, to use such means as circumstances place at his disposal, and the nature of the case and the safety of the ship committed to his charge demand. However ineffectual any measures that can be adopted too frequently will be, under the unfortunate circumstances attending such troublesome characters forming an influential portion of a crew, yet was there but certain punishment defined to follow the conviction of violent conduct on the part of seamen on board a merchant-ship, I believe few instances would occur. At present a seaman may, short of personal violence, proceed to any extent of insolence; and let his conduct be ever so insulting and abusive, I do not know that the law awards any punishment for it; he may defy the master and his officers, and use every species of indecent and abusive language before passengers and crew, and I should like any one to inform me how the master is to be compensated for such insults? Nay, even proceeding to personal violence, to whatever extent (short of murder, or attempt thereat) is, as far as I know, only to be met by action for damages, or common indictment for assault; no sufficient compensation can, in fact, be awarded, but surely some certain punishment should await upon such conduct.

I consider that every seaman on board a British merchant-ship that is proved before a magistrate, consul, or British officer, as having been guilty of mutinous conduct, an assault upon the master, or upon any superior officer (say of the rank of mate) should be committed for trial at the public expense, and if convicted, transported for life; that upon conviction of even personal abuse towards the master, or assaulting an officer, he should be transported for seven years,—some minor punishment being attached to abuse towards any superior whatever,—and upon conviction of refusal to defend a ship before an enemy, or under circumstances of distress, he should suffer death,—loss of wages, and all he has on board of course to be added; and evidence *in all cases* to be immediately taken before the proper officer of the court, to prevent the detention on shore of the master and witnesses, the fear of which tends at present effectually to prevent prosecutions for offences committed at sea.

It is quite erroneous to suppose seamen so indifferent about money that their forfeiture of wages (if they could be brought to believe such forfeiture would be inflicted) would be contemplated by them without its affording some considerable check upon them: it is true that they throw away quickly all they earn, when they get ashore, but I know of no men who think more about being curtailed of their earnings. They notoriously delight in grog, pay, and prize-money; though they squander their hard-earned money in the most thoughtless manner of

any people existing; and as respects their clothes, and whatever they may have on board, becoming forfeit—though this may appear an unworthy retention of what can hardly be of any value—yet to them it is a very material loss; and when their derelictions of duty occur soon after leaving port, often constitutes, in fact, all the hold you have upon them: therefore this forfeiture should be insisted upon in addition to loss of wages upon all occasions.

The laws by which they are to be ruled should be embodied in very plain and simple language in the articles of agreement; as short as possible, divested of all technical terms, and *under distinct heads*. As at present drawn up the articles are not easily read,—and a copy thereof should be invariably placed in some part of the 'twixt-decks, where their attention is likely to be drawn towards it. Their ignorance of the regulations under which they sail should upon no account be admitted as any excuse; they are bound to know the laws of the land; though it is no uncommon thing to find naval officers, and others, set at nought the articles of agreement at present, if you answer to their enquiries, that they have not been read over to the seamen before signing, they must be supposed to know what they have agreed to. And when upon this subject, it may be as well to observe the present frequent omission of a very necessary act to all mutual agreements, namely, the signature of *both parties*: it is not once in a hundred times that the articles of agreement are executed at all by the master. This arises from the form in which they are at present drawn up; commanders of ships not being always very conversant with legal instruments, fancying that all they have to do is to fill up the blanks.

Whilst suggesting more strict laws for the controlling of seamen, I am for giving them all reasonable protection, and wish to remove every cause of which they can have pretence to complain; and to this end I think there should be some better regulation on the score of victualling, on which I consider they are entitled to as clear an understanding, as their officers are to their obedience. There can be no doubt that much just cause of complaint exists on board merchant-ships in respect to provisions: there is too much uncertainty, and too much left to individual caprice, on this important point. I would have this better arranged, so that a seaman should know what he is entitled to; and that point established, he should have every facility afforded him, by the proper authorities abroad, in obtaining his rations: a scale of victualling should be inserted in the articles of agreement, and I would suggest the following:—

Every man and boy to be allowed daily such quantity of bread as he can consume; but upon the option of the master to be limited to one pound, if appearance of waste induces him to weigh it out; two pounds of beef, or one pound and a half of pork; this allowance to be reduced in the Tropics to one pound and a half of beef, and a pound and a quarter of pork; when beef is served out, each person to have three-quarters of a pound of flour, and when pork, one third of a pint of split peas. On long passages, when it is considered necessary to limit the consumption of water, six pints per day; if the owners choose to serve out tea and sugar, the rations of meat to be diminished half a pound per day: allowance of tea to be considered two ounces per week, and

of sugar, ten ounces. When in harbour fresh meat may be served out in the same proportion as salt at sea, but not reduced in quantity within the Tropics, the quality of the meat generally not admitting of such reduction; and in lieu of flour and peas, half a pound of vegetables, (a quarter of a pound of leeks and onions,) with sufficient quantity of barley, rice, &c., for the soup. Substitutes for any of the above provisions to be issued at the option of the commander, and on these occasions the scale observed in H.M. ships to be adopted as the rule. Spirits to be considered on all occasions "an indulgence;" custom, however, rendering it almost necessary that a moderate quantity should be issued; but this should be entirely at the discretion of the master, having reference, in some measure, to the custom of different voyages, but never to be demanded.

I consider every seaman, doing his duty, as fairly entitled to such rations, of good quality; and if, through neglect of the owners in not providing a sufficiency of good provisions, or, if withheld by the master, a seaman should not have served out to him his full and proper quantity, that upon proof thereof he should be entitled to be paid by the owners double the value of all deficient. Should the quality be objectionable, the complaint to be investigated by consul, or magistrate, or officer's order, and the people paid the full amount of the cost of all such provisions of objectionable quality, even should they have had the regular quantity issued to them, and, from necessity, have actually consumed the same; and the master should be called upon for proofs of his having replaced such defective provisions as he may have remaining on board, before he obtains his clearances to go to sea again. These payments to seamen, for defective or deficient provisions, I would have the master called upon to make on arrival at the first port the ship comes to. A good regulation on this head is of the first importance to the good government of a ship, it being the chief cause of complaint, and the foundation of ninety-nine disturbances out of one hundred.

It will perhaps be thought by some that the foregoing hints for framing laws to govern seamen in the merchant service, by insisting upon implicit obedience, savour too much of a military character. A ship is however in no other way to be properly conducted. The person in charge *must be* the sole judge of what is necessary to be done. Owners look to the master as the only one responsible for the conducting of the ship on all occasions, and his order must be law. If his authority is carried beyond proper bounds, and oppression ensues, let him be made responsible for his conduct to the utmost; but his authority must, notwithstanding, be submitted to for the time. Naval officers should not complain upon their being obliged to support the masters' authority, as already suggested; they may depend upon it that the consequences would be, the saving of themselves a great deal of trouble in the end, by preparing seamen, whilst in the merchant service, for the discipline of H.M. ships. No ordinary laws can be sufficient to control men totally out of the reach of the civil magistrate; and this can only be effected by dread of the punishments that await them on arrival in port, or encountering a man-of-war. Through the fear of severe measures, alone, are such a lawless set of beings to be controlled.

I have only, in conclusion, to add one word of advice to commanders

and officers of merchant-ships, which is to consider those placed under their authority as entitled to the treatment of rational beings, and to avoid the too common practice of attempting to support their authority by the use of language *which is not borne by any other description of men whatever*. It may be depended upon that this habit is subversive of all order, and the use of it lowers the commanders and officers to a level with the people immediately. A slight consideration of the subject ought to convince any one, that it is only to be attributed to the opinion a body of ignorant people have of a man placed in authority over them that obedience is to be looked for; this enables the influence of the few to control the many, and has upheld governments in all ages, much more than physical force; and there is, it may be relied upon, no such effectual way to secure influence and complete command over a body of seamen, as to impress them with the belief that their commander is really their superior. I look upon seamen to be more especially under the control of this influence than perhaps any other body of men, probably from its being so seldom exercised over them. The most hardened and lawless will rarely venture upon offensive language when addressing an officer who has supported this character in a proper manner; and in cases even of mutiny, personal respect has been found on most occasions to protect officers from outrage. It must, however, be admitted, that an evenness of temper, and steady deportment, is most difficult to be preserved, under the often irritating circumstances in which commanders and officers of ships are placed; but the value of it is unquestionable, and the practice of the navy, according with it more than it did formerly, is proving its effective influence daily, the same being brought to perfection in the army long ago.

A PART OWNER, AND MASTER OF A BRITISH MERCHANT-SHIP.

THE MERCHANT SERVICE.

[The following opinions from an officer recently returned from a high station in our South American squadron, derive greater weight from the opportunities which that situation gave him for forming those opinions.—Ed.]

May 3rd, 1843.

SIR.—As Captain FitzRoy's appointment will prevent his carrying the "Bill for the better regulation of the Merchant Service," through the House, I sincerely hope it will be taken up by the Ministry, as a better code of laws for the government of our Merchant Service is greatly needed.

I am glad to find the subject is taken up by masters; viz., "Mexicano," and others, in your *Nautical*, to the justice of whose remarks, upon many points, four years experience on the east and west coast of South America enables me to bear testimony. The constant complaints, as well as loss of life, occasioned by the drunkenness and brutality of many of the masters of our merchant ships to their men, is really disgraceful to the character of Englishmen; fortunately, there are excel-

lent examples to the contrary, and I have every reason to believe the number is on the increase.

During the time I was on the station, five lives were sacrificed through the effects of cruelty; two men were sent home to be tried for murder; one for killing the master, and the mate of the same ship for occasioning the death of a man by excessive cruelty; the former was found guilty of manslaughter, the other acquitted through the absence of the principal witness, who, I am sorry to say was a naval officer; what was his reason for keeping out of the way is an enigma to many.

If the Consuls at the different ports were to make returns of all complaints from the merchant ships, it would point out to our Government the necessity of a new code of laws for the Merchant Service. The system at present of all complaints being made to the consuls, does not work well; and I have known a Lieutenant, commanding a 10-gun brig, obliged to interfere because the vice consul declined, and order the master of a brig's grog-case to be locked up, and the key placed in charge of the mate, which brig was afterwards abandoned off Cape Horn, after having shifted her crew three times, in the course of as many months.

Why not adopt the French system, viz. all complaints to be made to the senior officer in port, who shall hold a court of enquiry, assisted, if you please by the consul; and if no other ship of war be in port, his first-lieutenant and master, with power to remove masters or mates, upon conviction of improper conduct, and to punish the men according to the nature of their crimes, except murder, which should be tried by the civil power.

It would tend greatly to the interest of shipowners if they were more particular in employing none but men of respectability of character and conduct, as masters and mates of their ships, which would be the means of saving many ships as well as valuable lives every year. Something ought to be done, and that very soon, as the ships of the north of Europe,—Danes, Swedes, and Hamburgers are chartered, in preference to those of our country, more particularly with perishable cargoes, as more care is taken in securing the hatches to keep out wet.

Yours, &c.,

J. B. SULLIVAN, *Captain R.N.*,

To the Editor, &c.

Late Commodore on the South American Station.

MACASSAR STRAIT.

Salem, Mass., U.S.A., March 21st, 1843.

SIR.—Having noticed in your valuable *Magazine*, No. 2 for February, 1843, an account of breakers having been seen by the barque *Countess of Minto*, in lat. $8^{\circ} 10' W.$,* (meaning north I presume,) and long. $154^{\circ} 34' E.$, and headed "*Minto Breakers, Macassar Straits.*" I have to call your attention to this error, as the position assigned to the *Minto Shoal* places it far in the Pacific Ocean instead of Macassar Straits. *Cape Donda*, the northern entrance of Macassar Straits being in lat. $0^{\circ} 48'$

* See errata in our March number.—Ed.

N., long. $119^{\circ} 57'$ E.; and Cape Mandhar the southern entrance in lat. $3^{\circ} 35'$ S., long. $119^{\circ} 9'$ E.

In looking over a new chart of the southern part of the China Sea, comprehending the Straits of Singapore, Durian, Banca, Sunda, Gaspar, Carimata, &c., by John Walker, Geographer to the Hon. East India Company, London, 1841, in a note I find an error, which is apt to mislead a new beginner; he says, it is not advisable to attempt a passage through Gaspar to the northward in the northerly monsoon from April to September; the north-west monsoon is from November to April, and the season he advises not to make a passage to the northward through Gaspar Straits, is the very time to make a passage up, having the south-east monsoon in the Java Sea, and south-west monsoon in the China Sea.

I send you an account of the Tryal Rocks should it have never appeared in your Magazine, please give it publicity.

The Trial or Tryal Rocks so long considered a doubtful danger, and said to have been seen by early navigators, were seen from on board the Dutch ship *Jacobus*, on her passage from Europe to Java, they were first seen very near in the night, when the ship was hauled off and hove to for daylight, they were then seen again and passed.

The Captain of that ship gives the longitude by chronometer $107^{\circ} 55'$ East of Greenwich, lat. $20^{\circ} 35'$ South.

In a short run afterwards to Java Head it was found that the chronometer was eighteen miles too far to the eastward, allowing this error would give the long. $107^{\circ} 37'$ E.

This is too far east to be in the way of ships which are in the proper track for Java Head, but dangerous to those which are bound through some of the passages east of Java.

I am, &c.,

To the Editor, &c.

C. F. WILLIAMS.

[The Extracts in our next.—Ed.]

RODGER'S ANCHORS.—It is satisfactory at all times to receive confirmation of the opinions we have expressed occasionally on important Nautical subjects, and we had therefore much pleasure in reading the following letter concerning Lieutenant Rodger's anchor, from so good an authority as Mr. Driver, whose experience in the Merchant Service, as well as in Her Majesty's ships, entitles his opinion to more than ordinary consideration.

H.M. Steamer Dee, Woolwich, April 18th, 1843.

DEAR SIR.—Since I last left Woolwich, your Small Palmed Anchor has undergone very severe trials, but it gives me pleasure to inform you that it did its duty, and I rode out a very heavy gale of wind with it at Falmouth, which lasted from the 9th to the 17th of last November; and again, in very severe weather at Lisbon, from the 23rd November, to 3rd of December, the Anchor held fast. I should observe that I always ride with a long scope of chain, on the appearance of bad weather, and lighten the vessel aloft.

I certainly prefer your Anchors to any I have ever seen, or used, and having tried them for several years, my opinion has not been formed with haste.

I am, Sir,

Your Obedient Servant,

THOMAS DRIVER, *Master, R.N.,
Commander H.M. Steam-Vessel Dee,*

Lieut. Rodger, R.N.

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, with an account of the attendant phenomena, abstracted from the *Official Journals of the respective Ships*, and from other authentic sources of information.—By W. S. Harris, F.R.S., &c.

In the *Nautical Magazine* for March, 1838, will be found a list of 174 ships of the British Navy, which have suffered at various times from the effects of lightning, since the commencement of the war in 1793. These cases were collected with a view of eventually obtaining an authentic history of the phenomena of electrical storms at sea. Such a history would necessarily have great scientific value, whether it be regarded in a theoretical or in a practical sense, since it would contain important meteorological facts, connected with those great atmospheric disturbances which give rise to explosions of Lightning, and would lead to a better appreciation of the means we possess of guarding against their destructive operation.

Although in a first attempt of this kind, it was scarcely possible to avoid some inaccuracy of date, and of detail, still it seemed desirable to give publicity to the list, as a useful approximation to a more perfect history, in the full assurance of obtaining through the kindness of the officers of H.M. Navy, and others interested in the subject, such corrections as might be found requisite. The result has not disappointed this expectation; not only have many errors been corrected, but the list of cases has been considerably increased. In addition to the valuable information derived from various sources, the greater number of these instances have, by the kind permission of the Lords Commissioners of the Admiralty, being lately verified, and elucidated, by a direct appeal to the records of the Navy.

This corrected and extended list, may now claim to be considered in the light of a history of the phenomena of electrical storms at sea, and of their effects on ships, rather than as a mere dry and uninteresting catalogue of vessels damaged by lightning. In the details of the different cases, great care has been taken to adhere, so far as possible to the form of expression used in the ship's logs, and such additions only have been made, as were fully warranted by information derived from equally authentic sources, viz., the statements or private journals of the captains or other officers who were at sea in the ships.

In describing these cases, the following arrangement has been adopted, with the view of facilitating scientific and statistical deductions from them. 1st. the place of the ship is given with the date. 2ndly, the effects of the discharge. 3rdly, the meteorological phenomena. Lastly such remarks as appeared necessary to complete the history of the case.

We propose in a future communication, when the series is complete, to enter upon a critical examination of the phenomena which it presents.

AN AUTHENTIC LIST of some of the ships of H.M. Navy, struck and ENLARGED SERIES.—NO. 6.—VOL. FOR 1843. 3 E

damaged by Lightning at various times, with brief notices of the attendant meteorological and other phenomena.

(The cases not derived immediately from the Official Journals are marked thus *)

ALBACORE, 20.

1798. Tuesday, August 7th, lat. 17° 47' N., Point Morant, Jamaica, N.W. five or six miles; 4h. 20m. P.M., a discharge of lightning damaged the main-top-gallant-mast, main-top-mast, and main-mast; and wounded the main-yard.

Wind variable; moderate and cloudy with rain.

A.M. squally, with thunder and lightning.

The ship was obliged to proceed to the dockyard at Port Royal, and have her main-mast taken out; she was not again ready for sea until the 2nd of September.

ALBION, 74. *

1799. Off the east end of Jamaica, 4h. 30m. P.M., during the hurricane season, weather dark and gloomy; the main-top-gallant-mast and top-masts, totally destroyed; the main-mast shivered; and the main-sail set on fire; the main-mast was rent so far as the pump-winch, just abaft it.—Capt. Thomas White, R.N.

ARAB, 22.

1799. October 11th, cruising about Nassau, West Indies; 1 A.M. the main-top-gallant-mast and top-masts were shivered in pieces by lightning, and the main-mast severely damaged. Three men killed and six men wounded.

6th, wind E.S.E., squally with thunder and lightning, and torrents of rain. The Log describes the electrical discharges as "thunderbolts flying about the ship, two or three of which fell in the water within a cable's length of the ship," after which it dropped calm. The next day, 7th, a breeze sprung up from the west with lightning and increased to a gale; the wind on the 10th south-east again, moderate and fine; on the 11th moderate and squally; at 1 P.M. a heavy squall with rain. In this squall the ship was struck by lightning; after this the wind flew in to the north-east.

The ship having repaired damages went to Port Royal, and had a new main-mast; she was detained for refit from the 18th of November to the 29th of December.

ALEXANDER, 74.

1801. September 8th, Cape de La Mella, Mediterranean, N.N.E. off Toulon twelve leagues; 11h. 40m. P.M. a flash of lightning struck the main-top-mast and shivered it in pieces.

The wind on the previous days had been squally with fresh gales from the east, after which it dropt calm.

On the 8th cloudy, wind from west and moderate; 8 A.M. on the 9th moderate, with the wind at north-east and inclining to calm.

N.B.—Dragon struck the same day off Cape Furgons at 1 P.M.

ACTIVE, 36.

1802. Sept. 19th, Gibraltar Bay; 9h. 30m. main-top-mast below the hounds shivered in pieces, the upper part of top-mast, top-gallant-mast, and top-gallant-yard-arm fell on the main-top. The lightning passed down the main-mast shivered the fishes and started the hoops; and passing through the coat of the mast took a piece out of the bits; one man killed. The ship was supplied with new fore and main-masts, &c.

On the 18th calm, with occasional breezes from the east; 19th east, with strong breezes, thunder, and lightning: the lightning tore the sail from the larboard top-gallant-yard-arm; on the 20th variable winds.

AMPHION, 36.

1808. March 25th, lat. $36^{\circ} 13'$ south-west end of the Island of Goza, five leagues; 12h. 30m. main-top-gallant-mast and top-mast shattered, main-mast wounded and set on fire, the main-top-sail, royal, top-gallant-studding-sails, nearly cut in pieces, also the mizen and mizen-top-mast-stay-sails.

The wind N. to N.N.E., then W.N.W. The ship went to Malta, and had a new main-mast, detained until the 2nd of April.

AGAMEMNON, 64.

1808. November 28th, Isle of Lobos, W.N.W., five miles; Rio de La Plata; 4h. 20m. main-royal-mast and top-gallant-mast shivered, and starboard side of main-mast. Four men hurt.

27th moderate and cloudy, wind south-east; 28th calm, after which a breeze from the north. 3h. 30m. A.M. moderate and cloudy with thunder and lightning. On the next day, the 29th, wind south-east again, fresh breezes and squally.

AUDACIOUS, 74.

1810. August 4th, lat. 52° N., long. $2^{\circ} 50'$ E., off Flushing. Ship at anchor. 5h. 10m. A.M. main-mast struck by lightning; at 5h. 15m. again struck by a second discharge, the lightning was followed by a tremendous peal of thunder, the hoops of the masts were broken, and the mast shivered in several places, and set on fire. The top-gallant-mast and top-mast were also shivered; several pieces rent out of them.

The wind on the previous day south-west moderate and fine, light airs. 4th south-west, moderate with heavy rain, the succeeding day W.S.W., fresh breezes and cloudy.

The ship was obliged to go to Spithead, and shift her main-mast.

ARMADA, 74.

1811. February 24th, at anchor in Basque Roads, coast of France; A.M. strong gales with thunder and lightning; a ball of fire struck the foremast, started one of the hoops, and did other damage.

Wind on the 23d west, with strong gales; 24th W.S.W., ditto weather; 25th the wind shifted to north-west, moderate, with rain; after which it went back again to W.S.W.

The ship went to Spithead to refit.

AJAX, 74.

1811. June 25th, Isle of Gorgona, four leagues, Mediterranean; 6h. 30m. main-top-mast shivered in pieces; main-mast much injured; wind 24th, light breezes W.N.W.; 25th A.M., calm and E.N.E.; 6h. 25m. a heavy squall with thunder and lightning; 26th, fresh breezes and cloudy, with the wind at W.b.S. The UNITE, in company, also struck in the same squall.

The ship fished her main-mast; had subsequently a new mast at Plymouth.

ARETHUSA, 38.

1811. July 4th, off Sierra Leone, coast of Africa; 2h. 45m., lightning struck the head of the main-top-mast; shivered the mast in pieces and much damaged the main-mast; several men working at the pumps knocked down.

Wind on the 3rd east, with heavy rain, moderate weather; at midnight it shifted to W.S.W. and blew fresh; 4th variable all round the compass with heavy rain; the next day, 5th, the wind settled in to the north.

The ship fished her mast, and went to Sierre Leone to refit; had subsequently a new mast at Plymouth.

ACHATES, 18.

1812. February 26th, lat. 45° 39' N., long. 5° 38' W., 12h. 10m. P.M.; main-top-mast and main-top-gallant-masts shivered in pieces, main-mast severely shattered, both pumps split, decks filled with a sulphureous smoke; main-top-mast rigging cut and lost overboard.

Wind on the 25th, W.S.W., moderate, A.M., after which a strong breeze at noon, midnight strong gales and squalls; 26th ditto, with violent squalls; on the 27th the weather became moderate, with the wind at W.N.W.

The ship went to Plymouth and had a new mast.

ALBION, 74.

1822. July 5th, Portsmouth harbour, 2 A.M.; main-top-mast shivered and the main-mast much damaged.

The preceding day had been moderate and clear; midnight, calm with much rain; on the 5th calm and variable, and north-west.

The main-mast was taken out on the 11th.

ATHOLL, 28.

1830 or 31. Bight of Biafra, coast of Africa; midnight; fore-top-gallant-mast shivered, head of fore-mast slightly damaged.

The ropes were drenched with rain; the electrical discharge was carried off by the chain top-sail-tye and sheets, by which the top-mast and lower-mast were protected.

The ship had lightning conductors supplied to her, but they were stowed away below in a box.—*Report on shipwreck by lightning, p. 43.*

At the time the ship was struck it rained heavily; light winds with thick dense clouds, causing a pitchy darkness.

The discharge was conducted by chain top-sail sheets to a bolt driven through one of the forecastle beams, by which it was safely conveyed to the chain cable, without damage to the beam.—See *Nautical Magazine*, Feb. 1839.

BELLEROPHON, 74.

1807, Thursday, August 27th, at sea, Rochesbonnes north-west three leagues, lat. 46° N., long. 2° W.; 6 P.M. main-top-gallant-mast shivered in pieces, so that all of it disappeared except the heel, the rigging cut and burned in pieces, main-top-mast shivered from head to heel into a thousand pieces, main-mast much damaged, the fish on the fore part ripped off, thirteen feet of it disappeared, mizen-top-gallant-mast shivered in pieces, and top-mast and the mizen-mast damaged; mizen-top-gallant and main-top-mast-studding-sail booms carried away by the shock; some parts of the quarter-deck perforated, all the glasses in the ward-room smashed, and many persons knocked down; a butt end of a plank in the ship's side started by the violence of the concussion below, the clamps of the main deck beam cut, and a rider underneath the deck split open. One man killed, eight wounded.

The wind had been westerly, inclining to south, fresh breezes and unsettled weather; barometer 29.63; at 6 P.M. when the ship was struck it was variable and squally with heavy rain, thunder and lightning. It appears by the log that they endeavored to secure the pumps and magazines against the lightning. The discharge divided before striking the ship, into two streams, one fell on the main-mast, the other on the mizen-mast. It traversed the mizen-mast in a spiral direction, and divided again upon the hull, and found its way through the metallic fastenings to the sea, filling the ship below with thick smoke, and a strong sulphureous smell, the hull was *not* damaged below the water.

The ship remained at W.S.W. In addition to the ship's log an account is given in an official letter from Captain Rotheram, to the Hon. Michael De Courcy.

BLOOD HOUND, 10.

1812. August 2nd, lat. 40° N., long. 63° W., 5h. 30m. A.M., main-royal-mast shivered, and main-mast damaged, main-top-gallant-sail torn in pieces, main-royal riddled like a net, a piece 6 feet long torn out of main-mast, lead ripped off cistern before the main-mast, also under cabin stove below, hatch of the spirit-room burst open; all the watch on deck struck down.

The wind was south at 4 A.M., fresh breezes and clear; 4h. 30m. strong breezes and squally, with thunder and lightning; 5h. 30m. a tremendous squall with ditto; the main-top-gallant-sail was furled, the royal was stowed in the top-mast rigging so that the discharges passed on the rigging also.

The ship went to Plymouth for refit, where she had a new mast.—Some of the particulars, from private log kept by the master.

BLAKE, 74.

1812. March 2nd, lat. 40° N., long. 3° W., at sea; 5 P.M., the ship

was struck by lightning, the main-top-gallant-mast was rent open, and some of the geer set on fire under the main-top. Two men on the deck were slightly hurt.

Direction of wind; on the previous day, variable from west to north-west; on the 2nd fresh and squally; 2 P.M. the wind shifted to the eastward; at 4h. cloudy variable weather; on the succeeding day the wind went back to N.N.W., and became variable again.

The flash of lightning was the only one which occurred between 4 and 6 P.M., and it fell immediately on the ship. The top-gallant-mast had a good deal of green sap in it, which was thrown out by the shock in long fibres, in all directions, so that the mast looked like a tree with branches.

BUZZARD, 10.

1812. September 18th; off the south point of Minorca; 6h. 30m. A.M., main-mast shattered, flag at the mast-head destroyed, larboard pump split open.

The wind on the 17th east, E.b.S., and variable; 18th variable from north-west to E.N.E.; at 4h. squally with thunder and lightning; 19th north-east and variable.

The vessel went to Mahon and got a new mast; she was employed at the time in charge of a convoy, and on this service was disabled.

BARFLEUR, 74.

1813. October 21st, lat. 42° N., long. 5° E., cruising off Toulon; 9h. 40m. P.M. fore-top-gallant-mast, topmast, and foremast very much damaged by lightning, gunner's store-room and light-room below damaged. The wind had been on the previous day from S.S.E. veering to south; on the 21st variable, from south to east and E.S.E., squally with rain, and heavy lightning at 6 P.M.; the wind subsequently backed to the east, where it remained on the 22nd.

The masts are said to have been much splintered; five hoops were struck off the foremast; the discharge passed through the gunner's store-room, and forced open the door of the fore light-room close to the magazine.

The ship went afterwards to Chatham, where she had new masts.

BADGER, 10. *

1822. August 1, at Chatham, in the Ordinary; foremast shattered below the hounds, at opposite points, and at a few feet above the housing severely fractured; lead melted over bolts in the beams. The vessel was housed over.

The mast being so much damaged as to be rendered unfit for service, it was taken out.

The spire of a neighbouring church was ripped open in the same storm from the top to the bottom.

BUZZARD, (Brigantine,) 3.

1838. February 27th, lat. 6° 40' N., long. 13° W., off west end of St. Anne's shoals; 7h. 50m. a flash of lightning struck the foremast,

shivered the top-gallant-mast and top-mast, and wounded the lower mast; top-gallant sail cut to pieces.

The weather 1 A.M. moderate and fine, with the wind at south-west; 3h. 30m. dark and cloudy, with heavy rain, thunder and lightning; 4h. light winds with rain; 6h. 15m. a heavy tornado from the north-east, with vivid lightning and heavy rain; 7h., after the ship had been struck the wind veered toward the east; and at 9h. became settled and calm. The vessel was out of soundings.

The lower mast was in great measure protected by the chain top-sail-tye; the discharge in passing down the mast rent a strip two inches wide out of the sleeve of the shirt of one of the sailors, without hurting him, farther than leaving the impression of a slight bruise.—See *Nautical Magazine* for Feb. 1839.

BLAZER, (steam-vessel.)

1839. March 20th, Mediterranean near Beyrout; 7h. 50m. P.M., main cap split open, chain peak and throat halliards cut through, and partly fused, thirty feet of the planking of the sponsons on the larboard side blown out, one of the deck planks on the same side split and shivered; a quarter-deck rail of 4-inch African oak, shivered on the starboard side for ten feet; all the iron stanchions started; a large hole struck through a boat hanging at the davits; the after cabin filled with sulphureous smoke. Two persons on the deck knocked down.

The vessel was rigged with chain rigging, and over this the discharge passed on each side to the hull; the pieces of the chain halliards strewed the decks; the lightning broke a chain of half an inch in diameter on each side the mast; the engine was going at the time, and the lightning was seen to play about it in an extraordinary way;

Direction of wind south-west, blowing fresh with very heavy rain.—From the log of Mr. J. Hele, acting-master, and communication from Capt. Wakefield, R.N.

CAMBRIAN, 44.

1799. February 22nd, English Channel; 1 P.M. a ball of fire fell on the main-top-mast, and passing by the wet ropes into the waist killed two men, and hurt several. One of the hoops of the main-mast burst open.

Direction of wind, south-west and squally; the morning had been fine; about 12h. 30m. a heavy black cloud came up from the westward with lightning and a deluge of rain, when the ship was struck the people were employed in clewing up the sails. All the men on one side of the deck were struck down; the lightning passed out through the scuppers abreast the main-mast; the number of men taken below was about twenty. The explosion appeared tremendous, similar to that of a 32-pounder.

Fisguard struck at the same time off the Eddystone, and all her sails scorched.—Ship's log, and further communication from Admiral Sir B. Martin, G.C.B., and Captain Haydon, R.N.

CUMBERLAND, 74.

1810. August 27th; at anchor near the Faro of Messina; 11 P.M.

main-royal-mast, main-cap, and main-mast struck by lightning; fore-top set on fire. The wind on the previous day had been westerly, moderate and variable. 27th wind shifted to the east; P.M. squally, with thunder and lightning, and rain; 11h. heavy claps of thunder, with lightning and rain; the next day, on the 28th, the wind veered to the north, with moderate weather. The main-mast was surveyed and condemned; but as the ship's services could not be dispensed with, it was fished.

CUMBERLAND, 74.

1810. September 2nd, at anchor near the Faro of Messina; 8h. 30m. A.M. the main-top-gallant mast and main-mast struck with lightning; four hoops on the main-mast burst open.

Direction of wind, S.S.W., fresh and cloudy; 8h. 30m. heavy thunder, with lightning and rain; on the next day S.W., moderate and fine.

The main-mast by this second explosion was completely ruined, and the ship was obliged to leave her station and proceed to Malta for refit. Ship's log and further particulars by Lieutenant Brady, R.N. (See *Nautical Magazine* for December 1834.)

CALEDONIA, 120.

1811. February 24th, moored in Basque Roads; 9h. 15m. fore-top-mast rent from the head to the heel, fore-mast damaged. The lightning descended into the hull, and scattered some iron work about the forge. Thirty of the crew on main deck were slightly affected by the shock, one man seriously hurt.

Direction of wind, W.S.W.; 8h. A.M. fresh breezes with rain, the wind on the previous day W.S.W. fresh breezes and cloudy; on the succeeding day W.S.W., squally with rain.

The ship went to Portsmouth soon after, and had a new foremast.

CRESSY, 74.

1812. February 21st, Dunnose, Isle of Wight N.E. two or three miles, 8h. 10m. main-mast struck by lightning and much damaged.

Direction of the wind, south-west to west; P.M. strong gales and squally, with rain thunder and lightning; on the preceding day variable from south to south-west, the succeeding day W.S.W. and variable.

The ship shifted the main-top-mast, and went to Spithead, where the main-mast was taken out.

CUMBERLAND, 74.

1812. February 25th, Bill of Portland N.N.E., five leagues; 1h. 40m. main-mast set on fire by lightning; 1h. 55m. mast again struck by lightning.

Direction of wind, 24th, A.M. strong gales N.N.W., midnight moderate and fine; 25th south-west, fresh gales and squally; P.M. strong gales with heavy squalls, thunder, lightning, and rain; 26th north-west moderate and fine.

The main-mast was rendered unserviceable, it was perforated in

several places, some of the iron hoops burst open. The ship was obliged to go to Spithead for a new mast.

This was the second main-mast in this ship ruined by lightning within a period of less than eighteen months.—See *Nautical Mag.* for December, 1834.

CLORINDE, 44.

1813. March 11th; Little Basses N.W.b.N. four miles, off Friars Head, east coast of Ceylon; 3h. 30m. main-top-mast cut by lightning in two pieces, main-mast shivered from the mast-head to the deck. Three men killed, five wounded.

Direction of wind, westerly and variable; p.m. fresh breezes and cloudy; 2 p.m. squally appearance, a heavy dark cloud came toward the ship from the windward side. It burst on the mast and shivered it in pieces, only a wreck remained; the lightning passed out of the main-deck ports. The explosion seemed to those below as if all the main-deck guns had been fired.

The ship went to Trincomalee for refit, did not sail again until the 11th of April. Further particulars furnished by Admiral Briggs.

CHANTICLEER, 10.

1822. October 18, moored in Corfu; 3h. 15m. main-mast struck by lightning and rendered unserviceable.

Direction of the wind; 17th E.S.E. to S.S.E.; weather variable, fine and squally by turns, with thunder, and lightning; 18th, south to south-east; a.m. moderate and squally, with thunder, lightning, and rain.

CLINKER, 12.

1828. December 31st; south-end of Fernando Po, 70 miles, Coast of Africa; 5h. 20m. brig struck by lightning, main-mast carried away six feet above deck, the top fell over the gangway, and the mast across the deck, top-mast and sails thrown overboard. One man killed. 7h. 30m. wore ship, found head of main-mast carried away 8 feet below the cap, topmast splintered, and top-gallant-mast fairly split in shivers; jaws of main boom broken.

Direction of wind; the wind had been W. to W.N.W. for some days; 31st a.m. moderate and cloudy; 4h. cloudy with distant thunder; 4h. 30m. squalls from the north-west; 5h. 30m. the ship was taken aback by a heavy squall from the east with heavy rain, thunder and lightning; 5h. 15m. the lightning extremely vivid, the rain heavy. After this the wind again went back to the north-west as before.

The brig went to Fernando Po for refit.

(To be continued.)

A COLLECTION OF M.S. CHARTS AND PLANS RELATING TO HARWICH,
AND ITS IMMEDIATE NEIGHBOURHOOD, in the *British Museum*.—
Communicated by CAPTAIN WASHINGTON, R.N.

At a time when the Admiralty are about to publish a plan of Harwich harbour on a large scale, and the Eastern Counties Railroad is being extended to that place as its terminus, and when from the value of its port and its proximity to the continent, Harwich is likely to become again shortly the station of our mail steamers, with all Northern Europe, the following account of the former plans of this port may not be without interest to the readers of the *Nautical Magazine*.

1. A coloured chart of the coast of Essex and Suffolk, from the Naze to Bawdsey; shewing the course of the rivers Stour, Orwell, and Deben; drawn on vellum, *temp.* Henry VIII., 2 feet by 2 feet.—*Cott. Aug.* 1. 1. 57.

2. A coloured chart of Orwell haven, or rather Harwich road, with some projected fortifications at the entrance, it is inscribed "This plott made by Mr. Lee, *anno* 25 Henry 8 vi." On vellum, 3 feet by 2 feet 8 inches.—*Cott. Aug.* 11. 56.

Observations.—As the date of this plan is about 1536 it is perhaps the oldest extant,—it is rudely drawn on a scale of about 10 inches to a mile,—it shews the town of Harwich, walled, a small part of Shotley Point, the entrance of Hanford Water, and a creek with vessels riding about $1\frac{1}{2}$ mile north of Landguard Point. On Beacon Hill and at Landguard Point are square fortifications, but whether as projected only or actually existing, there is nothing to prove further than that No. 3 is a plan of a fort only; shewing that a fort either was, or was about to be, erected in the reign of Henry VIII.

There are no soundings in this plan. Landguard Point is a bold round of nearly a quarter of a mile immediately to the southward of the fort, (it now extends 600 yards beyond). There is an appearance of a double circle of detached heaps of stones apparently for a breakwater, both off Beacon Cliff and Landguard Point; but they may be meant to mark the low water line, which otherwise is not represented.

The land between the town of Harwich and Beacon Cliff forms a bight nearly a quarter of a mile deep: the cliff projects very little to the eastward of the face of the town.

Landguard Point is styled Langer Pointe.

3. A plan of a fort inscribed "Harwich," probably of a fort proposed to be erected there; it differs from the preceding. Drawn *temp.* Henry VIII., 1 foot 4 inches by 1 foot 2 inches.—*Cott. Aug.* 1. 1. 61.

4. An outline plan of Harwich; drawn about 1690, by a Dutch artist, (Sir Bernard de Gomme? compare the plan of Sheerness, xvii. 12) on a scale of 150 feet to an inch, 1 foot 3 inches by 1 foot.—*XIII.* 15. 3.

5. A coloured plan of the town and harbour of Harwich with the soundings marked; drawn in 1725, on a scale of 850 feet to an inch; with a separate plan of Landguard Fort, on a scale of 40 feet to an inch; 2 feet 3 inches by 1 foot 7 inches.—*XXXIX.* 61.

6. A plan of the harbour of Harwich, with the rivers Stour and Orwell that empty themselves into it, with the country up to Maningtree

and Ipswich, and marking the precincts of the borough of Ipswich; shewing also the course or run of water from the river Orwell or Ipswich, river towards Polleshed, according to the charter of the 10th of Henry VIII. granted to Ipswich; drawn about the year 1780, by the late James Pulham, Esq., who died Mayor of Harwich in 1808, on a scale of 2 inches to a mile; 2 feet $1\frac{1}{2}$ inch by 1 foot $7\frac{1}{2}$ inches,—*add.* 11,802. *a.*

7. A plan of the harbour of Harwich, and the entrances of the rivers Stour and Orwell, with the soundings of the harbour distinguishing the depths of water found upon survey, about 1757, and the depths taken in February 1777; shewing also the enlargement of the Sands, and the decay of the cliffs between those years, and the course of the Orwell according to the charter of Ipswich, 10 Henry VIII., drawn by the late James Pulham, Esq., on a scale of 6 inches to a mile; 2 feet $5\frac{1}{2}$ inches by 1 foot $8\frac{1}{2}$ inches,—*add.* 11,802 *b.*

Obs.—This plan shews a depth of 30 feet water between the Altar Shoal and Landguard Point: there appears a general decrease in depth of water in the harbour but most probably this is not accurate; the shoal now called the *Bone* is termed the *New Gristle*. A small fortification called the Guard is shewn on the north-eastern corner of the Harwich Shelf, with a dotted causeway connecting it with the land; but it seems doubtful if such a building ever existed.

There is a duplicate of this plan on vellum in the British Museum.

8. A coloured plan, on vellum, of the harbour of Harwich, and the entrances of the rivers Stour and Orwell; drawn by the late James Pulham, Esq., on a scale of $6\frac{1}{2}$ inches to a mile; 2 foot $8\frac{1}{2}$ inches by 1 foot $6\frac{1}{2}$ inches,—*add.* 11,802. *c.*

Obs.—It is nearly a repetition of the preceding and contains the same soundings.

9. A coloured plan of the town of Harwich, drawn about the year 1780, by the late James Pulham, Esq., on a scale of 130 yards to an inch; 1 foot 3 inches by 11 inches,—*add.* 11,802 *e.*

10. A coloured view of Harwich, and Landguard Fort, taken from Harwich cliffs; drawn by H. Gilder, in 1777; 5 feet 6 inches by 1 foot 1 inch.—XIII. 15. 4. *e.*

11. A tinted plan of the Royal Dock Yard and part of the town of Harwich, with proposed alterations in the position of the Ships, placed as breakwaters; drawn about the year 1780, by the late James Pulham, Esq., without a scale, but about 18 yards to an inch; 2 foot $4\frac{1}{2}$ inches by 1 foot $7\frac{1}{2}$ inches,—*add.* 11,802 *f.*

Obs.—This plan shews the Pool, Fireship, and Argyl as breakwaters.

12. An outline plan of the Royal Dockyard, and part of the town of Harwich; drawn about 1780, by the late James Pulham, Esq., without a scale, but about 36 yards to an inch; 1 feet 9 inches by 1 foot 3 inches,—*add.* 11,802 *g.*

13. A coloured plan of Harwich Cliffs and Crown Lands; drawn about 1780, by the late James Pulham, Esq., on a scale of 100 feet to an inch; 1 foot 10 inches by 1 foot $4\frac{1}{2}$ inches,—*add.* 11,802 *h.*

14. A coloured plan of the river Orwell up to Ipswich, and part of

the river Stour; drawn about 1780, by the late James Pulham, Esq., without a scale, one inch to a mile nearly; 1 foot 6 inches by 11½ inches.—*add.* 11,802 i.

15. A coloured plan of Landguard Fort, with the proposed alterations, by Thomas Hyde Page, Engineer, signed as "approved 12th of June, 1778, c, c, c." [i.e. Sir Charles Cocks, Bart., then clerk of the Ordnance, afterwards Lord Somers]; drawn on a scale of 40 feet to an inch; with section, on a scale of 20 feet to an inch, 4 feet 4 inches by 2½ inches.—XXXIX. 62.

Obs.—This plan is one of those which accompany a Report, xvii. 16. 6., to the Master-General and Board of Ordnance, on the state of the fortifications, etc., in the Medway division; viz. Sheerness, Gravesend, Tilbury, and Landguard, by Captain (afterwards Sir) Thomas Hyde Page, Engineer, dated 6th of June, 1788.

16. A coloured plan of the state of the new works at Landguard Fort, in Jan. 1781; drawn on a scale of 200 feet to an inch; with sections of the redoubt and the lines, on a scale of 15 feet to an inch; 2 feet 8 inches by 2 feet.—XXXIX. 63.

17. Coloured plans of the Wells which supply water for the use of the Dockyards, etc., of Sheerness, Harwich, and Landguard Fort, with M.S. explanations, by Thos. Hyde Page, Engineer, 1783.—XIII. 15. 4. g.

18. A coloured chart of the coast of Suffolk, from Orwell haven to Gorleston, near Yarmouth, with the several Forts and Beacons erected thereon; drawn on vellum, *temp.* Henry VIII. on two sheets, measuring together 7 feet by 1 foot 1 inch.—*Cott. Aug.* 1. 1. 58.

19. A coloured chart of the coast of Suffolk, from Bawdseye to Thorpe, including Orford and Aldborough; drawn, *temp.* Elizabeth, on two sheets, measuring together 5 feet 2 inches by 2 feet 2 inches.—*Cott. Aug.* 1. 1. 64.

20. A coloured fac-simile copy, on vellum, of a bird's-eye view or chart of the coast of Suffolk from Alderton to Aldborough, including Orfordness, "made in Aldborough by Ananias Appleton, *ar. dom.* 1588;" 2 feet 4 inches by 1 foot 8 inches.—*add.* 11,802, n.

Obs.—This chart shews the Onion and Whiting Shoals; the river Alde flows into Hollesley bay, as at present. The original is in possession of Mr. Lee Vernon, at Aldborough.

OTHER PLANS OF HARWICH, *not in the British Museum.*

21. Plan of Harwich harbour, on the scale of 400 feet to an inch, or about 15 inches to a nautic mile; surveyed by T. P. Desmaretz, 1732.

Obs.—This plan is roughly drawn and coloured; it shews all the shoals in the harbour, but incorrect in their outline; it gives eight lines of soundings across the harbour, indicating roughly a western channel leading in a north direction between the Altar and the Guard, as well as the main channel close round Landguard Point; the land at this point ends

abruptly just to the southward of the fort in a very round point a quarter of a mile long from east to west. Ireton's ditch is marked as running across the peninsula of Landguard just to the southward of Walton marshes.

This plan is in possession of Mr. Sansum, at Harwich; a tracing of it by Lieutenant Wood, R.N., is in the Hydrographic Office at the Admiralty.

22. A survey of the cliff and town of Harwich in 1752, shewing the encroachments made by the sea since the year 1709. Scale 100 feet to an inch.

Obs.—This plan is valuable as enabling us to judge of the ravages of the sea, for nearly a century and a half, when compared with the charts of Græme Spence, in 1804, and the survey just completed in 1842. It is in possession of the corporation of Harwich, which possesses also some other plans of the town of minor importance.

23. A chart of the East Swin with the adjacent rivers on the coast of Essex, and Suffolk, from Clackton Cliff to Orfordness; surveyed by order of the Lord Commissioners of the Admiralty, by GRÆME SPENCE, in 1804; scale 2 inches to a statute mile, in possession of the Hydrographic Office, Admiralty.

Obs.—This is an elaborate and accurate survey, and shews the soundings throughout, with the rivers Stour, Orwell, and Deben, up to the bridges of Maningtree, Ipswich, and Woodbridge.

24. Harwich harbour in 1780; scale 6 inches to a statute mile.

Obs.—This plan is fairly drawn, it gives all the shoals, and a fair sprinkling of soundings. The leading marks for clearing the shoals are well drawn out, and the views, seven in number, are good. A proposed breakwater is drawn along the north face of the town; another runs 500 yards east along the whole of the north edge of the Guard, and a third 100 yards in a north-east direction from Beacon Cliff.

It is in possession of the Trinity Board.

25. A plan of Harwich harbour, surveyed in H.M.S. *Shearwater*, Captain Washington, by Mr. E. K. Calver, master and assistant-surveyor in 1841-2; scale 12 inches to a nautic mile.

Obs.—This plan extends from Ray Island and Dovercourt Church on the west to the Cork Ledge Buoy on the east, giving the soundings throughout; it shews a good western channel, carrying 12 feet water; it also points out the all but blocking up of the eastern channel by Landguard Beach Point, with the extension of that point 600 yards to the southward, and the encroachments of the sea on Beacon Cliff, occasioned by carrying away the cement stone from Felixstow Ledge, and from the base of Beacon Cliff.

26. Harwich harbour, the same as above, engraved on the scale of 8 inches to a nautic mile.—Hydrographic Office, Admiralty, May 1843.

Obs.—This is the only engraved plan of Harwich harbour.

The public is indebted to the Trustees of the British Museum for a valuable catalogue of the M.S. maps, charts, and plans in that

magnificent collection. The 1st volume of this catalogue is printed, and the second in course of compilation under the able superintendence of Mr. John Holmes, of the M.S. Department, and it is to his kindness that we are indebted for the first part of the above extracts.

Harwich, Rodney's Victory, 1843.

BOTTLE PAPERS.

(Continued from p. 370.)

We have received the following additions to our bottle chart, and are only prevented by a pressure of other matter, from continuing the accounts of the Bottle Papers in the order of the table in our March number (p. 182), but which we shall resume in our next.

(No. 131.—5a)

R. W. Yacht Club-House, Mill Bay, Plymouth.

SIR.—In the March number of the *Nautical Magazine*, p. 181, you invite your readers to communicate any information they possess on the subject of Bottle Papers. As brevity is the order of the day, allow me shortly to state that, on the 16th of July, 1838, I threw *four* bottles overboard from the Plymouth schooner "Corsair," (bound from Leghorn to Liverpool.) Our then lat. was 50° 0' 0" N., and long. 8° 30' 0" W. The *Morning Post*, of October 22, 1838, reported, on the authority of the French consulate at Lloyd's, *one* of the bottles found at Guignac Island, near Ushant. The paper enclosed therein was signed by Messrs. Webster, Cuming, Miller, and myself. The distance, in a straight line, drifted by this bottle was about 250 miles in three months; and the several facts of the case correspond tolerably well with those of the "Hope," (vide p. 182, No. 5, N.M.).

Yours, &c.,

WM. KNIGHT.

(No. 132—106 c.)

A bottle was found on the shore of Abaco, in lat. 26° 40' about fourteen days ago, which contained the following:—

"Whoever picks up this bottle be pleased to take notice, and have it published, that the ship "Prince George," Capt. William Potts, is now in lat. 29° 30', long. 71° W., and this day got up their main-top-mast, having lost one in a squall on the 30th of July, off St. Domingo. Passengers all well; Mr. and Mrs. Vick, and three young children; Mr. P. Simmonds, Mr. Anderson, and our noble Captain. One seaman died this day, and three sick.

"At sea, August 8th, 1827. Lat. 29° 30' N., long. 71° 00' W.

(Signed)

"WM. POTTS, Commander.

JOHN SIMMONDS, Passenger.

WM. C. ANDERSON, do.

WILLIAM VICK, do.

Nassau, N. P., Oct. 31.

(No. 133.)

About ten days ago, a bottle was picked up on the north side of Long Island, in lat. 26° 15', and long. 74° 52', containing a paper thrown overboard from the United States ship, *Natches*, Capt. Budd, on the 6th of August last, in lat. 28° 13';—but the longitude is not mentioned, or, has been torn off, as some part of the paper got wet and is destroyed, so as to prevent the whole from being made out; but the request of Midshipman B. J. Moeller to publish is thus far complied with.—*Ibid.* Dec. 15.

We record this latter No. 133, in the hopes that it may meet the

eye of Captain Budd, or that of Mr. Moeller, as either of them may be able to supply the longitude of the place where it was thrown over, which from the latitude given, would appear to give it more than ordinary interest. The preceding one No. 106c affords another very interesting proof of the eddy current, setting to the southward from the Eastern edge of the Gulf Stream.

THE BOTTLE CHART.

SIR.—I was surprised, if not sorry to find that, Sir John Ross, himself distinguished in scientific *research*, should consider it to be his duty to write condemnatory of the system of research proposed in your Bottle Chart. I say research, for it conveyed to my mind but the idea of challenging investigation into a large and extensively useful field of ascertainable facts, though Sir John assumes that it asserts the currents to have run from the point at which each bottle was thrown overboard to where they were each picked up, and then proceeds “to expose” as he says, the “*bottle fallacy*.” The fallacy, however, consists in his having attempted, and attributed to any one that attempts, to deduce a system from insufficient data; finding this impracticable he pronounces the facts contained in your chart to be fallacies, and then endeavours to do away with them; but facts have ever been stubborn things, and will not be thus easily put aside.

This misuse of data was anticipated, and I had thought sufficiently guarded against. So thought also the writer of that excellent letter which follows that of Sir John, who says, “as properly observed,” the lines on the chart are merely intended to connect the places of departure and termination of the bottles, and not to shew (as may be imagined, by those who are not seamen,) in every case the true direction which the currents and drifts pursued. I had thought your proposed system unquestionable, as the true inductive system, and still remain convinced that it is to collect all ascertainable facts, from them collated to deduce their law of action, and from thence ascertain their governing law, thus “tracing nature up to nature’s God.” Sir John perhaps having *run* the range of the sciences has *but* found all to be vanity; true indeed! such is the case as comparable to the *eternally true*, yet are all truths of value in their just order and degree. Such then being the case, I hope you will continue your highly interesting, and what will prove to navigation, eminently useful investigation; and though many may be found to cavil at it, none who have experienced the advantage of following certain routes because of the favourable winds and currents which had obtained on them, but will duly appreciate the advantages that will be obtained to navigation by your map being continued and enlarged by the data which will flow in. These data will present difficulties to the captious, as a collection of isolated unmanageable facts, partial in their action and inadequate to the discovery of anything useful but to the philosophic spirit that will examine and generalize the discrepancies, banish dis-similar things then seen to follow a similar law, evidence of a mechanism, the character of which is universality, and

the result of which is "very good," and in turn becomes the proof of the design of a law with which they had appeared to be at variance.

The several instances cited by Sir John, as contradictory of the facts, contained in your map, and as falsifying the proposed scheme of inquiry may be satisfactorily accounted for. Reconciled difficulties or dissimilar facts shewn to conform to a similar law are additional proofs of the truth of that law to which they conform.

The first instance cited by him, being in a tide, off Dover influenced by local causes, and prevented from following the law in its general aspect, is not a case pertinent to the argument. Yet, there does not appear much difficulty even in this, as it is obvious that he himself was in doubt whether the *desired* ebb had made or not. Our desires materially modify the results which we *receive*, and the bottle was thrown over to ascertain the fact. Therefore, though the log shewed two knots of ebb, this was not the case at the surface, else why the doubt expressed in the experiment? And, as Sir John says, the bottle may have taken the direction of the Downs, impelled by the wind, as we know that a strong wind will arrest even a surface tide. That it did not do so in this case the log is no proof, as the log-ship sinks below the surface water when not held up by the action produced by a somewhat tightened line which will hardly have been the case in the instance alluded to.

The value of the second experiment, the loaded wood and bottle, may be admitted, and the truth of the theory proposed remain entire. The difference consists in the extent of action. The wood was accelerated less than the bottle by the wind, but when the wind was adverse to the current, was less retarded. Then if Sir John's wood experimenter were equally good with the bottle, and set off at the same time and point of departure, they would reach nearly the same destination.

The results of the bottle experiments prove that though there be currents and counter currents in the water and atmosphere, the prevailing currents were such on the route of each bottle, as to bring them to where picked up. Hence though they may have "worked a traverse" the course and distance made good was from point of departure to point of termination, and had a vessel passed over the route of any one of these bottles she would have similarly, though not to the same amount been influenced with that bottle.

The statement relative to the Defence's top-mast but argues that it had got into one of those whirling eddies that are a consequent result of the law of currents, the economy of which must also deserve investigation.

The experiment of the loaded bottle with an empty bottle, is similar in principle to that of the second experiment, and open to the same answer; while it further illustrates what all admit, that a loaded bottle being more immersed offers more resistance to motion in the water, and offers less surface for the wind to act on than an empty bottle.

The fact relative to the icebergs is valuable testimony to the truth of the proposed scheme of ascertaining the direction of currents, as it quite accords with what appears to be a likely effect of the governing forces of the southerly motions, from a consideration of which it must appear that the southerly currents spoken must be, in the absence of other courses, greatest at the surface. Therefore, though the icebergs

were carried southward, and though five-sixths immersed they must have been so carried by a comparatively, if not actually, surface current.

I doubt not, but that a strict examination will prove that a surface current passes icebergs in the same direction in which they move, the icebergs being retarded by being so immersed, and the lower water not having equal rapidity of motion with the upper; if so it may account for the infrequency of collisions with them, and what beauty, what design, what fitness to the weakness and wants of man!

Sir John's account of the icebergs going south may account for the Alexander's bottles reaching Staffa and Donegal, by a current which is, perhaps, referable to the earth's motion.

Then of the many reasons why Sir John's copper cylinders should arrive at any destination, save that which a little reflection would assign them, viz. the bottom, I shall select but one, as sufficient to account for their not arriving in terra cognita. The galvanic action (especially between wind and water,) between the metals, would be to destroy their junction, and thereby render the cylinders pervious to water, and this long before the period necessary for their transit could expire.

The contrariety between the winds and currents instanced by Sir John, obtains but partially, for it is undeniable that the currents are constantly being caused, controlled, or modified by the action of wind, suffice it to mention two instances, though hundreds will suggest themselves to those who observe such things. The current on the Lagulhas Bank is altered and controlled by the wind till the gravitating force of the water overcomes the force of the wind, and the stream bursts back with double rapidity into its former direction even against a gale.

And on the Gold Coast the usual easterly current is arrested by the the south-east winds, which blow home to the coast in June and July, and gives place to a current running to the W.N.W. from Cape Palmas, and continues during the months of June and July, sometimes for a longer period depending on the winds. But while we admit the fact that the winds influence the currents, and even considerably, we must not fancy that they are the sole causes of currents. The similarity of direction of each in general, may give rise to this idea; but it is evident that they are both due in the main to the same causes, which act similarly, though not alike extensively, viz. the earth's motions. The difference consists in that while the air is more mobile than water, its inertia is comparatively nothing, and while air may be extensively altered and influenced by heat, or its absence, water remains apparently unaffected; one ceases to act, at least sensibly so, while this the other goes forward.

I would then propose that you should continue to encourage the prosecution of the enquiry, but would beg to suggest the advantage to be derived from white bottles being used (coloured white in the blowing with an oxide of arsenic,) because of their being more easily seen, in order that they may be picked up on the route, their place, latitude, and longitude registered; and again started with the added information.

I remain, &c.

To the Editor, &c.

G. FISHBOURNE, *Commander R.N.*

ENLARGED SERIES.—NO. 6.—VOL. FOR 1843.

3 G

VARIATION OF THE COMPASS.

(Continued from p. 211.)

Royal Observatory Greenwich, May 15th, 1843,
Magnetical and Meteorological Department.

MEAN MAGNETIC DECLINATION FOR 1843.

January . . .	23° 11' 31"	March . . .	23° 7' 17"
February . . .	23 9 56	April . . .	23 4 48

MEAN MAGNETIC DIP—1843.

	AT 9 AM.	AT 3 A.M.
January	68° 59'	68° 59½'
February	68 59¼	68 59¼
March	68 58½	69 1¼
April	68 0	69 0¼

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

REPORT ON EAST INDIA ISLANDS.

(Concluded from 345.)

At the Arru Islands, Christianity was introduced many years past by the Dutch at Amboyna, and nearly all the principal people there profess the Christian religion. The Ki Islands, however, appear to have been neglected by the Dutch missionaries, and the consequence is, that many of the natives have been converted by the Mahomedans of Ceram, who have several priests on the island.

The commerce of the Ki Islands is inconsiderable when compared with that of the Arrus, attracting only about a dozen prahus annually from Celebes, Butou, and Banda.

These obtain tortoise-shell and cocoa-nut oil. The last is the staple produce of the group, and is of superior quality, in exchange for the foreign articles in general use amongst the natives on the islands.

Refreshments in the form of yams, pigs, poultry, cocoa-nuts, Indian-corn and fruit, are to be obtained here in greater quantities, and at a cheaper rate than on any island in these seas that I have visited. Prahus and boats of all sizes, built of the excellent timber with which the island abounds, form one of the principal articles of export; and the construction is the chief occupation of the inhabitants when they are not employed in the cultivation of their plantations. Vessels going to the Arru Islands touch here to obtain boats for trading among the smaller islands, and a large portion of the prahus navigating these seas are built here. The small boats especially are highly prized for their durability and swiftness, and it is singular that these people have hit upon a model closely resembling that adopted for fast-sailing vessels in England.

The Ki group is well situated for communication with Port Essington, as the monsoons blow fair for making the passage either way. The harbour of Kidulan, on the north-west side of the Lesser Ki, in which we anchored, was surveyed by Captain Stanley; it is an excellent anchorage being sheltered to seaward by several islands of considerable extent, between which there are navigable channels.

The Britomart left the Ki Islands on the 29th of June, and arrived at Banda

* Just published, see notice of Charts.

on the following morning. The port of Banda is closed against foreign merchant vessels, and is rarely visited by those under the Dutch flag, with the exception of two or three ships which arrive annually from Java, bringing rice and European luxuries for the supply of the inhabitants, and taking away the produce of the nutting plantations. The population consists of about 20 Europeans in the civil and military employ of the government, 250 soldiers, all of whom are natives of Celebes and Amboyna, with the exception of about 30 Europeans, 50 Chinese, 3,000 or 4,000 convicts, about the same number of slaves, perhaps, 1,500 free people or burghers, many of whom are of Dutch extraction, and 200 or 300 natives of Timor-laut and Baba. The aboriginal inhabitants of Banda have totally disappeared, in fact, have been exterminated. The only European merchant in Banda is an agent of the Dutch Commercial Society, who had lately arrived; but the Chinese are all engaged in commerce, are more wealthy than the others, possess two small vessels and several prahus, which are employed in trading with the natives of Timor-laut and New Guinea; but owing to the amount of duties at Banda, the Chinese find it difficult to compete at the places they visit with the traders from Singapore. During this year, the voyage of one of the vessels belonging to the Chinese above mentioned, had been rendered unprosperous by the arrival, in the same port of New Guinea, of the Lullworth, an English merchant vessel, that has several times visited Port Essington; the goods brought by the latter being better suited to the tastes of the natives, and, therefore, enabling her to buy up all the nutmegs, the most valuable produce of that part of New Guinea. A few prahus from Ceram, New Guinea, and Ki Islands annually visit Banda; but the trade on the whole is inconsiderable.

Banda owes its chief and almost sole importance to the nutmegs produced there. The parks (as they are called), in which the nutmeg trees are cultivated, are in the cultivation of several planters, of Dutch extraction, who are supplied with convicts by the government with the entire produce of the plantation at a very low price (about three halfpence per pound), and are strictly watched, that they may not dispose of any nutmegs to the traders. The annual produce is said to average between 300,000 and 400,000 pounds of nutmegs, and about one-fourth of that quantity of mace. Nutmegs are the only exportable produce of Banda, there being a great want of energy amongst the inhabitants, the cause of which, however, is sufficiently evident. The climate of Banda proves very unhealthy both to Europeans and natives, especially during the western monsoons, when the smoke from the neighbouring volcanoes rolls down upon the town, and renders it scarcely habitable. The two last residents lived only three months after their arrival at Banda. The secretary was acting resident at the period of our visit.

The Britomart left Banda on the 6th of July, and at noon on the following day entered the Bay of Amboyna; but the wind being light and unfavourable, she did not anchor off the town before the morning of the 8th. We found here a large Dutch frigate, and a brig-of-war, which were attached to the Malacca station.

Amboyna is the capital of the Malacca; the governor resides here, but makes occasional visits to the residencies under his control, which are as follows:—Banda, Ternata, Mandano, on the north-east end of Celebes, Coepang, on the south end of Timor, Cajata Bay, on Buru; and Wadhi, on the north coast of Ceram.

The last is a settlement that was formed in 1838, after the abandonment of Fort Du Bus, on the south-west coast of New Guinea. The island of Amboyna, with Sapagua and Harouka, contains about 35,000 inhabitants, the greater portion of whom are employed upon the clove plantations. Victoria is the capital; contains 4,000 inhabitants, about one-fourth of whom are of European extraction. There are also many Chinese inhabitants, who are chiefly occupied as traders, shopkeepers, and farmers of the revenue. Amboyna owes its importance entirely to the clove plantations, which are cultivated on the forced labour

system. The people of the villages (orang negri) are obliged each to maintain a certain number of clove trees, and the chiefs of the villages are responsible for the trees being kept in order. The produce is sold to the government at a price so small, that, were not forced labour adopted, the natives would abandon the culture. The soil and the climate of Amboyna, which is humid in the extreme, are well adapted for the growth of all descriptions of tropical produce; but the restrictions on trade have had the effect of crushing all spirit of enterprise on the part of the inhabitants, notwithstanding the exertions of the present governor of the Malaccas, Colonel De Steurs. The supply of rice and sugar is imported from Java; the consequence is, that the former can only be purchased by those in good circumstance, while the bulk of the people are obliged to be contented with the insipid bread made from the sago palm.

The port of Amboyna is closed against foreign merchant vessels, but occasionally an English whale-ship in distress puts in there, when a guard of soldiers remains on board until she goes to sea again. About half-a-dozen Java ships (for Amboyna does not possess a single vessel larger than a prahu) visit the place annually, and occasionally some small Spanish vessels from Manilla enter the port. These take the precaution of calling at the Sulee Islands, on the way to Amboyna, to obtain fresh papers and the Sulee flag; for, according to treaty, whenever the Dutch shall admit vessels belonging to other than native powers, the port of Amboyna shall be open to British also.

The imports by private ships consist almost entirely of supplies for the inhabitants, which are paid for in cash, there being a considerable circulation of the latter, in consequence of all individuals in the employ of the government, even the crews of the ships of war on the stations (generally two), being paid monthly.

The native population of Amboyna may be divided into four classes; the burghers, the orang negri or villagers, the arafuras, and the slaves.

The burghers are either of European extraction, or are descended from native parents, who have become burghers by servitude in the army or civil department. They are a very intelligent race, and would be industrious also, were there sufficient employment for them. Many employ themselves as carpenters, cabinet-makers, and workers in metal; but the demand for the articles they manufacture is so limited (not extending beyond the wants of the immediate neighbourhood) that their labours meet with little encouragement. Their anxiety for employment is evinced by the number of candidates for the situation of native schoolmaster in the Arru and Serwatty Islands, the salary of which amounts to no more than six rupees, or ten shillings per month. Owing to several applications from young men of this class for employment at Port Essington, I was induced to ask the governor whether natives of the burgher class would be allowed to emigrate, and found that it would in no way be contrary to existing regulations. The orang negri, or, villagers, are genuine natives of the island, and are a fine intelligent people, certainly superior to every other in the Indian Archipelago. Like the burghers, they are all Christians, and with very few exceptions can read and write. Being subjected to the forced labour system, they are in a manner slaves to the soil. The arafuras are the uncivilised inhabitants, who trade in the interior; their numbers are not great.

From Amboyna the Britomart proceeded to the Serwatty Islands, and touched at Kissa and Letti; the anchorage at both which places was surveyed by Capt. Stanley. Kissa had for nearly three years been suffering from drought to such an extent, that 300 of the poorer inhabitants had died, if not from absolute starvation, from disease produced by the diet to which they were forced to resort to sustain life. Pigs and buffaloes were nevertheless to be purchased. Mr. Bies, the missionary, had left for Amboyna about six months previous to our visit, and did not intend to return. Two English merchant ships, one from Bale, loaded with rice, the other from Sydney, had been trading here and at Letti, within the last three months. At Kissa we learnt that the Portuguese of

Dille had recently made a new settlement on the north coast of Timor, immediately opposite to Kissa, and that then vessels frequently came across to trade.

In working to the eastward, the Britomart passed along the north side of the Serwatty Islands, and communicated with Sermattans, where there is a very good anchoring place during the south-east monsoon. Baba, the next island to the eastward, had an appearance of great fertility; we saw two large villages on the south side, at one of which a Dutch flag was hoisted. As the provisions were running short, Capt. Stanley was unable to survey the west coast of Timor-laut, which appeared worthy of examination. The island Serra is high, but the main land opposite is very low; and this appears to be its character to the south extreme, differing in this particular from the east coast, where the land is high and mountainous.

When at Bandan we met with a Capt. Chasteaux, commanding a ship belonging to a Chinese who resided there; he had lately returned from a voyage to Timor-laut, during which he had found that the south-eastern part of Timor-laut consisted of an extensive island, on the north side of which was a bay, which afforded excellent anchorage in eight to ten fathoms throughout the year. He remained there two months, trading with the natives for tortoise-shell, bees'-wax, trepang, &c., and proposed going there again in the setting-in of the north-west monsoon, as stock, yams, Indian corn, &c., were abundant there. This port, which is not 200 miles distant from Port Essington, may hereafter be of importance.

I regret very much that we were unable to remain a few days at Timor-laut, since, from the specimen of the natives of this island that I had seen during this voyage, I should have been glad to have had a further acquaintance with them. The young men are partial to emigration, with the view of acquiring sufficient wealth, during the time they remain abroad, to enable them to live in comfort at home, where the knowledge they have acquired during their absence gives them a high standing amongst their countrymen. We met with a few of these emigrants at the Ki and Arru Islands, but their favourite resort is Banda. Here the greater portion enter into the service of the government or of the residents, in the capacity of police and custom-house peons, night watchmen, &c.; while all the prahus sailing out of Banda are manned by them. Others employ themselves in catching fish, cutting timbers and firewood, and growing vegetables for sale. Indeed the markets are chiefly supplied by them. They are generally good rough carpenters, and upon the whole would make a very good description of labouring settler for Port Essington, when such may be required, particularly as there would be little difficulty in obtaining any number of them. They have lately come to Banda in such numbers, that the government have refused to permit any more to settle there.

On the 6th of August we left the south end of Timor-laut, and on the following day made Melville Island, on the coast of Australia. Contrary winds detained us until the 14th, when we entered Port Essington, having been absent eight weeks. Having now given every particular of interest that came under my observation during my late excursion.

I have, &c.,

(Signed)

GEORGE WINDSOR EARL,

Capt. M^r Arthur, R.M., Acting Commandant,
Victoria.

Linguist, &c.

THE MERMAID.—It is now nearly three years since we first called the attention of our readers to the performances of the Archimedes. The results were to prove the superiority of vessels fitted out on the screw over the paddle-wheel system in an eminent degree. The different voyages made by the Archimedes across the channel, and round the whole coast of Great Britain, proved that up

to a speed of between 9 and 10 miles per hour, and working against strong head winds, nothing could exceed that vessel. Although the experiments since made with other vessels fitted out with the screw-propeller have not given such good results, enough has been shown to justify stern-propellers in all sea-going ships.

The system is being now carried out, on a great scale, in the Rattler steam frigate just launched, and a few months hence the Great Mammoth now ready for launching, and fitted up with the screw-propeller; also a vessel called the Napoleon, destined for the Post-Office service of France, between Marseilles and Corsica, has given results of ten miles per hour. We were not, however, prepared for such a result as has recently been produced with the Mermaid; namely, a velocity of from 13½ to 14 miles per hour.

This vessel which has just been completed for the Admiralty is of iron, and of the following dimensions:—

Length	130 feet.
Breadth	16 feet 6 inches.
Depth	9 "
Burthen	164 tons.

She is propelled by two low pressure condensing engines each of 45 horses'-power, or 90 horses'-power collectively.

The propeller, which is on Mr. Rennie's coroidal principle, is 5 feet 6 inches diameter is placed in the stern of the vessel as usual; and is driven up to its velocity by toothed or friction wheels, of which it has a spare set.

The engines are placed on iron sleepers, fastened to the bottom of the vessel, and are worked on the direct action principle, namely, with the crank shaft immediately above the cylinders.

The engines are exceedingly compact, occupying only a space of 15 feet by 5 feet, which the total dimensions of the engine-room, including the boilers and spaces are only 28 feet by 9. The weight also of the engine, boilers, water, sleepers, and machinery, including the coal-boxes is only 47 tons. This is in a measure owing to the compactness of the engines, and the almost exclusive use of wrought iron. The workmanship is first-rate.

The Mermaid has now had four trials on the river Thames. The result of which have given in velocity of from 13½ to 14 miles per hour. She steers with great facility, and her performances have equalled some of the best boats on the river. As proofs of her performances, she has made the voyage from Blackwall to Gravesend distant 20½ miles, with tide in 1 hour and 19 minutes, which is about the average time of the Blackwall Railway and other first rate boats, and she has gone from Deptford Dockyard to Erith Pier 12½ miles against wind and tide in 1 hour.—*From a Correspondent.*

PAYNE'S MODE OF PRESERVING WOOD, &c.

We have lately seen some specimens of timber which have undergone Mr. Payne's process of preparation, and we are decidedly of opinion that his method is a good one.

Some of these specimens were very hard, and all of them when tested, were proved to have been impregnated to the very centre. The durability of his mode of preservation rests on the important fact that timber accidentally brought into contact with some of the solutions he uses, has been known to last for 50 or 100 years. Many of our readers have no doubt inspected the timbers of the Royal George, and will have observed that the metallic bolts have been destroyed, and the wood which has been in immediate contact with

them, preserved at their expense. Also in Cornwall and other mining districts it is found that wheels that work in streams impregnated with iron, last for ages, and the wood in the shoes of piles have been found perfect after a lapse of some centuries. Mr. Payne has also tolerable proof that wood which has undergone his process, will not be attacked by insects.

A correspondent has forwarded to us the copy of a letter, detailing the result of an experiment made at Calcutta, with some of his prepared wood. He states that two pieces of Deal of the same size (the one prepared, and the other not) were placed in a room infested by the white ant, these pieces lying about six inches asunder. On the second day the insects had made considerable ravages on the unprepared piece, and on the eighth day had destroyed all of it except a thin crust on the top. The prepared piece remained for three months longer, in the original position in which it was placed, and although on taking it up a great number of ants had located themselves beneath it, yet it remained as sound as when first laid there. This is an important fact and goes a long way to establish the validity of Mr. Payne's process for preserving timber from the ravages of insects.

NAUTICAL NOTICES.

BUOYS OF THE HOLLEPOORT.—The Director-General of the Royal Netherlands Marine has given notice, under date 8th of April, that in consequence of an alteration in the position of the inlets between the Islands of Vlieland and Terschelling, the buoys of the Hollepoort will be removed and placed at the recently repaired channel called North East Gat, between Thomds Smit Gat and the New Gat, of which the number of buoys and bearings will hereafter be duly published.

It has also been notified, under date of the 11th of the same month, that on the 20th of March a tjalk was wrecked on the North Shoal of the Vley, near Rammekens, about eight ells within the black buoy, outward of the channel, which since has been entirely buried in the sand, only the mast remaining standing, its bearing being southward and northward, with the steeple of the Abbey of Middleburgh and a group of trees on the late Villa of Newland. And under the same date, that another vessel, with spritsails, lying at anchor in the Vley of Rammekens, was run on board of, and sunk at the depth of two ells at low water, in the direction of S. & N. of the steeple of the Abbey of Middleburgh and the barn of the before-mentioned country seat, the mast of the vessel also remaining standing.

PORT DALRYMPLE.—Captain Stokes, of her Majesty's brig *Beagle*, employed in surveying the Straits, &c., has recently placed a beacon on the shore in Lagoon Bay, which, kept in one with the beacon on the Barrel Rock, forms a good lead in through the West Channel into this port. The last house on the western shore, the property of the Rev. Dr. Browne, kept in one with the Shear Beacon, will take a ship through the East Channel—a channel that may be used with safety by commanders of vessels making the port in heavy weather, when the pilots are unable to get out.

EIDER CHANNEL, near the Koller Sand.—The Director-General of Customs and Commerce has given notice, under date 25th ult., that instead of the Eider

Channel, near the Koller Sand, which has been found to be inaccessible to large vessels, another channel, through the so-called Peter Carstons Loch, is to be substituted. The entrance of this channel is, coming from the South and North Rock, near the Black Stiel Buoy No. 14, or the White Buoy No. 11. Besides these two buoys there are also—as marks on the south side of the Stiel Buoys Nos. 15 and 16, as also along and between both the Buoys No. 14 and 15; several beacons, and on the north side of the White Stiel Buoys Nos. 12 and 13. At the shallowest part between the Black Buoys Nos. 15 and 16, the water at an ordinary ebb time does not exceed six feet. The course along this channel is N.E. and N.N.E..

Tonning Royal Pilot Inspectorate, May 11, 1843.

C. F. RATHSCH.

COLUMBIAN PILOT-BOAT.—The master of the Bremen ship *Adelgunde*, Kehrman, arrived in the Weser from Angostura, reports that on his last arrival off the Orinoco he found stationed there a pilot-boat, fitted out by the Columbian government. The same is cruising either within or close to the bar, or lying at anchor below Cape Barima, as the said master reports, in a depth of water sufficient for ships to approach her without danger. The pilot-boat is a schooner under the Columbian flag at her main, and carried two guns one a large swivel.

LIGHTS OF THE NEW DIEP.—To facilitate ships entering the harbour of New Diep, in case of need, in the evening or during night time, two lights have been placed on the Wierhoofd (Wierhead), which mark the north-west entrance of the New Diep; one nearly at the extremity of the Wierhoofd, showing a white light, placed above the level of the sea 8 86 ells; the other, a south-westerly direction, 67 60 ells inside of the former, and 10 67 ells above the level of the sea, shewing a red light; which lights since April 1st have been lighted every evening at sunset. They have been placed thus conspicuously that they may be seen by vessels coming from sea, as soon as they have passed the Westerhoop and may also be clearly perceived from all points of the roadstead of the Texel and the Texel stream, up to the Texel harbour, and to the Balg. As soon as the red light bears a little to the south of the white light, the entrance to the New Diep is open, and by steering S.W. by compass the "Corps-morts," before the New Diep, and the Oldhoofd along the Weirhoofd will be avoided, and steering along the lights, New Diep may safely be entered.

ALTERATION IN THE LIGHTS OF KULLEN, ON THE SWEDISH COAST.—The Director-General of Marine has, under date of the 2nd May, given notice that, according to a proclamation of the Royal Administration of Marine at Stockholm, of the 17th March last, the Light Tower of Kullen, on the Swedish coast, in lat. $56^{\circ} 18' 12''$ N., long. $12^{\circ} 27' 45''$ E., of Greenwich, will, in the course of next summer, undergo an alteration, and the open coal fire on the same be replaced by a revolving lamp light, which, in eight minutes, will turn round, producing during its revolution four flashes, each of 30 seconds duration, and be succeeded by eclipses lasting a minute. The light will consist of twelve lamps, with parabolic reflectors, which will be placed on a quadrate frame moved by machinery. During the alteration, an open coal fire will be shewn at the foot of the Light Tower. This new revolving light cannot be mistaken for that of the Island Anholt; as, according to the proclamation of the Danish Marine administration of March 21, the revolutions of the latter light continues only $3\frac{1}{2}$ minutes, during which eight glares, each of six seconds, are produced.

HUNTER BANK, between Syang and Wyang, North-west of New Guinea.—Sunday, February 23rd, 1840, about 11 A.M. steering through the passage between Syang and Wyang, with a fine breeze N.W.b.N. going about five knots, and keeping rather nearer the Syang shore than the other, I happened to look over the side and saw that the water was a very light colour, immediately after could see the bottom distinctly, the masthead-man not having seen it before. White sand and black coral rocks, got a cast of the lead as quickly as possible, 11 fathoms, we soon after deepened too much for the hand lead, and went into the dark blue water. Took the bearings immediately that we were over Syang body of the island, west about 5 or 5½ miles; Wyang S.S.E. about 7 miles, the breakers plainly visible from the deck on both islands. From the masthead as soon after as I could get there, the green water was seen extending considerably on each side, or about E.S.E. and W.N.W. of the part we crossed, which I should estimate to be about 200 yards in breadth. We were heading N.E.b.N.

I could not examine this bank more particularly as breakers were reported ahead previous to our getting on it, which, perhaps, was the reason it was not first seen from the masthead; it seemed, however, pretty large, and to extend a good way towards Wyang, also to reach very near or quite to Syang; but of this I can say nothing positively. It lies directly in the fairway of ships passing between these islands; we got only one cast, through the lead line being below, and the ship going quickly through the water. I do not think there was less than ten fathoms on any part that passed under us.

The soundings which are generally inserted on the west side of Syang should be continued to the south-east point, as the bottom can be plainly seen a full mile from the shore; except at the north-east part there are soundings a considerable distance from this island. I have landed on the south side for turtles, of which, in April 1837, we procured nineteen very fine ones, in fact, the boats had been ashore about two hours previously to our getting on the bank above-mentioned, but only obtained two.

CORAL ROCKS, in the Straits of Mindoro.—Cruizing to the westward of the Appo Shoal, in the Straits of Mindoro, and standing to the north-east with a light breeze and fine weather; about 2h. 30m. P.M. a shoal was reported from the masthead close to on the weather bow. From the rail I saw it distinctly by the discoloured water, it being then about 100 yards distant, backed when under the lee, and sent a boat to sound, in which was the chief mate. About 3h. 30m. P.M., the boat returned, having examined it carefully, the result of which is that on a rock, situated near the western verge were found only nine feet water, and on another of similar description near the other extreme eleven feet. The depths on the remaining parts varied from three to nine fathoms, extent of soundings altogether not exceeding three hundred yards, and the size of these very dangerous coral rocks about 16 feet by 10 or 12 feet.

At the time the tops of the highest trees on Appo large island were just visible at an elevation of 50 feet, bearing E. ¼ S. by compass, from which I estimate the distance to be about 14 miles; and from the shoal that lies W.N.W. of Appo Island, which we passed at 5h. P.M. of the same day. It bears about S.W.b.W. distant about 5½ miles. Therefore, taking the position assigned to Appo large island in the Directory, which is 12° 39' N. and 120° 28' E., this dangerous coral bank having only nine feet over one part, will be in 12° 40' N. and 120° 14' E. nearly, and the other shoal, which is about half a mile in extent will be in 12° 43' N. and 120° 18' E.

I trust this notice may be of service until these dangers are critically surveyed.—March 15, 1842.

R. L. HUNTER.

BENNET SANDBANK AND REEF, between Masbate and Sibuyan, Philippine
ENLARGED SERIES.—NO. 6.—VOL. FOR 1843. 3 H

Islands.—While running to the southward along the west side of the island Masbate, contiguous to the straits of St. Bernardino, I discovered a dangerous sandbank with surrounding shoal. It was first seen from the masthead, bearing S.W.b.S. distant 6 or 7 miles, and we approached the west side in passing to within a mile and a half. This bank bears W.S.W. from Gato Isle or Rock distant about 7 or 8 miles, and 9 miles distant from the nearest part of Masbate, small, the dry part not above 200 feet in length, including the shoal on each side not more than half or three-quarters of a mile any way, clear blue water between it and the main island, and elevated about the height of a boat, therefore a ship without a lookout aloft, would pass very near without discerning it. S.b.W. from the sandbank and distant 9 or 7 miles we passed a patch of shoal water, the depth on which I am unable to state, but from the colour think it dangerous. From here we hauled off to the westward and then were met by an extensive reef about ten miles from the Sibuyan shore, part of which was breaking. I was not near enough to this reef to ascertain the size of it, but within our masthead view the green water was seen extending considerably to the south-west of that part on which the sea broke, this being the east end, and bearing east from the body of Sibuyan, distant ten miles as stated.

Also observed a reef off the north-west side of Sibuyan, distant about a mile, having blue water within it. Until seeing these unknown dangers I intended to have passed by this route to the Mindoro Sea. With the exception of the common track from the Straits of St. Bernardino to the Straits of Manila, these seas are most imperfectly known.

The Island Gesta Del Gallo of Norie's Chart, omitted in Horsburgh's, has existence.

MEROPE SHOAL, Straits of Mindoro.—Cruising in the Straits of Mindoro, and standing to the E.S.E. (sun ahead) got suddenly into shoal water, coral rocks under the bottom, and evidently not far from the keel, wore immediately, got two casts of the lead in five fathoms, then seven, and no bottom. Sent a boat to examine it, returned, having found no less than seven fathoms, but they overhauled it very imperfectly. As we did not pass over this shoal but stood back in the direction we went on, I know not whether there may be less water than the five fathoms. It lies W.N.W. from Appo large island, with the trees on said island just visible at an elevation of 16 feet, estimating the island to be 25 feet, will give about ten miles distant, which from the appearance I should consider to be near the truth.

This shoal must be small as I had previously passed many times between it and the reef and did not observe it, quite steep to on the west side, when seven fathoms were obtained in the gangway, no soundings under the bows.

[This is the same shoal as that reported in our last volume, p. 286, and alluded to in the preceding page; and the Marshall Bennet is, perhaps, one of the "London Whalers" alluded to.—Ed.]

EUROPA LIGHT, Gibraltar.—An additional section of the range of light shewn from this lighthouse has been opened from the 25th of April, which renders it visible from Sandy Bay on the Algeiras coast to the mouth of the River Palmones. It is spoken of in high terms as to its brilliancy.

UNDERWRITERS, SALVAGE, SHIP-MASTERS, AND SHIPWRECKS.

THE annals of former times, not fifty years ago, will exhibit no such heartrending scenes, as have recently in almost every day's recurrence, blanched the cheeks of humanity, losses of life and property were then comparatively few, they are now of daily occurrence; yet the science of navigation is infinitely better understood, and practical seamanship more generally diffused, whilst the calamities at sea are fearfully increased, as if the advancement of skill and knowledge instead of a blessing, had become an actual curse.

This anomaly can only be explained by examining into the causes which have influenced and produced it; amongst the first are the malpractices of many Underwriters of the present day, who are no longer the men of high honour and integrity which graced Lloyd's in former times; it is now well known that there is neither certainty or safety in an insurance Lloyd's (where each individual risk ranges from £100 to £200 only,) when a loss has accrued, too many of the Underwriters no longer feel themselves bound by the intent and equitable interpretation of the terms of their bonds; often so many as 200 of them are on one ship and cargo, and the insured is exposed to the whims, objects, prejudices, delays, and interests of those Underwriters, who, influenced by any of these considerations, subscribe to a joint fund, for the purpose of employing a lawyer to find or make a flaw in the policy, or to raise legal quibbles and trust to the laws uncertainty, and its delay. In the mean time the insured party is unjustly harrassed with law proceedings, his character frequently assailed without cause, and possibly ruined by the delays which have been interposed. The masters and part of the crew are often tampered with, and made witnesses against their employers, when frequently they become initiated in scenes of trickery, which render them selfish and dishonest men for the residue of their lives; so that in point of fact the practice of evasion degrades the entire body of Underwriters, debases and demoralizes the shipmasters, who ought to be, and formerly, were, the trusty guardians of the Shipowners property, and of the public interests confided to their charge.

In this manner crime begets crime, the dishonesty of the Underwriters frequently reacts against themselves, whilst the shipmasters (with a few honourable exceptions) prey alike upon the Underwriters, and their employers. The absence of the high character which once distinguished Lloyd's, has recently given rise to some Joint Stock Marine Insurance Companies, most of whom conduct their business upon fair and equitable principles, there is however one of recent origin, the N Marine Company, who in their constitution have adopted a quibble worthy of imitation at Lloyd's; it is carefully concealed from the public, but ought to be generally known, for its principle is manifestly unjust, and dangerous to the assured. By the constitution of this Company, if a Broker or Agent effect an insurance in their office, and after paying the amount of premium, indorses the same to his principal, declaring therein that the sole interest was and is for the Indorsee who is the *bona fide* proprietor, and notwithstanding that the body of the policy written by the office, expressly states the same to be effected

by Agent, yet this office will not pay under their own policy to the principal, but compels the claimant to demand or sue through the Agent or Broker, although it may happen that such Agent or Broker is bankrupt or out of the kingdom, or positively refuse to do so, from private interested motives, and in consequence of this private regulation in the constitution of the Company, the principal on whose behalf the Insurance was effected and whose money paid the premium, is left entirely at the mercy of the Agent, Broker, and Underwriters on the policy, and cannot even put the parties under cross-examination, should they or the Company's officer have mal-worded or varied the orders of the Insured: for what equitable purpose I would ask, has such an undue stipulation been introduced into the constitution of this Company?

I now proceed with illustrations to support my arguments, and for the purpose of exemplifying my suggestions and reasons, why it is imperative on the existing Committee to have an equivalent amount of testimony from Shipowners and Merchants who are *not* underwriters, and insurance-brokers, the motto of these gentlemen being, *no losses no premiums*, viz., without the occurrence of occasional losses, and which bear no proportion in the aggregate, parties would not be incited to insure, whilst the very object of parliamentary inquiry is to give freedom and security to commerce, and by placing the maritime interests of this country upon as secure and efficient a basis as that of the navy, to permit with equal safety those who so choose to run their own risks of the sea.

That the evils and losses complained of should exist in the merchant service, of this great maritime power, and beyond those of foreign nations, and in fact to any further degree than in our own navy, is a disgrace to the Legislature, and until they shall have remodelled and simplified all the laws relating to shipping, and have given the owners as much power, protection, and easy redress, &c., as in the naval service, there is certain loss or ruin to all who (except the owner be also master) shall own a vessel of less tonnage than 300.

In the January number of your Magazine, I took a review of the Laws of Doctors Commons regarding salvage and shipping interests, I advert thereto for the purpose of briefly shewing why the existing Parliamentary Committee on Shipwrecks, should avail of their present labours to frame a bill for Parliamentary revision of the jurisdiction of that Court, in respect of marine matters.

1st. No seaman should be permitted to place the ship under arrest, from that Court for wages claimed, until the *owner* had been summoned before a magistrate, and if the latter do not think fit to decide it, he shall have the power of sending the matter to the superior court. In support of this reasoning I cite three cases, A, and I give transcription of letter B, from one of the apprentices of another vessel, not dilated upon, the "Susan." The expenses incurred by this master in Rio and charged upon his brig of 180 tons only, were £1050, whereof but £290 could be recovered from the Underwriters, to whom the sum of 200 guineas had been paid for their twelve months' insurance on the vessel.

2nd. For the reasons set forth in last January number, I urge that not more than one half the *net amount* of any salvage shall go amongst the entire ship's company, and that the owner shall have the right to

apportion such money, upon which if any dissatisfaction be felt, the aggrieved may summon before a magistrate, who only, as in the case of wages, shall have the power to send it to the superior court, and in support of this, I will also cite a case C.

The Haidee with a valuable cargo, was stranded at the Cape de Verds, and according to the evidence, from inattention somewhere, but not of the master's that I am aware of, or will presume to say. Her rudder was unshipped, and some other damage done to her bottom; the Mary Ann being at hand with a large crew and four boats, rendered prompt aid in transshipping cargo, &c., and ultimately succeeded in getting the Haidee off, (during which period of 30 hours, the Mary Ann was left a quarter of a mile distant, in an exposed bay, with one passenger and a boy only on board,) pending the 10 days occupied in refitting, &c. of the Haidee, the cooper, carpenter, crew, boats, materials, &c., &c., of the Mary Ann were freely employed, with the wages, provisions, delay, danger, &c., all at the expense and loss of the owner of the Mary Ann, several of the crew of which latter vessel on arriving at Monte Video, deserted, contrary to their articles, thereby forfeiting wages and claims.

On behalf of himself and such of the crew and apprentices as returned in the Mary Ann to England, the owner entered proceedings in the Court of Doctors Commons for salvage, the owners of the Haidee having refused to offer any amount of compensation, but pending the proceedings the owners of the Haidee or their proctor seek the Captain of the Mary Ann (who had long been discharged from that vessel, and out on bail, upon charge of felony, &c.,) nevertheless the proctor for the Haidee secretly obtains an affidavit from him, and sub rosa compromises for £150, the claim of the parties under the pending suit; which subsequently came to the ears of the proctor of the Mary Ann, who knowing it to be illegal, (and holding besides that master's letter, and vouchers sent from the Cape de Verds, as well as the written authority of the entitled crew and owner's apprentices) took no trouble to prepare an affidavit relative to the conditions of the Ship's Articles and other facts.

Upon the case going into Court a mass of irrelevant and undue matter was put in, sworn to by the late master (then having been tried and sentenced to transportation,) by one of the mates, (who had been discharged for participation, incompetency, fraud, perpetual drunkenness, &c., and being in that state at the time of the salvage,) and by a poor black seaman, all in diminution of salvage services and slander; though having given their evidence and authorities in writing to the owner and proctor of the Mary Ann: the award of that court was that the crew take three-fourths of the gross amount, (and entitling even those to participate who were useless from drink, as well as those who had deserted their ship and violated their articles, causing their owner loss and expense for and by having to pay double wages, for bad substitutes in a foreign port,) leaving but one-fourth to pay ship's delay, wages and keep, waste, wear and tear of boats, materials, risks, trouble and expenses in port, and in and out of court; and for the use and danger of his vessel, and her insurance whilst so irrelevantly neglected, by and for the interests of the master and crew, to whom the court

hold such preferential temptations to run risks and to do wrongs upon their owner, and to set him and his equitable rights and power of control, &c., at defiance even when at home!

The owner has too little power, the master too much in such matters as these. The master should no longer be omnipotent ashore, to the injury of his owner or others; but should be in the position to be called by owner and crew, and subjected to cross-examination by both. A more comprehensive and conclusive form for Ships' Articles should be established to protect and aid the owner, and bind the master and crew.

The case of the "Galston," wrecked in Valentine Bay, Terra del Fuego, in 1841, is a most remarkable one from first to last, and if fully set forth and investigated would tend to corroborate my previous assertion, "that the present system of awarding salvage is a premium for shipwrecks,—for endangering more property,—for encouraging desertion and insubordination of master and crew;" and my present declarations that the interests of owners and underwriters are not reciprocal, that masters are benefited by shipwreck, and can and do aid each other therein and thereby; and that the underwriters as a body are not interested in altering the law of salvage or of master; nor in effecting salvage at all, beyond seizing what may have been saved at the expense of others; nor in the general conduct of the master; nor as to waste, or neglect, or his abominations in repairing of damages, or in raising bottomries. The underwriters admit alone the most obvious necessities for the repair of the ship only, and then pay only for two-thirds thereof; thus, it will be found that in the owner, having to bear one-third of what repairs the underwriters will admit, of all that they will not admit, and in addition thereto port charges, pay and keep of master and crew, with other incidentals and prodigalities, and the premium paid to the underwriters on the total value of his insurance; *that his said insurance is a delusion*, unless the captain make a total loss or a salvage case of it, for some friend. The underwriters, are not interested in seeking into cause and effect, or results to owners, they rely on the law, on the loose wording of the policies, the doubtful interpretation thereof, the deviations and vitiations by the masters, and their neglects and irregularities from ignorance, &c., or from believing the owner insured, viz. when they do reflect at all!

I am satisfied that if the details of the Proposed Bill be not too lenient, and Captain Fitzroy's proposed exemption clause be expunged, and the character, integrity, &c., of the masters and mates constitute equally a point in their qualifications, and my proposed log and journal made legal proof, (not thereby to exclude *viva voce* evidence,) *then premiums will come down 25 per cent. and 50 per cent.*

If these animadversions should be the means of enlightening some who are not quite au courant, of aiding to secure ample powers to the contemplated boards of examiners, of lessening the necessities for insurances, of promoting an inquiry into and simplification of Doctors' Commons law, and of removing the present powers from rapacious proctors and needy alongshore attorneys, I shall have obtained the object of my labors.

Having in the above given but a faint outline of some few only of

the many facts and proofs in my possession, and that too done with the view of serving the public, and promoting the best interests and pre-eminence of our country, by its mercantile marine, I would further desire to enlighten my countrymen upon an important point of law which I feel convinced is too little known, and has hitherto been legally denied and resisted, viz., the liability of judges and other public functionaries to be sued for erroneous judgments or injuries, caused by them in their official capacities; but the recent decision of the Privy Council in a case of appeal, sets that point at rest; it will be found in *Fisher's Colonial Magazine*, for April last, pages 430 to 436; and cannot fail to be read with interest by all who will take the trouble to peruse attentively and observe the *very general bearing* and applicability, as laid down in the elaborate and able judgment delivered by Lord Brougham; and in consequence whereof, four other important cases of civil action are about to be brought forward; two being upon marine and two upon colonial matters.

G. T. WHITINGTON.

CASES A.

The master of the "Susan," on arriving in port, was displaced for bare-faced robberies of cargo, stores, passage-monies, and freights, suppressing papers, and other bad conduct; he leagued with six of the crew, signed a certificate for wages double those for which the men had signed articles, and in an hour six monitions for arrest, &c., were issued against the ship, at an expense of £60, though it appears the ship's husband had asked the long-shore attorney to summon the owner before any magistrate he chose.

In the case of another ship, after Alderman Pirie had dismissed a summons granted to two of the crew, they went to Doctors Commons and obtained citations; the proctor for the owner advised payment to save greater loss by expense; the court besides holding it law that, if the crew deny or resist the deductions from wages, for slops supplied at sea, such must be proceeded for by action at law.

In another case, the ship was heavily bottomreed, &c., and on her arrival was seized by the court, and two officers put into possession for the bottomree holders and crew; the latter in conjunction with a Jew who had purchased the wages of the crew at £5 per head; the captain and the Jew arranged matters, and wages, for three times the real amount, decrees were obtained by default of owner's pleading thereto, and the ship of 200 tons, A 1 for nine years, coppered, and copper fastened, &c., was sold for 400 guineas; not sufficient to pay the wages and law expenses,—the owner declining to interfere, because he would thus become liable, in addition to the loss of his ship, &c., although he had taken advice, and made private representations of the nefarious proceedings; but was told nothing could be done, unless he came into court, paid all the costs incurred, and appeared to the *dozen different actions* in the names of the crews, who had actually no interest, and who had shipped and sailed elsewhere. The owner might then have indicted the master at the Old Bailey; but could not bring him before the court.

N.B.—As so many arrests are admitted against the Ship upon the *ex parte* statement of the seamen, without magisterial authority; why should not 1500 weavers be permitted each to issue process of seizure against the manufactory of their employer, and that without summons?

CASE B.

July 3rd, 1842.

SIR.—In consideration of your kindness in allowing me to take my baggage, and in not punishing me for the plunder of the ship's cargo, in which I was concerned with others, I purpose and desire to tell you all I know, and likewise to abandon, as against your ship "Susan" all claims for wages and otherwise, which Capt. Alley agreed to allow me, notwithstanding I was under articles to you.

Capt. Alley, whilst at Rio, never but once came on board the Susan, during the many weeks she was there undergoing repairs; he resided with Capt. Johns part of the time, (whom he brought home as cabin passenger,) and partly at Pharent's Hotel. When we left for England he had on board about £100 in sovereigns and doubloons; he had not a farthing when we went into Rio. He also received from an English gentleman £10 for freight of plants, and signed a bill of lading, which you are not likely to find, any more than the sextant, quadrant, charts, and many other things which were on board. Capt. Alley likewise sold things in Rio to Mr. Grundy, which he had obtained in barter at the Falklands; he also sold, and brought home a quantity of merinoes, silks, velvets, linen, broad cloth, &c., which he had obtained from the wreck of the "Galston."

Your obedient servant,
(Signed) CHARLES YOUNG.

CONCUSSION SHELLS AND FIELD ARTILLERY.—Captain Norton has made application to the Master-General and Board of Ordnance to be permitted to adapt his Concussion Shell to Field Artillery, believing that such shells may be used with good effect against an enemy posted in block-houses, farm-houses, mills, &c. These shells have been already tested from the eight and ten inch guns, otherwise called the 68 and 130 pounders, and the Select Committee of Artillery Officers at Woolwich in their official report to the Master-General, dated Oct. 15th, 1842, have pronounced them "simple, safe, and efficacious."

EURYDICE.—*Portsmouth, May 20.*—The Eurydice, 26 guns, built according to the plan of Rear-Admiral the Hon. George Elliot, was launched on Tuesday. The ceremony of naming her was performed by a daughter of the gallant Admiral. A numerous assemblage of persons had collected, and a few minutes before high water she left her semi-aërial position for a more natural and graceful one upon the surface of that element over which she is hereafter to move. The following are her principal dimensions;—

	Feet.	Inches.
Length between the perpendiculars	141	2
Keel for tonnage	116	1½
Breadth extreme	38	10
Breadth for tonnage	38	4
Depth in hold	8	9

908 tons.

She is to be taken forthwith into dock to be coppered, and to be got ready for the pendant; and it is expected she will be commissioned in a few days. From her appearance there is every probability of her proving a fast sailer.

VICTORIA AND ALBERT YACHT.—Portsmouth has been selected as the future

head-quarters of the Royal Yacht, and a depot will be established here for the coals she will use. It is her Majesty's wish that the equipment and rigging of the yacht should be completed as speedily as possible, so that she may be brought round here by the end of June. It is, however, very doubtful whether she can be got ready by that time. The is to be fitted with Smith's paddle-boxes, which are now being prepared for her at Chatham. Her figure-head consists of a double shield surmounted by the crown, that on the starboard side being the shield of the Queen, and the one on the port side the shield of his Royal Highness Prince Albert. The shields are surrounded by the rose, thistle, and shamrock, and the motto "Honi soit qui mal y pense." Below the stem is some handsome frieze work, and two splendid medallions of Her Majesty and Prince Albert, the Queen on the starboard, and Prince Albert's on the port side.—*Hants. Advertiser.*

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ERRATA IN THE PRACTICE OF NAVIGATION,

Continued from p. 279.

Page 244, 2nd note *alter alt to lat.*

268, line 8, *alter P. P. 58' to H. P. 58'.*

283, *alter* ) app. alt. 29° 37' 30" to 29° 47' 30".

362, Explan. tab. 40, in the rule for computing a term, *erase 2d. before Reduction.*

461, Col. 1h. 12m. *erase the 4 in 8.4.*

617. Col. (3) div. 3, Limerick, *alter 52 35.0 to 52 40.*

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THE VOICE OF THE TROPICAL HURRICANE.

I come! I come! with the gloom of night,
In terrors dark garb, mid the broad day-light; (1)
In whirlwinds to sweep o'er the land and the sea,
Wailing harshly the elements minstrelsy! (2)

With varied pace in my destin'd round, (3)
Like the bubble of childhood, I swell my bound;
And the north wind's moan, and waves hollow roar,
Are heralds my advent sends to the shore!

I come in the black, the rainy blast, (4)
With lightning flash o'er the reeling mast;
The wild wind's screech, and the billows sound,
And the thunder pealing its echoes around!

With force resistless o'er hill and dale
And boundless seas shall my might prevail; (5)
The weak or the strong I embrace in death,
When encircled within my revolving breath!

And I keep in the midst of my wrathful breast,
At the whirlpool's surface—a circle of rest, (6)
The heedless to lure, as the winning wile
Which treachery lightens in beauty's smile.

But my calm like the lull of the tyrant's sway,
Or, baseless vision—soon hastens away,
For again I sweep on in mad career,
And the scattered wrecks of my wrath appear.

I tarry not long in the path of the sun,
But hurry away from mischief I've done; (7)
From Equator to Pole my course I incline,
By laws never changed and acknowledged divine.

Tho' frightful in aspect, as aspect can be, (8)
 Searching throughout both the earth and the sea ;
 Like the angel of death with the message of fate,
 I come first to chasten, and then renovate.

My purposes done, the sun comes with glee, (9)
 As the riven clouds pass to the dusky lee,
 And the trade-wind returns, with its genial air,
 But desolate scenes I leave in my rear!

Yet mourn not that havoc my visit hath dealt,
 For the chariot of health wheels round my belt ; (10)
 And the Voice which spoke awfully forth from the sky,
 Doth balm, in the Seraph of Mercy, supply !

NOTES.

(1) Those who have experienced a tropical hurricane, though in the mid-day, are aware of the extremely angry and wild appearance assumed by the clouds, so threatening, indeed, as to make a sensible, though perhaps a silent impression, on the mind of the most firm and resolute. It is scarcely possible to afford a sufficiently clear idea by using the term "gloom" of the extraordinary and terrific appearance of the weather on the approach, and during the continuance of a storm of this nature within the tropics; the severity of its character is much subdued in temperate latitudes; although, if cold be superadded to its other relieved features, the consequences of its effect may become equally dreadful.

(2) Equally impossible is it to describe in adequate terms the peculiar sounds which accompany the storm. "There's music in its roar." The word "min-strelsy," however, is scarcely applicable but in a figurative sense—the impetuous rush of the aerial current, as if issuing from a tube, is so overpowering as during the squalls to absorb all other sounds; but it assumes at times such a chorus of yells, screeches, and shrill whistles, probably from its action among the corlidge, as to be quite indescribable.

(3) The progressive rate of a storm varies; the cause of which is unknown. Although conjectured, the cause of the remarkable regularity of their curves has not been clearly determined; that this is governed by a fixed law of nature may, however, be inferred, and hence the term "destined" may be admitted. The "soap bubble" is here alluded to. The analogy is not inapplicable, as the meteor is known to swell its bound, or expand. The limit of a circle is continued (its periphery) hence we use the singular. The precursor wind, if any, generally comes from the north, and its melancholy moanings precedent to the coming or "advent" of the storm has often been described; also the "hollow roar" of the waves as if driving into caverns. These are the "heralds" to the land, the precursor swell, and fluctuating winds announce the approach of the tempest at sea.

(4) If it were possible to see the entire meteor, it is highly probable that, it would appear as a black mass of vapour cone shaped "Rainy blast," this expression of course is mere poetic licence. One of the remarkable features of the hurricane is the prodigious quantity of rain which accompanies it, especially between the tropics. Though generally unaccompanied with thunder at sea, that phenomenon is extremely awful at times when the storm passes over land, and this perhaps usually occurs when there is little or no rain falling.

(5) It must be evident upon the least reflection that on the open ocean the full force of the gyrating current of air will be felt; whilst on land the violence may be often modified by friction, and the interception of elevated lands. "The weak, &c.," the idea intended to be expressed here is that, mere strength or power does not always prevail against the might of the storm, the strong man, and the sturdy giant of the forest, alike with the weak, and the mere shrub succumb to the blast.

(6) The central calm is here alluded to, the similes may be allowed. The calm central space, although passive, is borne along with the progressive mass, and the renewal of the "mad career" is certain, from the peculiar disposition of the meteor. Seriously dwelt upon, it is one of the most curious of Nature's "handy works."

(7) "The path of the sun" westward; in less than a week the meteor passes to the point of change, "a law of creation," this is no doubt unquestionable.

(8) To the eye of the seaman, the appearance of the heavens on the approach, and during the continuance of a hurricane is indeed "frightful," perhaps more so than any other single phenomenon. "Searching thro'out," this is a licence, in allusion to the searching property of the wind from its rotary motion, no part escapes.

(9) "My purposes done." Upon the presumption which none will doubt, that a wise purpose is intended in its presence, "all partial evil is universal good;" therefore however dreadful the immediate consequences may be, the visitation in its ulterior effects is good, the air is purified, the seeds of disease scattered, and the soil has a fair chance of renovation from the relief (fallow) afforded to its continued efforts in production. The rest is intended as a poetic picture of that which succeeds a storm.

(10) The thunder has poetically been termed the "voice of the Almighty" and the rarity of death ensuing from the vast amount of the electric fluid in action during a storm of this nature is surprising, and is to be rightly considered as emanating from the mercy of God. And whether so or not it has been considered that electricity clears the atmosphere, and restores its balance. Besides, it is well known that when the thunder is heard the danger has passed; and the hurricane's departure is the signal of reprieve to those who may be expecting momentary death. The lines, upon the whole, are poor and uninspired, but may serve to amuse. The subject requires a master's hand.

STATEMENTS OF LIFE BOATS ON THE COASTS OF GREAT BRITAIN AND IRELAND.

No.	COAST GUARD STATION.	LIFE BOAT WHERE KEPT.	UNDER WHOSE DIRECTION.	BY WHOM PROVIDED AND MAINTAINED.	Length			Oars.	Boats' character.		
					ft.	in.	ft.				
1	Hastings, Sussex	Rye CGT. 2½' W.	CG. Com. officer	RHS. and RNI.	25	5	10	2	5	6	IS
2	Rottendean	Eastbourne	P.C.O.	J. Fuller, Esq.	25	8	6	3	9	10	G
3		Brighton Chain Pier	CG. Com. officer	RHS.	28	6	4	2	7	6	G
4		Brighton beach	Town Commisr.	Town Commisrs	22	6	6	2	7	6	G
5		Shoreham	Shoreham pilots	Pilots of Shoreham	38	10	7	4	0	0	D
6	Swanage, Dorset	Studland Bay	CG. Com. officer	RNI.	20	6	10	2	4	4	IS
7	Weymouth	Portland Watch-hse.	ditto	ditto	20	6	8	2	6	6	D
8	Penzance	St. Ives, CG boat-hse	Mr. Short	Local	39	5	10	2	2	8	G
9	Scilly Isles	St. Marys, I. ditto	CG. Com. officer	RNI.	26	8	7	2	6	10	IS
10	Padstow, Cornwl	Hawkers Cove.	Committee	Local	22	6	6	2	6	6	G
11		Bude by Canal	Committee	Local	20	8	0	3	6	18	IS
12	Barnstaple	Appledore P' frm Bar	CG. Com. officer	Local Sub.	26	6	2	2	4	6	IS
13	"	"	ditto	"	18	6	4	2	4	4	G
14	Bridgewater	Bridgewater	Trustees	Sir G. P. Ackland	27	6	3	2	5	6	IS
15	Swansea	Swansea P' from sea	Harbour-master	Swan. Har. Trus.	26	6	0	2	7	0	G
16		Baulson boat-house	Committee	D. Northumberland	26	4	0	2	2	10	G
17	Berwick-on-Td.	Spittal boat-house	Bwick LB. Com.	Local Sub. (& RHS)	27	6	3	2	6	6	G
18		Holy Island, N.W. end of S. Shields	Harbour-master	Ld. Carew & RNI	32	10	5	3	6	12	IS
19		Ros Links, Holy Id	ditto	Tr. H. Newcastle	24	8	9	2	6	8	IS
20		North Sunderland	Pilot at N. Sunld	RHS. & Tr. B.C.	27	6	1	2	7	18	IS
21	Sunderland	Blyth haven	None	None							
22		Tynemouth low end of South Shields	Mr. Anderson	Mr. Anderson	31	10	6	3	0	12	G
23		do.	ditto	Toll on shipping	32	11	0	2	8	14	G
24		N. Shields, low point	Mr. Ray	D. Northumberland	29	10	5	3	0	12	G
25		Whithorn	Rev. T. Baker	Rev. T. Baker	27	10	0	4	0	0	G
26		Sunderland h. N. side	Harbour-master	Shipowners of Sunderland	27	10	0	4	0	0	G
27		ditto, cent. S. side	ditto	ditto	27	10	0	4	0	0	G
28		Seabam harbour	None	None							
29		Hartlepool Scaton	LB. Local Com.	T. Backhse, Esq.	26	9	6	3	9	10	G
30		ditto harbour N. side	ditto	Local	31	10	0	4	0	14	G
31		ditto docks	Har. & Dk. Mas. Committee	Local & Stockton	30	10	0	3	6	14	IS
32	Whitby, Yorksh.	Redcar, No. 1	Committee	Local & Stockton	30	10	2	3	10	10	G
33		ditto No. 2 2½'	ditto	ditto	30	10	2	3	4	10	G
34		Whitby h. N. side	Local Com.	Local & Lloyds	29	9	5	3	4	12	G
35		ditto S. side	ditto	ditto	28	9	0	3	4	12	IS
36		Robin Hood bay	Skerry & Estell	Local	28	10	0	3	4	10	G
37	Bridlington Quay	Scarbro', CG. wth-hs	Committee	ditto	28	4	6	3	6	12	G
38		Filly boat-house	Mr. J. Mosey	ditto	30	9	0	4	0	10	G
39		Bridlington Quay	Committee	RHS. & Local Sub.	28	4	10	4	9	18	IS
40		Spurn Point	Master & 10 men	Hull Trin. House	31	10	7	3	8	0	G
41	Great Grimsby	Skewness, nr CG. sta	Committee	Lincolnsh. Shp.A	24	8	0	2	6	8	G
42		Thiddehorp boat-hs	John Bell	Do. LB. Associa.	22	7	0	2	6	8	G
43		Halltoft boat-house	W. Loft, Esq.	Local Sub.	22	7	7	3	0	8	G
44		Donna Nook	Joseph Dobson	Lincolnsh. Assoc.	25	8	5	3	0	0	D
45	Wells	Wells harb. W. side	G. Croft, Esq.	Mar. Ass. Norwch	25	8	7	2	8	8	G
46	Cromer, Norfolk	Sheringham boat-hs	Robert Long	Mrs. Upcher	32	10	2	4	4	12	G
47		Cromer boat-house	District Com.	Cnty Norfolk Ass.	31	10	4	3	6	10	D
48		Maudsley	Mr. F. Wheatley	ditto	26	9	0	4	0	10	G
49	Bacton	Bacton	Mr. R. Cubitt	ditto	32	10	6	5	0	10	G
50	N. Yarmouth	Winterton CG. w-hs	Winterton DC.	Nrfk. & Norwich	32	11	0	2	11	0	G
51		N. Yarmouth	Yarmouth Com.	Shipwck Mar. Ass.	39	10	7	3	5	6	G
52		Lowestoft S. light	Com. Suff. H.S.	Sub. & Suff. HS.	40	11	0	3	0	0	G
53		Pakefield 3¼ S. of	Suff. HS. Lowestf	ditto	45	12	0	3	3	6	G
54		Southwold Lt. N. cliff	Do. at Southwold	ditto	40	11	0	4	0	0	IS
55	Aldborough	Woodbridge haven	Woodbridge SC.	Suff. S. Ass. & Lo	24	8	1	2	6	10	IS
56		Sizewell Gap	ditto	ditto	24	8	1	2	6	10	IS
57	Dublin	Sandy Cove, Dulkey	Lt. Hutchinson	Ballast Bd. Dublin	28	8	0	3	0	10	G
58	Wexford	Mouth of harbour	Lieut. of Station	RNI.	27	6	2	2	7	6	G
59	Youghal	Entr. Youghal har.	Agent for Lloyds	Local Sub.	29	6	2	2	7	6	G
60	Newcastle, Ird.	Thyrella	CG. Com. officer	Board	22	9	0	3	3	6	G
61	Swears nr Dublin	Howth East Pier	ditto	Ballast Bd. Dublin	7	0	3	0	12	18	IS
62	Elie, Fifeshire	St. Andrews N of Tay	ditto	Local	27	9	6	3	6	10	IS
63	Montrose	Montrose Lt. ent. R.	Lgt. Hse. keeper	ditto	27	8	6	4	0	8	G
64		Arbroath harbour	Treas. Seam. Fra	Local Seam. Fra.	26	9	6	3	4	18	IS
65		Dundee	Lgt. Hse. keeper	River Tay HS.	30	9	8	3	4	12	G
66	Aberdeen	Aberdeen Pier	Mr. Morrison	Harbour Trustees	26	9	0	3	0	6	G

ABBREVIATIONS.—RHS. Royal Humane Society; RNI. Royal National Institution for Saving Lives from Shipwreck; IS. Improvement in Boat suggested; G. Boat of good character; D. Boat of doubtful character; CG. Coast Guard; P.C.O. Principal officer of Customs.

SAILING DIRECTIONS FOR QUADRILLES.

LE PANTALON.—Haul upon the starboard tack, let the other craft pass, then bear up, and get your head on the other tack, regain your berth on the larboard tack, back and fill with your partner, boxhaul her, wear round twice against the sun in company with the opposite craft and your own, afterwards boxhaul her again, and bring up.

L'ETE.—Shoot a-head about two fathoms till you nearly come stern on to the other craft underway, then make a stern board to your berth side out for a bend, first to starboard and then to port, make sail and pass the other craft, get your head round on the other tack, another side to starboard, and port, make sail to regain your berth, wear round, back and fill and boxhaul your partner.

LA POULE.—Heave a-head and pass your adversary, yard-arm and yard-arm, regain your berth on the other tack in the same order, take your station in the line, with your partner, back and fill, fall on your heel, and bring up with your partner; she then manœuvres, heaves all aback; shoots a-head again, and pays off alongside; you then make sail in company with her, till nearly stern with the other line, make a stern board, and cast her off to shift for herself; regain your berth by the best means in your power, and let go your anchor.

LA TRENISE.—Wear round as before against the sun twice, boxhaul the lady, range up alongside her, and make sail in company; when half way across to the other shore drop astern with the tide, shoot and cast off the tow; now back and fill as before, and boxhaul her and yourself into your berth, and bring up.

LA PASTORALE.—Shoot a-head alongside your partner, make a stern board, make all sail over to the other coast, let go the hawser and pay off into your berth and take a turn; the three crafts opposite range up abreast towards you twice and back astern again; now manœuvre any rig you like, only under easy sail, as it is always a light wind (zephyrs as they call it) in this passage: as soon as you see their helms down, haul round in company with them on the larboard tack and make all sail with your partner into your own berth, and bring up.

LA FINALE.—Wear round to starboard, passing under your partner's stern, sight the cat heads of the craft on your starboard bow, then make sail into your berth, your partner passing astern your bows; now proceed according to the second order of sailing; to complete the evolutions shoot ahead and back astern twice in company with the whole squadron in circular order of sailing.

LOCAL ATTRACTION.—The subject of Local Attraction carries with it always so much interest to nautical readers, that we have made the following extract on it from the remarks of H.M.S. *Vestal*, Mr. W. Forbes, master,—June, 1838.

In the Gulf and lower part of the river St. Lawrence, we experienced a great deal of cold foggy weather, with a very strong refraction at times, so as to greatly alter the appearance of any object seen at a distance. Thermometer from 46° to 50°, barometer 29.75 to 29.96. The sailing directions, and other remarks by Captain Bayfield, with his charts of the river, as far as our careful observations have gone, may be taken by a stranger as a perfectly safe guide in navigating in those parts. One thing surprised us beyond what even Captain Bayfield's remarks led us to expect, which was, the great deviation we found in the compasses in the binnacles, being from 1½ to 1¾ points increase upon the amount of westerly variation allowed for the place, when the ship's head was between N.W. and S.W.; this deviation decreasing gradually to none at all, as the ship's head went off to north or south. The deviation we found afterwards in coming down the river to the same amount with the ship's head between the N.E. and S.E., but the contrary way; and with the wind at west working up the river the ship appeared to be working within eight points, while on the contrary in working across with the wind at east she appeared to be working within fourteen points. On our arrival at Quebec we found that all the ships of war experienced nearly the same thing. The pilot we had on board declared that the compasses on board merchant vessels are not subject to any such deviation.—[It would be desirable to know whether this is fact.—Ed.]

CHINESE HARBOUR.—On her way down (from the northward) the *Nemesis* in 1842 and 43, paid a visit to the Island of Hainan. She ran into the Bay of Liensoy, and also into Galong Bay, and also into the beautiful harbour of Tin-lin-Kan, all of which afford good anchorage during the north-east monsoon, while Galong Bay which has the advantage of three entrances, is also sheltered in part from the south-west. But the best of all is said to be Tin-lin-Kan; at one extremity of which a passage deep enough for large ships, leads into a Lagoon sheltered from every wind. The whole extent of the Lagoon or rather

Creek, was examined in boats, and a very pleasant river discovered at the further end, leading up through a fine valley. It was explored for the distance of two miles, and then an excursion into the interior made on foot. The population was by no means dense, but the people were everywhere civil and good humoured. The mountains were covered with wood, often to the very highest points, and deer and pheasants seemed abundant. In every respect this harbour would be a good place for a disabled ship to take refuge in.—*Singapore Free Press, 12th January, 1843.*

CHINESE JUNK TRADE.—We have pleasure in presenting our readers with a few particulars respecting the Chinese coasting trade, which have been received from a native correspondent; from whom we have also obtained a list of most of the junks that have entered Macao roads, during the last six months.

To our readers in this country, and even to the majority of our readers abroad, no description of a junk can be necessary. Any one who has seen such a vessel, can never forget its appearance; the broad cut-water, the high open stern, piled up with mats, the glaring black and white eyes,* which enable her to “walk the water like a thing of life,” the fine spars, which form her masts, the immense mat sails and bag like top-sails, in short, the whole unweildy bulk of a Chinese junk, must remain vividly impressed on the memory of all who have passed the Ladrões. And to any one who has been on board, above all one who has sailed in, a junk, her filth, her confusion, and the want of discipline of her men must be no less remarkable.

These vessels belong chiefly to the provinces of Fuh-keen and Kwang-tung; though there are many also in the northern provinces of Che-Keang and Keang-soo. Among the islands in the neighbourhood of Macao, to which we are now obliged to limit our remarks, they generally appear with specie or light cargoes; and take away opium, which they sell to the westward, at Chi-kan opposite the island of Hai-nan. They return with white and brown sugar, bones and nutshells for manure, dried li-chis, and long-ans, &c., &c., which they either sell at Canton, Macao, and Keang-mun; or carry on to the northward to Ningpo and Shang-hae, in the provinces of Che-keang and Keang-soo. They usually take back with them a larger or smaller quantity of opium, much of which is consumed by the sailors themselves. From Shang-hae, and Ningpo they trade in cotton to the southward.

A few junks leave Canton every year for Cochin China, Siam, Singapore, and the Indian Archipelago. The majority, however, of these vessels are from Fuh-keën, and the department of Chaou-chow-foo in Kwang-tung, bordering on Fuk-keën; and of them many belong to persons residing in Siam and Cochin China. The number of junks which leave Canton and Keang-mun for the Indian Archipelago, &c., is about twenty. The annual amount of their trade varies from about 200,000 to 300,000 taels. Several of these vessels are lost on their passage, every year, with often from 150 to 200, and even 300 men on board.—*Canton Register.*

NEW CHARTS.

(Published by the Admiralty, and Sold by R. B. Bate, 21, Poultry.)

PORTS IN THE ARAFURA SEA, by Commander Owen Stanley, in H.M.S. Britomart, 1839,—41.

These ports consist of the following; viz. Banda Harbour, Ki Doulan Harbour, Dobbo Harbour, Anchorage of Oliliet, Dilhi Harbour, Anchorage on west side of Kissa Islands, and Anchorage on north side of Letti Islands, to many of which useful views are given.

* “S’ppose no man can see, how can walkee?” Is the invariable reply of a Chinaman to any question respecting the utility of these painted eyes.

HONG-KONG.—Surveyed by Capt. Sir Edward Belcher, in *H.M.S. Sulphur*, 1841.

The scale of this very important chart is two inches and a quarter to the mile, the channels are full of soundings, and the features of the land brought out with that attention to minutiae which we might anticipate from Sir Edward Belcher.

PROMOTIONS, AND APPOINTMENTS.

APPOINTMENTS.

CAPTAINS—C. Graham (1838) to *Castor*—J. A. Duntze (1823) to *Fisgard*—C. H. Freemantle to *Inconstant*—R. N. Fair (1837) to *Conway*.

COMMANDERS—Houston to *Imaum*—J. Paget (1837) to *Pilot*—A. Reed to *Racer*—W. S. Blount to *Royal George* for service in *Victoria and Albert*.

LIEUTENANTS—F. S. Tremlett (1843) to *Alfred*—J. Stephen (1841) to *Dublin*—R. Williams (1840) to *Curacoa*—R. H. Bunce (1838) to *Tyne*—P. Parkhurst (1841) to *Rose*—E. D. Ashe (1842) to *Fisgard*—J. Hancock (1842) to *Pique*—W. H. Stewart, E. L. Strangways, G. O. Popplewell, A. D. Jolly, A. R. Dunlop, J. Seacombe, and R. Roberts to *Illustrious*—F. H. Stevens (1841) to *Medea*—Balfour to *Geyser*—S. Morrish (1841) to *Avon*—G. E. Clark to *Excellent*—J. H. Selwyn (1842) to *Racer*—W. F. Rivers (1841) to *Volage*—J. F. Warre (1841) and F. Godench (1809) to *Victory*—D. M. L. McKensie (1841) to *Castor*.

MASTERS—R. L. Burnard to *Racer*—W. Ellis (add.) to *Royal George* for service in *Victoria and Albert* yacht.

MATES—E. Lacy to *Cormorant*—W. B. Willis to *Camperdown*—G. B. Roberts to *St. Vincent*—E. A. Brice to *Curacoa*—F. B. Quin, Hon. P. F. Pellew, and C. Rainer to *Tyne*—H. S. Jackson and R. Patey to *Excellent*.

SECOND-MASTERS—T. Walker to *Seaflower*—J. Mathews to *Tyne*—H. Hunter to *Crocodile*—H. F. Pryce to *Dee*.

SURGEONS—T. R. H. Thompson to *Racer*—T. R. Dunn to *Fisgard*.

MASTERS' ASSISTANT—F. W. Jackson to *St. Vincent*.

ASSISTANT SURGEONS—L. J. Montelle to *St. Vincent* for service at Haslar—J. Jeffcott to *Rose*—W. T. Kay to *Tyne*—J. F. Jenkins to *Fisgard*—W. Hamilton to *Racer*.

MIDSHIPMEN—J. S. Darell to *St. Vincent*—W. Adair and E. Scraggs to *Tyne*—R. B. Beale to *Excellent*.

VOLUNTEERS 1st Class—W. T. Gregory, G. J. Bartelot, J. Higman, and G. F. Paget to *Tyne*—H. Houghton to *Racer*.

PURSERS—J. Colville to *Tyne*—T. E. Goulding to *Albatross*—J. Ward to *Pilot*—J. Warwick to *Pique*—M. A. Feeley to *Racer*—C. W. Roone to *Tweed*—J. Marks to *Castor*.

NAVAL INSTRUCTORS—C. R. Archdeacon to *Castor*—G. F. Parker to *Dublin*.

CLERKS—B. P. Heather to *Tyne*—W. H. Harris and L. E. Beckett to *Castor*—F. H. Grey to *Fisgard*.

COAST GUARD.

Appointments—Lieut. T. Edwards to Staiths Station—Lieut. C. Dangerfield to Seaham Harbour—Mr. G. Hire to Fishersgate—Lieut. J. Houghton to Western Super-Mere.

Removals—Lieut. G. Harding to Bolderig, Sligo—Lieut. R. P. Littlewort to Westhaven, Montrose.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

CURACOA, 24, Captain Sir Thomas Pansley, May 9th left Spithead for the Pacific.

CYCLOPS, (st. v.) Captain H. Austen, April 29th arr. at Portsmouth from Mediterranean May 2nd sailed for Woolwich

DRUID, 44, Captain H. Smith, April 10th arr. at Plymouth, 29th paid off.

FISGARD, 42, commissioned at Plymouth 16th of May by Captain John Alexander Duntze.

HERALD, 26, Captain J. Nias, April 22nd paid off at Portsmouth.

LYNX, 3, Lieut. J. Burslem, April 19th arr. at Plymouth from Lisbon.

PILOT, 16, Commander Paget, April 25th arr. at Portsmouth, 27th sailed for Plymouth.

RACER, 16, Commissioned at Portsmouth for Commander Archibald Reed.

PORTSMOUTH.—*In Harbour*.—Victory, St. Vincent, Royal George, Excellent, Tyne, Racer, Tenedos, Nautilus, Fearless and Gleaner steamers, and Cornwall transport.

In Dock.—Britannia, Prince Regent, Bellerophon, Eurydice, Fox, and Athol.

ABROAD.

BELVIDERA, 38, Capt. Hon. G. Grey, April 20th at Gibraltar.

CHAMPION, 16, Capt. Sir G. Sortorius' Feb. 17th at Mazaden, West Coast of Mexico.

CLEOPATRA, 26, Capt. Wyvill, Dec. 21st at Mozambique, and sailed to southward.

DEVASTATION, (st. v.) Commander Henry, April 15th left Smyrna for Constantinople.

ENDYMION, 38, Capt. Hon. F. W. Grey, Feb. 9th arr. at Madras.

FAVORITE, 18, Com. Sullivan, Nov. 24th arr. at Sydney Dec. 11th sailed.

FORMIDABLE, Capt. Sir Charles Sullivan, April 20th at Gibraltar.

GORGON, (st. v.) Capt. Hotham, 19th March arr. at Barbados on way to La Guayra and Rio,

HAZARD, 18, Com. Bell, Dec. 15, arr. at Sydney from China.

HECLA, (st. v.) Lieut.-Com. J. B. Cragg, April 7th arr. at Gibraltar from Portsmouth.

LILY, 16, Com. J. J. Allen, Dec. 21st off Mozambique.

LIZARD, (st. v.) Lieut. W. Estcourt, April 24th at Gibraltar.

RODNEY, 92, Capt. R. Maunsell, 21st April arr. at Madeira.

SAVAGE, 10, Lieut. J. H. Bowker, April 20th at Gibraltar.

SPIREPUL, (st. v.) Com. W. Maitland, April 1st arr. at Madeira on way to China.

TWEED, 20, Com. H. Douglas, March 20th at Barbados.

WASP, 16, Com. A. Drew, March 20th at Barbados.

WATERWITCH, 10, Com. H. Matson, Feb. 28th at the Cape.

WINCHESTER, 50, Com. Kelly, Feb. 24th at Simons Bay.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Catisfield, April 20th the lady of Capt. Bruce, R.N., of a daughter.

At Chester, May 8th the lady of T. J. Brooke, R.N., of a son.

At Thurso, the lady of Lieut. T. Smith, R.N., May 12th of a son.

Marriages.

At Charlton, April 25th, Com. Cheyne R.N., to Maria daughter of the late T. J. Young, Esq., Southampton.

At St. George's Hanover Square, 27th April, Capt. the Hon. P. Cary, R.N., to Mary Ann, only daughter of J. F. Maubert, Esq., Norwood.

At St. Mary's, Bryanstone Square, April 27th W. Wilby, Esq., to Harriet daughter of the late Capt. W. Dowers, R.N.

At Edinburgh, April 25th Lieut. J. C. Johnston, R.N., to Jane Dunlop, daughter of the late Capt. T. Hamilton, of Down.

At St. George's Hanover Square, J. W. Nicholls, Esq., R.N., (late Secretary

to Admiral Sir E. Codrington, G.C.B., to Ellen daughter of the late T. Ball, Esq.

Deaths.

At Eastwood, Canada, Vice-Admiral H. Vansittart.
Lately Rear-Admiral Sir J. C. Coghill, Bart.

Lately Capt. J. M. Gordon, R.N.
At the Cape, Nov. 27th Lieut. R. L. Boyan, R.N.

At Dunaw, April 23rd Mrs. Quarrier, and a few days afterwards Dr. Quarrier, R.M., of Stoks.

On his passage from the Brazils, Capt. Spurring, R.M.

At Greenwich, April 25th, Caroline, wife of Lieut. Bowers, R.N.

At Old Brompton, April 25th aged 19 years, Margaret Anne, daughter of Lieut. J. F. Elliot, R.M.

At Brompton, April 28th, Com. H. C. Pemberton, R.N.

At Glasgow, April 23rd A. Blackwood son of Dr. Muirhead, R.N.

At Amoy, China, Jan. 22nd, Lieut. E. M. Noble, son of Rear-Admiral Noble.

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, 1843.

Month Day.	Week Day.	BAROMETER.		FAHRENHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9AM	3PM	4PM	5PM	Quarter.		Streng.		A.M.	P.M.
								A.M.	P.M.	A.M.	P.M.		
		In. Dec	In. Dec	o	o	o	o	SW	SW	2	3	b	bc
21	F.	29.88	29.90	53	64	46	65	SW	SW	4	5	bep 1)	qbepth (3)
22	S.	29.84	29.94	52	54	48	56	SW	SW	1	2	bc	bc
23	Su.	30.06	30.06	50	55	36	56	SE	S	2	2	bc	bc
24	M.	30.02	30.04	49	60	35	61	NE	E	2	2	bc	bc
25	Tu.	29.78	29.58	46	52	31	53	S	S	5	4	cor 2)	bc
26	W.	29.62	29.68	38	56	35	51	NW	NW	4	4	ors 1) (2)	bep 4)
27	Th.	29.78	29.88	43	54	37	55	N	N	4	4	o	bc
28	F.	29.80	29.70	48	51	38	54	S	S	5	6	o	cor (3)
29	S.	29.70	29.72	48	58	41	59	N	NE	2	2	o	o
30	Su.	29.82	29.94	56	66	44	67	E	E	2	3	b	b
1	M.	30.09	30.15	57	67	48	68	E	E	4	4	b	b
2	Tu.	30.16	30.12	55	67	44	68	E	E	3	4	b	b
3	W.	29.90	29.86	46	65	41	66	E	E	2	2	o	b
4	Th.	29.78	29.75	44	63	53	64	SW	SW	3	4	or 1)	bc
5	F.	29.70	29.70	47	62	53	63	SW	SW	2	4	or (2)	bc
6	S.	29.37	29.57	52	45	39	52	S	W	2	4	or (1) (2)	ors 3
7	Su.	29.64	29.63	47	51	35	53	SW	SW	3	3	bc	bephr (3)
8	M.	29.57	29.55	43	45	37	47	NW	NE	2	4	or (2)	or (3) (4)
9	Tu.	29.58	29.72	47	54	41	55	NE	NE	2	4	or (1) (2)	bc
10	W.	30.00	30.10	51	56	41	57	NE	NE	2	2	o	o
11	Th.	30.20	30.20	50	61	40	62	E	E	2	2	o	bc
12	F.	30.18	30.14	53	65	40	66	S	SW	2	3	bc	or (4)
13	S.	29.93	29.95	54	65	51	66	W	W	3	4	o	bc
14	Su.	29.83	29.72	59	61	45	62	S	S	1	2	bc	or (4)
15	M.	29.53	29.56	53	57	49	61	SW	SW	4	4	o	bep (3) (4)
16	Tu.	29.44	29.56	56	60	47	61	SE	NE	2	3	bep (2)	bep (3)
17	W.	29.50	29.56	52	54	49	57	SW	NE	2	3	or (2)	or (3) (4)
18	Th.	29.80	29.84	47	48	43	49	NE	N	3	4	o	o
19	F.	29.90	29.91	51	56	43	58	E	E	3	3	ber (2)	o
20	S.	29.86	29.85	57	57	45	59	E	E	4	5	bc	bcr 4)

APRIL—Mean height of the Barometer=29.810 inches; Mean temperature=48.5 degrees; depth of rain fallen=1.86 inches.

MAY 6th, The Northern Lights were very brilliant about 10h. P.M.

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### TO OUR FRIENDS AND CORRESPONDENTS.

A pressure of important matter has completely filled our pages to the exclusion of all further notices of books. This we shall make up for in our next.

We have omitted to state that the drawings of the Sillometre were provided for us by the accurate pencil of LIEUTENANT CUCLIP, R.N., of the Blazer.

The good intentions of A SAILOR we are obliged by, but the performance to which he alludes will be found in John Hamilton Moore's oldest edition.

The "Nautical Rambles," will be continued, if possible, in our next.

We understand that accounts, dated in April last, have been received from Capt. Ross, in the Erebus, on his way home from his expedition, having been prevented from getting to the southward of his former discoveries by an accumulation of ice.

We perceive by an advertisement in this number, that we are to have a work, containing the "Public Life and Adventures of Sir Francis Drake," from the pen of John Barrow, Esq., which we have no doubt will be full of interest.

Hunt, Printer, Carlisle-street Maida-hill.

ON THE PASSAGE FROM MACAO TO CHUSAN,  
*against the North-east Monsoon.*

HAVING recently made the passage, with a good carrying ship, and being under the impression that bulky goods may continue to be sent up to this dépôt at every period regardless of seasons, I beg to offer the result of our own experience in coming up through the strength of the N.E. monsoon, and request that you will kindly transfer the particulars to your valuable columns, as they may be of some use to your nautical readers.

Left Macao roads December 28th, but calms and adverse winds prevailing, it was January 3rd before we left our last anchorage in Harlem Bay. Continued working down the coast keeping it well aboard to Breaker Point blowing strong N.N.E. to E.N.E., with a short high sea carrying 2nd reef for the most part. On opening Formosa Straits, wind more steadily prevailed from the northward, enabling us to make the south point of Formosa on the 6th. The wind easting as we approached the Bashees, worked through the north group of those islands on the 7th, with strong gale at E.N.E., and high sea. Wind increasing as advance was made to S.E., tacked to N.N.W., and on the 9th passed the island of Botel Tobago Xima. 10th, weathered Samasana island. 11th, Koumi island east of us; on the 12th left the bold, rocky islands Hoa-pin-sin and Tia-yu-su to the west of us, wind east, from whence it quickly drew round by the south and west to N.N.E. and blew hard. On 13th from lat.  $27^{\circ} 28' N.$ , long.  $125^{\circ} 6' E.$  tacked to N.W., carrying a press of sail against a strong gale and heavy sea to obtain anchorage under the islands. On the 15th weathered the Kwesans and came to, with both anchors under Buffaloes Nose. Light weather succeeding the gale prevented us from drifting into the inner harbour before the 19th.

Winds prevail from E.N.E. chiefly until the Formosa Straits are open, when they come down N.b.E. and N.N.E., about the Bashees N.E. and E.N.E. prevail with a very turbulent sea; reaching to the S.E. found an undeviating strong wind and heavy sea from N.E., but stretching out of this to the northward along the east coast of Formosa. Wind easterly and variable until well to the north of that island, when we had it heavy from N.N.E. It may be considered a general rule, that when the wind creeps round to the south of east, it will speedily fly round with the sun to the north, and blow with redoubled fury. Heavy N.W. gales sometimes blow for several days together upon this north coast reaching far into the offing.

Currents set strong from the east until the Formosa Straits are open when they usually trend down the China Sea more southerly. On approaching Formosa found little or no current under the lee of the Pescadores. About Botel Tobago Xima the current divides, one stream setting strongly to the west through the Bashees, the other branching off to the north along the east side of Formosa. In the open sea to the north of that island, they seem very mutable in direction and velocity, governed by the prevailing wind, but setting fast to the south during the strong northerly gales so often experienced in that locality.

*General Remarks.*—The passage up against the N.E. monsoon involves considerable wear and tear, very trying to sails and spars, as it is one continued series of heavy weather. Almost a constant double reef breeze with a very turbulent sea: after leaving the Bashees the chief difficulties of the passage seem to be over.

On departing from the Lemas it is best to hold the coast close on board, using every legitimate means of obtaining easting, and evading the constant adverse current, which here prevails, by working up in the smooth water of the safe bays by day, and if blowing hard coming to, when anchorage is attainable, until the gale is over; standing boldly to the eastward when wind permits, and again seeking in shore when it becomes adverse. This is the trying part of the passage, and requires a watchful perseverance.

After passing the south point of Formosa the passage either to the east or west of the Ty-pin-sin Group may be adopted according to wind. The latter offers the advantage of a favorable current, which sets with some velocity up to the north of Formosa head; the most favorable tack may be pursued, wind veering from north to east in the offing, with an occasional gale from the N.W.; it is best to avoid the land until a lead in can be made to windward of the Kwesans, where a well sheltered anchorage may be obtained under the islands.

The barometer fails to be of much use on this coast for ordinary gales, rising very high with the prevalent northerly stormy weather. After veering round southerly the wind generally comes down with sudden violence from the north. Sail should be reduced in time; the gales are never of long continuance.

As an accompaniment to these scanty remarks annexed, is an abstract of the *Wanderer's* passage.

| Days.  | Winds.                 | Lat.       | Long.         | Direction current. | Miles. |
|--------|------------------------|------------|---------------|--------------------|--------|
|        |                        | Wayed from | Harlem's Bay. |                    |        |
|        |                        | ° /        | ° /           |                    |        |
| Jan. 3 | E., E.N.E., N.E.       | N.         | E.            |                    |        |
| 4      | N., N.b.E.             | 22 17      | 116 6         | S. 30° W.          | 14     |
| 5      | N.N.E., N.             | 21 55      | 118 28        | S. 35° W.          | 27     |
| 6      | N., N.E.               | 21 54      | 120 24        | No current         |        |
| 7      | N.E.                   | 21 23      | 121 25        | West               | 12     |
| 8      | N.E., N.E.b.E.         | 20 20      | 122 46        | West               | 21     |
| 9      | N.E.b.E.               | 21 26      | 122 10        | West               | 30     |
| 10     | N.E.                   | 22 31      | 122 0         | North              | 21     |
| 11     | N.E., E.               | 23 36      | 122 30        | N. 21° E.          | 25     |
| 12     | E.S.E., S.E.           | 26 5       | 123 50        | North              | 34     |
| 13     | S.E., S., N.W., N.N.E. | 27 28      | 125 6         | } No obs.          |        |
| 14     | N.E., N.E.b.N.         | 28 25      | 124 6         |                    |        |
| 15     | N.N.E., N., N.b.W.     |            |               |                    |        |

\* The forty miles of southerly current was the result of the last three days.

[As an appropriate addition to the above useful information from the master of the *Wanderer*, we annex the following extract from remarks of Mr. J. S. Forster, master of H.M.S. *Modeste*.]

*Chusan Group.*—Working between Chusan, Sinkamoon, and Nim-

rod's Sound the chart will be sufficient. The coast from Round-about to Singlosan is quite clear,

The bank at Singlosan is steep in some places, so you should not look for too small water: a junk is sunk to the northward of Gough's Passage, abreast of Singlosan; the mast has been cut off a few feet above high water. Gough's Passage is much the best, and should always be used after leaving Singlosan. Anchorage may be got towards Sinkamoon, or under the Ketow land, about half a mile from the shore, in 17 fathoms. I have found anchorage in all the bays, from Ketow to Tygosan,\* and also under the islands at the entrance of the Tygosan Passage; if caught with light baffling winds between Ketow and Chusan, prefer the Ketow side to the other, as you can anchor, and the tide sets strongly through the Tea Island Archipelago.

*Between Chusan and Ching-hae.*—You may anchor to northward of Tygosan, with the end of Silver Island N.b.E., but if coming towards Chusan, bear in mind the ebb (the fair tide) sets strongly down towards Ketow, rendering it requisite to keep further towards Silver Island. The rock to the south of Just-in-the-way may be avoided by keeping the Deadman open of Silver Island point. The outer rock dry at low spring lies with Just-in-the-way on the highest peak of Silver Island, and the peak of Dumb Island, on the centre rock of the Silver Island reef.

*Silver Island reef.*—Tygosan Islet on peak of Tower Hill leads clear but close to the end of this reef.

*Rock off Deadman.*—Small islets on the edge of the main land, mud bank, kept open till Passage Islet is on with the Inner Yew or Triangle, clears this rock which is above water about  $\frac{1}{2}$  flood tide.

*Rock inside the Triangles.*—This rock may be avoided by keeping the highest building in Ching-hae (a red turret close to the wall) open of the low extreme of fort hill, taking care to keep the land astern, (in going in), well open, to avoid the mud spit running off from the southern entrance. Then keep well over to Fort hill, the northern shore, till in the river, then mid channel up to the town of Ching-hae. The spit off the southern point is more in the way coming out with an ebb tide, as the ebb sets down the coast which causes a rather thwart set across the river's mouth.

Ships from Chusan bound to the northward may use the passage through Blackwall or that by Ching-hae, as may be most convenient for tide; a reference to the chart will point out the position of the shoal to the southward of North Island. In passing the Hangchow Gulf, great care must be taken to avoid the indraft of the Hangchow river, the flood setting much more up the river than the ebb does out, owing to the ebb and flood along the coast; the strength of the tide 6 knots, and perhaps more, renders it not advisable to move in the night or in thick weather, until the set of the tides is much better known than at present.

*Yang-tze-Kiang.*—If bound to the Yang-tze, the best channel for ships drawing not more than 18 feet is to go from Gutschlaff, a distant island, following the chart and directions of Capt. Bethune,† the bank to the south may be approached by the lead, minding the tide. This track,

\* Nevertheless great caution is required, as the whole of this coast is unknown. Ed.

† See p. 576, Vol. for 1840, for these directions.—Ed.

though not quite the deepest water, keeps you clear of Ariadne rocks and the banks to the northward, which are more dangerous than the mud flat to the southward. Keep the southern shore on board, till within three miles of Woosung, when you must not come nearer than one mile, or keep the end of the fortification at Woosung W.N.W. (not to northward of that bearing) to avoid a hard shoal point, shoaling suddenly from 5 to 2 fathoms. If going up the Woosung river to Shang-hae, anchor to westward of the fortifications, as the shoal spits run well to westward (see chart, the old one of Capt. Rees will do,) to enter the river : the run to Shang-hae had better not be attempted without the chart or a pilot, although the fleet did succeed in going up the first time without any accident, but the *Clio* grounding merely by taking the longest sweeps : at Shang-hae anchor well abreast of the town ; the anchorage by the point at the commencement of the town is not so convenient.

*Tides.*—The flood or fair tide sets from Buffaloes Nose through Goughs and Duffield passages, keeping the indraught of Nimrod Sound round by Ketow, past Tower hill, and through the Blackwall passage. From Ketow it enters Chusan harbour, strongly through the Tea Island Archipelago round to the northward of Tower hill, and out towards Silver Island. The flood also branches off between Silver Island and the main, past the Deadman strongly between the Dumb, Deadman, &c., to the north. Leaving Chusan for Ching-hae ; remember you have to cross the tide at first, and coming from Ching-hae to Chusan keep well over to Silver Island, or the ebb will carry you on to the north point of Tygosan or past Tower hill. If the wind is scant, get to windward under Silver Island or you will not fetch. At anchor on the west side of Silver Island, before you feel the Hangchow tide, you ride nearly north and south ; at the Rugged Islands W.N.W., and N.W. for the ebb tide, and E.b.S. for the flood, the strength of the tide being as much as six knots high springs. In the entrance of the Yang-tze, the whole rise is in the first quarter flood, or nearly so. This should be attended to if you ground, and endeavour to get off with the first of the tide : the tides render it prudent not to use light anchors when bringing up for a night, as they will certainly not hold, especially if in the influence of the Hangchow tides.

*Just-in-the-way.*—The anchorage by Just-in-the-way will be found much better than that by the Square. The ships at Just-in-the-way do not feel the wind generally from north or N.W., nearly so much as those at the Square, and you have no sea which renders Just-in-the-way a safe anchorage although the water is deep.

The shoals about Chusan are all mud or rock. An acquaintance with ships in a tide way and a consideration of the action of water on a mud bank, will be of much service. Where the tide sets fair and strong the bank is quite steep to. Where the force of the tide is checked, the shoaling will be more gradual. The tide generally cuts the bank smoothly from point to point, so that by not going within the line of the points, you might almost navigate the whole group.

The *Modeste* left with a strong wind from the northward, and to avoid the Hesun Group steered well to the eastward. The weather continued thick for two days ; then we made the Lamoch Islands, the weather then clearing off, being 100 miles a head of our reckoning, we had nearly

the first strong wind from the northward, for the season which would account for this set about 2½ miles an hour. We were not drawn in, but set right ahead or through the channel. This of course would prevent any ship working up, indeed the outside passage has been repeatedly made in a shorter time than the other; so even from Amoy, unless you have a good slant go outside Formosa. From Hong-Kong, followed Horsburgh's directions, and made Cicer de Mer, which is not so correctly described as his places generally are. We passed about five miles off, and in addition to the single island with two peaks, we made another small one to southward, too large to pass under the name of a rock, and nearly as high as the larger island. As we passed to eastward their joining may be on the other side, but we thought we saw the sea through the opening: it might mislead and should be pointed out.

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STRAIT OF SUNDA AND PASSAGE FROM ANJER TO BATAVIA, with
*Remarks upon the beacons, perches, &c., placed on the Shoals in the
 Outer Channel leading to Batavia Roads.—March 1841.*

(Concluded from p. 367.)

THE buildings connected with the arsenal at Onrust appear very conspicuously in steering for the anchorage, but of the city of Batavia nothing can be seen from the roads, except a few red roofs peeping over the dense jungle which extends around the shores of the bay, in a belt of several miles in breadth, and is the hot bed of those pestilential fevers engendered by the exhalations from the putrid waters and decayed vegetation of this noisome morass. A white cloud reeking with poisonous steams, slowly rises about sunset and hangs over this region so fatal to Europeans. All night the hoarse croak of the frog and the cries and chirpings of various animals and insects, may be heard issuing from this vast pall which as the sun grows high and not till then, rolls sluggishly away in enormous waves, clinging in its progress to the sides of the higher grounds, and lazily creeping up until finally lost in the purer air. Passing through the roads *en route* to the city, the attention of the stranger is drawn to the great number of large Dutch Indiamen all lying dismantled and housed over, waiting for cargoes. These splendid ships often experience great difficulty in procuring freights, in consequence of there being generally more tonnage in harbour than produce to load with. This may be attributed to the policy of the Dutch, who, in their over anxiety to possess a fleet of superior merchant vessels, have encouraged those desirous of building ships by an ordonnance, which provides a freight for each new ship until her outlay incurred by construction be defrayed; although to the prejudice of efficient, yet, older vessels, by perhaps a few months. However, the new ship is only allowed a certain number of years to earn her prime cost in. This has of course forced an unhealthy state of affairs, as far as the shipping interest is concerned, it having induced private parties in Holland to over-build, with the hope of recovering the outlay by the freights guaranteed by the Netherlands East India Company.

The next conspicuous object is the Guard Ship, a dirty looking vessel, about the size of one of our eight-and-twenties. She has a large tele-

graph constructed on her main top, and which seems to be kept pretty busy. The Dutch are strict disciplinarians, treating with great severity all cases of insubordination occurring on board of any vessels whether native or foreign, and which may be brought before their notice; upon complaint being made of the slightest misconduct, a lieutenant and boats' crew take away the delinquents and put them in irons on board the frigate, and if requested will bring them to the gangway. While we were in Batavia some men belonging to a London barque were flogged on board the guard ship, the commandant having first politely given an invitation to their captain to be present at the punishment, which however he had the good taste to decline; these men had been shipped in Sydney, and by all accounts richly deserved the infliction. Among other objects worthy of attention, are several large white posts driven into the mud in various parts of the anchorage; they define the limits of the port. Any vessel calling at Batavia merely requiring water or supplies, can avoid the port charges by anchoring outside these beacons, and only a quarter to half a mile outside the shipping; many persons for want of good information, bring up further out than there is any necessity for. The approach to Batavia from the roads is by a kind of canal, or more strictly speaking the embouchure, (confined by stone jetties of about two miles in length), of the waters of the small river, which diverted a little above the city into numerous canals replete with mud and filth, lazily drains through the streets of Batavia, and reuniting near the boom or custom-house, flows into the sea through this embankment. The distance from the shipping to the landing place being considerable, (four or five miles), it is customary to employ a native crew in the captain's gig, it not being prudent to make use of Europeans for boat service in so unhealthy a climate; indeed it is advisable to prevent the crews from going on shore at all, and therefore it is not usual to grant that liberty which in other more favoured places is generally accorded to sailors on Sundays, &c. The Malays generally take good care of the boats, and are made responsible for oars and other articles entrusted to their charge; they always track the gigs up and down the canal, it being more expeditious than pulling.

Protected from the fierce blaze of a Java sun by a well curtained boat's awning, the stranger ascending the canal on his first visit to Batavia, gazes with astonishment upon the endless variety of scenery which in all its novelty everywhere assails his attention; trading junks of the Chinese moored to the banks of the river; their greasy looking crews rejoicing in well shorn polls and plenitude of tail, and of whom some are busied in discharging their cargoes of iron pans, coarse ware, Chinchew sugar candy, lacquered goods, ornaments, and junk tea; others chattering, squabbling, cooking, and praying, if burning joss sticks and setting off little squibs and crackers, accompanied by a splitting noise of gongs be entitled to that distinction; and the remainder perched upon the innumerable corners and projections of a junk's side, enjoying the sunshine, staring with envious self-complacency upon every person or thing coming within their ken. This agreeable *otium cum dignitate* is relieved from monotony, by now and then a chase after a stray pediculus humanus, and which, when caught is crunched with a most Apician relish; a game of cards, or odd and even for copper doits, is a

finale to their celestial employments. The trading prahus (*vulgice* proahs) of the Malays with their low fore ends, projecting stern and gallery, bamboo decks and mat sails, the Arabs dows with bowsprit and bow consolidated in one, coir rigging and hair cables; the odd looking craft from Macassar, Celebes, and of the Bugis, all poop and beak of most primitive build and uncouth rig, the upper part of the hull daubed black, and beneath smeared with a white greasy composition crowd the canal. Some articles of their lading are curious; the widely-famed edible nests of the sea swallows, torn from the recesses of the slimy caverns of Karang-Bolang on the Western coasts of Java, and destined to form a luscious potage for Chinese sensualists, shark's fins and maws, trepaning a hideous sea slug gathered on the reefs of New Guinea and Australia, and several other oriental delicacies are included in their cargoes, and regularly quoted in prices current with all other descriptions of merchandize. A few crazy gunboats pulling several oars, and armed with a long well polished brass gun, may be seen lying quietly among the reeds and sedges, awaiting their rôle of duty; they are for the suppression of the piratical Malay prahus which are very numerous in those seas; some piles of cannon balls, a turf rampart or two ornamented by a rusty gun peeping from an embrasure, a ricketty wooden guard house, and a dingy barefooted Javanese sentinal clad in a shabby uniform with dirty yellow cross belts; together with a most indescribable and overpowering smell, being a melange of the odours emanating from decomposed animal and vegetable substances, mingled with the effluvia of putrid swamps and the curious scent from the native craft, particularly the Chinese, of burning firewood, joss stick and incense, complete the sketch of the canal; this taken too under a red hot sun, people, boats, the whole canal blazing, and every pore in the body turned into an Artesian well, our awning in all its pride and power of new snow white duck, being unable to shield us successfully from the rays of a two o'clock sun concentrated upon this muddy sink.

On our landing near the boom, a cadaverous looking Dutch official in a straw hat, old blue frock and yellow slippers, walked out of a little guard house and captured the letter bag. This worthy, although hardly able to get up steam enough to puff his cigar, still resolutely maintained possession, until at last on our getting into the carriage which was waiting for us by order of our consignee, he so far relaxed as to permit the bag to accompany us. It was, however, out of the frying pan into the fire, in consequence of his sending an underling who, jumping up along side of our breechless jarvey, made him drive to the custom-house where, in a room upon the ground floor, furnished with a bamboo sofa bedstead, washing-stand, a Chinese mat or two, and a large table strewn with books and papers, we were received by an attenuated young man, a European, and a most miserable looking specimen of the attacks of this villainous climate; the dull glaze of his eye, the green anguish tinge of his cheek, and languid movements of his body, almost warranted the idea of his being an immediate scarecrow, placed by his Dutch masters as an object *in terrorem* to all foreigners intruding upon their territories. This modern representative of the god Priapus carefully selected from the bag all the Dutch letters, then as carefully tying it up, sent it off to the Governor's residence some distance in the interior;

the consequence of which was, that twenty hours elapsed before the English letters were distributed. This we were told was illegal. The Dutch, however, are notorious for the obstacles they throw in the way of Englishmen when transacting business in any of the Netherlandish possessions abroad, and particularly in Batavia, where commercial rivalry is carried to a great extent.

The Hollanders in Java were described to us as being a sociable good sort of people enough in private life, but decidedly unamiable as far as political and commercial relations are concerned. There is much difficulty in finding out the true state of affairs in Batavia, their newspaper, the *Javanaasche Courant*, being entirely under the control of government. Besides, the Dutch mercantile community are naturally anxious to give the foreign merchants as little information as possible. However, at the period of our visit, the embarrassment both of the government and trade could not be disguised. There was hardly a guilder in the bank, and its credit was almost at as low an ebb. The revolt in Sumatra had called away the greatest part of the naval and military force from Java for the suppression of the emeute in the former island, leaving a handful of raw, undisciplined, native troops, for the protection of the supreme government; and as a climax, the strongest apprehensions were entertained of the native princes of Java taking advantage of the difficulties into which their rulers were plunged, and endeavouring to extricate themselves from that iron yoke under which they, in common with their fellow sufferers of the other islands, have so hopelessly groaned. The restoration of this most invaluable island to the Dutch at the termination of the last war, can hardly be deemed cause for self gratulation to our rulers of that day, whether received, in the first instance, as evincing a want of philanthropic feeling towards the multitudes who, under the mild and beneficent sway of the British, were now, for the first time, tasting the sweets of their improved condition, until the fatal stroke from the pen of the statesman severing the thread of their happier destiny, consigned them, before yet the ink had dried, to a deeper abyss of misery than that from which they were snatched; or, in the second place, by the forfeiture of the immense advantages which would have accrued to England by its retention, both on account of the great value of its productions, vegetable and mineral, and its vast importance as a key to the great East Indian Archipelago and to China, in consequence of its singularly happy local position as regards those countries.

Glancing at a chart of the Eastern seas, we find the Strait of Sunda dividing Sumatra and Java to be the Point d'Appui at certain seasons of the year of British ships from Australia and Europe, bound to Batavia, Singapore, or other ports; indeed, at all times it is as convenient for ships bound to China in the N.E. monsoon to pass Anjer, where news may be obtained, and from thence through the Java sea, straits of Salayer, Gilolo passage, and into the Pacific, as to steer through any of the eastern entrances, such as Lombok, Allass, &c.; and it being completely a matter of opinion as to the eligibility of either route as far as wind, &c., may be taken into consideration. It is clear that the strait of Sunda, from its proximity to the capital of Java, as well as answering as a portal in either monsoon to the Archipelago, must impart that

degree of importance to the north-western extremity of the island which will always render its possession very desirable. On the other hand should a vessel enter by one of the eastern passages *en route* to China, it would be a desideratum for her commander and owners to feel in passing the neighbourhood of the eastern end of Java, were it in our hands; that Her Majesty's ships having ports of their own to cruise from and refit in, would afford a continuation of a chain of protection to our commerce from Australia to Bengal, and which is at present incomplete, by Java being in the possession of another power. British occupation of Java would also be a death blow to the sinful practice of annually sending Dutch ships of war to *supervise the destruction* of the gifts of a bountiful Providence, namely the extirpation of the clove and other spice trees in all islands, except those few in which spices are cultivated merely as monopoly, and which by keeping up only a very moderate supply, enables the Netherlanders to effect sales at prices which would soon be reduced to a proper level, were so disgraceful a system abolished. The hostility of the Dutch to our thriving settlement of Singapore is notorious. Take up at random almost any number of that well written and spirited little journal the *Singapore Free Press*, and its pages will be found to teem with accounts of the grossest infractions of commercial treaties, on the part of the Batavia Government—of the most exorbitant and unreciprocal imposts being placed upon articles from Singapore—and most vexatious restraints and tyrannical regulations adopted towards the British bottoms, compelled by their unlucky stars to enter Dutch ports.

An exemplification of the paternal rule of the cabinet of the Hague, may be inferred, from the circumstance of the poor Malay fishermen, Dutch subjects, being unwilling to push off to ships hoisting the flag of that nation, in consequence of the maltreatment they generally receive when endeavouring to dispose of their fish and other refreshments; thinking themselves fortunate in many instances if they get on shore again with a whole skin, in addition to the forcible deprivation of their little articles of barter. With regard to vessels showing the colours of other nations, however, the inhabitants of the islands scattered through the various straits seem to be upon the best possible terms, coming alongside without fear, being in the full dependance of being treated as they ought to be.

Batavia is a large city and covers a great extent of ground; the population is about 75,000, chiefly consisting of Javanese, Chinese, Malays, Arabs, and the natives of nearly all the islands of the great Oriental Archipelago. The Europeans are the Dutch lords of the soil with a few English, French, and Germans: the city is built on a low swamp hardly above the level of the sea; a small river flows through the streets, being diverted into canals, the banks of which are planted with lofty trees with a foot path running beneath their shade, and a wide carriage road extending thence in a parallel line to the houses; these which are built of stone are very commodious and airy, and generally have a large court in the centre; formerly they were used as residences, but since the new town has been built they are occupied by the merchants as offices and godowns (stores). One part of Batavia is exclusively

a Chinese settlement, several thousands of the Celestials being there located pursuing their various trades with great success. The fronts of their shops being open, we had a good opportunity of inspecting the labours of the hive while driving along. In this nest of chattering sons of Han will be seen coach builders, wheelwrights, blacksmiths, braziers, and tinmen, tailors and shoemakers, even artists; in short, the pursuits of almost every artisan under the sun may here be seen in full work, and exercised in a very tradesman-like style. There are several handsome public buildings in Batavia, all profusely ornamented with the lion of the Netherlands, which is sculptured on almost every projection of these edifices; the parade, and other government grounds, are kept in good order, the walks being neatly trimmed and weeded, and the grass closely cut. Several birds of the jay and sparrow species cheer them by the beauty of their plumage and the liveliness of their motions. It is singular, that in almost every part of the globe, Java included, the common sparrow may be seen hopping about with the same mischievous waggery in his demeanour, without regard to climate, as that which characterizes the saucy little bird of our island home, clearly showing that impudence is tolerated in all countries.

The immense crowds of vehicles and buffalo waggons, the numbers of itinerant fruit and sweetmeat sellers, the troops of coolies, carrying heavy loads of all that is costly, whether gold from Pontick, or the spices of the Moluccas, and country people carrying long poles on their shoulders, a basket pendant at each end containing ducks, geese, and turkeys for sale, give the burning streets a very gay appearance. But by sunset this town may be almost likened unto a huge cemetery, or a plague stricken city, a few Malays may be seen here and there prowling about, a solitary Javanese sentinel, or straggling Chinese, are the few drops left of that human current, which but a brief space since was so noisily flowing. The cause of this desertion is the malaria produced by the exhalations arising from the stagnant canals and fetid swamps of the city, and which compels the native residents to retire early to their homes, and forces the Europeans to retire to the New Town before the unwholesome vapours spring from the ground. Driving through the city one day at dusk we had the full benefit of this miasm. It seemed to take the shape of some tangible substance crawling into the mouth and nostrils; the sensation of inhaling the vapour is indescribable, and the effect of it is most overpowering.*

The new city of Batavia is merely a large assemblage of detached bungalows bordering the great road running from Batavia to the interior, as well as the various cross roads in the neighbourhood. These houses commence about two miles from the suburbs of the old city, and are very handsome residences. A description of the domicile of our late lamented host, Mr. —, who has since fallen a victim to the climatal fever, will, with very few exceptions in general, suffice for all. His house was a large handsome structure, built of stone and stuccoed white. It consisted of only one floor, but was raised upon arches several feet above the ground; a wide verandah paved with variegated marbles encircled it, and in which, at the front of the bungalow, were placed ottomans, chairs, marble tables, book stands, and flower vases, forming

* See Dr. Armstrong's observation on this subject in our last volume, p. 381.

with all these agreeables a most delightful place for the accurate enjoyment of a correct Manila and well cooled glass of Schiedam pawney.

At night the verandah is brilliantly lighted in front by a row of numerous lamps, and all the bungalows being similarly illuminated, presents a pleasing appearance from the road. The sitting rooms consisted of a suite of large apartments, very lofty, and communicating with each other as well as opening to the verandah; they were handsomely, but rather scantily furnished, and a pretty Chinese matting supplied the place of carpet, being more suited to the climate. The sleeping apartments were not large, merely containing a bed furnished with a mosquito curtain, dressing table, and a chair or two. The windows and jalousies are carefully closed at night to exclude the air, which is so very prejudicial to European constitutions. A glass, partly filled with water and a surface of oil, contains a floating wick, which is lighted at the hour of retiring and remains burning until gun-fire at dawn.

The culinary branch is conducted in one of a range of outhouses forming one side of the compound behind the bungalows; the stables, coach houses, together with the dwellings of the Javanese servants and their families are included in these buildings. As several horses are kept by persons of opulence, a great number of grooms in addition to carriage cleaners is indispensable, their families forming part of the establishment; the allowance, however, which they receive from their masters for the maintenance of those depending upon them being only a little rice, which in Java is very cheap, renders the support of so large a household less expensive than would be imagined.

The English residents in Batavia commence the day by mounting their horses at gun-fire for the purpose of enjoying a cool ride at that early hour, and which can only be appreciated by sojourners in hot climates. As morning dawns and the sun rises, gilding the summits of the higher grounds, the appearance of freshness which everthing assumes is delightful, the trees and flowers loaded with heavy dew-drops scintillate as they catch the young rays, pleasant perfumes emanating from them, which, at a later hour, would be imperceptible from the withering effects of heat and dust. The little Malay pony even seems to participate in the elastic feelings which the bright morning excites, and joyously curvets along the damp road with apparently as great a sense of enjoyment as his master. The roads at this hour are thronged with Chinese tradesmen and labourers going to work, their baskets containing tools, &c., are slung at their backs, and they are all provided with chitterys or umbrellas. Numbers of carriages containing ladies and gentlemen are driving slowly along, squads of clumsy looking heavy sternered soldiers are at drill; and an interesting procession comes in view—the children of the Dutch female orphan school taking their usual walk. As they filed quietly along before us, clad in pure white, their situation gave rise to melancholy reflections, subdued, however, by the assurance of their bereavements being assuaged as far as earthly means were concerned, by the care of a kind administration; these children, we were given to understand, were chiefly orphans, who having no relatives in Holland, were supported by the institution at Batavia. As the rider proceeds, he sees Malays urging horses with loud shouts into the river, for the

purpose of washing them, and in the waters of which, at the same time, almost two-thirds of the coloured population are busily paddling about; parents at their morning ablutions and scrubbing their little ones, the latter in *puris naturalibus*, their sires in merely a waist cloth, and the mammas in a sarong; servants scouring domestic vessels, pots, and pans, cleaning fish and washing clothes, and some carrying water away, as if for home use, this muddy little stream seeming to be quite the fashionable resort.

The morning being now somewhat advanced, a herd of hideous looking buffaloes may be seen wending along to a pool on the wayside, to luxuriate in mud and water during the heat of the day. This laudable precaution as well as the rapidly increasing strength of the sun's rays, are good hints of the propriety of returning home. Upon arrival which is generally about seven, a cup of coffee is taken, and preparation made for bathing, by undressing and donning a Malay sarong, which garment is simply a large piece of chequered stuff, the ground a reddish brown with red and light coloured cross bars; it is closely wrapped round the body from the hips to the feet in a succession of folds, and is curiously tucked about the waist without the aid of either button or string. The knack of fastening it *secundum artem* is usually a puzzle to the uninitiated. In walking across the compound to the bath we afforded great fun to the servants, in consequence of our sarong slipping off and leaving us completely sans culottes. Bathing over, an hour is spent with a book, *en fauteuil*, after which dress for the day, and breakfast at nine. This meal is certainly a very well got up thing as far as devilled drumsticks, first chop curries, fish, eggs, fruit, roasted plantains, preserves, &c., are concerned, and a bottle of cool claret to conclude with. About ten the carriage is brought round, hood drawn well over, blinds close down and every thing in order, driver and footman in laced coats, but as to continuations the less said about them the better. Upon arrival in town the man of invoices repairs to his desk, and his skipper guest (*if he have one*)* goes off to the ship to see how things are getting on there. At four or half-past, the road to the new city is again alive with the *commerciants* homeward bound; having discussed that luxury of luxuries, a tropical dinner, rejoicing in the accessories of table linen rivalling in whiteness the snows of the Himmalay, as a most tempting cuisine, a desert not procurable in the latitude of Covent Garden, and wines of an almost icy temperature. A drive is taken in the cool of the evening, nearly all the European population being on the *qui vive* at that pleasant hour, some sipping coffee either in the verandahs of their cottages *ornées*, or on the smooth turf before the doors, the effect produced by the appearance of groups of ladies and gentlemen all clad in white, and gently flitting in the brief twilight amid statues, jets d'eau, and vases of beautiful shrubs and flowers, being very picturesque. Large parties may be seen promenading on the roads and race course. The general walking costume of the ladies seemed to resemble an English evening dress, no bonnet being worn, merely a flower in the hair. We should suppose the heat of the climate tolerates some easy habits, and

* The trite proverb of "A fat kitchen makes a lean testament" seems to be the order of the day with Eastern consignees now a days; few poor devils of skippers, particularly *Liverpool ones*, being thought worthy of a feed from such magnates. *Tempora mutantur* since the golden morn of the first Free Traders dawned.

also eschews straightlacedness, as we observed several pale, very pale, dark brown beauties, who certainly in Jack's phraseology required a fresh pull upon their stay tackles.

In Batavia where the torture of sitting out a dinner in a *camisole* of a dress coat, (Hibernia log,) would nearly rival the pains caused by the poisoned gift of Nessus; the etiquette to be observed by gentlemen with regard to dress is to wear a coat at church, attending the Governor's levies, or at a dinner or ball at Government House; but in private society only when going to a dinner or evening party for the first time to any place where there may be a lady of the house, and this with certain modifications, which are to make the entrée and bows in a coat, and then retire to put on a white jacket which your servant has in readiness, ever afterwards a jacket is *selon les regles* in that house.

Returning from our digression we must revert to the haut ton of the evening driving parties, among whom the Governor in an open carriage drawn by eight ponies, makes no inconsiderable display in consequence of the footmen standing behind His Excellency, as well as the outriders in attendance, wielding lighted torches when night has fallen. His Excellency patronizes the Jockey Club established by some of the members of the English mercantile houses. However we believe it is confined exclusively to themselves. They have a stand, weighing house, &c., on the race course, and come out very strong in racing toggery of the most approved description, to the great wonderment of the Dutchmen, who justly marvel at anybody, unless of doubtful sanity, having recourse to so violent an amusement in this broiling part of the world.

There are two hotels in Batavia both in the new city, but in the old town there is no place whatever of rest or refreshment for persons on shore during the day, and which is very disagreeable in consequence of the distance the vessels lie off. Having completed our business in Batavia, we received on board water and supplies prior to our sailing for Singapore and China. The water was brought off in a floating tank, prahu rigged, and furnished with a hose and force pump, our own crew going on board the craft and pumping, the Malays refusing to perform that duty. We paid three rupees a leaguer. The price charged us for negro head tobacco was 2 Rs. (rupees) per lb., sugar 16 Rs. per pecul, fowls 4 Rs. per dozen, ducks 7 Rs. per do., paddy per bag 3 Rs., yams 31 Rs. per pecul, small hogs 7 Rs. each, and boat hire for conveying off a large stock 8 Rs. We found much fault with the comprador (a Chinese) for making what we thought exorbitant charges for everything, compared with the moderate prices at Anjer. However, upon enquiry, we discovered that in consequence of the Dutch levying dues upon all native supplies *outwards*, as well as the usual duty of 30 per cent. upon foreign articles *inwards*, refreshments cost much more than their intrinsic value. To show the relative difference of prices between Batavia and Anjer, the following are the prices of stock purchased at the latter place some twelve months after;—eleven dozen fowls, 25 baskets sweet potatoes, 14 bags paddy, 1½ dozen pumpkins, some fruit, birds, shells, &c., for £2. 10s., which was moderate enough. It being dark when our supplies came off in Batavia roads, of course there was much confusion in getting every thing safe on board, and unfortunately the hogs being very savage and untractable, evincing a great desire to

escape from their baskets and attack all hands, our worthy chief officer thought that he had better make them feel quite at home, by accustoming them to the smell of tar without delay. He accordingly made one of the youngsters attend with a bucket of tar and brush, with which he laid a good coat upon each snout preparatory to its consignment to the pig pen, at the same time gravely assuring us that it was an infallible remedy for keeping pigs from jumping overboard. However, the grunters were hardly in the pen before they escaped, and two out of four jumping through the main deck ports were never seen again, although two boats started in full chase, they must have been immediately seized by sharks, as no time was lost in pursuing them.

J. B. CALDBECK.

ON THE LONGITUDES OF THE PRINCIPAL MARITIME POINTS OF THE GLOBE.

By Lieut. Raper, R. N.

(Continued from Vol. for 1841, p. 764.)

In the last paper on this subject, published in Nov. 1841,—after which period my time was entirely occupied in putting the second edition of my Navigation through the press,—it was intended to proceed along the coast to the eastward. But the surveys of Sir E. Belcher having arrived in the mean time it has become necessary to combine his chronometric measures with those of former authorities; and, therefore, to avoid further delay, we shall proceed now to Australia.

193. PARAMATTA—OBSERVATORY.

M. Wurm has given in the *Astronomische Nachrichten*, Nos. 135, 137, 143, and 200, the results of twenty-three occultations observed between Aug. 1812 and Oct. 1828, which will be found enumerated in the *Conn. des tems* of 1836, “*Sur la Table des positions géographiques*,” by M. Daussy. Of these M. Wurm rejects all such as differ 10s. from the general mean, whereby he obtains twelve within 4s. of the mean. The result of these is 9h. 54m. 43.1s. E. of Paris, that of the whole is 9h. 54m. 45.0s, M. Daussy has adopted the former. Applying to 9h. 54m. 43.1s. the D. Long. of Greenwich and Paris, or 9m. 21.5s. according to Mr. Henderson (*Phil. Trans.* 1827), which has been confirmed almost exactly by Mr. Dent by means of chronometers, gives 10h. 4m. 4.6s. The long. adopted in the *Naut. Alm.* is 10h. 4m. 6.2s, or 151° 1' 9". As it is convenient to omit seconds in a fundamental position, and as this determination cannot be considered definitive we shall adopt 151° 1' 0".

194. *Port Jackson.* Fort Macquarrie flag-staff.

As we have adopted Paramatta Observatory as the secondary meridian of this district, we need not give here the numerous observations, consisting chiefly of lunars, taken at Port Jackson since those of Cook in 1770, and which range between 151° 20' 38" (Lt. Bradley in 1788) and 151° 8' 17" (M. Bougainville in 1825). We shall therefore refer Port Jackson to the observatory.

1822. D.L. *Param. Obs.*, by the transit of Mercury,
computed by M. Wurm

0° 12' 36"

FitzR. D.L. *Do.* by 3 ch. to and from the Observ. by water,
the same day $0^{\circ} 13' 0''$

Adding $1^{\circ} 3'$ to $151^{\circ} 1'$ gives $151^{\circ} 14' 0''$, which we adopt.

As this is an important station, it will be worth while to state, for the purposes of comparison, that Espinosa adopted $151^{\circ} 12' 41''$; M. Freycinet $151^{\circ} 12' 58''$; Admiral Krusenstern $151^{\circ} 12'$ (mem. 1824, p. 104). Capt. King $151^{\circ} 12' 56$; M. Duperry $151^{\circ} 10' 31''$; M. D, Urville $151^{\circ} 11' 4''$; and M. Daussy Wurm's deduction, or $151^{\circ} 13' 56''$, from which we differ only $4''$. The lighthouse is $4' 12''$ E. of the fort, or $151^{\circ} 18' 12''$.

As Flinders in 1802 passed from C. Otway by Port Western, Wilson's promontory, Kent's group and C. Howe, to Port Jackson in 5 or 6 days we may consider the connection of these several places as satisfactory, and therefore adopt his longitudes of these headlands diminished by about $3'$.

195. C. Otway.

Flinders $143^{\circ} 29'$, or $7^{\circ} 42'$ W. of Sydney: Freycinet, $143^{\circ} 39'$ or $7^{\circ} 34'$, W. of Sydney.

Wickh. D.L. *Sydney* $7^{\circ} 40' 38''$ $143^{\circ} 33' 22''$

196. Kings Id.

Hill on N. Point, Flind. $143^{\circ} 54'$.

Do. Wickh. D.L. *Sydney* $7^{\circ} 20'$, $143^{\circ} 54'$

Bay of Seals, S.W. Corner Wick. D. L. *Syd.* $7^{\circ} 18' 12''$ $143^{\circ} 55' 48''$

197. Black Pyramid, Summit.

Flinders $144^{\circ} 21'$.

Wickh. D. L. *Syd.* $6^{\circ} 52' 50''$, $144^{\circ} 21' 10''$ agreeing with Flind.

198. Port Western. Philip Id. N. E. Point.

Wickh. D.L. *Sydney* $5^{\circ} 55' 43''$ $145^{\circ} 18' 17''$
Which we adopt.

D. Urville gives C. Grant, (lat. $38^{\circ} 31' 38''$) $145^{\circ} 13' 52''$. He also place C. Schanck in $144^{\circ} 52' 20''$. This point Capt. Wickham places S. 4E., 15.9 mil. of Pt. Nepean, or in $144^{\circ} 57' 0''$.

199. Hobarton. Fort Mulgrave.

D'Entrecasteaux $147^{\circ} 23'$; Flinders $147^{\circ} 28'$; King $147^{\circ} 27'$

La Place, D.L. *Port Jack.* (Pinchgut I.) 2 ch. [3'] $3^{\circ} 54' 14''$

Pinch I. $1^{\circ} 25''$ E. of Fort Macq. gives $3^{\circ} 52' 50''$ $147^{\circ} 21' 10''$

FitzRoy D.L. *Fort Macq.* 15ch. 11d. [13s.] $3^{\circ} 52' 33''$ $147^{\circ} 21' 27''$

Wick. * 1836 D.L. *Do.* $3^{\circ} 52' 30''$ $147^{\circ} 21' 30''$

1838 D.L. *Do.* $3^{\circ} 52' 21''$ $147^{\circ} 21' 39''$

D. Beth Do. D.L. *Do.* 4ch. 14d [30s.] $3^{\circ} 52' 30''$ $147^{\circ} 21' 30''$

Blackw. † Oct. 1842 D.L. *Syd.* (Garden I.), and Capt. Ross' magnetic Observatory 12ch. 14d. [9s.] 15m. 32.9s. = $3^{\circ} 53' 13''$

Garden I. is $3^{\circ} 4s.$ E. of Fort Macq., and mag. obs. $4^{\circ} 6s.$ E. of Fort Mulgr. according to a plan in the Hydr. Off. with an "approximate scale," the difference is then $3^{\circ} 51' 13''$, we must employ, however, in this uncertainty $3^{\circ} 52' 30''$, and shall adopt $147^{\circ} 21' 30''$.

As Flinders places Hobarton in $147^{\circ} 28' 1$, or $6^{\circ} 5$ E. of our position, we subtract $6^{\circ} 5$ from his longitudes of places adjacent, and $5^{\circ} 5$ from those of Capt. King for the like reason.

* I am indebted to Acting Commander J. L. Stokes, who succeeded Capt. Wickham in the command of H.M.S. Beagle, for several important meridian distances on these coasts, and also for remarks on the relative value of some of the measures.

† Capt. F. P. Blackwood, H. M. S. Fly, now engaged on the survey of Torres Straits.

200. *S.W. Cape.*

The lat. of this point is variously stated. D'Entrecasteaux, Jan., 1793, made it $43^{\circ} 33'$. Flinders in 1798, $43^{\circ} 40'$. Horsburgh adopts $43^{\circ} 39'$. Capt. D. Bethune in 1838 made $43^{\circ} 33'$, and observes that M. Cecille of l'Heroine found $43^{\circ} 39'$ too great by $6'$ or $7'$; and Acting Commander Stokes in 1842, made it $43^{\circ} 35'$, the latitude, therefore, cannot be considered as determined. Long. Flind. $146^{\circ} 12'$, deducting $6'$, gives $146^{\circ} 6'$.

201. *Port Philip. Pt. Nepean.*

Pt. Gellibrand, Capt. D. Beth. D. L. *Syd.* 4ch. 9d. [4s.] $6^{\circ} 19' 15''$ $144^{\circ} 54' 45''$
 D. L. *Hobart.* 4ch. 14d. [5s.] $2\ 26\ 30$ $144\ 55\ 40$

Wickh. Pt. Nepean D. L. *Sydney* $6\ 31\ 8$ $144\ 42\ 52$

We adopt the latter as Pt. Gellibrand is not marked on any plan I have seen.

202. *King George's Sound. Princess Harbour, New Government Buildings.*

FitzR. D. L. *Hobart.* 15ch. 20d. [37s.] $29^{\circ} 27' 52''$ $117^{\circ} 53' 38''$
 Wickh. 1836 D. L. *Do.* $29\ 27\ 35$ $117\ 53\ 55$

We adopt $117^{\circ} 53' 48''$

Bald head is $7' 35''$ E. of the buildings, or $118^{\circ} 1' 23''$. Mt. Gardner, by D'Entrecasteaux's chart, is $6' 5$ E. of Bald head.

203. *Glenelg. Flag Staff.*

Wickh. 1840, D. L. *King G.'s Sound* $20^{\circ} 35' 30''$ (not good) $138^{\circ} 29' 18''$
 Do. Do. D. L. *Sydney* $12\ 41\ 11$ $138\ 32\ 49$

Which last we adopt.

204. *Port Arthur. Semaphore.*

D. Beth. June 1838, D. L. *Hobart* 4ch. 4d. [4s.] $0^{\circ} 29' 15''$ $147^{\circ} 50' 45''$
 Do. Oct. Do. D. L. *Sydney* 3ch. 13d. [6s.] $3\ 23\ 45$

A former run $3^{\circ} 23' 15''$ mean $3\ 23\ 30$ $147\ 50\ 30$

D. L. *King G.'s Sd.* 3ch. 27d. [27s.] $29\ 55\ 30$

Pt. Poss. being $1' 8''$ E. of Gov. buildgs. gives $29\ 56\ 38$ $147\ 50\ 26$

Blackw, Oct. 1842, D. L. Garden I. to commandant's jetty
 12ch. 8d. [5s.] $3^{\circ} 23' 3''$, or $3^{\circ} 22' 12''$ from Fort Macq. $147\ 51\ 48$

Do. D. L. *Hobart.* Capt. Ross' mag. obsrv. to

jetty, 12ch. 24d. [3s.] $31' 4''$ or from Fort Macq. $29' 58''$ $147\ 51\ 28$

Being uncertain of the exact position of the magnetic observatory, and the jetty above not being marked in the plans, we cannot, at present, combine the two results, and shall adopt $147^{\circ} 50' 40''$.

205. *Swan River. Scott's Jetty.*

Wickh. 1836 D. L. *King G.'s Sound* $2^{\circ} 8' 20''$ (good) $115^{\circ} 45' 28''$
 1838 D. L. *Hobart* $31\ 35\ 50$ $115\ 45\ 40$
 1840 D. L. *King G.'s Sound* $2\ 8\ 20$ $115\ 45\ 28$

We shall adopt $115^{\circ} 45' 28''$.

206. *Red. Id.*

King $124^{\circ} 15' 45''$

Wickh. 1836 D. L. *Swan River* $8^{\circ} 33' 6$ $124^{\circ} 19' 1$

207. *Adele Id.*

King 123° 11'
Wickh. D.L. *Swan River* 7° 30'·1 123° 15'·6

208. *C. Leveque.*

King 122° 56'
Wickh. D.L. *Swan River* 7° 15'·8 123° 1'·3

209. *Caffarelli Id.* Summit.

King 123° 18' 35"
Wickh. D.L. *Swan River* 7° 37'·2 123° 22'·7

Capt. Wickham thus confirms Capt. King's relative positions of the four preceding places.

210. *Port Essington.* Governor's House.

		h.	m.	s.	
Capt. Stanley 1838.	10 sets) culm. Stars	8	48	38	132° 9' 30"
Do.	D. L. <i>fort Macq.</i>	19	3'	30"	132 10 30
H. M. S. Alligator	D. L. <i>Do.</i>	19	3	45	132 10 15
Wickh. 1839	D. L. <i>Do.</i>	19	3	37	132 10 23
Do.	1840 D. L. <i>Swan R.</i>	16	27	9	132 12 37

We adopt 132° 10' 35". The diff. 16° 27' 9" does not agree with the others.

211. *Lizard Id.* Summit.

King 145° 23'
North bay, W. side, Wickh. D. L. *Port Essington* 13° 17' 40" 145° 28' 15"
The Sum. is 40" E. of this, or 145° 28' 25"

212. *C. Tribulation,* Finger Peak.

King 145° 22'
Wickh. D. L. *Port Essington* 13 15 0 145 25 35

213. *C. Weymouth,* Restoration Id.

King 143° 21½'
Wickh. D. L. *Port Essington* 11 16 40 143 27 15

214. *Mt. Adolphus.*

East sum. King,	142 36 25
Wickh. D. L. <i>Port Essington</i>	10 28 45 142 39 20

The N. W. part of the sum., which is 500 feet high, is 1' 26" E. of this, or 142° 40' 46", the eastern sum. about 1' further east.

The above four positions give very nearly Capt. King's meridian distances, a correction of about + 5' 30' being applied to his longitudes

215. *Coupar,* Fort Victoria.

Flinders 123° 35' 43"	
Stanley 1839 D. L. <i>Port Essing.</i> 9d.	8° 34' 48" 123° 35' 47"
Returning	8 35 3 123 35 32
Wickh. 1840 D. L. <i>King G's Sound</i>	5 41 55 123 35 43
Do. Do. D. L. <i>Swan R.</i> 2 meas [18"]	7 50 15 123 35 43

This close agreement among different places is very satisfactory. The diff. long. between Port Essington and Swan R. cannot therefore be far from the diff. of our positions or 16° 25' 7", and throws a doubt over the diff. 16° 27' 9". See No. 210 above.

216. *Entrance to Victoria River.* Point Pearce.

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3 M

Wickh. 1839 D. L. <i>Port Essington</i>	2° 48' 55"	129° 21' 40"
Do. D. L. <i>Swan River</i>	13 38 15 (not good)	129 23 43
We adopt the former. The extreme pt. is 46" W. or 129° 20' 54"		

217. *C. Upstart.*

King 147° 44' 30".		
Wickh. D. L. <i>Port Essington</i>	15° 36' 30"	147° 47' 5"
D. L. <i>Port Stephens</i>	4 17 7	147 46 53
We adopt 147° 47' 0"		

(To be continued.)

IMPROVEMENTS IN SHIPS AND STEAM-VESSELS.—By A. H.
Holdsworth, Esq., of Dartmouth.

NAVIGATION by the means of Steam has increased, and improvements in the vessels and in the various parts of the machinery by which they are propelled, have grown up with a rapidity that has astonished those persons who have watched its progress from its commencement.

Two, however, of the most essential points for consideration, connected with the subject, appear to have been hitherto little regarded,—*security against fire, and the health of the men.*

If we were to search for the cause of this apparent want of attention to the condition of the crew, we should probably find it in the fact, that on few occasions connected with foreign adventures, whether public or private, has the safety of human life been at all valued as a primary consideration. We know that men are easily obtained, and replaced by others if occasion require it; that when an accident occurs, by which a vessel is destroyed and a whole ship's company is lost, that description of misfortune is, from long habit, so familiar to our minds, that after the momentary excitement has passed away the circumstances are soon forgotten. The same reasoning may probably be applied to those casualties in steam vessels which arise upon the voyage—they are regarded only as "casualties." They may be more in one voyage than in another, but they may occur to all, and are passed over apparently unnoticed, because they do not demand a special report to the owner or public office; they are set down as unavoidable drawbacks, like the wear of the ship; and as we have not the power of knowing what is the real constitution of each person, we are ignorant whether the heat of the stoke-hole, the climate, or natural infirmity of body have been the cause of indisposition.

A vessel goes into the tropics, she has her complement of men for her ship's company, and the proper establishment for her engineers' department; they are but a short time actively employed in that climate before a stoker may be taken ill; one of the ship's company is ordered to fill the vacancy; but unaccustomed to this work, he soon becomes ill also; and thus the crew is not only lessened below its complement, but the loss of each individual augments the duty of the whole crew, in a climate where the health of all demands the greatest relaxation from

hard labour, whilst each invalid must still be maintained, although unable to earn any thing for his employer.

Let any one picture to himself the position in which a man is placed in the after stoke-hole of some of our large steamers—the space between the fires and the bulk-head being nine feet, with a heated atmosphere of twenty feet over his head. The bulk-head being of wood, gets gradually heated through, and the metal plates with which it is covered, to guard it against fire, from the frequency of opening the fire-doors becomes heated to a degree one cannot venture to mention, the thermometer in the stoke-hole standing from 150° to 156° . Under such circumstances, the stoker would naturally seek to guard himself from the additional heat which the opening of the fire-doors throws upon him; but when he attempts to retire from it, the reflected heat from the metal plates on the bulk-head is as bad as the fire itself, and after repeated shifts of two hour watches at such work, if his constitution give way, no one can wonder at it.

The best remedy which presented itself to my mind for this afflicting evil, was to find a bulk-head which, being placed in the same situation, or even nearer the fires, should absorb the violent heat that would be cast upon it, and which could not reflect any into the room above the temperature of the water in which the vessel was placed. This is accomplished by constructing the bulk-head of metal plates, formed into two walls or partitions, and so connected together as to be capable of retaining water constantly circulating between them, as is more fully described in the specification of my patent.

Where there is an ingress pipe connected with the *bottom* of any tank or vessel capable of holding a fluid, and which pipe is in connection with any body of water of a higher elevation than the tank or vessel, and there is another pipe leading from the *top* of the tank or vessel; as the specific gravity of the water so introduced into the tank or vessel is changed by the application of heat, the lighter particles will rise to the top and flow away through the upper pipe, the heavier or colder particles flowing in at the bottom to supply their place; consequently the temperature of the vessel itself can only be perceptibly raised by applying so strong a fire to it as to overpower it with heat and cause it to boil, when the flowing through will be the more rapid.

But in the stoke-hole the heat, although overpowering to the human frame, is not enough to raise the temperature of a metal bulk-head, filled with water, perceptibly to those who are employed in the atmosphere which imparts the heat to it; on the contrary, as the communication with the sea water will be free, and large in proportion to the contents of the bulk-head, the man in the stoke-hole retiring close to it, or sitting down against it, will feel all the comfort which his reclining against a substance at the temperature of the sea water would naturally impart to him; or, if it be supposed that the action arising from the communication with the sea water would not be enough to maintain the temperature required in the bulk-head, the supply-pipe may be connected with a pump, driven by the engine, or the water to feed the boilers may be drawn through the bulk-head bringing with it whatever heat it may collect.

An arrangement might be made for filling the bulk-heads through a pipe from a cistern, which is supplied by the water thrown from the floatboards against the side of the paddle box, to which the cistern is attached. This cistern need be only two inches wide or even less, and placed about two feet above the deck of the vessel; the pipe will pass through the side immediately under the deck, and descend to the bottom of the bulkhead, where it will enter it, having a stop cock upon it to cut off the supply, if required.

There will be another pipe leading down from the top of the bulk-head through the ship's side immediately under the deck, into the other paddlebox, which will complete the arrangement, and keep up a constant circulation.

When in harbour, or the engine is not at work, the bulk-heads may be supplied once a watch, or as often as the officer in command may require, by a deck pump in the paddle box, filling the cistern through a hose, which will occasion little trouble and no expense in the outfit. In either of which cases the current must be incessant, and the temperature never perceptibly altered. The principle upon which the bulk-head is formed being established, a very little experience will teach men the best mode of carrying it out, according to the circumstances of the ship in which it is placed.

The same effect will be produced on the other side of the bulk-head, where the heat cannot be raised above that temperature, forming the best store-room for every kind of article which might be melted or ignited by the heat of the fire, whether tallow, artificial fuel, or any other inflammable material. If such bulk-head be placed between the boilers and the habitable part of the ship, and be supplied with the water required, either by a deck pump or one attached to the engine, the cabins within one foot of the boilers will be the coolest in the ship in the hottest climates. Let any one reflect on the inconvenience he would feel in living in warm weather in a berth within two feet of the boilers, with only a wooden bulk-head between them, (which being soon heated through, will remain at that temperature so long as the boilers are at work, and will be the means of conveying the heat of the boilers to the berths adjoining to it,) and contrast it with a berth in which the temperature of the bulk-head can never be raised above that of the water with which it is filled, and he will soon be convinced of the value of the proposed alteration.

It may be made equally available for heat or for cold: it may be kept at that of the sea water when in hot climates, or be raised, by a communicating pipe with the boiler, to any temperature that may be found most agreeable when in the colder latitudes in winter; by placing it, therefore, between the boilers and the habitable part of the ship it will be found most useful to the officers and crew, in whatever climate they may be.

It has been said by some persons that the engine-room was the coldest part of the ship. I may be allowed to express a doubt of this assertion; not only because the radiating heat from the boilers and fire-places must affect the atmosphere which surrounds them, but because the most attentive and experienced officers of the service have constantly spoken of the difficulties of cooling those places, particularly in bad weather;

and the persons to whom I have alluded would not be angry with me for doubting their account, if I asked the question whether they tried with the thermometer the other parts of the ship through which the current of air passed to effect their object? And if their engine-room appeared to be cooler than those of other vessels, I would enquire at what expense was the advantage obtained? I cannot help suspecting that it was done at that of the health and comfort of the ship's company, by keeping a communication open with the decks on which the men are berthed, and by drawing a stream of air down the fore hatchway (to use the expression of a naval friend) "enough to blow the men out of their hammocks."

The health and comfort of the ship's company, when engaged in active operations, or on an enemy's coast, is as essential to the service as that of the engineers and their men. The object, therefore, which I have endeavoured to accomplish, is the health and comfort of all. I would not allow any communication between the engine-room and the ship's company: and I am satisfied that every steam-boat officer who knows his duty, and has the good of the service at heart, will agree with me in its importance. I would carefully guard the habitable part of the ship from access to the engine-room by bulk-heads, so formed as to prevent the possibility of a communication of heat to, or a current of air from, the deck on which the ship's company live; and I would supply the stoke-hole and engine-room with air by a very different process. With such comfort as those bulk-heads would afford, and by attention to the ventilation of the stoke-hole and engine-room, properly understood and regulated, there is no reason why a steam-vessel should not be as healthy, perhaps the most healthy, vessel that could be sent into the tropics. Perhaps I may be told that attempts have been made to prevent the heat from going into the other part of the vessel from the engine-room by the double bulk-heads of wood, with a space for air between them, but let any one consider what must be the situation of the ship if the less accessible of these bulk-heads should take fire, with such a channel for air to maintain it—the commander would rather be subject to the heat than the additional and difficult enemy he would then have to contend with.

To many persons the history of steam-navigation, and the management of steam-vessels, is quite new; and men may undertake to fit them out, and others may be placed in command of them, who are not practically acquainted with the service. Such persons will necessarily endeavour to ascertain what are the difficulties they may have to encounter, and take advice from those officers who have had experience in them, or it may yet be some time before our vessels will arrive at that perfection which is the aim of every man who is entrusted, publicly or privately, with any branch of that service.

There is another matter connected with this subject of still greater importance, in the estimation of some persons to whom I have proposed it, viz., the fitting up of hospital ships, and the sick-bays in other vessels, with bulk-heads of this description, particularly for hot climates. It appears to them that if the bulk-heads be kept at the temperature of the sea water in the tropics, and iron bedsteads be attached to them, of which the two outer legs alone would touch the

decks, that those bedsteads may be always kept at about the same temperature; because all the heat above the temperature of the water will be withdrawn from the bedstead, and conveyed away by the bulk-head. Indeed, if greater advantage would be gained by it, those bedsteads might be made of hollow tubes, and the water of the bulk-head be allowed to circulate through them; so that the sick man would be surrounded by a cool substance, for his bedding to rest on, which it is said would tend greatly to the recovery of his health. I speak only of the means within my power: the medical gentlemen must decide on its value and importance.

These bulk-heads afford equal protection against fire as against the ill effects of heat: one might as easily burn a kettle full of water as a metal bulk-head of this description. The more violently the fire impinged against its side, the more rapidly would the water circulate; but it could not flow more rapidly out of the upper pipe, through the action of the fire, without being as rapidly filled below, if the communication were properly arranged with the water from whence it is supplied; and as long as there is water in it the metal plates cannot be destroyed. Let, then, this principle be carried into the floor and top, as well as the sides of the room that is used as the magazine or shell-room, either in men-of-war or in steam-vessels, and let its door or hatch be constructed in the same way, and be hung on hinges made hollow, and guarded from leaking by stuffing-boxes, so that the water may flow into the door through one hinge and out through the other, and the whole space within the room will be as safe from fire as water and metal can make it. For it is obvious, from the position of every magazine, that the sides and top are the only parts which can be affected by fire, making it a very bad boiler, and proportionably a safe magazine.

The account which was given in the *Times* newspaper of the 14th of May, 1842, of the loss of the 'Madagascar' steam-vessel, on the coast of China, in which the first alarm arose from smoke being seen to issue from below, when, after great labour in clearing the coal-boxes, the vessel was found in flames, "*the bulk-head immediately abaft the boilers being on fire,*" forms a melancholy instance of the precarious state of those vessels when some time at sea.

This instance will at once show the value of metal bulk-heads filled with water being fitted near the boilers, in place of those of wood. No one will ever know the cause of that accident. The fire-places were on the other side of the boilers; but such was the state of the wood in the bulk-head at the back of boilers, from the incessant heat, that it took fire without any one knowing how, or having any suspicion where the fire could be, until it had gained too much head from the inflammable state of the materials, to be afterwards arrested, and the vessel was burnt, and half her crew lost their lives. The narrator of this accident displays the same feeling with regard to the *dread of explosion*, as he immediately adds, after describing where the fire was discovered to be, "*this was about forty-five feet from the magazine.*"

I will not go into the account of the narrow escape of H.M.S. 'Salamander,' preserved from destruction by the good conduct of her officers and ship's company, or other instances that could be adduced of fires on

board other steam-vessels: these cannot be necessary to convince those who are acquainted with steamers of the critical position in which all on board are now placed, with the bulk-heads composed of the most inflammable materials, forming, with the decks and other wood-work, a train to their magazines and shell-rooms, and within so short a distance from such fires as are necessarily kept up for the engines.

The condition, however, of the 'Geyser,' at Gibraltar, on the 18th of July, 1842, (since this patent was sealed,) must not be passed over. A correspondent of the *Naval and Military Gazette*, of the 6th of August, states, that on the fires of H.M.S. 'Geyser' being lighted, a boiler became red hot, and ignited the wood-work that was near it. After describing the position of the vessel near the wharf, and the means resorted to to arrest the progress of the fire, he says, "everything combustible was passed quickly up the after hatchway, the shell-room and magazine at once directed to be opened, and the latter to be drowned, the order for which was, however, almost immediately countermanded. The shell-room was, however, at once cleared of its contents, which were put abaft the main-mast under tarpaulings, with hands stationed to heave them overboard at a moment's notice." Whether this account be accurate or not in its details, it shows the impression on the mind of the writer, and is another instance added to the many already known of the advantages which would be derived from making the shell-rooms and magazines proof against fire.

With the bulk-heads which I have proposed to use to prevent the heat of the fires from passing out of the engine department, and with the magazines and shell-rooms made in the same way to give security from explosion, if the vessel be on fire from any cause, unconnected with her engines, to which all ships are subject, the steam-vessel may be as healthy and free from fatal accidents, by fire, as ships of any other description. To the man employed to send the vessel to sea, this may not be of much personal moment: but if the health, comfort, and safety of the crew and passengers be of any importance to society; if the expenses arising either from the loss of health in the ship's company, or the loss of the ship itself, be worthy of the consideration of those upon whom the expenses will fall; the means proposed for preventing these evils, and now offered to the public, demand their attention and most minute investigation.

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, with an account of the attendant phenomena, abstracted from the Official Journals of the respective Ships, and from other authentic sources of information.—By W. S. Harris, F.R.S., &c.

(Continued from p. 401.)

CONQUESTADOR, 74.

1814. May 12th, moored in Port Royal Harbour, 5h. 30m. A.M.; the lightning struck the ship; main-top-gallant-mast split in pieces, main-mast and main-top-mast very much rent.

11th, wind S.E.; on the 12th, variable, and S.E., after which, on the 13th, calms and light airs from S.E.

The ship was obliged to have her main-mast taken out.

COLUMBINE, 16.

1837. June 25th, Coast of Africa, lat. 3° 41' N., long. 9° E. Standing off and on shore; Bembia point N.E. 14 or 15 miles. 8h. 10m. P.M., fore-top-gallant-mast shivered in pieces; fore-top-mast cap split open; one of the fore-castle beams damaged.

The weather had been on previous days moderate and fine. 24th, wind S.S.W. and W.S.W., light airs and cloudy at night, with thunder and lightning. 25th, A.M. calm, with thunder and lightning; 7h. A.M. wind easterly, northerly, and easterly; at 2h. S.W.; 3h. 40m. squall from the N.W.; 6h. moderate and cloudy; 7h. 50m. squally, with very heavy rain. When the ship was struck, rain and lightning prevailed to an excessive degree. 12th P.M. heavy squall from the west with rain, thunder, and lightning. This weather continued for some time after; southerly and westerly winds; occasional squalls, with rain.

The electrical discharge passed down the chain-topsail-tye and sheets, and split the sheet-block; it went below decks, ripped the copper off the galley floor, and filled the ship with a sulphureous odour; all the lights were extinguished in the binnacles by the concussion. Ship's log and account by Capt. Henderson, R.N.

CEYLON (Receiving Ship), 50.

1839. March 8th, Malta Harbour. Pole fore-top-mast and fore-mast shivered. The electrical discharge fell on the fire-engine, and became dispersed on reaching some water in the bottom of it.

The storm spread over the town and harbour of Valetta. The Bellorophon, Talavera, and Hastings, three line-of-battle ships, fully rigged, and having conductors, and lying near the Ceylon, were not damaged. (Report on shipwreck by lightning, p. 61 and 86.)

Wind on the 7th, S.E., where it had been for several days; moderate and cloudy by turns. On the 8th calm and cloudy. 7 A.M., N.W., squally, with heavy rain, thunder, and lightning. 9th, N.W. and W.N.W.; moderate and clear.—Log of Hastings.

CHICHESTER Cutter.

1840. February 7th, at anchor in Killerran Bay, coast of Galway; 4 P.M. top-mast shivered in pieces; 5 feet of the mainmast split out, and the mast charred and damaged in several places; mast-head completely destroyed; the bulk-heads and berths below all smashed; cabin sky-light shattered and thrown up; all the dinner china, then on the table broken in pieces; part of the main-deck raised off the beams, and some of the bulwarks thrown out; the hold filled with smoke, and all the compasses rendered useless. The wind had blown a gale the whole day from W. to N.W. with occasional showers of hail; at four a very heavy squall with hail; a flash of lightning blazed over the ship, attended by a tremendous peal of thunder. The electrical discharge came obliquely down the mast and passed through the deck behind it.

It is said to have then divided upon the hull into two streams, one ran along the chain-cable into the lower hold; the other passed through the cabin.

On hauling the vessel on the ground, it was discovered that the lightning had passed by the copper bolt, right through the bottom into the sea, without any damage to the timbers or planking; the copper sheathing, however, was found to have been burst out over the ends of the bolts in six places; one of the bolts had a round drop hanging on the end of it as if melted; the hole in the sheathing in one place was seven inches by five. Two other pieces a foot square were blown out nearly in a line with the mast; the sheathing was raised only over some of the bolts, it bulged out, but was not broken; the discharge burst upon the copper from the bolts, through the substance of the intermediate sheathing paper; the planks were carefully examined, but all were found quite firm and water tight.

The electrical discharge passed close to 25 persons, some few were thrown down, but no one was in any degree hurt. Official report by Captain J. Stewart to the Board of Excise.

DUKE, 90.

1793. June 17, Martinique, West Indies; 10h. 30m. A.M.; ball of lightning with a tremendous clap of thunder struck the main-top-gallant-mast-head; top-gallant-mast and top-mast shivered into small pieces; main-mast severely damaged; hoops and wouldings of the mast burst open, and the centre piece split to within 14 feet of deck; larboard pump-case split; main-topsail and top-gallant-sails much torn; also the mizen-topsail and stay-sail.

Wind on the 16th, from E.N.E.—17th, easterly and variable, the weather cloudy and calm; much lightning; 9 A.M. thunder and rain; 10h. the rain increased and the thunder approached the ship; at 11h. the rain and thunder ceased, wind continued easterly.

The masts were so shivered that the pieces covered the decks, and were found in the mizen-top and in the launch at the stern; the chain of the larboard pump was broken in several places, and the pump shivered in pieces; the main-mast was so disabled, that they were obliged to cut it down to a stump, and rig a jury-mast; the ship arrived at Plymouth in November, and had new masts.

This terrible damage occurred at the attack on Martinique; the ship was disabled under one of the batteries, after an intermission of the firing. The account in the log is written after the battle.

DICTATOR, 64.

1794. October 8th, Fort Royal Bay, Martinique, at anchor 6h. 15m. P.M.; main-top-gallant-mast and top-mast shivered in pieces; main-mast seriously damaged in two places.

The wind on the 7th, the previous day, N.E., and variable weather, moderate and fine; on the 8th N.E., moderate and cloudy with thunder and lightning; on the succeeding day 9th N.E., moderate with rain.

A fire-ball is said to have entered the ward-room windows and striking through the door to have ascended the main-mast. It is, however,

Just as likely to have come down the mast and passed through the ward-room. The cross-trees and cap of the top-mast were completely struck off, together with top-gallant-rigging; the stump of top-mast was left standing, but so split open, that the upper part spread out like a pair of compasses. Two days after this smoke was seen to issue from the figure-head, which was immediately cut down; a large nest of fire was discovered in the heart of it; the wood was of elm and very solid.

A circumstance very similar to this occurred in 1799, on board the "Principe Real," a Portuguese ship of the line, struck by lightning in company with H.M. ship Audacious, off Malta; the ship went into St. Pauls harbour in consequence, and had been at anchor for some hours, when her main-mast burst out in flames. The fact of the subsequent fire in the Dictator, is attested by Captain Couch, R.N., and by the late Mr. Moore, Purser, R.N., both of whom were in the ship. The case of the Portuguese ship is well known, and was furnished to the author by the late Lieut. Jeans, R.N. who was present.

The Dictator was about to sail for England with a convoy, but was so disabled as to be unable to proceed for a week.

DRAGON, 74.

1801. September 8th, off Toulon; Cape Furgons N.W., 8 leagues; 1 A.M. main-top-gallant-mast shivered, top-mast and main-mast sprung, main-topsail rent.

The wind on the previous days had been easterly, fresh gales and squally, after which it dropped calm. On the 8th the wind came in from the westward, weather moderate. On the following day it again flew round to the N.E., inclining to calm. The weather during the autumn and winter was squally, with frequent lightning and thunder.

The ship fished her main-mast and shifted the top-mast.

DRAGON, 74.

1802. October 17th, off Mahon, Mediterranean; 2h. 30m. P.M., main-top-mast shivered in pieces; main-mast hurt. 16th calm, after which W.S.W. and squally. 17th W.N.W., fresh and squally. 18th S.S.W. to N.W., moderate and cloudy.

DESIREE, 36.

1802. October 8th, anchored in West Harbour, Port Antonio, 9 P.M., main-top-mast shivered in pieces; main-mast rent from the head down to the partners in quarter-deck. Wind on the 7th S.E.; squally, with rain. 8th S.E., moderate and clear P.M.; at 9 P.M. a sudden shift of wind to the north, with a heavy squall, and tremendous lightning and thunder; 12 P.M. the storm abated. The next day, the 9th, wind again S.E., and moderate.

The expansive effect of the shock on main-top-mast was so great, that the pieces were dispersed in all directions to considerable distances from the ship; two large masses in particular were thrown in opposite directions; one was found in a timber yard on one side of the harbour, and the other sticking in the mud on the opposite side.

The storm had not any considerable altitude; it was witnessed by an

observer, at his house on the hill, as taking place immediately under him, whilst over head the sky was clear and tranquil.

The ship went to Port Royal for a new mast.

Ship's log, and additional information, from Admiral Ross, R.N., who then commanded the ship.

DÆDALUS, 36.

1809. October 13th, Port Royal, Jamaica; at daylight found the star-board cheek and fish of the fore-mast very much splintered, and one of the hoops burst out by lightning; also the boats davits carried away. Wind on the 12th variable, southerly and westerly, with light breezes. 13th A.M., light airs, with small rain, after which squally from the northward, with rain; 2h. 30m. squally from the land, with heavy rain, thunder, and vivid lightning; 3 h. A.M. very heavy thunder and lightning: about this time the ship was struck.

The vessel was refitting after having been disabled in a hurricane in August. The fore-mast had just been got in; the mizen-mast was in and rigged, but not the mizen-top-mast; sheers ready for the main-mast.

The new fore-mast was, on survey, found quite unfit for service, and was taken out; the lightning first took the head of the mast, entered the hounds, and passed through its centre down to the main-deck; all the mast hoops were burst; the mast was quite ruined.

H.M. Ship Hebe, lying about two cables' length from the Dædalus, was struck apparently by the same flash, and her masts destroyed.

Further particulars by Admiral Inglefield, who then commanded the ship.

DISPATCH, 18.

1832. January 4th, off Cape Roca 45 miles; at sea, 2h. 15m., P.M. an explosion of lightning took place abreast of the main-hatchway, which injured nearly twenty of the crew.

Wind N.W. and N.N.W.; P.M. strong breezes and squally; 2h. 10m. a heavy squall, with thunder, lightning, and rain.

ELEPHANT, 74.

1790. November 24th, Portsmouth harbour at night, main-top-mast shivered in pieces; main-mast shaken and splintered from the hounds downward; hoops of mast burst open, wouldings much burned, hand-pump broken, back casing of chain-pumps burned.

The shivers of the top-mast were forced from the heel, and in falling one of them broke off the head of the mizen-top-mast lying on the booms. The ship had a new main-mast.

The same discharge of lightning also fell on the Prince William sheer hulk, and destroyed one of the sheers.

Extract of a letter to the Navy Board from the Portsmouth yard, Dated, November 25th, 1790.

EDGAR, 74.

1798. October 30th, off Cadiz, P.M. 9h. 30m., main-top-gallant-mast and main-top-mast shattered by lightning, main-topsail-yard-arm carried away, main-mast damaged. Several of our men hurt.

Wind on the 29th, S.W., fresh breezes and hazy; 30th, S.W. and W., P.M. strong gales W.S.W.; 8 P.M., heavy gales with lightning; 31st A.M. more moderate wind W.S.W.; P.M. E.S.E.

"The main-mast was found to have been sprung by the above accident, signalized the Admiral." The mast was fished.

ENDYMION, 44.

1806. April 13th, off Cape St. Vincent 106 miles; P.M. 6h. squally with rain, thunder, and lightning, main-mast struck by the lightning, which set the mainsail on fire; mast much shaken and wounded, several of the hoops burst open.

Wind N.W. inclining to north; 14th strong gales N.W. and squally.

EOLUS, 36.

1808. December 14th, latitude 29° 38' N., longitude 9° W., West Indies; A.M. 10h. 30m. squally with heavy rain, thunder, and lightning, fore-top-gallant shivered in pieces, fore-mast damaged; the weather on the previous days had been moderate and cloudy, with light airs from the south and variable; 13th P.M. a westerly swell, midnight fresh breezes; 14th S.S.W., strong breezes with lightning; 11h. A.M. variable winds; P.M. westerly strong gales, the wind continued from the west, and on 15th fell calm.

It appears by the log that the fore-top-mast was also damaged, it was shifted on the 16th.

EAGLE, 74.

1811. January 22nd, in the Adriatic, Sassena, E.S.E. 10 miles A.M., strong breezes with heavy rain, thunder, and lightning; the lightning struck the fore-mast and wounded one man.

Wind 21st S.E. fresh gales; 22nd S.S.E. fresh and cloudy; 23rd south with strong gales.

EAGLE, 74.

1812. January 14th, off Corfu, Antipaxo, N.E. 4 miles, P.M. 8h. 20m.; main-mast struck by lightning in a heavy squall, with thunder and rain, one of the hoops of the mast was struck off, and the mast much shaken, ten men severely hurt and one of them much burned.

Wind on the 13th S.E. and west, blowing fresh; 14th A.M., west and moderate, after which squally; 15th the succeeding day calm A.M., then N.W. fresh gales.

EAGLE, 74.

1812. January 21st, off Corfu, 13 miles; 12h. 25m. noon, main-mast struck twice by lightning; 12h. 40m. again struck and set on fire, which continued for nearly 10 minutes.

Wind on the 20th variable and easterly; 21st, east by south variable all round the compass, 3h. 30m. strong breezes from the west and squally with rain; 22nd strong westerly gales and clear; 23rd and 24th calm and variable.

Admiral Sir Charles Rowley who then commanded the ship, describes these cases of lightning as having been extremely awful and distressing—he was himself knocked down by a bolt which was struck out of the tops; one man in a Guernsey shirt was scorched black all over, although the shirt remained untouched: this is a curious instance of the conducting power of the human frame in defending the woollen substance. The sails, rigging, and spars, were all more or less damaged; so many men were struck down that the crew became terrified at the effects produced by the electrical agency, so that it was only by great exertion on the part of the officers that the fire was got under and order restored. The ship was, for a short time, in great jeopardy, and likely to have been turned.

Esk, 18.

1827. November 1st, Coast of Africa, latitude 5° N., longitude 5° E.; at anchor River Bento 44 miles; main-top-gallant-mast shivered; main-top-mast slightly splintered.

The weather had been fine and moderate, with southerly and westerly winds. November 1st A.M. W. to W.N.W.; P.M. 3h. 30m. a heavy tornado with thunder, lightning, and rain. 8 P.M. moderate and cloudy; midnight fine; wind remained westerly.

A schooner Prize was struck by a terrific discharge of lightning at sea, on her passage to Sierra Leone. The fore-top-mast was knocked in pieces; the fore-sail set on fire, as also the hull; the deck was ripped up, and all hands thrown down. Another Prize, a ship, was struck first on the mizen-top-mast; afterwards on the main-top-mast, and both rendered useless. One marine killed.

Report on shipwreck by lightning, p. 85, and ship's log.

ENDYMION, 44.

1842. March 21st, at Calcutta, off the fort; A.M. vivid lightning, with heavy thunder; daylight found the fore-top-gallant-mast and top-mast badly shattered by lightning, and the fore-mast damaged.

Wind W.N.W., N.E., S.E., S.W., and variable.

The storm began in the evening, when a common conductor was got up to the main-mast; about 4 A.M. an explosion of lightning took place in the ship and struck on the main-deck, near the galley. After this, the damage forward was discovered; the fore-top-gallant-mast was shivered from the royal sheave to the cap; top-mast from the catharpins to the cap, nearly destroyed; rubbing paunch of fore-mast started, and pieces taken out of mast between the hoops; lower end of the cheeks splintered.

The fore-mast was fished, the ship being to sail for China, her services could not be delayed; the top-mast could not be replaced except by a peak top-mast; the damage was found extremely inconvenient, as it occurred just at the moment the ship was about to sail to join the China expedition.

WRECKS AT SEA.

AMONG the multitudes of ships that are continually traversing the ocean, alas, how many break down by the way? how many mariners are annually consigned to the deep, or are cast naked and penniless upon the rocky shores of our continents and islands? we can hardly take up a single newspaper without finding passages detailing instances of shipwrecks and loss of life. It has even been ascertained that on an average about ten British merchant ships are wrecked weekly!

In a great maritime country like England, whose ships may be seen on every sea, whose waves wash the shores of the civilized world, it may be expected that accidents will happen among our numerous ships, exposed as they are to collision at sea, changes of climate, and all the varieties of atmospherical vicissitude, from calm to gale, from tempest to hurricane between the arctic and antarctic circles.

The wearied and weather-beaten, worn-out mariner, whose ship, "tempest driven" and dashed to atoms on the strands of this kingdom, if he reach the shore alive, is received on the beach by a charitable, sympathyzing, and friendly population; or should the vital spark have perished in the pitiless storm, the seaman's manly and mangled remains are consigned to a silent and respectable, although an obscure tomb; and although no *coroner* and *jury* enquire into the cause of *his death*, the stranger drops a silent tear among the long grass that waves upon the sailor's grave.

In other lands and other climates, the shipwrecked mariner if he reach the shore alive may be less fortunate; he may be stripped by the robber, murdered by a savage, or cast upon the shores of solitary barren islands or coral reefs! Such misfortunes excite our pity and awaken our best sympathies, but there are other conditions of shipwrecks at sea, which entail the most melancholy conditions of human misery and suffering, to which human beings can be subjected: the stranded vessel is soon destroyed, and her crew is either saved alive or launched into another world; a horrible crash takes place between ships on opposite tacks. The swift, powerful, and splendid steam ship, darts with *railroad speed* to the rocks and sinks to the bottom of the sea, without affording even time to hoist out the boats! In either case the sufferings of the men are soon at an end. Not so with a leaky, worn-out and water-logged timber ship! her unfortunate crew are doomed to toil at her pumps so long as she continues to swim on her bottom, but the water continues to invade her hold through innumerable crevices in her crazy frame; a gale comes on, the waves mount her sides, they rock and strain her worn-out and superannuated fabric, and the exhausted crew can no longer prevent the hold from filling with water. The hold is at last filled. The buoyant timber within the vessel, instead of serving as a *weight* to preserve the ship in equilibrium, by its *buoyancy* exerts a force in a vertical direction, which turns the ship over on her side. The sea now makes a clean breach over her, tearing away booms, boats, and bulwarks; the "deck load" breaks adrift and gets entangled among the rigging, killing some of the men and battering the masts. Should the masts and yards give way, the ship may resume a position of equivocal stability and swim on her bottom, but now she is no longer manageable, she

floats, but not by *her own* intrinsic buoyancy, but rather by that of the cargo of timber. The timber in the hold may be regarded as a huge *raft*, and the fabric of the ship to a bundle of water-sodden boards suspended near the sea level by the more buoyant materials.

Let us now consider the condition of those unfortunate beings, that may still be clinging to the ship and drenched by every wave, they stretch and strain their eyes on every side, but see only a wide waste of turbulent waters; the floating wreck only serves to prolong and augment their misery; the huge waves have torn away every kind of shelter, there is nothing left to satisfy the cravings of nature! not even a single drop of fresh water can be procured. It is true there may yet remain in the hold casks of salt provisions, but the hold is every where full of water, and the floating timber has broken *down* as well as broken *up* everything, fore and aft. Day after day this melancholy picture receives deeper shades of horror; man after man is washed from the wreck, drops from the rigging, or departs this life from starvation, insanity, or delirium. How then have those who are still alive subsisted? Shall we inform the reader?

The recital of such misery as we have been describing, and the frequency of its occurrence make one shudder with horror; its frequent occurrence may tend to petrify our feelings and harden our hearts against the sailors' appeal for legislative protection. Our honest indignation is raised against the inhuman *feasts* of the New Zealander, but, can we look on with indifference to the horrible necessities to which the crews of water-logged timber ships are reduced?

The miserable survivors continue to cast lots who shall be sacrificed to furnish food for the remainder, or else lash the body of a dying companion to the rigging, in order to prevent a worse alternative. The loud piping wind rocks the poor seamen in the dripping shrouds, the sea-mew skims the welkin and hovers about the wreck, whilst ever and anon, the voracious shark may be seen prowling about the vessel.

When old or crazy merchant ships become leaky and unfit to receive dry cargoes, they are sent into the "timber trade." Here they *may* run for many years, but their end is almost always such as we have described. None but the ignorant or necessitous would take charge of such vessels, for they are even sometimes too bad to be insured! But why should such ships be *allowed* to cross the Atlantic? It is no doubt difficult to get at the *age* of old maiden ladies as well as of old ships. *Art* may assist to impose the appearance of both, but with regard to ships of a certain age, none should be permitted to *clear* for a foreign voyage, but those pronounced sea-worthy, no not even for a cargo of timber.

It must, however, be acknowledged that all *timber ships* are not rotten or superannuated, nor even all those which have foundered at sea; many a good ship has been lost through a want of skill in the crew, or a want of qualification in the officers. A knowledge of practical seamanship in a master or mate is indispensable, and at least a moderate amount of practical navigation is necessary, in order to be a good sea officer in the merchant service, much experience and attention is required; the duties of a master are of no ordinary kind, and cannot even be described in narrow limits. We will just glance at the principles of stowing a timber ship.

1st. The cargo should be so disposed, that each separate section should bear a weight proportional to its buoyancy, so that no part be either over or under loaded.

2nd. Great care should be taken in placing the lower tiers, least an undue weight be exerted on some parts, so as to force out a part of the bottom and cause leaks.

3rd. The stowage should be such as to afford the ship a sufficient stability for carrying sail. Now this is a point of great importance, and requires much attention, for a ship laden with timber of a buoyant nature may be sufficiently stiff so long as she is *tight*, but would turn over if she prove leaky, as already alluded to. The timber of greatest *density* should be stowed below, and the lightest materials aloft. If ballast be retained, it should never be of a sandy or soluble kind, liable to be pumped out of a leaky ship. Chain cables should be stowed in lockers below, instead of being, as they frequently are, stowed on deck. The cargo should be thoroughly secured from shifting, and so stowed as to lie in a solid manner against the ship's side, and thereby prevent undue strain on the top timbers.

4th. It should ever be borne in mind, that all solids specifically heavier than water will sink in water, and all solids lighter than an equal volume of water will swim in it; and even the heaviest parts of floating bodies descend deepest, and for these reasons the heaviest things should be stowed lowest, in order to increase the stability and consequent safety of timber-laden ships.

Every kind of cargo requires certain precaution in the tonnage, and for a want of skill in this branch of a seaman's duty many ships shift or damage their cargoes and become unmanageable, and get on shore or founder.

The hiring of riggers, lumpers, stivadores, &c., has tended of late years to narrow the limits of nautical knowledge. Our masters, mates, and men in the merchant service have not the opportunity of acquiring so much skill in their profession as had their grandfathers; the art has certainly retrograded by reason of docks, steam-tugs, railroads, lodging-houses, lumpers, crimps, &c., and the time has arrived for some legislative interference in order to insure a certain amount of professional skill in those who may be entrusted with the command of our ships, and the passengers and valuable cargoes they carry. Any blockhead, with much money, whether he be fit or not, may get the command of a ship, and may run her on shore without being liable in any way to an inquiry into circumstances. The public are, therefore, never safe; everybody insures, paying a high premium, (for insurance offices never lose in the end), and thus all losses at sea come upon the nation: property is lost or destroyed, and *great numbers* of seafaring men are annually consigned to the deep.

WILLIAM WALKER.

Plymouth, 26th May, 1843.

JEFFERY'S MARINE GLUE.

[A recent invention, called Marine Glue has been produced by Mr. Jeffery, of Limehouse, which demands our attention, as from its extraordinary qualities it is likely to become hereafter of great importance in the various purposes of ship-building. We have taken the following account of it for our readers, from the inventor's description.—Ed.]

MR. Jeffery the inventor of this substance, who was one of the early producers of copper plates by galvanic action, considered that the manufacture of copper sheathing for vessels might be improved by that process. But finding that he could not diminish the cost of production below that of plates made by the ordinary method, and also that the waste by oxydation on the one hand, and on the other hand, the mischief of foul bottoms when oxydation was checked, formed insuperable barriers to his success in the application of this process, he desisted from the attempt. The idea also occurred to him of applying gums insoluble in water, as a protection for the bottoms of ships; and by combining elastic gum with non-elastic, and charging the whole composition with ingredients destructive both to animal and vegetable life; that such a coating would protect the timbers from the contact of the water, and also prevent any adhesion or accumulation of animal or vegetable matter, and resist the attack of the *Teredo Navalis*. Mr. Jeffery accordingly made a series of experiments, and succeeded in producing a composition likely to realize all his wishes and expectations. He then deposited a sealed paper descriptive of his discovery in the Admiralty, with a statement as to the probable effect of the composition, and at the same time several blocks of wood were experimentally sunk in Portsmouth Harbour, to prove that the marine glue, possessed properties most useful and important for ship-building, and other purposes.

Every one knows that the timbers which compose a ship are exposed to constant strain from winds and waves, from the time the ship is launched until she is broken up. One of the qualities required in a substance used to join those timbers must be insolubility in water, or it would be useless; it must be impervious to water so as to prevent leakage; it must be elastic so as to contract and expand according to the strain on the timber, or the vicissitudes of climate; it should be sufficiently solid to fill up the joint and give strength; it should be adhesive so as to connect the timbers firmly together. These properties Mr. Jeffery has combined, in an eminent degree, in the marine glue. One of the experiments made to test the power of this glue was the following:—

Two blocks of African oak, eighteen inches long, by nine inches wide, and four and a-half inches thick, were joined together longitudinally by the marine glue, and a bolt of one and a quarter inch in diameter was passed through each of them from end to end, and a chain attached to it.

On the next day attempts were made to draw the blocks asunder longitudinally, by means of the hydraulic machine in Woolwich Dockyard applied to the chain in the presence of Sir Francis A. Collier, and the master shipwrights of the Royal Dockyards at Plymouth, Portsmouth, Sheerness, Chatham, and Woolwich. A strain, to the extent of nineteen tons, broke one of the bolts, but the junction of the wood by the glue remained perfect. Two bolts, of one and a half inch in diameter, were

inserted on the following day into the same block, and the strain was again applied, until it reached twenty-one tons, when one of the bolts was broken; the junction of the wood still remaining perfect, and apparently not affected.

Two blocks of African oak, of similar dimensions, were glued together, with bolts at the opposite ends, so that the strain might be applied at right angles, to the junction made with the glue. With the strain of five tons one of the blocks split asunder at a short space from the point, but the joint remained perfect.

The result of these last experiments was deemed more extraordinary by those assembled, inasmuch as African oak is a very difficult wood to unite.

Numerous experiments have been made to ascertain the best proportions of the mixture constituting the marine glue for various sorts of wood; and in one case, where it was applied to elm, it resisted a strain equal to 368 lbs. on the square inch. This trial was made whilst the block was in a wet state, which state is considered most favourable for the effect of the glue.

Several large pieces of timber glued together were precipitated from the top of the shears in the Dockyard at Woolwich, a height of about 70 feet above the ground, on to the granite pavement below, in order to test the effect of the concussion. The wood was shattered and split, but the glue yielded only in one case, in which the joint was badly made, and after the third fall. This falling from a height on to a hard substance, is a very severe test of the strength of a joint. The explosion of a shell has greater power in rending wood, but does not produce so great an amount of vibration.

From the elastic nature of the marine glue, it contracts when the timbers to which it is applied are swollen by water, and expands when the timbers shrink from heat, or any other cause.

A block of wood with a rend in it was taken, and the rend filled with the glue. It was then immersed for a month in a mast-pond at Chatham, at a temperature ranging between 30° and 40° Fahrenheit. On taking it out of the pond, the glue from the pressure of the wood was slightly squeezed out, so as to present a raised surface above the rend, but after this block had been a month in the Chatham hoop-house, at a temperature from 70° to 80° Fahrenheit, it assumed a concave figure on the surface of the rend. This block experiment is still going on, and it is intended to place the block in the hoop-house and mast-pond alternately for the space of a year, in order to ascertain whether the result will be equally successful. But in preparing the glue, its elasticity may be increased or diminished, as circumstances may require.

This quality renders the glue most valuable as a remedy to be applied to the rends and fissures of timber; and in fact it renders defects of that nature of little consequence—a result, of which the practical shipwright will perceive the immense importance. It is also available with peculiar advantage for the seams of vessels, in lieu of pitch: seams which were payed with it about a year since, and were exposed to the heat of last summer, appear but little changed, and are quite free from leakage, although they were executed under very unfavourable circumstances. For the deck seams it will be found peculiarly suited; and

where it is used the crew will never have reason to complain of the glue sticking to their feet. The surface of the seams after heavy rains, or from a damp atmosphere, will become slightly convex, and under a warm temperature will become slightly concave; but it will not liquefy by solar heat, and it will, under all circumstances, adhere with its original tenacity. All practical seamen will perceive the vast importance, in point of economy, comfort, and security from leakage, which these qualities ensure, especially in hot climates.

Another important experiment has been made with the glue in reference to its being a substitute for copper sheathing. This composition was applied without poison, to four surfaces of some nearly cubical blocks of wood, and on the other two surfaces it was applied in combination with poison, equally destructive to animal as to vegetable life. After the lapse of twenty-three months these blocks were taken up, and were found to present the following appearances:—small shell-fish were adhering to the four unpoisoned sides, whilst the two sides charged with the poison were perfectly clean. The whole of the composition was slightly changed in colour, but was not deteriorated or affected in respect of its useful qualities.

Another most important use of the marine glue, is evidently in its application to the construction of masts. Its power of adhesion and elasticity admirably fit it for the purpose of joining the spars of which masts are composed. A great reduction of expense is likely to follow its adoption for this purpose, as shorter and smaller timbers may be rendered available, and most, if not all, of the internal fastenings may be dispensed with.

The following account of some experiments on this point are from daily journals. The masts alluded to have been glued with such proportions of elasticity given to the glue, which defect in about the same ratio as the wood itself, or as if the wood were in one solid piece.

“Experiments were carried on, January 4th and 5th, at Chatham, in the presence of Capt. W. H. Shirreff, Superintendent, and Mr. John Fincham, master shipwright, at the Dockyard, with the marine glue, invented by Mr. Jeffery. The experiments which were carried on last year at Woolwich, with the view of improving its immense adhesive power, and that it would be more difficult to separate the joinings made with it than it would be to tear the solid wood in pieces by shots from the large guns of the Ordnance, and the result of the trials so convinced the master shipwrights then assembled to consider improvements which might be brought forward for the benefit of the Royal Navy, that they recommended its adoption, and its application to naval purposes was approved of by the Lords Commissioners of the Admiralty. The main-masts of the following vessels have been joined with it, under the instructions of Mr. Jeffery:—The main-mast of the *Eagle*, 50-gun ship, was first fitted with it, and it now stands exposed to all the changes of our variable atmosphere: the main-mast of the *Trafalgar*, 120-gun ship, built at Woolwich, has been joined with marine glue, and appears to be finished in a most substantial manner; and some idea may be formed of the number of joinings, when it is stated, the dimensions of the mast is 125 feet in length, with a diameter of 40 inches. The main-mast of the *Curacoa*, formerly a 32-gun-ship, but at present being reduced to

24-gun vessel, is in progress of being joined with the composition. The whole of the practical workmen speak highly of its merits, and have expressed an opinion that its general use will save a great amount of labour in placing internal fastenings, which may now be nearly dispensed with. Mr. Jeffery had an officer from Pembroke Dockyard under his instruction, who returned home with a quantity of the composition to be used in laying the decks of the Victoria and Albert steam-vessel, for the especial use of her Majesty and his Royal Highness Prince Albert.

"The experiments formerly made and tested, were undertaken at a period when a high degree of summer temperature existed, and it was imagined by some that it would be difficult to use it in winter so as to have equal adhesive and strengthening powers. In order to satisfy himself on this point, the inventor had several pieces joined together during the present cold weather, and the following is the result of the trials of their qualities:—

"Eight pieces of wood 12 feet long, and 6 inches in diameter at one end and 5 inches in the other, were each cut lengthways into four pieces, and joined together with the marine glue, two of the pieces with a new sample of the composition, and the others in the usual manner, only varying the proportions of shell lac of $\frac{6}{12}$ and $\frac{9}{12}$.—These pieces of wood were alternately attached by strong bolts to the floor of the mould loft; and an iron collar and chain having been placed in the centre, the following weights were placed on a balance to shew the deflection or strain.—No. 1, with the new sample, with a strain of 25 cwt., bent 3 inches exactly, and on the withdrawal of the power, returned to its former position with the greatest elasticity. No. 2, with a strain of 27 cwt., only yielded $2\frac{1}{2}$ inches. No. 3, with a strain of 27 cwt., bent $2\frac{3}{4}$ inches. No. 4, with a strain of 27 cwt., yielded $3\frac{1}{4}$ inches, having been joined by the new sample. No. 5, with a strain of 27 cwt., showed a deflection of $2\frac{1}{4}$ inches. No. 6, with a strain of 27 cwt., only yielded 2 inches. No. 7, with a strain of 27 cwt., bent $1\frac{1}{4}$ inches; with $29\frac{1}{4}$ cwt., $2\frac{1}{4}$ inches; with $31\frac{1}{2}$ cwt., $2\frac{1}{4}$ inches. It was then attempted to break this model mast, and additional weights were put on, until it amounted to 45 cwt., when the strain made it yield $3\frac{1}{4}$ inches, and fractured the upper part of the wood, but did not separate the joinings or thoroughly break the wood, and afforded those present an opportunity of satisfying themselves that the joined pieces were far stronger in every respect than solid wood of the same dimensions. No. 8, was tested in a similar manner, and with a strain of 45 cwt., yielded $3\frac{1}{2}$ inches, and at one end the joining opened a little in one direction, which will afford the inventor an opportunity of judging of the best degree of mixture of the various substances of which it is composed. The experiments were carried on at a temperature of 40 degrees, and that was the height of the thermometer in the mould-loft at the time they were completed, 4 o'clock P.M. on the 5th, it being only 8 degrees above freezing point. The value of the materials and invention has now been completely established, and its importance to Her Majesty's Navy will be very great, as it has hitherto been found very difficult to obtain trees of sufficient length and diameter, about 22 or 23 inches, for main-top-masts for first rates; but they may now be

made from any number of pieces, and from the nature of the marine glue, they will never be subject to the dry rot.

“Another experiment was made by joining two pieces of wood 9 inches square by 20 inches long, and placed in such a position that 21 cwt. of iron, forming a pile 6 feet high, about seven inches broad, and 20 inches long, and it bore the whole weight without yielding at the time.—On the second day the wood gave way under the immense pressure, shewing the cement was more powerful and secure than the solid timbers.” We shall in a future number enter into further details of the value to the navy of this important discovery.

The extraordinary utility of the marine glue will not be fully appreciated, until vessels, in the construction of which it has been applied throughout from the keelson to the main-top, shall have been exposed to disasters in which ordinary vessels would go to pieces, or founder from leakage. In many such cases the superiority of the marine glue will hereafter be manifested, in the preservation of vessels, together with the property and lives of the persons on board.

No attempt is here made to enumerate the various constructions, such as dock gates, piers, aqueducts, floating bridges, &c., &c., to which the marine glue may be applied with advantage; the present design being simply to point out some of its principal qualities as shown by experiment.

March 25th, 1843.

THE BUOY OF THE HEAPS.

SIR.—I am the “Buoy of the Heaps,” at your service. You will, perhaps, pardon my want of a better introduction than I give myself; for, although I am known very well to the masters of the great first naval school, who are continually passing my locality, I cannot well impose upon them the task of presenting me personally and formally to your attention and notice, and from my guardians I may not presume to ask so great a favor.

I am but a poor orphan, sir, as you may have heard—no father, no mother; and you will admit that I should do ill were I to leave my situation to visit Tower Hill, on any mission of my own; besides, sir, to do my patrons justice, they do take care of me, so that I am in no dread of becoming chargeable to the parish, or of being adrift, either in summer or winter. In fact, one of my guardians promised something for me as I am informed by a mariner who heard him say, that “that ere buoy shouldn’t want for nuffin as long as he votches;” and so I do watch, and see, and hear a good deal more than some folks give me credit for.

But, with your good leave, sir, I’ll come to the business I wish to interest you in. Some time ago you were kind enough to listen to two ladies, acquaintances of mine; they are twin sisters, and addressed you under their real signatures—“The Reculvers.” They had matter to narrate about my good friends, the Elder Brethren of the Trinity of Deptford on Strond. I shall have no occasion to repeat any part of their story, which was quite of a Platonic nature; albeit, my letter also relates to the doings of the “undivided.”

They are my proper guardians; but men will die, and I think I may

be excused, if, while watching for other people, I look out for myself. Men, as I say, sir, will die; and I have lived to see an event which I always believed never could happen—the resignation of an Elder Brother.

It is now proved that an Elder Brother can resign. This is a very serious matter to me, and to others of my order, who, "*willi nilli*," must remain bobbing about at our stations without as much as an attorney to look after our interests, when new guardians are appointed, which we conceive to be very cruel, and the more so, because we see country gentlemen, ropemakers, and some who should by rights wear leather breeches, striving who shall be first to be sworn in. Nevertheless, there are those who, I am bold enough to say, owe more to me and my fellow buoys than to pilots or any body else. Those persons always appear pleased to see us; and I think that they, and their connexions on shore, are called upon to attend such affairs as may affect us, and to speak out if everything is not managed fairly and for the best.

Look you, sir, I wish my friends to understand, in the first place, that by the Trinity rules for electing Elder Brethren, lieutenants in the navy are virtually excluded, through which the Board is obliged to shut out from itself, perhaps, some of the highest talent that ornaments the naval profession.

In the second place, it should be remarked, that the rule relating to the avocations of candidates to be elected Elder Brethren should be strictly conformed to. It will never do to have Trinity masters liable to be called to other duties. It would be a fine thing for me to pretend that I could do my own business, that of my checkered brother of the Brake, and that of half-a-dozen other buoys into the bargain.

I know very well that the business of the Trinity Board cannot be done as it should be, when the services of the members are divided between several establishments. The office is not only an onerous, but an honourable one; and while it is injurious to have the Trinity functionaries boxing about, backing and filling, getting a cast here and a cast there; now running to see what is doing in India, then to the Bank; next to look after the peltry from Hudson's Bay, and then again to manage insurances, and to do or inquire about twenty other things besides,—the dignity and honour of the corporation are sacrificed.

The world may think the Trinity Corporation does not pay its directors, and that they are obliged to look elsewhere to make up an income large enough to be taxed; but there is not a buoy about the coast that is not better informed than to believe that. What! do we buoys lie in a "half nothing?" Can we neither see nor hear, nor remember? "Oh! what a pity we're buoys as vatches!"

I would it were observed, that there is no rule laid down with respect to the age of candidates. The Board is competent to propose one; it should do so, and adhere to it.—Too young a seaman should not be accepted, nor one too old.

Some five-and-twenty years past a commander of great respectability and unexceptionable acquirements, an East India commander, who fought a French frigate very gallantly, paid his fee as a younger brother, and tendered himself for election as an elder; but his age, (he was under fifty,) was held to be quite a disqualification, while a crop of

grey hairs was completely overlooked on the poll of the unsuccessful candidate, who happened to be several years his senior.

It may be justifiable to allow a man to enjoy something like a sinecure after fifteen or twenty years of close application; but not every man is active after sixty-five, and therefore an elder should not be too elderly; he should not be more than fifty at his election.

The corporation has altered its rules, let them be amended again, by addition and otherwise, for there is ample room for it. Let the elders exercise this privilege, and with regard to age, they may refer to the case of the deputy-master; he went to sea in 1791, underwent his probationary service, and was appointed commander of a ship in the East India Company's employ, which post he held five years and retired. He was elected an Elder Brother in 1823, so allowing him to have been of the usual age (fourteen) when he was shaved in latitude nothing, and used to caulk o' nights under the lee of a hen-coop, he was forty-six when admitted a member of the corporation; a period at which a seaman may reasonably be expected to have attained a thorough knowledge of his profession; a period at which most mariners begin to be sensible that it is time they should lay it aside.

Then, Sir, a more satisfactory order should be established than that which enjoins the proposer of a new member to be prepared to do—what? why to assert that, *as far as he is acquainted* with the man he proposes, he *believes* him to be a very clever fellow, and a most qualified man to attend to us buoys, and the families of the lights and the beacons. See, Sir, there are several sailors who are looking out for the berth now vacant. Some of them wear the Queen's uniform, but not one of the whole batch would like to pay me a visit in a dark night.

Will you be so good as to let me know who passes his word for the ability of the new man? I can read and write, as you have evidence; and if you will let me know, I'll tell you why that Elder Brother did not volunteer to pilot Her Majesty round to Scotland, and will not put himself in the way of obtaining the honour of showing her, on her passage to Ireland, some of the truest, though veriest wooden-headed buoys that float swimmingly in her seas, under the sunshine of her favor.

Mr. Docking Dowsing, will perhaps trouble you next; and I am to ask your indulgence for him, as I do for myself.

Yours, ever-nodding, always watching,

BUOY OF THE HEAPS.

To the Editor, &c.

Account of an attempt at Soundings, in Lat 68° 34' S., and Long. 12° 49' W., made in the boats of H.M. Ships Erebus and Terror, on the 3rd March, 1843.

The wind continued light from the southward until 11 A.M. When it fell quite calm, I seized the opportunity of ascertaining the temperature of the ocean at 750, 600, 300, and 150 fathoms, and in the afternoon, the sea having become perfectly smooth, and the calm still pre-

vailing, our boats were lowered down, and the experiment of deep sounding attempted. I regret that, owing to our having always found soundings in less than 2000 fathoms in other parts of the Antarctic sea, I had not prepared more than 4000 fathoms of line for this occasion.

The whole ran off the reel without striking ground. The experiment was most satisfactory and perfect, under the management of Commander Bird in the sounding-boat.

The experiment was conducted in the manner I have already described, and the time of each hundred fathoms passing out was observed by me, and recorded by Capt. Crozier. A copy of the original paper is annexed. The weight employed was 340 lbs.

The first 250 fathoms of line was 12 yarns, the rest (3750 fathoms) of 9 yarns, and the whole was prepared in equal proportion by the crews of the Erebus and Terror.

The current was found to be setting to the southward at the rate of 0'3 per hour, which almost inappreciable quantity may be fairly ascribed to the influence of the light north-easterly wind that had sprung up.

Deep Sounding, 3rd March, 1843.

Fms.	Mark.	h.	m.	s.	m.	s.	Fms.	Mark.	h.	m.	s.	m.	s.
Let go	0	11	21	32			2100	Green	11	59	11	2	25
100	Green	22	11		0	39	2200	Black	0	1	38	2	27
200	Black	23	1		0	50	2300	Flannel	4	16		2	38
300	Flannel	24	9		1	8	2400	Canvas	6	56		2	48
400	Canvas	25	23		1	14	2500	Cheque	9	58		3	2
500	Cheque	26	50		1	27	2600	Duck	13	23		3	20
600	Duck	28	22		1	32	2700	Red	16	58		3	30
700	Red	29	59		1	37	2800	Grey	20	48		3	50
800	Grey	31	38		1	39	2900	Blue	24	58		4	10
900	Blue	33	21		1	43	3000	Red Ribbon	29	5		4	7
1000	Red Ribbon	35	11		1	50	3100	Green	33	20		4	15
1100	Green	37	8		1	57	3200	Black	37	44		4	24
1200	Black	38	57		1	49	3300	Flannel	42	11		4	27
1300	Flannel	41	0		2	3	3400	Canvas	46	31		4	21
1400	Canvas	43	7		2	7	3500	Cheque	50	50		4	19
1500	Cheque	45	15		2	8	3600	Duck	55	16		4	26
1600	Duck	47	27		2	12	3700	Red	59	50		4	34
1700	Red	49	45		2	18	3800	Grey	1	4	22	4	32
1800	Grey	52	3		2	18	3900	Blue	8	52		4	30
1900	Blue	54	23		2	20	4000	Red Ribbon	13	21		4	29
2000	Red Ribbon	56	46		2	23							

J. Ross, Captain.

SALUTARY REFLECTIONS FOR RESIDENTS IN TROPICAL CLIMATES.

Letter of Captain Murray, R.N. to Doctor A. Combe.

CAPT. M. is of opinion, that most of the bad effects of the climate of the West Indies might be avoided by care and attention to clothing.—The measures which he adopted, and their effects, are detailed in the following letter.

My dear Sir.—I attribute the good health enjoyed by the crew of His Majesty's ship *Valorous* when on the West India station, during the period I had the honour of commanding her, to the following causes,—keeping the ship perfectly dry and clean,—habituating the men to wearing flannel next the skin,—the precaution I adopted of giving each man a proportion of his allowance of cocoa before he left the ship in a morning, either for the purpose of watering or any other duty,—and to the cheerfulness of the crew. The *Valorous* sailed from Plymouth, December 24th, 1823, having just returned from the coast of Labrador and Newfoundland, where she had been stationed two years; the crew, including officers, amounted to 150 men. I had ordered the purser to draw two pairs of flannel drawers and two shirts extra for each man, as soon as I knew that our destination was the West Indies. On our sailing, I issued two of each to every man and boy in the ship, making the officers of each division responsible for the men wearing these flannels during the day and night; and at the regular morning nine o'clock muster, I inspected the crew personally, for you can hardly conceive the difficulty I have had in forcing some of the men to use flannel at first, though I never knew one who did not, from choice, adhere to it, when once fairly adopted. The only precaution after this was to see that, in bad weather, the watch, when relieved, did not turn in, in their *wet* clothes, which the young hands were apt to do, if not looked after. Their flannels were changed every Sunday.

Whenever fresh beef and vegetables could be obtained at the contract price, they were always issued in preference to salt provisions. Lime juice was issued whenever the men had been fourteen days on ship's provisions; and the crew took all their meals on the main deck, except in very bad weather. The quarter and main decks were scrubbed with sand and water, and wet holy stones, every morning at daylight. The lower deck, cockpit, and store-rooms, were scrubbed every day after breakfast, with dry holy stones and hot sand, until quite clean,—the sand being carefully swept up and thrown overboard. The pump-well was also swabbed out dry, and then scrubbed.

Here, and in every part of the ship which was liable to damp, Brodie stoves were constantly used until every appearance of humidity vanished. The lower deck and cockpit were washed once every week in dry weather; but Brodie stoves were constantly kept burning in them, until they were dry again. The hammocks were piped up and in the nettings from seven A.M. until dusk, when the men of each watch took them down alternately; by which means only one half of the hammocks being down at a time, the 'tween decks were not so much crowded, and the watch relieved, was sure of turning into a dry bed on going below. The bedding was aired at least once a week. The men were not permitted to go on shore in the heat of the sun, or where there was a probability of their getting spirituous liquors; but all hands were indulged with a run on shore, when out of the reach of temptation. I was employed on the coast of Caraccas, the West India Islands, and Gulf of Mexico; and in service, I visited Trinidad, Margarita, Cocha, Cumana, Nueva, Barcelona, Laguaira, Porto Cabello, and Maracaibo; all the West India Islands, from Tobago to Cuba, both inclusive; as

also Curacoa and Aruba, and several of these places repeatedly; also Vera Cruz and Tampico, in the Gulf of Mexico, which must have given a trial to the constitution of my men, after being two years among the icebergs of Labrador, without an intervening summer. Yet I arrived in England, June 24, without having buried a single man or officer, or indeed having a sick man on the list! I am satisfied that a dry ship may be expected to be a healthy one in any climate. When in command of the *Recruit*, of 18 guns, in the year 1809, I was sent to Vera Cruz, where I found — 46, the — 42, — 18, and — gun brig; we were joined by — 36, and — 18. During the period we remained at anchor, (from 8 to 10 weeks) the three frigates lost from 30 to 50 men each; the brigs 16 to 18; the — most of her crew, with two different commanders! Yet the *Recruit*, although moored in the middle of the squadron, and constant intercourse held with the other ships, did not lose a man and had none sick. As some of these ships had been as long in the West Indies as the *Recruit*, we cannot attribute her singularly healthful state to seasonings; nor can I to superior cleanliness, because even the breeches of the carronades were polished bright in both — and — which was not the case in the *Recruit*. Perhaps her healthy state may be attributed to the cheerfulness of the men; to my never allowing them to go on shore in the morning on an empty stomach; to the use of dry sand and holy stones for the ship; to never working them in the sun. Cheerfulness contributes more to keeping a ship's company healthy, than any precaution that can be adopted; and with this attainment combined with the precautions I have mentioned, I should sail for the West Indies with as little anxiety as for any other station.

Assynt, April 22nd, 1827.

THE BOTTLE PAPERS.

SIR — Your patient perseverance in collecting and recording the “*Bottle Papers*,” has awakened attention to a subject that, will ultimately tend to advance the progress of practical navigation.

By these papers, recording the latitude and longitude of ships at sea, being sealed up water-tight in bottles and thrown overboard, to be wafted by the winds, waves, and currents of the ocean till picked up, either at sea, or upon the coasts, where they may arrive “safe and sound,” we obtain their points of departure and places of arrival. Now, it is the winds that raise the waves at sea, and the winds and waves together give rise to surface currents. The trade winds produce the great equatorial currents, and the monsoons are the cause of those periodical currents that are found to accompany the changing monsoons; and when a sufficient number of “*Bottle Papers*” shall have been picked up and recorded in a collective form, they will enable us to trace out the *mean curved directions* they may have taken, along with the surface currents of the ocean, influenced, as they necessarily must be, by the earth's rotation on its axis. Commander Becher's “*Bottle Chart*,”

is a work begun on sound principles, and when complete, will be *permanently useful* to navigators.

It was with some pain that I perused in a recent number of the *Nautical Magazine*, a letter by Sir John Ross, on the "Bottle Chart," in which he pronounced the chart a "bottle fallacy," likely to lead navigators into error. The labours and discoveries of Sir John are before the public; his contributions to magnetical and meteorological science, and his geographical discoveries in the Polar Seas entitle him to our respect! but I may be permitted to differ in opinion with him on the merits of the "Bottle Chart," and the conclusion he draws, even from his own observations and experience.

The bottles thrown overboard by Captain Ross were observed to drift in the direction of the wind, and more rapidly than the other machines he set adrift loaded with lead and less exposed to the wind. Had he thrown overboard an *inflated bladder*, the bladder would have outstripped the bottle in its leeward course. These experiments prove nothing: the results were precisely what might have been expected.

But, an interesting circumstance is mentioned in the letter to which I refer. Captain Ross tells us, that in the year 1793, and in the month of November, H.M.S. "Defence" being in chase of a French fleet, carried away her top-masts somewhere near the 49th degree of north latitude, and 20th degree of west longitude; that in the year 1815, being in command of H.M.S. "Actæon," and cruising in the above latitude and longitude, he picked up a top-mast, with part of the top-mast rigging upon it, which, "by hanging down about four fathoms effectually kept the after part of the mast above water, on which the name 'Defence' was perfectly legible;" and hence he *inferred*, that the mast must have remained stationary for a period of more than twenty-one years. Now, it is worthy of remark, that in the Royal Dockyards generally, the names of H.M. ships are usually cut in the *heels of the top-masts*; and when top-masts are carried away by a press of sail at sea, that they generally go about or above the *cap*, on the head of the lower mast, the heel part remaining on the fid till it is sent down on deck by a rope rove for the purpose. The upper broken part, when cleared of the rigging, may go overboard; but surely a ship in chase of a flying enemy would try to *save the top-mast rigging* for the spare mast!

Therefore putting all these circumstances together, I am slow to believe that the top-mast picked up by the "Actæon" in 1815, was lost by the "Defence" in 1793! We are not told that it had a *broad arrow* on it, as well as the word "Defence." We are not informed that the rigging remaining on the mast had the *rogue's yarn* in it, nor have its dimensions been recorded. Had these circumstances substantiated the identity of the mast, or even had a "bottle" been found containing a paper under the hand and seal of the Captain of the top, and attached to the remains of the rigging recording the circumstances of losing the mast in the year 1793, still I would be slow to believe that this spar *would have remained stationary 21½ years!* The little I know about currents generally, induces me to believe that such a top-mast, with its rigging attached, (if it could remain so long as 21½ years as a floating body in the sea), would have made several trips to the West Indies and back into the North Atlantic.

When naval men put their pens to paper and appear in print, it is generally with a view to improve their profession, and as such, their production is received by their brethren; when doubts arise about old opinions, or when facts present themselves in a new form, the sooner they are discussed and established the better! Let, therefore, the bottle experiments go on, for if they only shew the general direction of the *wind*, we should gain something. Let the author of the "Bottle Chart" continue to prick off the track of new arrivals, to obtain a sufficient number of cases for the purpose of finally shewing the *curve*, which in all probability each bottle took between the point where it was thrown overboard, to the place where it was picked up, and we may then *reason upon the possibility* of these curvilinear voyages being made without the aid of oceanic currents.

WILLIAM WALKER, *Master R.N.*

↳ *To the Editor, &c.*

We do not anticipate that the bottle experiments will cease in consequence of Sir John Ross's letter. Many are, no doubt, floating on their course towards that destination in which we shall hereafter record them. The various objections he has advanced against these experiments we shall fairly consider in a future number, bearing in mind the difference in bulk between a ship and a bottle; and, consequently, the relative effects of wind and current on each. One of the proofs of their fallacy, advanced in it has been specially adverted to by our correspondent, Mr. Walker, who requires the fact of the Defence's top-mast being lost to be established, before he can receive it as proof. With a view of helping him to this *sine qua non*, we referred to the ship's log, a copy of which we annex, but in which it does not appear that a top-mast was *lost*, although "both went over the side;" while, at the same time, "a main-top-gallant-mast, yard, and sail" appear entered *as lost*. It is well known to naval men, that an entry is always made in the *ship's log* of stores *lost overboard*, therefore, the entry of a top-gallant-mast, yard, and sail being lost, and the absence of any entry concerning the loss of the top-masts on this occasion, will serve only to increase the doubts of our correspondent, as to their really being lost. Again, had they been lost, they would, most probably, have taken the top-gallant-masts with them; and the fact of not more than twelve hours and twenty minutes intervening before another fore-top-mast was got up, and another hour and forty minutes before the main-top-mast was got up, looks as if the rigging was saved for the new top-masts, which, if it were, the broken spars, would be also. With this kind of negative proof we shall leave it for the present. The log appears in the old style of reckoning, from noon to noon, long since abolished in the navy, but preserved by our merchantmen for the confusion of dates, and those who have anything to do with them. We trust the Shipwreck Committee will do away with this absurd remnant of antiquity. —ED

Date.	Wds.	Course.	Dist.	Lat. in.	Long. in.	Beargs. & dist. at noon.
Nov. 1793 <i>Mond.</i> 18th	East					Ushnt. S. 83° E. dist. 83 lgs.
	S. E.	S. 23° W.	19 ms.	48° 44' N.	7° 39' W.	Scilly N. 28° E. dist. 27 lgs.
	Calm					Lizard N. 5° E. dist. 40 lgs.

P.M., Moderate breezes and cloudy; *** at 6 h. little wind and cloudy; admiral and fleet in company; at 8h. light airs and cloudy; at 12h. moderate and cloudy; admiral

S W.b.S. 3 miles; at 8h. fresh breezes and fair wr.; at half-past 8 A.M. saw several strange ships in the S.E. quarter; the admiral made the signal to reconnoitre them; at 10h. tacked per signal; the admiral made the signal for an enemy in sight; cleared the ship for action; 13 sail in sight in the S.E., the nearest of them distant about 6 miles; the admiral made the signal to engage the enemy, as arriving up with them; at twenty minutes past 10, when in chace of the enemy, the fore-top-mast went over the side, and carried away the main top-mast with it, being under courses double reefed top-sails, top-gallant-sails, jib, main and fore-top-mast stay-sails, most of the fleet carrying nearly the same sail; at noon, employed clearing the wreck, the fleet still in chace, and coming up with the enemy; fresh breezes and cloudy.

Tuesday 19th, S.S.E.
E.S.E.

P.M., at half-past 12, fresh breezes and squally, with rain; saw one of our head-most frigates firing at the enemy; at 1 h. the admiral made our signal to proceed to the nearest port; at 2h. wore ship, employed clearing the wreck; at 4h. fresh breezes and cloudy, the fleet still chasing to windward; at half-past 4 heard several guns fired; lost overboard the main-top-gallant-mast, yard, and sail; at 8h. set the courses, employed getting up the fore top mast; at 10h. got up the fore top mast; at 12 got up the main top mast.

TROPICAL COSTUME OF MEN-OF-WAR SEAMEN.

SIR.—Everything which relates to the preservation of health among seamen, must be worthy of attention. In the proposal I have the honour to submit, there is nothing new, or which has not long since been practised in the merchant service; but as it has not been so in the navy, I think I shall be performing a duty in particularly adverting to it here, and respectfully urging the propriety of its adoption in the Queen's service.

It has become an established fact, that flannel worn next to the body of a person in tropical climates assists in the preservation of health. The seamen employed in the mercantile marine have found this out, and of their own accord, wear dark blue flannel shirts, the stuff of which they are made being called *serge*. The effect produced from their use, is the absorption of moisture exuded from the body, and the prevention of colds,* and probably fevers, which, if the men wore linen frocks, would be likely to ensue from the sudden checking of the perspiration when the sea-breeze or land-wind begins to blow.

It has been the custom, in vessels of war, for the men to be dressed in linen frocks and trousers, which, unless flannel be worn next to the body, is detrimental to health. A woollen garment in contact with the skin preserves a due temperature, and prevents those sudden chills which happen when a single shirt or frock made of flax is worn.

As neatness of dress is a point properly attended to in our vessels of war, particularly in those employed within the tropics, a stuff might be manufactured for the especial purpose, say, with alternate broad *blue* and *white* stripes, which being made into shirts and worn by a whole ship's company, would have a very neat, and even tasty appearance, at the same time accomplishing the desired end.

The manufacturers would soon be at work, when informed that such a stuff would be in great and regular demand.

* Particularly when exposed to showers of rain.

An objection may be made to the white stripe, as undyed flannel is apt to assume a yellowish tint after repeated washing; a very light-blue stripe might be substituted for the *white* one, and the alternate one be of a dark indigo colour, these can be permanently fixed; but some other tint may be found agreeable, but the *blue* of one must remain, or Jack would not relish it.

Another objection may be raised. It would be necessary to change these frocks or shirts twice, at least, every week; and they should not be washed in sea-water.

Where is Sir James Stirling's apparatus for converting salt-water into fresh?*

I must leave these objections, (if they should turn out to be such,) to be settled by others. One thing, however, (and I think I should be backed by the doctors,) I am pretty certain of, the health of our seamen, generally, would be protected, by the use of flannel worn next to the body. If a waistcoat were under the duck frock, it would require also to be washed in fresh water, for reasons too obvious to require mentioning.

The objection to the Guernsey frock is, that it fits too tightly, incommodates free action, and is apt to run into "Jacob's-ladders." The flannel shirts of our merchant tars are of dark blue shades, and from some cause soon become "dingy." The Americans wear *red* flannel, and the Spaniards *brown*.

I would, sir, also beg leave to say a word or two on the dress of the Marines whilst in a tropical climate. It seems obvious, that the broad-cloth *cotee* which is supplied to the "Jollies," when buttoned up close to their throat, is altogether too warm and oppressive, and the common undress flannel jacket not *very becoming*. In a frigate, I served in, the captain of her perceiving these objections, directed *cotees* to be made, by the ship's tailor, of a white duck, and tastily braided with blue worsted, which being of one pattern, had a very neat appearance. A *white* peaked cap was also made, with a front similar to that on the caps worn by soldiers and others, and ornamented with blue twisted or plaited bands and tassels, and a narrow strip of fur round the base of the cap; all which contributed to the comfort, and flattered the laudable pride of the individual wearers.

AN AID TO SALUS.

To the Editor, &c.

P.S. It is the custom of our sailors to paint their water-proof hats black; in a cold climate this would be of no consequence, but under a vertical sun it is highly improper: the colour should be *white*, and to prevent the paint from turning yellowish, it should be mixed with *boiled* linseed oil. Strange as they would appear, all our ships within the tropics, should be painted entirely *white outside!*

* I recollect reading a promising letter (I believe in the pages of the *Nautical*) on the subject of converting sea-water into fresh, signed by Captain Middleton. I can but express a hope that he has not hoisted the Egyptian "dark lantern" at his peak (see the *Spectator*), or that he has become a disciple of Rosicrusius who founded the sect that pretended to new discoveries, which it resolved never to communicate to the rest of mankind.

[It is quite true the account of this invention appeared in the *Nautical*, but the principal inventor, a well informed and highly talented seaman, whose memory we we revere, is dead. Sir James Stirling can, perhaps, tell the rest.—ED.]

VOYAGES FROM THE UNITED STATES TO ENGLAND.

Average duration of voyages performed from the chief ports of the United States of America to England, in 1841, compiled from the Custom House return and shipping lists.

Ports in United States.	Averg. Pass. Days.	No. of Voy.	Short-est Pass.	Long-est Pass.	To Ports in England.
New Orleans	43	74	28	60	Liverpool & London.
Mobile	45	21	28	61	Liverpool
Charleston	31	27	22	53	Do.
New York	23	44	15	35	Do.
Do.	29	12	22	45	London
Philedelphia	28	6	21	42	Liverpool
Savana	31	14	21	41	Do.

W. S. BROWN, Registrar.

General Register Office of Merchant Seamen,
9th March, 1842.

Steam-Vessels are not included, but the Sailing Packets, called Liners, are included in the number of voyages, as these ships carry cargo as well as passengers.

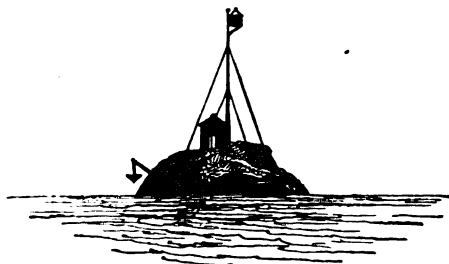
 NAUTICAL NOTICES.

PROMONTORE LIGHT, *Adriatic*.—Vice Admiral Sir Edward Owen, has reported to the Lords Commissioners of the Admiralty, the establishment of a temporary light on the Porer rock, off Cape Promontore, in the Gulf of Venice. It appears that Lieut. Lunn commanding the Locust steam-vessel, to whom we are indebted for the annexed sketch of it, forwarded through the admiral, on proceeding from Ragusa to Venice, having arrived off Cape Promontore, (the southern point of Istria), at 8 P.M. on the 13th of May, perceived a light, which appeared to be a light-vessel close to the land, as he could distinctly see a mast with a light on it: the weather was very clear, with a good moonlight,—the light did not appear particularly bright, but still it remained visible at the distance of ten or twelve miles when it was lost sight of. As this light is not mentioned in the Admiralty Sailing Directory for the Gulf of Venice, but on the contrary it is there stated that nothing of the sort exists, Lieut. Lunn sought for the best information he could obtain respecting it on his arrival at Venice, and received from a most intelligent Austrian Officer, Captain Fumanelli of the Marine Artillery, who is the second in command of the Arsenal at Venice, the following description:—The Light-House of Promontore, is situated on a small round rock called the Porer rock, off the southernmost point of Istria, and distant from the Cape three-quarters of a mile, the rock is about twenty-six feet above the level of the sea, a pole of the height of fifty French feet is fixed on it, at the top of which there is a light of sixty oil burners, (*fixed light*), visible according to the state of the atmosphere from eight to twelve miles off, and it is sometimes seen in very clear weather, even at fifteen miles. The pole is painted black,—and at a distance of one mile and three-quarters S.S.E. from the light, there is the dangerous shoal of Promontore with only nine feet of water on it at the foot of the

Pole is a house for the Guardian, of which there are two, who have a boat, and davits fixed to hoist her up with, and are relieved every twenty-four hours.

It is intended to build a permanent stone Light-House with the dues of one dollar for each vessel.

Appearance by Daylight.



CROOKHAVEN LIGHT-HOUSE, South Coast of Ireland.—The Corporation for Preserving and Improving the Port of Dublin, &c., hereby give Notice, that a Light-house has been erected at the entrance to Crookhaven, from which a light will be shewn at sun-set, on the 1st August, 1843, and which will thereafter be exhibited every night from sun-set to sun-rise.

Specifications given of the position of the Tower and appearance of the light, by Mr. Halpin, the Inspector of Light-houses.

The light-house is erected on Rock Island point, at the northern side of the entrance to Crookhaven, in lat. $51^{\circ} 28' 35''$ N. and long. $9^{\circ} 42' 31''$ W. and bears from Cape Clear Light-house N.W. $\frac{1}{4}$ N. distant $8\frac{1}{2}$ sea miles.
 „ Cape Clear Island, (S.W. end) N.N.W. $\frac{3}{4}$ W. „ 8 do.
 „ Alderman Rocks, (outer point) N.W. $\frac{1}{4}$ N. „ $\frac{1}{2}$ do.
 „ Fastnet Rock N. $\frac{1}{4}$ E. „ 6 do.

The light will be a fixed white light. The lantern is open to sea-ward and to the haven, from E.b.S. to W.by.N., and is elevated 67 feet above the level of the sea.

The bearings stated are magnetic.

(By Order.) H. VEREKER, Sec.

Belfast Office, Dublin, 30th March, 1843.

EQUATORIAL CURRENT EXPERIENCED BY H.M.S. WINCHESTER—*Extract.*

On the 9th of July, we had strong westerly winds, with squally and very unsettled weather, torrents of rain, wind round the compass from north to west

On the 10th, we found the current had set us 130 miles in forty-eight hours to the eastward, wind southerly; this is the strongest current I ever met with. Weather continued unsettled until the 15th. in lat. $2^{\circ} 13' N.$, long. $24^{\circ} 53' W.$ when we felt the first of the S.E. trade.

The Winchester was in about $7^{\circ} N.$ and $26^{\circ} W.$ at the time. In our volume for 1841, we have recorded an account of H.M.S. Pearl, having been set to the westward above a hundred miles in one day.

Hydrographic-Office, Admiralty, June 19th, 1843.

NAFLES LIGHT.—The Light-house on the elbow of the Southern Mole at Naples has been considerably raised, and a revolving light (of gas) has superseded the former fixed light.

The period of revolution is two minutes, during the first of which the full strength of the light is continued, and during the second minute, its brilliancy rapidly decreases. The height of the light is 161 feet above the sea, and it is visible at the distance of 18 or 20 miles.

At the eastern extremity of the Mole there is a low fixed light, in order to guide vessels round the Mole Head.

REEF BETWEEN TOBAGO AND TRINIDAD.—The following important information to vessels passing between Tobago and Trinidad, is extracted from a letter transmitted to the Lords Commissioners of the Admiralty, by Vice-Admiral Sir Charles Adam, K.C.B.

H.M. Sloop Wasp, Demerara, 4th May, 1843.

Sir.—I beg leave to bring to your notice, the position of a shoal, which is laid down in the general chart of the West Indies, about midway between the islands of Tobago and Trinidad, which is stated to have not less than six fathoms water upon it, and is thought to be an isolated rock; whereas, in our passage from Trinidad, we had an opportunity of exploring it, and found it to be a continuous reef, extending from Brown's point, in the southern part of the island of Tobago, about nine or ten miles in a S.S.W. direction, with not more than fifteen fathoms water on any part of it; but the greater part being from five to eight fathoms, the deepest water close in with the island, and upon one part of it, we found only twenty-seven feet; Brown's point bearing N.N.E., about seven or eight miles; and from the even nature of the bottom, which was plainly visible, I have reason to suppose there may be less water than twenty-seven feet. It appears to me to be a coral reef growing up, and which, in time, may become extremely dangerous for vessels of a larger draught of water, navigating the channel between Tobago and Trinidad.

I have, &c.,

(Signed) ANDREW DREW, *Commander.*

To Vice Admiral Sir Charles Adam, &c.

DIFFERENCE OF TIME BETWEEN PORT-ROYAL AND KINGSTON.—Many complaints having of late been made respecting the difference of time between the observations made by the Naval Yard at Port-Royal and that marked by the clock in this city, a distance across, perhaps of only three or four miles, the Commodore has been pleased to forward to the Hon. the Mayor, the following communication for the guidance of those interested therein. As the time kept by Her Majesty's vessels of war in Port-Royal harbour is generally considered the best, it being kept from observations of the sun taken, we hope the keeper of our town clock will not fail to attend every Monday to the notice which the Commodore has promised to give us here.—The irregular manner in which time has lately been kept by the keeper of our clock, has made plenty of work for the watchmakers. The inhabitants set their watches by the town clock one morning, and the next they are sure to find it either half an hour too slow or too fast, so that they are continually turning and twisting the hands of the same, till at last they become injured, and are obliged to be sent to the watchmakers for relief.

The following communication has been sent to his honor the Mayor, and posted at the commercial rooms, for general information:—

H. M. Ship Imaum, Port Royal, Jamaica, April 24, 1843.

Sir.—I am desired by the Commodore to forward, for the information of the commercial community of the city of Kingston, the enclosed notice of a Ball being hoisted on board Her Majesty's ship Imaum every Monday, at noon, to denote the exact time.

I have the honour, to be, Sir, &c., &c.

H. W. HUNT, *Commodore's Sec.*

To the Hon. H. Mitchel, Mayor of Kingston.

ENLARGED SERIES.—NO. 7.—VOL. FOR 1843.

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A Black Ball will be hoisted at the fore-royal mast-head of Her Majesty's ship *Imaum*, on Monday next, 14th May, at five minutes to 12 o'clock, and will be hauled down at the instant of twelve o'clock of mean time, at the Flag-Staff of Port Royal Dock-Yard, by which means all vessels at Port Royal and Kingston will have an opportunity of rating their chronometers, as the Ball will be continued in the same manner every Monday hereafter.

By order of Commodore Hon. H. D. Byng,

GEORGE BIDDLECOMBE, *Master*.

N.B. The longitude of the Flag-Staff, as determined by Capt. Owen, R.N. being 76° 51' 10" west of Greenwich. (A True Copy—H. W. H.)

IMPORTANT TO SEAMEN.—We have been favoured with the following extract from the log-book of the *Frolic*, whaler:—"October 29th, 1841, A.M., moderate breezes and fine throughout; all requisite sail set; all hands employed breaking out the run, tarring and rattling the rigging. At 2 P.M., saw a shoal, soundings at nine fathoms water, bottom—sand and coral rock, deepening to forty fathoms, in lat. 19° 15' S., long. 173° 40' W., the south-east end of Vavao bearing N.W., distant 45 miles." Captain Disney is of opinion that the water on some parts of the shoal where he passed over before taking soundings was much less than nine fathoms.—*Sydney Herald*.

MALABAR BANK.—Extract of a letter from Capt. Sartorius.—In lat. 38° 57' from the observation at noon, and long. 26° 4' by chronometer, and from the supposed most correct bearing of the land, the north-east end of Terceira, taken at 8 A.M., gives lat. 38° 57', long. 25° 57', the ship grazed over apparently a shoal of about her own length. There was no sudden shock, no appearance of discolored water, or any other indication of the vicinity of rocks or shoals; and at the time the motion was felt, the ship was going eight knots, wind aft and studding sails set.

I immediately shortened sail and sounded with 180 fathoms, no bottom. There was too much swell and sea to risk a boat for examination. My own individual opinion is, that, it is likely to have been the shock of an earthquake as passing over a shoal.

EARTHQUAKES.—On the subject of Earthquakes felt at sea, we understand that one of H.M. Ships, on her passage from Smyrna to Malta, experienced two smart shocks of earthquake, thirty-five miles in a westerly direction from the west end of Candia, twice in nearly the same position, but accompanied by a "loud rumbling sound," coming from the S.E. quarter, and apparently immediately under the ship. No bottom was found at the time with 160 fathoms.

PROTECTING EFFECT OF MR. HARRIS'S CONDUCTORS IN H.M.S. DAPHNE.

By an official communication from Capt. Onslow, R.N., it appears that on the 9th of February last, a shock of lightning burst on H.M. Ship *Daphne*, under his command whilst at anchor at Monte Video. The discharge was instantly dispersed by Mr. Snow Harris's conductors, without the slightest damage or inconvenience, and was heard to pass along one of the auxiliary branches leading through the ship's side.

In the *Nautical Magazine* for November, 1842, we have given an account of a series of interesting experiments, instituted by Mr. Harris at Chatham, in the course of which powerful accumulations of artificial

electricity were passed upon this same ship whilst floating in the Medway, with a view of exemplifying to Lord Haddington and the Lords Commissioners of the Admiralty, the nature and operation of the conductor. Although, from the repeated protection afforded by Mr. Harris's system in storms of lightning, this recent result might have been predicted, yet it is still an interesting and most important confirmation of the identity of the agency of lightning with that of ordinary electricity; and that whether it operate on the more awful and sublime scale of nature, or through the medium of artificial electrical accumulation by the common electrical machine, still the result is the same. The lightning conductors fixed on this vessel's masts and placed in uninterrupted communication with the water, through the masses of the metals about the hull, appear to have received and dispersed this heavy shock of lightning, just as readily and with as little disturbance, as, in the case of the dispersion of the charge of the electrical battery, in the Medway at Chatham.

To place the navy of this country beyond the reach of damage from so destructive an element, it must be allowed is a matter of great moment, and one having the most powerful claims on our calm and serious consideration.

Capt. Onslow's notice of the protecting effect of Mr. Harris's conductor in H.M. ship *Daphne*, was lately transmitted through the Commodore at Monte Video, to the Lords Commissioners of the Admiralty.

THE SANDWICH ISLANDS.

The principal islands in the South Pacific, commonly called Polynesia, and which have so recently been brought into notice by Admiral Dupetit Thouars having taken possession of the Marquesas, and induced Queen Pomare to place Otaheite and the Society Isles under the protection of his Majesty Louis Phillippe, the King of the French, are the Friendly Isles, so named by Captain Cook in 1774, in consequence of the apparent friendship which subsisted among the natives, and their courteousness to strangers. Tonga is the capital, and is fifty-five miles in circumference, and eighty feet above the level of the sea. To the N.W. are the Fegee Isles, and the Navigator's Islands, discovered by the French navigator M. de Bougainville, and explored by the unfortunate *La Perouse* in 1786, when he and all his crew were lost off the island of Manicolo. They are ten in number.

Otaheite, called also King George's Island, to the N.W.b.N. is the capital of the Society Isles, and was discovered by Captain Wallis in 1767. It consists of two peninsulas, of a form nearly circular, joined by a narrow isthmus in the middle, surrounded by a reef of coral rocks, which form several excellent bays and harbours, offering a secure anchorage to shipping. These islands have been nearly civilized by the English, and the inhabitants have, through the operations of the missionaries, who have settled here for upwards of the last half century, become converted to the protestant religion, as well as their Queen (*Pomare*) and their chiefs. A number of chapels and schools have been

constructed by the missionaries, and the aborigines taught different European trades. The greater part of them speak English with facility, and look upon the British residents as their protectors and benefactors.

The Marquesas Islands, which have also been adopted in the name of the Citizen King, and to which Captain Brust has been appointed Governor, (now on his passage out on board the Uranie frigate, with the first expedition of troops and catholic missionaries), are situate to the north-east of the Society Isles. They were discovered by the Spaniards in 1567, and visited by Cook in 1774, 1777, and 1779, as well as by Perouse in 1786, and Vancouver in 1792.

The Sandwich Islands.—Passing to the north latitude twenty degrees is Owhyee, or Hawaii, 275 miles in circumference, which, with ten others, form a group, and so named by Captain Cook in 1774, in honour of the Earl of Sandwich, then at the head of affairs. They are less sultry than the West Indies, and there are no hurricanes that prevail at certain seasons, as in the Atlantic. The natives, both male and female, are similar to those of Otaheite, a fine race, and extremely industrious and friendly towards the English, who were also the first to civilize them and propagate christianity among them. The seat of Government is at Kenarurie, in the island of Oahu, where are deposited in a magnificent mausoleum the mortal remains of the late King Tamehameha II., and his Queen, who died in London with the measles, in 1825, when on a visit to his late majesty George IV., whom they called father, to offer to place the islands under his protection. These, as well as nearly all those in the Pacific, are mountainous, but most productive in everything required for man. There are numerous springs of the purest water. Cattle, sheep, pigs, poultry, fish, &c., are plentiful. Corn, fruit, and vegetables of every description, can be grown in abundance, the soil being most prolific. The sugar-cane, coffee, cotton, rice, maize, bananas, cocoa-tree, the olive, vine, orange, citron, pomegranate, pines, and other fruits, grow spontaneously. The mulberry-tree, for the propagating of the silk-worm, is very abundant, and wood and gums of different descriptions, abound in these islands. There are no reptiles nor beasts of prey, as in South America, Africa, and Asia. The coral and pearl fisheries, and the sperm whale, are of most importance to the natives, who are very expert in making canoes and their different implements, and carry on a great traffic with the adjacent islands. Besides the English settlers, there are a great many missionaries here, particularly from the United States of America, who have erected churches, chapels, schools of industry and agriculture, and introduced the art of printing. The aborigines are now much civilized, and generally profess the christian religion, as their King, Tamehameha III., who is an enlightned man, calls himself the chief disciple. Their government is monarchical, the sovereign having the right of imposing taxes for the maintenance of the royal household, and the support of its dignity. He has also the power of punishment, but not that of taking away the life of any of his subjects for a supposed offence, without the concurrence of twelve of the chiefs. He is not allowed to deprive the chiefs or the gentry, at his discretion, of their lands, which are inherited by their legitimate offspring when they die. The people are free, and not bound to the service of any particular chief or person.

The great circumnavigator Cook, was unfortunately killed in the bay of Karakakoa in 1799, in a conflict with the natives, then cannibals. The acquisition of these islands by Great Britain, and the Marquesas and Otaheite, under the protection of France, will, in a few years hence, completely civilize and christianize the whole of Polynesia, and be the means of conferring the greatest benefits on the natives, and extending their commerce.—*Hants Paper.*

EXCURSION TO FOO-CHOW-FOO.—Mr. Coverley, an officer of the *Phlegethon*, had been sent in a cutter to Foo-chow-foo, with a letter from the admiral to the authorities there. Nothing could be more friendly than the reception which they had from the authorities and population, whose curiosity was much excited by their arrival. On the passage up, they were hailed by a junk, the bearer of invitation cards from the admiral of the station they were then passing, who wished them to land and partake of a feast. Desirous of proceeding without delay to the city, the invitation was respectfully declined. Foo-Chow appears a bustling, thriving place, of considerable commerce, but the excessive curiosity of the natives was a grievous impediment to any attempts at exploration or even locomotion. Nothing was apparent on the part of the populace, but an eager, yet respectful curiosity; and there was not evinced the slightest aversion to the foreigner who had coerced the emperor into a peace, and whom they then saw for the first time. The river is not dangerous, or at least its rocks and dangers can be easily avoided when it is accurately surveyed. The famed bridge mentioned by Du Halde did not excite any surprise in the minds of European beholders. It is not arched, but erected on a series of granite pillars across the river, at the point where there is an island; thus there are thirty-six openings, or rather waterways, on one side and nine on the other.

PORTSMOUTH, JUNE 3rd.—Her Majesty's first class steam frigate *Cyclops* was lying totally dismantled on Saturday last at Woolwich, and the engineers of the dock-yard had disconnected part of her machinery for the purpose of effectually repairing her. On Sunday morning, at four o'clock, she was commissioned by Captain Austin, C.B. and on the following day (Monday) by four o'clock P.M. she was completely rigged, had got her large guns on board, with ammunition and stores, from the Royal Arsenal, her provisions and tanks of water from Deptford, including 300 tons of coals, and was in every respect ready for sea, within the short space of thirty-six hours. This shews what may be effected by the immense resources of this country in the time of need, as the vessel might then have sailed, but was delayed until two o'clock Tuesday morning. Lieutenant-Colonel Burton, of the Woolwich division, Royal Marines, embarked at a late hour on Monday evening, and the *Cyclops* sailed at the above early hour to Sheerness, there to receive on board a large detachment of Royal Marines from

Chatham. The crew of the Cyclops is to consist of 175 men. The promptness with which the whole of the movements have been effected shews that Government is resolved to be prepared for the protection of Her Majesty's loyal subjects in Ireland, and that ample means are at its disposal on the shortest notice.

LAUNCH OF A STEAM FRIGATE.—The beautiful first class steam frigate *Infernal*, built on the same slip in Woolwich dock-yard as her sister, the *Devastation*, was launched on the 31st of May, in the presence of Capt. Sir Francis A. Collier, Knt. C.B. and K.H., Captain Meredith, Captain Smith, inventor of the paddle-box boats, and a great number of naval and military officers. The following are her dimensions:—

	Feet	Inches.
Length between the perpendiculars	180	0
Length of keel for tonnage	156	4½
Breadth extreme	36	0
Breadth for tonnage	35	8
Breadth moulded	35	0
Depth in engine-room	21	0
Burden in tons, old plan 1,058, 20-94		
Burden in tons, new plan, 1,027 1,142-3,500.		

THE ROYAL NAVAL SCHOOL.

The great importance to this country of an establishment for the education of the sons of naval officers, induces us to record at some length the proceedings which took place on the first of June, (a day most judiciously chosen,) on laying the foundation stone of a building for the above purpose at Counter Hill, Deptford. The ceremony was performed by his Royal Highness Prince Albert, attended by the Earl of Haddington, and the several Lords of the Admiralty; Admiral Sir C. Ogle, the President of the Council of the School, Admiral Sir E. Codrington, (late President,) Rear-Admiral Sir C. Malcolm, Rear-Admiral Sykes, Admiral Sir W. T. Lake, Sir R. Dobson, Vice-President, Admiral Dundas, M.P., Admiral Sir E. Brace, Lord Bloomfield, the Bishop of Rochester, the Rev. Mr. Sketchley, Rev. T. Chambers, (Head-Master of the School), Captain J. Jones, Vice-President, and many other gentlemen. Signal guns announced the arrival of his Royal Highness Prince Albert, amidst the cheers of the company; and having been received by the President and the members of the Council, the Prince was escorted by them to the place where the stone was to be laid, in presence of the building committee, the clergy, the architect, and the builders.

The national anthem having been played by the marine band, the Prince standing near the stone, the council and the head-master of the school were presented to his Royal Highness. The Bishop of Rochester then offered up a prayer, on the conclusion of which his Royal Highness received the vase with the scroll, and coins, which his Royal Highness then placed in the aperture of the stone.

The architect, Mr. John Shaw, having closed the vase, the silver trowel was presented to his Royal Highness by the chairman of the building committee; and his Royal Highness having adjusted the mortar, the stone was lowered to its place. The mallet, which is constructed of the relics of the celebrated Victory, in which Lord Nelson fell in the year 1805, was then presented to the Prince, who completed the work by giving the stone half a dozen blows, upon which the stone was declared to be "completely and properly laid."

A salute was then fired, and the band played "Rule Britannia," amidst hearty cheers. The Bishop of Rochester afterwards implored the blessings of Divine Providence on the institution, the scholars responding "Amen."

Prince Albert having signed a copy of the scroll, six of the scholars advanced to present the following address to his Royal Highness, which was read by Master Drew, son of Lieutenant Drew, R.N.

MAY IT PLEASE YOUR ROYAL HIGHNESS,

Deeply sensible of the honour, which your Royal Highness has conferred upon us, by graciously consenting to lay the foundation of our new building, we, the scholars of the Royal Naval School, humbly beg leave to express our gratitude to your Royal Highness, for this act of kindness and condescension.

We trust we may be permitted to cherish a hope, that our school, which was founded in the year 1833, has grown up, under the fostering patronage of our most gracious Sovereign, into an object of national interest; but we are fully persuaded, that the mark of high distinction now bestowed upon it by a Prince, who is justly dear to the British nation, will effectually promote its future prosperity.

We rejoice, also, that your Royal Highness should have selected the anniversary of a great naval victory, for the commencement of a work which cannot fail to prove a lasting benefit to the Naval profession.

That her most gracious Majesty and your Royal Highness, together with your illustrious family, may long be preserved in the enjoyment of all happiness, is the earnest prayer of

Your Royal Highness's

Most humble and devoted Servants,

THE SCHOLARS OF THE ROYAL NAVAL SCHOOL.

The Prince listened very graciously to this address, on the conclusion of which the President, Sir C. Ogle, addressed His Royal Highness in a short speech, thanking him for the condescension which he had displayed in honouring the ceremony with his presence on the occasion.

His Royal Highness having replied in a short but most gracious address, retired to his carriage, accompanied by the Council and the other dignitaries in attendance, the band again playing the National Anthem.

The design of the intended school is by Mr. Shaw, the architect, of Christ Hospital, and Messrs. Locke and Nesham are intrusted with its erection. It is to be built in the Elizabethan style, and will be capable of accommodating upwards of 200 scholars; the frontage of the edifice will be 120 feet long, and the depth 280 feet. The architect has principally taken his idea from the design of Chelsea Hospital. A play-ground, of from four to five acres, will be attached; and the dormitories are to be constructed in such a manner as to secure every comfort and afford every

convenience to the scholars. The elevation of the sleeping rooms will be about 14 or 15 feet, and thus the most complete ventilation will be readily obtained,

The Council has, very properly, taken this opportunity of making an appeal to the naval service, and to the country generally, for assistance in carrying out the great object which they have in view.

We will, first, congratulate both the service and the country generally, in having so efficient a council of administration, to whom, we can assure them, they are more indebted than they are aware of, for their personal exertions, so unremittingly devoted in securing the present stability and future permanency of the important work they have in hand; and then with the view of forwarding those exertions, we will take a brief glance at this appeal.

The object of the establishment as our readers are aware, is, "to enable the less affluent naval and marine officers to give their sons a sound general education, at the least possible expense," with a "further object of affording the same advantages gratuitously, or at a very reduced charge, to a limited number in necessitous circumstances, giving a preference to those who have fallen in the service of their country." Through all its disadvantages it has succeeded under the able management of its council, and has sent forth many of its scholars into the royal navy to emulate their fathers' deeds. Two annual nominations of volunteers of the first class have been granted to it by the Admiralty, and the council express themselves as "sanguine in believing that as the royal naval school is the only establishment in this great maritime country, for the education of the sons of officers in the navy and marines, this appeal will be productive of such pecuniary assistance as will enable them to complete the undertaking.

In pointing out the necessity of such an institution, the following strong language is adopted in the appeal:—"The merchants of this wealthy country can bear testimony to the bravery of the British navy, who kept the door fast locked against the enemy, while their ships covered the seas. Many of those gallant officers, who returned at the close of the war, are now numbered with the dead, having left their helpless orphans in abject misery: in confirmation of these assertions, it is only necessary to select a few cases, indiscriminately, from the crowded list of applicants waiting for admission on the gratuitous, or reduced foundation. Many cases of orphans, equally distressing, have already received the advantage of an education at the school; but until the erection of a suitable building, there is no hope of admitting those unfortunate claimants whose cases merit the warmest sympathy of the public."

Many of those cases are given with the appeal, and an idea may be formed of them from the first, which is this: "Nine orphans, without either father or mother, and the whole on £70 per annum. Father was engaged in the battles of Copenhagen and Trafalgar. The elder girls take in needle work." Here is another taken at random. "A widow, with six children, and nothing but a pension of £50 a year. Applicant's husband was eight years a French prisoner of war."

These are the kind of cases for the relief of which, by giving the boys a gratuitous education, the Council address themselves to their countrymen; and we trust that the exertions of these worthy men

in the cause of their unfortunate brother officers, and in the great cause of their country's good, will not be left unheeded.

The words "Copenhagen," "Trafalgar," and many more, are grateful to our ears from the recollections of victories which belong to them. But these are the bright sides of the picture, and we would remind our readers that the appeal from the Committee places before us the other side, too deeply shaded with such features as they have pointed out. That such things ever must be on all such occasions no one will deny; but being pointed out, it is the duty of us all, while exulting in these recollections not to forget those by whom the victories were achieved. "And here they are before you," says the Council! Her most gracious Majesty and her Royal Consort, Prince Albert, have well responded to this appeal, by a present of a hundred pounds from each, besides an annual donation of the same amount from the Queen.

We shall, therefore, adopt the words of the Council, and "urgently solicit the benevolent attention of all for the sake of the Wooden Walls of Old England; and trust, that with the gratifying examples of the liberality of civilians, the navy will be true to itself, and come forward to aid in this national work; bearing in mind, that one day's half-pay from all ranks in the service, would realize a sum sufficient for the erection of the building. But, as from their limited means, the majority are unable to spare even this small amount, we shall confidently look to all patriotic individuals *unconnected* with the navy, to assist in making up the deficiency.

We "cannot conclude this appeal, without earnestly entreating all who are connected or not with the navy, and who must be desirous of promoting the object in view, and whose avocations will permit them, to form lists of subscribers to the building fund in their own immediate vicinity; feeling fully convinced that, in the aggregate, a large sum would by these means be collected, however small the amount of each subscription."

Subscriptions, which will be published from time to time, are received by—

Barclay & Co., Messrs., 54, Lombard St.
 Barnet, Hoare, & Co., Messrs. 62, Lombard Street.
 Bosanquet & Co., Messrs., 73, Lombard Street.
 Call, Sir W. P. & Co., 25, Old Bond St.
 Cocks & Co., Messrs., 43, Charing Cross.
 Cockburn & Co., Messrs., 4, Whitehall.
 Coutts & Co., Messrs., 59, Strand.
 Drummond & Co., Messrs., 49, Charing Cross.
 Fullers & Co., Messrs., Moorgate St.
 Glynn & Co., Messrs., 67, Lombard St.
 Hallett & Co., Messrs., 14, Great George Street, Westminster.
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 Stone & Co., Messrs., 68, Lombard St.
 Vere, Sapte, & Co., Messrs., 77, Lombard Street.
 By all the Navy Agents, and by Mr. Hope, the Secretary of the Royal Naval School, Camberwell.

Donations and subscriptions are also received by Thomas Willey, Esq., R.N., Coast Guard Office, Custom-House; by D. Foggo, Esq., R.N., Secretary of the Royal Naval Club; by the Secretary; and by the following gentlemen, who are Honorary Agents at the outports, &c. Messrs. Coutts and Co., of the Strand, have consented to receive donations in aid of the Building Fund:—

Andover	by Lieutenant William Poore.
Bath	Lieutenant C. Brand.
Bridport	Captain W. F. Stanley.
Brighton	Lieutenant E. Franklin, (Coast Guard.)
Caermarthen	Commander J. G. Phillips.
Chester	Lieutenant B. Thelwall.
Deptford	G. F. Morice, Esq., R.N., (Royal Dock Yd.)
Devonport	Thomas Shanks, Esq., R.N.
Drumsna, County Leitrim, Ireland	Lieutenant R. R. Achmuty.
Dublin	{ Lieut. William Hutchinson; Lieut. W. P. Newnham; and W. Thompson, Esq., R.N.
Exeter	{ Rev. J. Baker; and Messrs. Milford, Snow, and Co., Bankers.
Exmouth	Sir D. Forrest, R.N.
Gloucester and Cheltenham	Lieutenant J. G. Francillon.
Guernsey and Jersey	Lieutenant John Treeve, Gronville.
Hastings	Captain M. H. Sweney.
Langport, Somerset	Lieutenant James Tilley, Fivehead.
Leicester	Captain James Jones, R.M.
Leith	Lieutenant J. R. Forrest.
Long Stratton, Norfolk	Lieutenant William Gynn, Tasburgh.
Lyme Regis	Lieutenant Thomas Mallock.
Manchester	Commander H. J. Clarke.
Portsmouth	Messrs. Grant and Co., bankers.
Ryde, Isle of Wight	Lieutenant J. H. Helby.
Shetland Islands	Lieutenant W. H. Brand.
Southampton	Commander Robert Forder.
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We have now placed the subject before our readers, the nature and objects of which are so well set forth by the Council: we have added the names of parties who receive subscriptions, and some of those who have just set so noble an example for imitation, and we have only to add a parting word for the present. We all know that our countrymen can do any thing of this kind that they choose to take in hand. At their bidding, stately edifices appear, costly monuments arise, and proud statues are erected, for what? all to celebrate the honour and glory of this great country. Here is an edifice worthy of their adoption;—one, which far surpassing the grandeur of the noblest statue, will remain as a worthy monument to celebrate and perpetuate *indeed* the glory of their country; for it is to foster and cherish the sons of those gallant men who have achieved that glory in times gone by; it is to nourish their living representatives, who will add to it in times to come! Not to the naval service only then, at home and abroad, do we address ourselves, but to our countrymen generally, far and near, in the words of Nelson:—"England expects every man will do his duty." Let *every* man, then, do it! It is not so difficult to-day as in the day when he made his signal. But that day may come again. Therefore, let each and every one of us at home and abroad, prepare for it, by laying aside now a sum proportionate to our means, to forward the excellent objects of the Royal Naval School; thereby to strengthen the "right arm" of our country's power, the royal navy; and to perpetuate for ages hereafter, the honour and glory of our native land.

TOTAL LOSS OF THE IRON SHIP "GUIDE."—Intelligence was on Monday last received at the East India House of the total shipwreck of the

Hon. Company's elegant iron brig, the *Guide*, commanded by Capt. Sercombe, while on her passage to Calcutta, unattended with loss of human life. The vessel was entirely constructed of iron, and this was her maiden voyage, having only been launched in the early part of the present year at Liverpool. She was built expressly for the Company's pilot establishment in India, whither she was proceeding. She left Liverpool on 14th February last, under orders to sail direct to Calcutta, and appears to have been wrecked on the 7th of March, on a dangerous reef of rocks situate on the north side of Bona Vista, one of the Cape de Verd islands; but the circumstances under which it happened are not precisely known, in consequence of the official despatches not having yet been received at the India House. The following particulars are extracted from a letter:—"The instant she struck efforts were used to float her off, but she remained a fixture, notwithstanding the immense mass of articles, &c., thrown overboard to lighten her. The ship remained in a perfect state on the reef until 20th March, when, in consequence of a heavy sea setting in, she broke into three pieces, becoming a total wreck. It was confidently anticipated she would have been preserved. Capt. Foote, of H.M. frigate *Madagascar*, offered his valuable assistance, but the sea setting in, as above mentioned, prevented Capt. Sercombe availing himself of the offer. To Capt. Foote, his officers, and crew, great praise is due for their readiness in coming forward; and had it not been for the above unfortunate state of the weather, there can be no doubt but that they would have rendered great assistance in saving the ship. The conduct of Captain Sercombe, his officers and crew, was beyond all commendation, and I regret that so sad a disaster should have befallen so brave a set of men." The ship's company consisted of twenty-seven persons, but there were others on board, passengers, all of whom escaped injury. Most of them were afterwards conveyed on board the *Madagascar*, where they would remain until the arrival of the next vessel going out to India. Several of the officers are on their return to England, to be tried by Court-Martial. The rocks on which the vessel was lost are called Hartwell Reef, and she is the second of the Company's ships that has been wrecked on the same spot. The vessel is reported to have been laden with copper and sundry stores, intended for the Company's works in India. She is not insured.—*Naval and Military Gazette*, June 17.

THE LATE MR. THOMAS BROCKLEBANK.

No event that has occurred in the borough of Greenwich, during the last 20 years, has occasioned such general and deep regret among all classes of the inhabitants, as the decease of Thomas Brocklebank, Esq., who lately departed this life at his residence, West Coombe Park. The loss of such a man is a public calamity to any district in which it may occur; and a very large portion of the labouring population of Greenwich and Deptford feel, most sensibly, that they have lost a sincere friend and protector. The extensive influence of Mr. Brocklebank, as managing director of the General Steam Navigation Company, enabled him in some way or other, to render service to hundreds of persons in the two towns; and his assistance was never sought in vain by those who had the slightest claim to his friendship, or favour.

Although the contriver and worker out of his own fortune, he avoided the mistakes into which parties so situated are prone to fall—he was not so far

intoxicated with the possession of wealth as to treat with contumely those who were not equally fortunate in its acquirement, nor did he abstain from its due enjoyments from inordinate desire for its unhealthy accumulation. Retaining the primitive habits and manners with which he had fought his way through the world, he seemed indifferent to the ease and state which his energies had enabled those around him to enjoy; and up to the last week of his existence, if it had been asked who was the most active and indefatigable man in Greenwich, the answer would have been—Mr. Brocklebank. When a public purpose was to be accomplished, in which his own views and feelings were engaged, no sacrifice of time or money appeared too great for him.

It would scarcely be reasonable to assert that a man, so constantly mingling in the stirring scenes of life, never made an enemy; but it may, with confidence be stated, that he never lost a friend. Of the most sterling independence himself, he knew how to appreciate that quality in others. In the city his name was so highly respected it will be long remembered; and his business transactions were always conducted in a way that gave force and respectability to his character as a British Merchant. He was gigantic in his conceptions of an undertaking; and he possessed all the energy and perseverance requisite for the execution of whatever measure he had the boldness to contrive. The General Steam Navigation Company, of which he was the projector, and to the successful establishment of which he devoted a considerable portion of his life, remains a splendid monument to his zeal, and an honour to his country. The name of Brocklebank, indeed, appears as intimately interwoven with the progress of this important branch of our national power, as the names of Watt and Arkwright with the elements of industry with which they are associated. In the fullest sense of the word his has been a life of usefulness; and he has left a large and excellent family to enjoy his fortune and reap the honours of his reputation.

NEW BOOKS.

PLANE AND SPHERICAL TRIGONOMETRY Part I, *containing rules, examples, and problems* :—By *H. W. Jeans, F.R.A.S., Royal Naval College, Portsmouth; formerly Mathematical Master in the Royal Military Academy, Woolwich.*—Woodward, *Portsea.*—Longman, 1842.

This small volume is much better adapted to beginners in trigonometry and its kindred subjects than a mere formal treatise would be, and it contains also an introduction to nautical astronomy, with a slight account of the principles of a trigonometrical survey. The first section contains practical rules for the management of logarithms, with numerous examples of the reduction of numerical quantities, and also of algebraical expressions by their means, with others of a miscellaneous kind, in which logarithms may be used with advantage. The rules are all given in words as adapted to the case proposed. The collections of examples in trigonometry and in nautical astronomy are very copious, and contain a vast variety of cases. A further part is added, containing the solutions of the problems in part I, and also a list of fundamental formulas in plane and spherical trigonometry. The author has adopted the plan (which is gradually obtaining more general and unqualified recognition) of giving the rules and examples before he enters upon the demonstrations. He supposes, indeed, the reader to be acquainted with vulgar and decimal fractions, and with algebra, sufficiently to work an easy equation. This knowledge, however, is not at all necessary in working by the rules. At the same time, we think, the author would have advanced his design better by adding the few pages into which this preliminary information might be condensed. This, however, he will, perhaps give in the promised continuation. From what has been said, it is evident that the work will be found generally useful, and, from the plainness of the rules and the number and great variety of examples, particularly adapted to learners.

It has also the convenience of being of a pocket size. In his next edition, the author will do well to adapt certain of his rules to the common tables as well as to the versed sines, for the latter are not contained in every collection, and in none of the tables of a more portable form. We also suggest that it would be useful in impressing vividly the mind of the pupil with matter of fact, if the author were to describe here and there how a problem may be worked, or at least illustrated, by means of a globe. When the student can bring home to his mind the true conditions of a question, experimentally, he is secured against the danger of mistifying himself by an imperfectly understood analysis; and the student could nowhere look for an intelligible and satisfactory method of verifying his calculation better than in a work which he employs as containing ready-prepared rules for all his cases.

ON THE NATURE OF THUNDERSTORMS, and on the means of protecting buildings and shipping against the destructive effects of Lightning.—By W. Snow Harris, F.R.S. London, Parker, 1843.

We do not know a subject that should come more immediately home to the minds of seamen, or one of more interesting research to them especially, than that of the nature of thunderstorms, and the means of guarding against their destructive effects. Of these effects our recent numbers teem with instances, and in a former volume we have recorded many, collected by the indefatigable exertions of the author of the work before us. Mr. Harris, whose labours for the protection of our ships, claim the grateful thanks of all seamen, has here rendered them another service by describing in a condensed and popular form the nature of that destructive agent called electricity, which, whether on the immense scale of nature, or in the imitating miniature representation of the electrician is so grand and imposing to our senses. We cordially recommend our naval readers to consult this work. They will find in it the true principles on which all the mischievous effects of lightning take place, and thereby see why Mr. Harris's conductors now fitting to all H.M. ships as they are commissioned are so efficient in protecting them therefrom. St. Elmo's fires to them will be no longer a mystery, and the harmless character of the luminous appearances on lightning rods they will at once account for. Indeed, whether in a professional, or a generally interesting point of view, we have not for a long time seen a work that has more claims on their attention than this of Mr. Harris.

THE PASTOR CHIEF, or, the Escape of the Vaudois; a Tale of the Seventeenth Century; 3 vols.—Cunningham and Mortimer, Trafalgar Square.

The story was first suggested says the authoress, for we presume it to be from the pen of a lady, by reading Mr. Gilly's interesting narrative of the Waldenses, and the pleasure I derived from perusing it, was continued on meeting with Mr. Acland's account of the glorious recovery of the valleys, by their Pastor Henri Armand, a man whom every biographer agrees in designating as alike remarkable for "his piety in the things of God, and his judgment in those of earth".

This beautiful little romance (if we may so call a work which is almost wholly founded on fact), will make an agreeable variety in a *seaman's library*, and, we therefore, strongly recommend it to the notice of our readers. The history itself she says "seemed to me replete with useful tendency, proving the power of faith and perseverance, and holding out an example to incite the exercise of those energies which were bestowed for great and noble purposes."

The whole history of this interesting sect is cleverly told in a few lines in the preface, with which, from want of space, we must unwillingly limit our notice, although we would otherwise have gladly extracted a portion of the many striking passages which adorn its pages.

"They profess," (she continues) "to have first received the tenet of their faith from the inspired lips of Saint Paul himself, who is supposed to have

visited Spain from Italy, and going thither by land, must have passed through the Piedmontese villages. From the earliest dawn of Christianity they have kept free from the corruptions of every other sect. To this day they have preserved a sort of catechism in the vulgar tongue, dated 1100, called the Holy Lesson, which is even now studied by them as articles of faith, and treatises are extant among them, dated the 9th century, in which their divines disown the errors of the church of Rome. This firm adherence to their original form of worship in a later age, drew upon them repeated and violent persecution.

"These poor people endured thirty-three different wars, and yet maintained their position in the inheritance of their forefathers, till the year 1686, when they were formally expelled by the orders of Victor Amadeus, on pretence of noncompliance with his laws. It is this period of their history that I have chosen for the subject of my tale; and if the hair-breadth escapes and miraculous deliverances it delineates border too much on the improbable, I would entreat my readers to refer to the notes at the end of these volumes, or to the works I have mentioned, and there see that fiction has not exaggerated the record of history; and then consider whether, with the proofs we have there of the vast power of religious excitement to nerve the mind to the most surprising efforts, it is extraordinary, that the enthusiastic devotion and belief of these peasants should have enabled them to perform the glorious enterprise by which they regained possession of their valleys, and triumphing over every obstacle by their energy, obtained the right and concessions granted to their forefathers.

A VOYAGE OF DISCOVERY TOWARDS THE NORTH POLE, performed in H.M. ships *Dorothea and Trent*, under the command of Captain David Buchan, R.N., 1818. To which is added a summary of all the early attempts to reach the Pacific by way of the Pole.—By Captain F. W. Beechey, R.N., (one of the Lieutenants of the Expedition.)—R. Bentley.

In our last number we gave a brief outline of Captain Beechey's agreeable narrative of this interesting voyage of discovery towards the North Pole, performed under the command of Captain Buchan, in the *Dorothea* and *Trent*. We then promised ourselves the pleasure of recurring to his book in our present number, in the hope of being able to impart to our readers some portion at least of the gratification we have ourselves experienced in the perusal of the work, and at the same time with the view of calling their attention to Captain Beechey's important remarks as to the comparative facilities now afforded of reaching the Pole, by means of the auxiliary power of the screw-propeller, an instrument as little dreamt of in former days as the Aerial carriage of the present time, which may, perhaps, one of these days proceed on a voyage of discovery to the Northern Regions. But, we must proceed to lay before our readers some extracts from Captain Beechey's narrative.

The following scene of an attack of walrusses upon the boats of the *Trent*, is well described, and the drawing which Captain Beechey has given of the somewhat critical position of the boat is full of character.

"One of these animals having been wounded, they rose in great numbers, snorting with rage, and rushing at the boats, and it was with the utmost difficulty they were prevented upsetting or staving them, by placing their tusks upon the gunwales, or by striking at them with their heads. It was the opinion of our people that in this assault the walrusses were led on by one animal in particular, a much larger and more formidable beast than any of the other, and they directed their efforts more particularly towards him, but he withstood all the blows of the tomahawks without flinching, and his tough hide resisted the entry of the whale lances, which were unfortunately not very sharp, and some bent double.

"The herd was so numerous and the attacks so incessant that there was not time to load a musket, which indeed was the only effectual mode of seriously injuring them. The purser fortunately had his gun loaded, and the whole now being nearly exhausted with chopping and striking at their assailants, he

snatched it up, and thrusting the muzzle down the throat of the leader fired into his bowels.

"The wound proved mortal, and the animal fell back amongst his companions, who immediately desisted from the attack, assembled round him, and in a moment quitted the boat, swimming away as hard as they could with their leader, whom they actually bore up with their tusks, and assiduously preserved from sinking. Whether this singular and compassionate conduct which in all probability was done to prevent suffocation, arose from the sagacity of the animals, it is difficult to say, but there is every probability of it, and the fact must form an interesting trait in the history of the habits of the species."

"In the year 1608," says Captain Beechey, "one of these animals was brought to England alive, and exhibited at the Court, where the King and many honourable personages beheld it with admiration, for the strangeness of the same, the like whereof had never before been seen alive in England.*"

We think we may safely add that it has never since been seen alive in England, and are somewhat surprised that the Zoological Society do not commission one of the whale ship's to endeavour to obtain one. This might not be impracticable, "as the beast in shape is very strange, so is it of strange docility and apt to be taught, as by good experience we often proved;" says Purchas. Dead or alive it would be an object of much interest to the public, who have no opportunity of seeing the walrus, at any other place in England (that we are aware of) than at Newcastle, where to the credit of the inhabitants, they have obtained a fine specimen which is well stuffed, and placed in their Museum. There are one or two bad specimens of the head of the walrus in the British Museum. They ought, we think, to procure a perfect specimen of what may truly be termed one of the most extraordinary animals in the Creation.

To convey to our readers a fair notion of Captain Beechey's power of description, we give the following extract, of a summer day in Magdalena Bay, which is to us a charming picture:—

"In cloudy or misty weather, when the hills are clothed with newly fallen snow, nothing can be more dreary than the appearance of the shores of Spitzbergen; whereas, on the contrary, it is scarcely possible to conceive a more brilliant and lively effect than that which occurs on a fine day when the sun shines forth, and blends its rays with that peculiarly soft bright atmosphere which overhangs a country deeply bedded in snow; and with a pure sky, whose azure hue is so intense as to find no parallel in nature. On such an occasion, the winds near the land at least are very light, or entirely hushed, and the shores teem with living objects. All nature seems to acknowledge the glorious sunshine, and the animated part of creation to set no bounds to its delight.

"Such a day was the 4th of June, and we felt most sensibly the change from the gloomy atmosphere of the open sea, to the cheerful glow that overhung the hills and placid surface of Magdalena Bay.

"Although surrounded by beds of snow and glaciers, with the thermometer scarcely above the freezing point, there was no sensation of cold. The various amphibious animals, and myriads of birds which had resorted to the place, seemed to enjoy, in the highest degree, the transition thus occasioned by a few bright hours of sunshine. From an early hour in the morning until the period of rest returned, the shores around us reverberated with the merry cry of the little auk, willocks, divers, cormorants, gulls, and other aquatic birds; and wherever we went groups of walruses basking in the sun mingled their playful roar with the husky bark of the seal.

"There was certainly no harmony in this strange din; but it was, at the least, gratifying to know that it arose from a demonstration of happy feelings. It was a pleasure of the same character as that which must have been experienced by every traveller who, on some fine bright evening in a tropical climate, has

* Purchas.

listened to the merry buzz of thousands of winged insects which immediately succeeds the setting of the sun. And here we cannot fail to notice the manner in which the great Author of nature has varied His dispensations. In the burning region of the torrid zone, the descent of the sun calls into action myriads of little beings which could not exist under the fierce glare of his meridian ray; whereas here, on the contrary, it is the signal for universal repose.

"This period of the day had no sooner arrived in Magdalena Bay, than there was a stillness which bordered on the sublime—a stillness which was interrupted only by the bursting of an iceberg, or the report of some fragment of rock loosened from its hold. These sounds, indeed, which came booming over the placid surface of the bay, could hardly be considered interruptions to the general silence, for, speedily dying away in the distance, they left behind a stillness even more profound than before.

"In the day-time the presence of our expedition was not disregarded. The birds shunned us in their flight, and every noise which was occasionally made, sounding strange to the place, sent to a greater distance the sea-gulls that were fishing among the rocks, and kept on the alert whole herds of animals, many of which would otherwise have been lost in sleep; causing them to raise their heads when any thing fell upon our deck, and to cast a searching look over the bay, as if to inquire whence so unusual a disturbance proceeded. These little alarms, which would have passed unheeded in situations frequented by man, proved, more than any other incident, how great a stranger he was in these regions; a feeling which, I must confess carried with it an agreeable sensation, arising, no doubt from the conviction that we were treading a ground which had been but rarely visited before."

Captain Beechey has given an interesting and instructive account of the formation and movements of the vast glaciers and icebergs, which abound in these regions, and of the tremendous avalanches which are constantly occurring.

"In consequence of the immense pieces of ice," he says, "which occasionally break off these glaciers, it is very dangerous for a boat to approach them. On two occasions we witnessed avalanches on the most magnificent scale. The first was occasioned by the discharge of a musket at about half a mile distance from the glacier. Immediately after the report of the gun a noise resembling thunder was heard in the direction of the iceberg, and in a few seconds more an immense piece broke away and fell headlong into the sea. The crew of the launch, supposing themselves beyond the reach of its influence quietly looked upon the scene, when, presently, a sea rose and rolled towards the shore with such rapidity that the crew had not time to take any precautions, and the boat was in consequence washed upon the beach, and completely filled by the succeeding wave. As soon as their astonishment had subsided they examined the boat and found her so badly stove that it became necessary to repair her in order to return to the ship. They had also the curiosity to measure the distance the boat had been carried by the wave and found it ninety-six feet.

"On another occasion we were viewing the same glacier and had approached tolerably near when a similar avalanche occurred, but, fortunately we were not near the shore, and, by attending to the direction of the boat's head, we rode over the wave it occasioned without any accident.

"This occurred on a remarkably fine day, when the quietness of the bay was first interrupted by the noise of the falling body. Lieutenant Franklin and myself had approached one of these stupendous walls of ice and were endeavouring to search into the innermost recess of a deep cavern that was near the foot of the glacier, when we heard a report as if of a cannon, and, turning to the quarter whence it proceeded we perceived an immense piece of the front of the berg sliding down from a height of two hundred feet at least into the sea, and dispersing the water in every direction, accompanied by a loud grinding noise, and followed by a quantity of water, which being previously lodged in the fissures now made its escape in numberless small cataracts over the front of the glacier.

"We kept the boat's head in the direction of the sea, and thus escaped the disaster which had befallen the other boat; for the disturbance occasioned by the plunge of this enormous fragment caused a succession of rollers which swept over the surface of the bay, making its shores resound as it travelled along it, and at a distance of four miles was so considerable that it became necessary to aright the *Dorothea*, which was then careening by immediately releasing the tackles which confined her.*

"The piece that had been disengaged at first wholly disappeared under water, and nothing was seen but a violent boiling of the sea, and a shooting up of clouds of spray, like that which occurs at the foot of a great cataract. After a short time it re-appeared, raising its head full a hundred feet above the surface, with water pouring down from all parts of it; and then labouring, as if doubtful which way it should fall, it rolled over, and, after rocking about some minutes, at length became settled.

"We now approached it, and found it nearly a quarter of a mile in circumference, and sixty feet out of the water. Knowing its specific gravity, and making a fair allowance for its inequalities, we computed its weight at 421,660 tons. A stream of salt water was still pouring down its sides, and there was a continual cracking noise, as loud as that of a cart-whip, occasioned, I suppose, by the escape of fixed air.

"Some of the icebergs on the western coast of Spitzbergen are of enormous dimensions. Mr. Scoresby has described one which is situated a little to the northward of Horn Sound, as being eleven miles in length, and presenting a front to the sea of four hundred and two feet, perpendicular height by his own measurement; and states that it extends back to the summits of the mountains to about sixteen hundred feet in height."

We had hoped to have been able to have given a long extract from Capt. Beechey's concluding remarks on any future attempts; but want of space must compel us to limit our notice to the following passage in respect to the screw-propeller, in the whole of which we fully and cordially agree.

"As the propeller is only intended to be used as an auxiliary power, a small high-pressure engine would be all that would be required, and consequently it would take up but little of the steerage of the vessel.

"In short, it seems as if this invention had appeared about the time to stimulate us to further exertion, and the auspicious return of Capt. James Ross from the Antarctic Seas, with officers and seamen already accustomed to the ice, and with two vessels already strengthened, to which the propellers could be applied at a moderate expense, appears to mark the present as a period at which Arctic research might be most advantageously resumed."

That it may so prove must be the earnest wish of every Englishman who feels a pride in seeing the names of his countrymen added (as Byron says)

———"To the glorious roll
Of those who seek the storm-surrounded Pole."

NEW CHARTS.

(Published by the Admiralty, and sold by R. Bate, Poultry.)

CAERNARVON BAR, on the South entrance of the Menai Strait:—By Commander W. L. Sheringham, R.N.

A clear plan of the entrance, extending from Park Point to Dinas Dinlle with the Menai, up to Caernarvon, and with which any vessel may enter without a pilot. Scale, 4 inches to the mile.

* From Captain Buchan's letter.

RACCOON CUT, Bahamas :—*By Commander R. Owen, 1834.*

A perfectly safe channel, to the south of Racoon cay, for entering on the Bahama Bank, for a vessel not drawing more than 12 feet. The plan includes also Maycock cay. Scale, 4 inches to the mile

RAGGED ISLANDS ANCHORAGE :—*By Commander R. Owen, 1834.*

Off the south-east end of the island. Scale 3 inches to the mile.

THE GULF OF CATTARO :—*By Captain W. H. Smyth, R.N., 1818.*

This belongs to that extensive series of surveys performed in the Mediterranean, by Captain Smyth, R.N., of which we took occasion to speak in high terms in a former volume. The scale is about an inch to a mile, and the plan includes the port of Buda, to the southward of the entrance. The following important plans have also just been published, resulting from the labours of the same talented officer.

1. *Porto Fino, Sestri a Levante.*
2. *Gallinera Islet, Finale, Port Maurizio.*
3. *Savona, Vado, Bersezzi and Spotorno, Noli.*
4. *Salou Road, Port Fingal.*
5. *Genoa.*
6. *Grao de Valencia, Cape Cullera anchorage, Port Denis.*

The last (No. 6), from Spanish surveys, and all exceedingly neat and highly useful plans to vessels on the coast.

RAGGED ISLAND HARBOUR :—*Surveyed by Commander R. Owen, R.N., 1834.*

A very neat little plan, on the scale of about 7 inches to the mile.

DOUGLAS ROAD, or the New Anchorage East of New Providence.

This extends from Hanover Sound to Douglas Passage, with the road on the south side of Rose Island.

BIOGRAPHICAL MEMOIR.

ADMIRAL SIR ROBERT BARLOW, K.C.B., (see obituary), was the eldest son of the late Mr. William Barlow, of Bath, was born in 1757, and was consequently in the 86th year of his age. He entered the navy at an early age, and, married, in 1785, Miss Garrett, second daughter of Mr. William Garrett, of Worthing, Hants. Sir Robert was lieutenant of the *Courageux* at the relief of Gibraltar in 1782, and ably distinguished himself on the 18th of September, in that year, when the Spaniards were defeated in their grand attack on that fortress. In 1794 he commanded the *Pegasus*, which was repeating frigate at Lord Howe's glorious victory over the French fleet on the 1st of June. He was subsequently appointed to the command of the *Phœbe* (36), in which, after a severe action, he captured the French frigate *Nereide*, in 1797; and in the same ship, in 1801, he succeeded, after a most determined and gallant resistance, in capturing *L'Africaine*, 44, having on board, beyond her crew, 400 troops, under the command of General Desfourneaux, which were destined to join the French army in Egypt. It was one of the sharpest contests recorded in our naval history, as both vessels were within pistol shot, the action lasting two hours. In consideration of the bravery and gallantry of Sir Robert (then Captain) Barlow, he received the honour of knighthood. In 1806 he was appointed Deputy Controller of the Navy, and in 1808, Commissioner of Chatham Dockyard. In 1823 he resigned with the rank of retired Rear Admiral, but in 1840 was recalled to active duty, and made Admiral of the White. On the 20th of May, 1820, he was appointed a Knight Commander of the Most Honorable Order of the Bath. His commission was dated as annexed—Lieutenant, November 6th, 1778; Commander, November 22nd, 1780; Captain, May 24th, 1793; Rear Admiral, January 24th, 1823; Admiral of the White 1840; and Admiral of the Red (by Brevet), November 23rd, 1841.

TABLE LXXI.

For reducing Amsterdam Ells to English yards, and English yards to Amsterdam Ells.

1 Amsterdam Ell = 0.7549348982 English yards
 1 English yard = 1.4570792562 Amsterdam ells.

Amstrdm ells or Eng. yds.	English yards and Dec. parts.	Amstrdm ells and Dec. parts.	Amstrdm ells or Eng. yds.	English yards and Dec. parts.	Amstrdm ells and Dec. parts.	Amstrdm ells or Eng. yds.	English yards and Dec. parts.	Amstrdm ells and Dec. parts.
1	0.755	1.325	40	30.197	52.985	79	59.640	104.645
2	1.510	2.649	41	30.952	54.309	80	60.395	105.969
3	2.265	3.974	42	31.707	55.634	81	61.150	107.294
4	3.020	5.298	43	32.462	56.959	82	61.905	108.619
5	3.775	6.623	44	33.217	58.283	83	62.660	109.943
6	4.530	7.948	45	33.972	59.608	84	63.415	111.268
7	5.285	9.272	46	34.727	60.932	85	64.169	112.592
8	6.039	10.597	47	35.482	62.257	86	64.924	113.917
9	6.794	11.922	48	36.237	63.582	87	65.679	115.242
10	7.549	13.246	49	36.992	64.906	88	66.434	116.566
11	8.304	14.571	50	37.747	66.231	89	67.189	117.891
12	9.059	15.895	51	38.502	67.555	90	67.944	119.216
13	9.814	17.220	52	39.257	68.880	91	68.699	120.540
14	10.569	18.545	53	40.012	70.205	92	69.454	121.865
15	11.324	19.869	54	40.766	71.529	93	70.209	123.189
16	12.079	21.194	55	41.521	72.854	94	70.964	124.514
17	12.834	22.518	56	42.276	74.179	95	71.719	125.839
18	13.589	23.843	57	43.031	75.503	96	72.474	127.163
19	14.344	25.168	58	43.786	76.828	97	73.229	128.488
20	15.099	26.492	59	44.541	78.152	98	73.984	129.812
21	15.854	27.817	60	45.296	79.477	99	74.739	131.137
22	16.609	29.142	61	46.051	80.801	100	75.493	132.462
23	17.364	30.466	62	46.806	82.126	150	113.240	198.693
24	18.118	31.791	63	47.561	83.451	200	150.987	264.924
25	18.873	33.115	64	48.316	84.776	250	188.734	331.154
26	19.628	34.440	65	49.071	86.100	300	226.480	397.385
27	20.383	35.765	66	49.826	87.425	350	264.227	463.616
28	21.138	37.089	67	50.581	88.749	400	301.974	529.847
29	21.893	38.414	68	51.336	90.074	450	339.721	596.078
30	22.648	39.739	69	52.091	91.399	500	377.467	662.309
31	23.403	41.063	70	52.845	92.723	550	415.214	728.540
32	24.158	42.388	71	53.600	94.048	600	452.961	794.771
33	24.913	43.712	72	54.355	95.372	650	490.708	861.001
34	25.668	45.037	73	55.110	96.697	700	528.454	927.232
35	26.423	46.362	74	55.865	98.022	750	566.201	993.463
36	27.178	47.686	75	56.620	99.346	800	603.948	1059.694
37	27.933	49.011	76	47.375	100.671	850	641.695	1125.925
38	28.688	50.335	77	58.130	101.996	900	679.441	1192.156
39	29.442	51.660	78	58.885	103.320	1000	754.935	1324.618

THE NAUTICAL MAGAZINE.—The following letters on the practice of Naval Officers in Commission addressing communications to this journal, will be read with interest by our friends and constituents of the blue cloth.

Admiralty, 13th June, 1843.

Sir—I have received the enclosed useful and highly creditable communication* from an officer of Her Majesty's ship *Belvidera*, on the Mediterranean station, for publication in the NAUTICAL MAGAZINE; a work which is conducted by me with the sanction of the Lords Commissioners of the Admiralty.

But having been told by an officer of rank that, it is contrary to the etiquette of the service to encourage communications of any description, for such a purpose, from officers of Her Majesty's ships in Commission; I request that you will lay the above paper before their Lordships, in order to ascertain whether similar communications, on subjects unconnected with the discipline and operations of the ship, for insertion in the NAUTICAL MAGAZINE, meet with the disapproval of their Lordships or not.

I have the honor to be, &c.,

A. B. BECHER, Commander R.N.

To Capt. Beaufort, R.N.

Admiralty, 16th June, 1843.

Sir.—In order to give you an answer from the highest authority, I submitted your letter of the 4th inst. to the Lords Commissioners of the Admiralty, and their Lordships command me to inform you, that as long as officers in commission keep within the limits expressed in your letter, there can be no impropriety in their sending communications on professional subjects to that very useful work, your NAUTICAL MAGAZINE.

I am, &c.

F. BEAUFORT, Hydrographer.

To Commander Becher, R.N.

* This will appear in a future number.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

PROMOTIONS.

COMMANDER—G. E. W. Hamond..

LIEUTENANTS—H. King, J. B. Cator, P. A. Halkett, John Irving, Thomas J. R. Barrow, Robert G. Campbell, Charles W. Bonham.

MASTER—F. H. Niblett.

command *Aron*—G. Raymond (1815) to command *Snipe*—H. St. J. Georges (1833) to *Racer*—R. H. Dalton (1843) to *Conway*—W. H. Symons (1841) and T. B. Christopher (1841) to *Tyne*—F. R. Coghlin (1814) to *Astrea*—H. P. Dicken (1815) to *Linnet racket*.—A. J. Burton (1841) to *Excellent*—John J. Kennedy (acting) to *Conway*.

MASTERS—H. G. Raynes to *Conway*—E. P. Cole to *Fisgard*—G. O. Dowers to *Inconstant*—T. R. Russell to *Cyclops*—G. R. Franklin to *Espoir*—W. H. Thompson to *Impregnable*—J. Chambers to *Modeste*.—J. T. Davies to *Virago*.

MATES—W. Wilbraham to *Illustrious* C. G. Glinn to *Cyclops*—W. B. Willis to *Malabar*—Hon. P. F. Pelleu to *Conway*—C. W. Bonham to *Dolphin*—C. Atkins and J. O. Johnson to *Inconstant*—Leighton P. Pigot to *St. Vincent*—G. Bellis to *Camperdown*.

SECOND MASTERS—H. B. Price to *Dee*—J. Imrie to *Seaflower*—J. Dillon to *Dolphin*—J. Thomas to *Raven*—J. Welch to *Hermes*—J. Matthews to *Snipe*—J. Pyper to *St. Vincent*.

SURGEONS—J. O. McWilliam, M.D., to be Surgeon-Superintendent of the *Forfarshire* convict ship—J. Taylor to *Conway*—F. W. Le Grand to *Cyclops*—J. H. Carruthers to *Virago*—B. Verling to *Inconstant*—J. Watson to *Imaun*—J. Cornthwaite to *Espoir*—

ASSISTANT-SURGEONS—E. Groves to *Inconstant*—T. Somerville to *Conway*—T. Domville to *Blossom*—J. F. Henry, M.D., to *Dolphin*—J. Henderson, M.D., and C. Coffey to *Malabar*—D. Russell to

APPOINTMENTS.

CAPTAINS—H. T. Austin (1838) to *Cyclops*—C. C. Frankland to be Secretary to Rear-Admiral Bowles.

COMMANDERS—G. G. Otway (1841) to *Virago*—A. Morell (1823) to *Espoir*—T. Baillie (1841) to *Modeste*.

LIEUTENANTS—E. P. B. Von Donop (1838) and H. T. Ryves (1841) to *Conway*—H. Hannant (1842) to *Racer*—G. J. Paterson (1841), E. W. Lang (1842), C. Dyke, and A. Grant to *Fisgard*—R. Otway (1828) to *Castor*—G. Popplewell (1842) and C. J. Hoffmeister (1841) to *Excellent*—W. S. Cooper (1834), G. Blane (1838), W. Rushbrooke (1841), and A. C. Gordon (1842) to *Inconstant*—G. S. Bourne (1812) and J. Nicholas (1815) to *San Josef*—R. Jesse (1841) to *Caldonia*—W. O. B. Hoare (1828) to command *Dolphin*—F. C. Aldham (1832) to *Bittern*—C. F. Schomberg (1838), J. A. Hodgskin, and W. A. Pearce to *Cyclops*—E. K. Barnard (1841) to *Virago*—A. Farquhar (1840) to *Malabar*—J. Secombe (1842) and W. K. O. Price (1840) to *Espoir*—W. Carr (1821) to command *Hermes*—D. R. B. Mapleton (1837) to

St. Vincent—R. Grigor to *Cyclops*—D. Booth, W. M'Kinley, and F. B. Pritchard to *Caledonia*—J. O. Goodridge to *Hermes*—George Ball to *Snipe*.

MIDSHIPMEN—J. Berkeley to *Spartan*—Bullock to *Tartarus*—King to *Stromboli*—M. F. O. Reilly to *Excellent*.—J. Gwynne to *St. Vincent*—Hon. J. Walpole to *Excellent*—J. C. Cholmeley, L. J. More, and F. W. Bishop to *Fisgard*.

VOLUNTEERS 1st Class—L. E. H. Somerset, Hon. L. G. Ellis, G. Eden, and C. T. Evelyn to *Inconstant*—A. Owen to *Tyne*—T. Smith, and M. R. Garland to *Conway*—R. B. Foster to *Fisgard*—C. Robson to *Racer*—J. J. Groves to *Siren*—C. A. B. Pooocks to *St. Vincent*—A. Morrell to *Espoir*—A. Owen to *Fisgard*.

PURSEERS—T. Dobbin and J. M. Hobbs to *Modeste*—W. Pinhorn to *Cyclops*—W. Bell additional to *Royal George* yacht for service in *Victoria and Albert*—C. L. Inch to *Espoir*.

CHAPLAINS—Rev. E. Cooper to *Caledonia*—Rev. R. Thompson to *Fisgard*—W. M. H. Elwyn to *Inconstant*.

NAVAL INSTRUCTOR—R. M. Inskip to *Fisgard*—The Rev. Henry Jones.

CLERKS—C. H. Elkins to *Espoir*—C. Saunders and J. Lewis to *Conway*—H. Cooper and W. Remphrey to *Inconstant*—F. G. Balgin to *Racer*—G. Andrews

to *Dolphin*—F. Bowman to *Rose*—G. Kent to *Fisgard*—E. B. Robins (in charge) to *Hermes*—G. H. Jewell to *St. Vincent*—J. Penberthy to *Victory*.

SECRETARY'S CLERK—C. Fegan to *Malabar*.

COAST GUARD.

Appointments—Lieut. H. A. Bates to Mannin Boy—Lieut. G. Morris to command *Skylark*—Lieut. W. Dawson to be Inspecting Chief officer at Keel, Westport—Lieut. G. S. Penfold to be Inspecting officer at Guidore—Lieut. J. Stewart, Lieut. D. Rymer, and Lieut. J. J. Keeling to Coast Guard—Lieut. J. N. Pritchard to Pitts Deep.

Removals—Mr. J. Peake to Cron Haven—Lieut. W. H. Lloyd to Lydd—Lieut. G. P. Trounself to Hurst Castle—Mr. J. Stirling to Torr Head—Mr. J. G. S. Moore to Torquay—Lieut. E. T. Morris to Treagh Point—Lieut. G. T. Smith to Clackton Wash—Mr. J. C. Jones to Carrickfergus—Mr. J. P. Blundell to be chief-mate of *Nimble*—Mr. J. Quedsted to be chief mate of *Sprightley*—Com. Gilbert to Malahide,—Com. R. S. Hay to Berwick—Lieut. J. M'Gladery to Rethmullen—Lieutenant J. Baker to Falmouth.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

CONWAY, 26, Commissioned at Portsmouth by Capt. R. Fair.

CURACOA, 24, Capt. Sir T. Paisley, 23rd May, left Plymouth for Pacific.

CYCLOPS, (st. v.) Commissioned at Woolwich, by Capt. Austin, c.b., Cork.

ESPOIR, 10, Commissioned at Plymouth 27th May, by Com. A. Morrell.

FAVORITE, 18, Com. Sullivan, 8th June, arr. at Portsmouth from Rio, 12th at Plymouth to pay off.

IMPREGNABLE, 110, Capt. T. Forrest, c.b., 20th May, arr. at Plymouth from Gibraltar.

MALABAR, 74, Capt. G. Sartorius, 26th May, arr. at Plymouth from Rio.

MINDEN, 18, Re-commissioned at Sheerness by Com. Baillie.

ORESTES, Com. Hon. T. S. Carnegie, 2nd June, arr. at Portsmouth from South America, 4th sailed for Ireland.

STROMBOLI, (st. v.) Com. Louis, 10th June, arr. at Plymouth.

VIRAGO, (st. v.) Commissioned at Portsmouth 27th May, by Com. G. Otway.

PORTSMOUTH.—*In Port*—*St. Vincent*, *Victory*, *Excellent*, *Royal George* yacht, *Inconstant*, *Conway*, *Dolphin*, *Seafower*, *Partridge*, *Nautilus*, *Cornwall*, *Fairlie*, *Echo* steamer.

PLYMOUTH.—*In Harbour*—*Caledonia*, *San Josef*, *Fisgard*, *Espoir*, *Snipe*, *Confiance* steamer, *Adventure* transport.

ABROAD.

ALFRED, 50, Com. J. W. Purvis, 22nd March, at Monte Video.

BEACON, (sur. v.) Com. T. Graves, 27th May, at Suda in Candia.

BELVIDERA, 38, Capt. Hon. G. Grey, 11th May, left Malta for Barcelona.

DAFNE, 20, Capt. J. J. Onslow, 22nd March, at Monte Video.

DEVASTATION, (st. v.) Com. Henry, 15th May, at Constantinople.

ELECTRA, 18, Com. Darley, 5th May, arr. at Bermuda from Jamaica.

EREBUS, Capt. J. Ross, 4th April, at False Bay, Cape Good Hope.

FANTOME, 16, Capt. Butterfield, 22nd March, at Monte Video.

FORMIDABLE, Capt. Sir Charles Sullivan, 27th May, at Gibraltar.

GEYSER, (st. v.) Com. Carpenter, 27th May, at Alexandria.

HECATE, (st. v.) Com. H. Ward, 15th May, at Barcelona.

HECLA, (st. v.) Lieut. Com. J. B. Cragg, 15th May, at Malta.

HOWE, 120, Capt. R. Smart, 15th May, left Malta, 1st June, at Gibraltar, on way to England.

INDUS, 84, Capt. Sir James Stirling, 27th May, at Malta.

MAGICIENNE, 24, Capt. Warren, 27th May, at Smyrna.

MAGPIE, (sur. v.) Lieut. Com. S. J. Brock, 15th May, at Suda in Candia.

MEDEA, (st. v.) Com. F. Warden, 27th May, at Barcelona.

MONARCH, 84, Capt. S. Chambers, 27th May, at Malta.

PARTRIDGE, 10, Lieut. Com. J. T. Nott, 22nd March, at Monte Video.

QUEEN, 110, Capt. G. F. Rich, 27th May, at Malta.

RAPID, 10, Lieut. Earle, 2nd April, at St. Helena.

SCOUT, Com. J. Larcom, 27th May, at Corfu.

SNAKE, 16, Com. Hon. W. Devereux, 15th May, at the Piræus of Athens.

TERROR, Com. F. Crozier, 4th April, at False Bay, Cape Good Hope.

VERNON, 50, Capt. W. Walpole, 27th May, at Beyrout.

VESUVIUS, Lieut. Com. Ommaney, 27th May, at Constantinople.

VIPER, 6, Lieut. J. Curtis, March 22nd, at Monte Video.

VOLCANO, (st. v.) Lieut. C. Smith, 23rd April, left Madeira, for River Gambia.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Saltash, May 10th, the lady of C. Meheux, Esq., R.N., of a daughter.

At Kingsgate, Thanet, April 30th, the lady of Lieut. E. F. Wells, R.N., of a son.

At Stoke, May 27th, the lady of Lieut. R. Watts, R.N., of a daughter.

June 8th, the lady of Captain Jay, Admiralty, of a son.

At Strabane, the lady of J. Moody, Esq., Surgeon, R.N., of a son.

Marriages.

At Gibraltar, the Rev. P. P. Smith, of H.M.S. Belvidera, to Mary, daughter of the late J. Hallett, Esq., R.N.

At St. James, Piccadilly, June 6th, Capt. Sir. W. H. Dillon, R.N., K.C.H., to Elizabeth, daughter of J. Pettigrew, Esq., of Saville row.

At Bedele, June 12th, the Rev. A. Hammond, to Harriet Charlotte, eldest daughter of Admiral Sir J. P. Beresford, Bart., K.C.B.

At St. Margarets, Westminster, Capt. Anson, R.N., to Sarah, daughter of the late R. Potter, Esq., of Manchester.

On the 29th ult, at St. George's Hanover-square, John Ward Nicholls, Esq., R.N., (late secretary to Admiral Sir Edward Codrington, G.C.B., at Portsmouth) to Ellen, daughter of the late Thomas Ball, Esq.

Deaths.

On the 11th June, at Canterbury,

Admiral Sir R. Barlow, K.C.B., aged 86 years.

At his seat Sussex, the Hon. M. J. Henniker, Rear Admiral of the White.

On the 18th June, in Abingdon-street, Westminster, aged 63, Rear Admiral Wm. Maude.

On board H.M.S. Impregnable, May 6th, Mr. D. Keys, son of Com. Keys, R.N.

At Bengal, April 6th, Mr. J. C. Aldridge, Midshipman of the Lord Hungerford, aged 16.

At Jersey, June 6th, the wife of Capt. G. Haye, R.N.

At Malta, May 6th, Lieut. Bennett, R.N., of H.M.S. Clio.

At Trinity, near Edinburgh, June 6th, Dr. R. S. Boyd, R.N.

At the Cape of Good Hope, March 28th, Dr. C. Alson, Surgeon of H.M.S. Endymion.

At Ditching, Sussex, Lieut. T. Cruse, R.N., aged 73.

Lately Lieut. William Brooking Doling, R.N.

In September last, on board H.M.S. Victor, (which unfortunate vessel was wrecked in the Gulf of Mexico, and all hands perished) Frederick Mark Williams surgeon, only son of Mr. M. Williams surgeon, of Soley Terrace, Pentonville.

On the 21st ult., at Bognor, Sussex, aged 59, Captain Sir Bentick C. Doyle, R.N.

In June, Mrs. Vidal, wife of Capt. A. T. E. Vidal surveying the Azores.

EDWARDS' PRESERVED POTATO.—We are glad to call our readers attention to this further testimony in favour of Messrs. Edwards' Preserved Potato.

Extract of letter from John Simpson, Esq., R.N., Asstt.-Surgeon H.M.S. "Blonde".

Gentlemen.—I have great pleasure in informing you, that during my services in China, I have witnessed the most beneficial results from the use of your Preserved Potato; and would earnestly recommend it as a most valuable article of diet in Ships going long Voyages, especially in those carrying Invalids.

May 30th, 1843.

(Signed)

JOHN SIMPSON, R.N.

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, 1843.

Month Day.	Week Day.	BAROMETER.		FAHRENHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
				9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	Quarter.				Streng.
		A.M.	P.M.							A.M.	P.M.	A.M.	P.M.
21	Su.	In. Dec	In. Dec	o	o	o	o	S	S	4	4	ber (1	bcp 3)
22	M.	29.66	29.66	56	63	48	64	S	SW	4	4	bcp (2)	bcp (3)
23	Tu.	29.70	29.70	56	58	44	62	S	SW	4	4	bc	otlp (3 4)
24	W.	29.73	29.73	57	61	47	63	SE	E	2	3	or 1) (2	bc
25	Th.	29.51	29.56	53	63	51	65	SE	S	2	2	bc	bcp 3)
26	F.	29.64	29.68	57	65	47	66	S	SW	3	3	bc	gor (3)
27	S.	29.72	29.68	56	57	47	61	SW	SW	4	5	bc	bcp (3)
28	Su.	29.58	29.50	57	59	48	62	SW	SW	4	4	op (2)	otlrh (3)
29	M.	29.52	29.60	55	53	44	63	SW	NE	3	3	bcp (2)	bcr (3)
30	Tu.	29.92	29.96	49	49	44	53	NE	E	2	2	or (2)	bcr (3)
31	W.	30.12	30.10	53	60	37	62	SE	SW	2	2	bc	or 4)
		29.90	29.88	60	66	47	67	SW	SW	3	4	o	bcr 4)
1	Th.	29.70	29.68	63	65	52	68	SW	SW	3	3	od (2)	bc
2	F.	29.36	29.35	58	65	50	66	SE	SW	2	6	od (2)	qber 4)
3	S.	29.45	29.51	60	66	50	68	SW	SW	5	5	bc	bc
4	Su.	29.66	29.70	61	65	46	66	S	S	2	4	bc	bc
5	M.	29.81	29.84	57	61	42	64	S	S	4	4	bc	bcp 3)
6	Tu.	29.80	29.84	54	57	42	58	NE	NW	2	3	o	op (3)
7	W.	29.94	29.88	53	59	44	61	W	SW	4	4	o	or 4)
8	Th.	29.45	29.43	55	61	48	63	SW	SW	6	6	qber (1)	qbc
9	F.	29.40	29.54	57	61	50	62	SW	SW	6	6	qbcp 2)	qbc
10	S.	29.78	29.88	57	56	48	62	W	NW	5	5	qphr 2)	op (3)
11	Su.	30.06	30.04	54	59	47	60	N	N	2	3	o	bcp 3)
12	M.	30.04	30.00	53	56	47	57	NE	NE	4	4	o	op (4)
13	Tu.	29.88	29.82	48	52	47	53	N	N	3	3	or (1) (2)	gor (3) (4)
14	W.	29.94	29.98	59	66	50	68	NE	E	1	1	o	op 3)
15	Th.	30.01	30.03	64	67	54	68	E	NE	2	4	ber (1	bc
16	F.	29.97	30.00	62	70	50	72	NE	NE	4	4	b	b
17	S.	30.01	30.04	56	73	47	74	NE	E	3	3	bc	b
18	Su.	29.97	29.91	56	70	50	72	NE	NE	2	3	o	bc
19	M.	29.85	29.89	55	62	49	63	N	N	4	4	o	o
20	Tu.	30.06	30.18	51	57	48	58	NE	NE	4	4	o	o

MAY—Mean height of the Barometer=29.871 inches; Mean temperature=52.7 degrees; depth of rain fallen=4.14 inches.—A very wet month.

Note.—On the 30th about sun-rise a hoar frost on the grass in Greenwich Park.

TO OUR FRIENDS AND CORRESPONDENTS.

The voyage of the **UNICORN** in our next. A pressure of other matter prevented its appearance in this number.

We have received **LIEUTENANT CHURCH's** useful proposals, and shall insert them in an early number.

Mr. "DOWSING DOCKING" will be attended to.

HUNT, Printer, Carlisle-street, Maida-hill.

VOYAGE OF SHIP UNICORN.

THE following journal of a voyage from Boston to Manila and back, contains some remarks important to seamen;—particularly in the intricate navigation among the islands of the Eastern Seas; which, although much frequented, are beset with dangers, of which little or nothing is known with certainty.

November 18th, 1841. Made sail from Boston for Manila; eleven a.m. pilot left us, Boston light bearing N.N.W. one mile and half distant, strong gales from north-west to west and snow squalls.

21st. A heavy south-east gale, ship lying to under close reef main-topsail, sharp squalls and a large sea; noon wind veered to W.S.W., strong breezes under double reefs: noon $37^{\circ} 49'$ north, long. $59^{\circ} 51'$ west. We have experienced in crossing the gulf stream sixty miles easterly, and twenty-two miles northerly current, or E.N.E. $\frac{1}{4}$ E. sixty-four miles.

22nd. A severe gale from north-west all day, with a tremendous sea scudding under close reef fore-topsail and reefed fore-sail; noon $35^{\circ} 49'$ north, $57^{\circ} 11'$ west, barometer 29.42.

27th. Light variable airs from E.N.E. to west, large fields of gulf-weed round us, sea literally covered with it; noon $31^{\circ} 12'$ north, long. $42^{\circ} 10'$ west; barometer 30.10, current east sixty miles.

December 7th. Light baffling airs from north-east to north-west; noon $22^{\circ} 3'$ north, long. $28^{\circ} 35'$ west; current south-west thirty-one miles.

8th. Light N.N.E. winds, current S.W.b.W. twenty-nine miles: lat. $20^{\circ} 6'$ north, long. $28^{\circ} 18'$ west.

9th. Strong E.S.E. breezes, clear weather, current west twenty-one miles, $16^{\circ} 40'$ north, long. $27^{\circ} 57'$ west.

10th. Do. current east thirty-five miles: lat. $14^{\circ} 24'$ north, long. $26^{\circ} 7'$ west.

11th and 12th. Stiff E.N.E. trades and hazy, a current on 11th S.S.E. sixteen miles; noon 12th, $9^{\circ} 28'$ north, long. 23° west, current south-east thirty-nine miles; variation observed 14° westerly.

14th. Noon lost the north-east trades in lat. $5^{\circ} 15'$ north, long. $23^{\circ} 40'$ west, no current.

18th. Took south-east trades, strong in $3^{\circ} 4'$ north, long. $23^{\circ} 58'$ west.

19th. Squally rainy weather, trades moderate: lat. noon $1^{\circ} 02'$ north, long. $26^{\circ} 26'$ west, current W.b.N. sixty-one miles.

20th. Light trades from S.S.E.: lat. noon $0^{\circ} 24'$ south, long. $27^{\circ} 3'$ west, current W. $\frac{1}{4}$ N. thirty-two miles.

22nd. Noon $4^{\circ} 5'$ south, long. $29^{\circ} 35'$ west, current west thirty-two miles; we find the current strong about the equator.

29th. Saw the island of Trinidad, bearing per compass S.E. $\frac{1}{4}$ S. thirty-five miles distant; noon lat. $22^{\circ} 19'$ south, long. $27^{\circ} 42'$ west.

January 11th. Stiff N.N.W. breezes, beautiful clear weather, crossed the meridian of Greenwich; noon $36^{\circ} 48'$ south, long. $0^{\circ} 19'$ east.

18th. Strong N.N.W. winds fine weather up with and passed east of the Cape of Good Hope; noon lat. $39^{\circ} 29'$ south, long. $20^{\circ} 28'$ east, current S.S.E. thirty-two miles; variation observed $25^{\circ} 3'$ west.

19th. Strong N.N.W., barometer very low, down to 29.40, prepared for a gale; noon lat. $39^{\circ} 47'$ south, long. $24^{\circ} 26'$ east, current sixty miles east.

21st. Wind changed suddenly from N.b.W. to south-west; barometer soon rose to 29.80, after being down to 29.40, for forty-eight hours with strong northerly winds, but the cold southerly air from the frozen regions soon rose it again; noon $39^{\circ} 11'$ south, long. $30^{\circ} 37'$ east, current E.N.E. twenty-five miles.

24th. Stiff south-east breezes and foggy, many snow petrel and albatrosses

round; noon $38^{\circ} 49'$ south, long. $39^{\circ} 10'$ east, current E.N.E. forty-five miles.

25th. Strong easterly winds: lat. $40^{\circ} 22'$ south, long. $42^{\circ} 17'$ east, current S.S.W. thirty-two miles.

26th. Do. " " 40 29 " 46 50 " " south-east forty-one miles.

27th. Strong N.N.E. winds and foggy: lat. $39^{\circ} 27'$ south, long. $51^{\circ} 9'$ east, current east sixty-two miles.

February 3rd. Strong W.S.W. gales, 6h. 30m. A.M. saw the island of St. Paul's bearing N.E.b.E. thirty-miles distant, 10h. island bore true north; long. by chronometer $77^{\circ} 27'$ east; St. Paul's is laid down by Horsburgh in $77^{\circ} 52'$, and by Admiral Bligh in $77^{\circ} 17'$ east. I think it is laid down too far east by twenty-five miles, and as I have made it in three different and successive voyages by good chronometers about $77^{\circ} 27'$, I must think it is not far from the true longitude.

4th. Strong westerly winds and foggy, a long swell from south-west; noon $38^{\circ} 26'$ south, long. $82^{\circ} 9'$ east, current E.S.E. thirty-six miles.

5th. winds W.N.W.: lat. $37^{\circ} 58'$ south, long. $85^{\circ} 16'$ east, current east thirty-eight miles; variation observed $16^{\circ} 58'$ west.

7th. W.S.W. wind: lat. $36^{\circ} 5'$ south, long $93^{\circ} 13'$ east, current E.N.E. forty miles.

8th. Do. lat. 35 4 " long. 96 9 " do. E.N.E. $\frac{1}{2}$ E. forty-eight miles.

10th. Gentle N.N.E. wind 33 29 " " 100 56 " do. E. 47 do.

11th Do. 32 56 " " 103 21 " do. E. 35 do.

14th. Took the trades in a hard squall from south-west; noon $30^{\circ} 31'$ south, long. $104^{\circ} 3'$ east.

22nd. Lost the trades this day, and wind veered to N.N.W. and N.N.E., the trade hung steady at south and S.S.W. all the way up by the west coast of New Holland, with clear weather; and after taken the north-west Monsoon wind was baffling, but mostly from the N.N.W. with an abundance of rain, and at times severe squalls; noon $14^{\circ} 18'$ south, long. $114^{\circ} 3'$ east.

March 2nd. Light easterly airs and a current to the westward, but weak. 6 A.M. saw Sandalwood island bearing from north to N.E. $\frac{1}{2}$ E.: lat. $10^{\circ} 40'$ south, $119^{\circ} 56'$ east; east end of the island makes off in a long low point, having breakers at a considerable distance off.

13th. We have been eleven days getting from Sandalwood island to the island of Pantar, having had light northerly and easterly, and an abundance of calm and westerly currents; 5 P.M. Pantar Peak N.N.W.; Ombay from N. $\frac{1}{2}$ E. to N.E.; noon, east end Ombay bore N.E. $\frac{1}{2}$ E.: lat. $8^{\circ} 37'$ south, long. $124^{\circ} 54'$ east.

14th. Variable airs from west to north-east, and calms; rapid tide-rips; noon, in the middle of the Ombay Passage; Ombay and Pulo Cambeling bearing E. and W. $\frac{1}{2}$ S.: lat. $8^{\circ} 9'$ south, long. $125^{\circ} 28'$ east.

15th. Strong north-west winds, and severe squalls; 5 P.M. saw Wetter bearing E. $\frac{1}{2}$ S.: noon, lat. $6^{\circ} 1'$ south, long. $126^{\circ} 28'$ east; current N.E.b.E., fifty miles. We are in the Banda Sea, and in crossing it had N.N.W. winds, severe squalls, and a large short head sea, with a current daily of twenty to forty miles to the eastward.

21st. At noon, Dome on the island of Booro bore E. $\frac{1}{2}$ N.

22nd. Gentle north-west wind and clear; current twenty-four miles south-west: sea full of sperm whales; island of Xulla Bessey in sight, bearing N.N.E., appearing high, and of an even appearance; all the land in the Pitt's Passage, on both sides, is high: lat. $2^{\circ} 55'$ south, long. $125^{\circ} 26'$ east.

27th. Passed into the Molucca from the Pitt's Passage; noon, ten miles south of the equator; Latta Latta bearing E. $\frac{1}{2}$ S., Tawally E.b.S. $\frac{1}{2}$ S., thirty miles; winds variable from south-west to north-east; lat. $0^{\circ} 10'$ south, long $126^{\circ} 20'$ east.

29th. Light N.N.W. winds and clear weather, rapid tide-rips, a great deal of drift logs, and a floating isle alongside; Tyfore isle just in sight from aloft, bearing N.b.W. $\frac{1}{2}$ W., thirty-four miles; thirty-two miles off it appears quite small, and like low land, the trees heaving up from the horizon; it is highest in the centre, and the hill will be seen from the deck only, while the whole island will be seen from the top-sail yard. Tyfore island bearing N.N.W., twenty-four miles; Meyon island will be just seen half way up the mizen rigging thirty-eight miles off, appearing like low land: lat. noon, $0^{\circ} 41'$ north, long. $126^{\circ} 15'$ east.

31st. Passed from the Molucca Passage into Sooloo Sea; passed between the islands of Bejarem and Banca; the channel is ten or twelve miles wide, and clear of danger; had a strong rush of current, setting west, through the islands.

April 2nd. Baffling winds from north to south-west, and squally; noon. island of Siao bore E.b.N. $\frac{1}{2}$ N., forty-eight miles, and Roan E. $\frac{1}{2}$ S., forty-six miles; both islands are high, and can be seen in clear weather twenty or twenty-three leagues; we are fifty miles off and can see them, with a cloudy horizon: lat. $2^{\circ} 29'$ north, long. $124^{\circ} 45'$ east.

3rd. Noon, Siao Peak in sight, bearing E. $\frac{1}{2}$ S., fifty six miles: lat. $2^{\circ} 59'$ north, long. $124^{\circ} 35'$ east; current north-east, thirty-four miles.

5th. Calm, and very warm all day; noon, thermometer $10^{\circ} 8'$; current W.S.W., forty-seven miles; lost fifty miles ground to-day: lat. 4° north, long. $122^{\circ} 47'$ east.

6th. Calm part of the day, and light airs from south to west; noon thermometer 108° , intensely hot; current W. $\frac{1}{2}$ S., fifty-five miles: lat. $4^{\circ} 9'$ north, long. $122^{\circ} 33'$ east.

7th. Do.; current W.b.S., fifty-six miles; we have been set in by the current four days W.b.S., 177 miles to leeward; the currents are very strong to W.S.W., between 3° and 4° north: lat. $4^{\circ} 31'$ north, long. $122^{\circ} 31'$ east.

13th. Light westerly airs and calms; we have been eight days getting sixty miles ahead; calms and rapid currents against us; noon, the two Peaks of Basilan bore N.W., and N.W.b.W., forty-five miles distant: lat. $6^{\circ} 11'$ north, long. $123^{\circ} 45'$ east.

15th. Beating into Basilan Straits; wind S.S.W. to S.W.; 5 P.M. nearly calm; came to with the stream in thirty-six fathoms gravel and shells; veered out ninety fathoms cable; the west end of western Sibago S.b.E; eastern Sibago shut in with low lands of western one, S.S.E. $\frac{1}{2}$ E.; Basilan Peak S.b.W., two miles off shore. Both Sibagos have low land projecting from their hills. Off Manalipa, and also off the Cocos islands are two small round islets, not noticed in the charts; while at anchor tide ran E.N.E., two hours, three knots, then E.S.E. the same rate; 5 A.M. wayed with the tide to W.N.W., and at noon came to anchor at Samboangan,* in 17 fathoms, Mud Fort bearing north. This is a good place for ships bound up the Eastern Passage to recruit, good water. Wood, poultry, fruit, yams, potatoes, bullocks, &c., are to be procured here, and at a fair rate; this place is protected by a fort, regularly built, and well mounted with ordnance; there are also seven gun-boats stationed here, to prevent the depredations of the Moors, and to assist vessels in distress, bound through the straits, particularly if they get on shore. There is a Governor and Commandant, and a very few Europeans here.

16th. Having got a supply of water, got underway, and worked to the westward with the tide; noon, Sangboys S.W. $\frac{1}{2}$ S.: lat. $7^{\circ} 8'$ north, long. $121^{\circ} 50'$ east.

22nd. Off the island of Panay, progressing slowly; winds from north and north-east, and by keeping the land well on board, I got a light breeze off the land at night. Noon, Point bore north: lat. $9^{\circ} 52'$ north, long. $122^{\circ} 4'$ east.

* See p. 219, of our April number for further information on this place; also vol. for 1842.—E.D.

25th. Passing the islands of Ambolon and Ylinn, half to one mile off, saw three rocks about as large as a pinnacle, close in to the west end of Ylinn the shore was bold with sandy beaches in some places; saw a large village on the north end of Ylinn. Horsburgh says these islands should not be approached under fifteen miles, until their bodies bear E.S.E. $\frac{1}{2}$ E., on account of a reef said to extend from them to the westward; but I took the precaution to sound all along, and kept a good look out, but got no ground at forty fathoms, neither was any danger visible; but I think there may be coral patches farther west, detached from the islands, as Captain Wells, of ship *Saracen*, who arrived at Manila day before me, passed over a coral shoal, and plainly saw the rocks under the ship's quarter, both sides. The Captain stated that he did not sound, as the ship was going quick through the water, and soon passed over it; it was of small extent, and when on it island of Ylinn bore E.b.S., and the Peak of Busvagon W.b.S., and Apo shoal N. $\frac{3}{4}$ E.: lat. $12^{\circ} 16' N.$, long. $120^{\circ} 39' E.$

27th, Off the island Amul; 8 A.M., felt a violent shock of an earthquake, lasted about two minutes; much thunder, and lightning, and rain, after it: noon, Goat Island E. $\frac{1}{2}$ S., ten miles: lat. $13^{\circ} 51'$ north, long. $119^{\circ} 56'$ east.

28th. Passed Corregidor, working up Manila Bay during the night, and at noon anchored in the roads, (162 days passage,) in seven fathoms mud, Mole Head bearing north-east, two miles. The Spanish government has placed a coppered floating buoy on the St. Nicholas shoal, in Manila Bay, having a white flag on it, with the number of feet of water on the shoal, in the centre of the flag, in black figures $6\frac{1}{2}$ feet.*

On the 18th June, 1842, we sailed from Manila, with a light land breeze from east; sunrise passed the Corregidor, nearly calm and a strong tide running out of the bay to the westward; noon baffling airs all round the compass, with a long swell from W.S.W.: lat. $14^{\circ} 17' N.$, long. $120^{\circ} 33'$ east.

19th. Squally rainy weather, calm at intervals, a large swell from south-west, wind baffling from south to west; noon Goat island in sight bearing S.S.W. $\frac{1}{4}$ W., a long reef off the north end of this island breaking heavily: lat. $14^{\circ} 4' N.$, long. $120^{\circ} 09' E.$

20th. Still squally and rainy, variable airs from S.S.E. to W.S.W., at times raining torrents; noon Mount Calavite on Mindoro, bore S.E. $\frac{1}{2}$ E., very high land of a round form: lat. $14^{\circ} 5' N.$, long. $119^{\circ} 40' E.$

21st to 24th. Dark gloomy rainy weather, wind light and baffling from S.W. to W.b.S., hard squalls; noon Mount Calavite bore E.b.S.: lat. $13^{\circ} 25' N.$, long. $119^{\circ} 43'$. Similar weather, rain in torrents part of the time deal of thunder and lightning; noon Mount Calavite still in sight bearing N. $\frac{1}{2}$ W., a long swell from south-west: lat. $12^{\circ} 59' N.$, long. $120^{\circ} 27' E.$

25th. Pleasant breezes from N.E., and increasing, weather clearing up. 6 P.M. quite clear, a smooth sea. 9 A.M., saw the Panacatan reef on which the English ships *Frances Charlotte* and *Marquis of Camden* were wrecked in 1840, and until then considered as an unknown danger; but in reading over Horsburgh's directions, I find he speaks of the Semerara islands having a long sand projecting a great way out from them, with two islets on its centre covered with trees, and when passing this sand at three miles distance it bore from E.S.E. to N.N. W., and the eastern of the Buffalos E.b.S.—I think this must be the same reef he alludes to. I found the reef was seven miles in extent east and west, and four or five miles north and south, it has two small low isles on it partly covered with trees, and parts appear to be white sand. The westernmost island is the largest and highest, both of which are surrounded to a great distance with a

* As this does not yet appear in any chart, we shall be thankful to any of our readers who will send us marks for its position. In the meantime this notice will be useful to seamen.—Ed.

reef, projecting one mile and half north-west of the western island, having many black rocks above water. The water was of a light green on the reef. Saw five boats at anchor on the reef, one of which made sail and stood for the island of Panay. I think the island of Semerara is laid down too far east by thirteen miles. I make its long. by two good chronometers $121^{\circ} 22' E.$; this reef is much in the way of ships going up and down the Philippines, and it is necessary to keep nearer Quiniluban, and not to borrow on the eastern side of the passage; noon centre of the reef bore east: lat. by mer. alt. of the sun was $11^{\circ} 52' N.$, long. from $121^{\circ} 17'$ to $121^{\circ} 24' E.$, when the centre of the shoal bore north, island of Semerara bore N.b.E. $\frac{3}{4} E.$, island of Ylinn of the south-west end of Mindoro bore N.N.W. $\frac{1}{4} W.$

26th. Light airs from south-east to north-west, and fine weather first part; latter part heavy clouds in south-west; noon point PotoI the north end of Panay bore E.N.E., saw a long low isle highest at its east, and not laid down in Horsburgh's latest charts, but is laid down in Norie's chart and also the Spanish surveys. It bears from point PotoI south-east, fourteen miles distant, is in lat. $11^{\circ} 35' 30'' N.$, long. $121^{\circ} 40' 30''$ east of Greenwich; noon $12^{\circ} 16' N.$, long. $120^{\circ} 51' E.$

• 27th. Light southerly airs and rainy; noon calm: lat. $11^{\circ} 28' N.$, long. $121^{\circ} 29' E.$

28th. Calm and sultry first part; a drift island in sight; five p.m.; point PotoI bore N.E. $\frac{1}{4} N.$, one of the Cuyo islands S.W. $\frac{3}{4} S.$; 5h. 30m. saw the dry sand-bank 7 miles distant, formed of white sand, having only one cluster of trees on its north end; noon rainy, sun obscure.

29th and 30th. Squally rainy weather; noon 30th, point Nasog bore E.N.E.; Negres island just in sight from the deck bearing E.S.E.: lat. $10^{\circ} 20' N.$, long. $121^{\circ} 54' E.$, we have experienced no current as yet.

1st to 5th July. Squally and rainy, wind from south to west, blowing hard in squalls, at intervals calm, a short head sea.

5th to 8th. Similar weather, winds veering from S.S.E. to S.S.W., working to the southward along the west coast of Mindanao.

9th. Light E.S.E. winds and clear weather, entering Basilen straits, with a rapid tide to the eastward; 1 p.m. exchanged signals with the Spanish fort at Caldera. 1h. 15m. struck on a coral shoal not noticed in the charts, the north end of the westernmost Santa Cruz isles bearing E.b.S. $\frac{1}{4} S.$ seven miles distance fort of Caldera N. $\frac{1}{4} E.$; fort at Samboangan N.E.b.E. $\frac{1}{4} E.$; grounded forward in $2\frac{1}{2}$ fathoms; ship being afloat aft got out the boats, sounded round and found a ship's length off the bow to the west $3\frac{1}{2}$ fathoms, deepening to 6 fathoms; a cable's length off amidships had 4 fathoms; under the stern, $5\frac{1}{2}$ fathoms; a ship's length from the stern to south-west, 7 fathoms; and a cable's length in that direction, 10 fathoms: carried out stream anchor and cable, and have a heavy strain, continued heaving during the night, and at 3 a.m. she floated, made sail, and soon after it fell calm, and we drifted out of the straits to the west again. While on the reef the tide ran E.S.E. and W.N.W. six hours each way four knots: the reef extends to the west of these islands seven miles, and it was on the outer end of this reef on which we grounded. We received no injury whatever, and escaped with the loss of our stream anchor and cable.

It is a singular fact, that within ten days four ships should have struck at or about the same place; eight days before me two English vessels from Canton for London, one received no injury, the other struck with a S.W. wind and a considerable sea on, and got off very leaky, and was obliged to proceed to Sourabaya for repairs; the other was the whaling barque Marquis of Allsborough, of London, nine months out, no oil, she received no injury. It is necessary to approach these islands, particularly in the night with great caution, for the tides are very rapid, and in light winds and calms are liable to carry a ship on to the reef projecting far to the west of these isles, and as yet but little known. Horsburgh in his directions states, that to the west of these islands the strait is clear from side to side, but a reef projects to the south-westward of these isles.

10th and 11th. At anchor off Samboangan Fort N.b.E. half mile, ten fathoms sand, tide four knots E.S.E. and W.N.W., six hours each way.

12th. Wayed with a light W.S.W. wind and a tide to east, six p.m. clear of the sand in the Soolo or Celebes sea; noon east end Basilan south-west: lat. $6^{\circ} 38' N.$, long. $122^{\circ} 38' E.$

13th to 15th. Heavy squalls, hard rain and calms, winds west to south.

16th. Similar weather, winds S.S.W. and south-west, a confused sea, current east $60'$.

17th. Squally from S.S.W. and south-west, two p.m. a violent squall, lasted on, hour, in all sail but foresail; noon calm, current west sixteen miles: lat. $3^{\circ} 43' north$, long. $122^{\circ} 32' east$.

19th. Southerly winds and rainy: lat. $3^{\circ} 21' north$, long. $120^{\circ} 52' east$, current sixteen miles west.

20th. Squally wild looking weather: lat. $3^{\circ} 11' north$, long. $119^{\circ} 50' east$, current south-east $23'$.

21st. Strong S.S.W. winds and clear: noon $2^{\circ} 58' north$, long. $119^{\circ} 43' east$, current north $67^{\circ} east$, twenty-eight miles.

22nd. do. noon $2^{\circ} 41' N.$, long. $119^{\circ} 43' E.$, cur. N. 56° , E. 19 miles.

23rd. do. " 2 16 " 120 10 " 22 26 do.

24th. do. gale, saw Cape Donda on Celebes, prodigious high land bearing from south to south-east, and tacked westward a heavy head sea; noon lat. $2^{\circ} 2' north$, long. $120^{\circ} 00' east$, current north-east, twenty-two miles.

26th. do. gales and a head sea: lat. $2^{\circ} 5' north$, long. $120^{\circ} 10' east$, current north $17^{\circ} east$, thirty-four miles.

27th. do. gales under double reefs $2^{\circ} 9' north$; long. $119^{\circ} 41' east$, current north $22^{\circ} west$, thirty-one miles.

28th. do. gales, Cape Donda in sight bearing S.b.E. 58 miles distant.

29th. Strong south-west winds and clear; noon saw the Harings islands bearing W. $\frac{1}{2} N.$, twenty miles distance, they are two small isles, I make them in lat. $1^{\circ} 44' north$, long. $118^{\circ} 58' east$, they are placed on the charts thirteen miles too far south. Horsburgh say the Harings islands are but little known, said to lie north, a little easterly from point Kannecoongan, they bear from that point N.b.W. $\frac{1}{2} W.$, these islands are seldom seen by ships.

30th. Fresh S.S.W. winds, a vast quantity of drift wood; noon Cape Donda bearing S.S.E. $\frac{1}{2} E.$; point Kannecoongan S.W.b.S.: lat. $1^{\circ} 23' north$, long. $119^{\circ} 41' east$, current north seventeen miles.

31st. Light S.S.W. airs and clear; noon Cape Donda S.E. $\frac{1}{2} E.$; point Kannecoongan W. $\frac{1}{2} S.$, both very high land: lat. $1^{\circ} 31' north$, long. $119^{\circ} 39' east$, current north eighteen miles.

August 1st. Light southerly airs and calms, very sultry; noon Cape Donda E.S.E. forty-two miles; lat. $1^{\circ} 7' north$, long. $119^{\circ} 39' east$, current north $15^{\circ} east$, eighteen miles.

2nd to 6th. Hot and sultry, light airs from south and south-west; current fifteen to twenty miles daily to the north, Celebes in sight; noon 6th, lat $0^{\circ} 16' south$, long. $118^{\circ} 55' east$, find the current changed to south since crossing the equator.

7th, 8th, and 9th. Light airs from south to south-west and squally, Celebes in sight thirty miles distant.

10th. Calms, light south-west airs and sultry, Celebes in sight thirty miles; noon, lat. $2^{\circ} 14' south$, long. $118^{\circ} 35' east$, current eighteen miles south $45^{\circ} east$.

11th. Light winds from south-east to south-west, strong tide, ripples resembling breakers; noon Cape William bearing east: lat. by mer. alt. is $2^{\circ} 48' south$, long. $118^{\circ} 34' east$, Cape twenty-four miles distant, current south eighteen miles. Cape William is laid down in Horsburgh's charts in $2^{\circ} 34' south$, and Norie places it further north, it is 14 miles further south or $2^{\circ} 48'$.

12th. Calm all day, Celebes in sight: lat. $3^{\circ} 8' south$, long. $118^{\circ} 34'$, current 20 miles south.

13th. Took the trades strong from east, 11 A.M. sounded in thirty-five fathoms water, green mud; noon Laurels shoal bears south sixteen miles: lat. $4^{\circ} 16'$ south, long $117^{\circ} 15'$ east, just entered on the edge of soundings in the Java sea, fifty-seven days out, and have beat every mile of the way.

14th. Fine S.S.E. trades, all studding-sails set; 4 A.M. lay by for daylight, dawn saw little Pulo Leat isles, bearing W. $\frac{1}{2}$ S. to north-west seventeen miles; noon $5^{\circ} 15'$ south, long. $116^{\circ} 2'$ east, current sixteen miles west.

15th. Fine trades: noon Salombo in sight, bearing N. $\frac{1}{2}$ E. twenty-three miles distant, making in Square Hill and high: lat $5^{\circ} 59'$ south, long. $114^{\circ} 21'$ east, current west eleven miles.

16th and 17th. Strong trades drawing from south off the Java shore at night, and veering to E.N.E. at mid-day, twenty-six fishing boats in sight, saw Lassem Hill on Java bearing S. $\frac{1}{2}$ E. twenty-six miles.

18th. Saw Carimon Java Peak, bearing north nineteen miles, very high.

19th. Passed Sedary shoal two miles off, soundings eight, ten, and fifteen fathoms.

20th. At six P.M., sea breeze failing, hauled in shore and anchored with Carawang point, south-west six miles distant in seventeen fathoms; at four A.M., wayed and stood to the westward; noon calm and tide setting us to the eastward, let go anchor in ten fathoms mud, Edam island bearing W.b.N. one mile.

21st. A strong breeze from N.N.W., passed between Edam and Alhaman; 1h. 30m. P.M. saw the shipping in Batavia roads, port Appty full of them; 2h. P.M. passed between Ontong Java reef, and the island of Middleburgh and Amsterdam; 4h. passed Maneaters isle and the Great Cambuys; 7h. P.M. came to an anchor off St. Nicholas point in twenty fathoms, the point bearing W.b.S. six miles, in company with six Dutch ships; 4h. A.M. wayed and stood down straits, passed the Button quarter mile off; 10h. tide running strong to north-east and calm, and finding we were drifting on to the Cape let go anchor in eighteen fathoms water Rocky Bottom Cape bearing N.N.E., one mile and half distant.

22nd. Eight A.M., wayed anchor with a light land breeze and a W.S.W. tide, and stood towards Anjer, nine, anchored with the flag-staff S.b.E. half mile off shore in ten fathoms sand.

24th. Wayed anchor and made sail from Anjer roads and beat down the straits of Sunda, wind strong from south-west off Crockatoa, took the trades strong from south and stood to the south-west.

25th. Clear of the land, after threading our way for sixty-nine days among islands, reefs, &c., with rainy squally weather, adverse winds most of the time, and very strong currents against us, to get into the Indian ocean.

25th to 28th. Strong trades from S.S.E.; three P.M., a sudden shift of wind to north, blowing furiously; noon 28th, a gale from north under close reefs: lat. $10^{\circ} 5'$ south, long. $96^{\circ} 48'$ east, barometer 29.75, air 75° .

29th to Sep. 9th. It has been blowing a gale from S.S.E. and S.E., all the time wild rainy thick squally weather; squalls very violent; wind twice has veered round the compass, shifted suddenly in a hard squall to N.N.E., and then veered round gradually until it came to S.E. There has been a heavy swell from S. and S.S.W., with a large tumbling sea from S.E.; ship rolling heavily, and shipping much water; ship under double reef and close reefs; the barometer has been up to 29.90 and 30.20 and yet there has been no change in the weather; noon, 9th, Roderigue bears west 450 miles: lat. $19^{\circ} 34'$ S. long. $71^{\circ} 25'$ E.; barometer 30.20, thermometer 72° .

10th. Strong S.E. gales, violent squalls; the sharp squalls appear to raise the sea; noon, under double reefs; a wild squally and windy look: lat. $20^{\circ} 23'$ S., long. $68^{\circ} 23'$ E.; barometer 30.20, thermometer 72° , current N. 67° W., 16 miles.

11th. Strong gales 1 P.M.; gale increasing, with violent squalls, and a furious sea breaking over the ship; took in close reefs and reefed the foresail; 6 P.M. more moderate; let out close reefs, set whole courses; noon, strong gales, sharp

squalls, and a large cross sea: lat. $21^{\circ} 28' S.$, long. $66^{\circ} 10' E.$; barometer 30·19, thermometer 72° , current N. $56^{\circ} W.$, 21 miles.

12th. Strong S.E. gales at commencement of this day, and squalls less violent; 6 P.M. sea and wind subsiding, weather clearing up, out all reefs, set light sails; 6 A.M. shut over thick and rainy, wind veering from E. to S.E.; noon, thick and passing squalls of rain, moderate breezes from E.S.E., and a regular sea running; saw three Cape pigeons. I think this is far north of their usual limits; three of our crew down sick, and others complaining; made them wear cloth clothing; I cannot account for their illness, unless it is the cold damp moist weather we have had of late following the intense heat we experienced before: noon, lat. $22^{\circ} 16' S.$, long. $63^{\circ} 54' E.$; barometer 30·18, thermometer 73° . Roderique N. $11^{\circ} W.$, 159 miles: distance this last week 1133 miles.

13th. First part squalls passing frequently and rainy; latter part a brisk trade and clear weather; wind S.E., and steady: lat. $23^{\circ} 16' S.$, long. $61^{\circ} 15' E.$; barometer 30·15, thermometer 74° . A sail astern steering west; noon, Port Louis N. $50^{\circ} W.$, 290 miles distant.

14th. Brisk trades and clear weather, with little swell on all day; noon, island of Bourbon bearing N. $40^{\circ} W.$, 238 miles distant; isle of France N. $15^{\circ} W.$, 234 miles: lat. $24^{\circ} 35' S.$, long. $58^{\circ} 35' E.$; variation observed $16^{\circ} 28'$ westerly; barometer 30·17, thermometer 73° .

15th. Remarkably open and clear weather, and a smooth sea, being the only clear day since leaving Java Head: noon, wind light and baffling from north to south-west: lat. $25^{\circ} 22' S.$, long. $56^{\circ} 40' E.$; barometer 30·05, thermometer 76° ; current south-west, 16 miles.

17th. Fine clear weather, light baffling airs from N.N.W. to W.S.W.; noon, wind south and freshening; nearest part of Madagascar N. $78^{\circ} W.$, 390 miles distant: lat. $26^{\circ} 3' S.$, long. $54^{\circ} 17' E.$; barometer 30·12, thermometer 72° .

18th. Strong breezes all day from E.S.E., and very pleasant, with passing clouds; noon shut over thick clouds, coming rapidly from west: lat. $26^{\circ} 28' S.$, long. $51^{\circ} 40' E.$; barometer 30·10, thermometer 70° : variation observed $20^{\circ} 38' W.$; current N. $45^{\circ} E.$, 16 miles.

25th. Light variable airs, mostly from E.S.E., and very clear warm weather, with a smooth sea; the weather has been very pleasant for the last week; winds from N. to E.S.E., and a confused swell from W.S.W.; have experienced no westerly current as yet; noon, Cape Natal bears W.b.N. $\frac{1}{4}$ N., distant 320 miles: lat. $31^{\circ} 11' S.$, long. $37^{\circ} 28' E.$; barometer 30·08, thermometer 75° ; current N. $33^{\circ} E.$, 21 miles.

28th. Light variable winds from S.W. to W.N.W., and remarkable clear weather; a very large swell from W.S.W.; noon, Cape Natal bears N.W. $\frac{1}{4}$ N., 220 miles distant; current 27 miles due west: lat. $32^{\circ} 44' S.$, long. $33^{\circ} 14' E.$; barometer 30·12; air 70° .

29th. Light winds from S.S.W. to E., and pleasant, with a large swell from S.W.; 2h. 30m. P.M. water of a milk white appearance; hove to and sounded; no bottom, with 120 fathoms straight line; water continued of that appearance for one hour; ship heading west by compass, and going three knots; tried the thermometer; air 60° , water 69° , barometer 30·15. Had I not sounded and tried the temperature of the water I should certainly have thought I passed over a bank of shoal water; 8 A.M. air 60° , water 69° ; noon, air 66° , water 68° ; barometer 30·5; lat. $32^{\circ} 50'$ south, long. $32^{\circ} 6'$ east; current these twenty-four hours N. $40^{\circ} W.$ 38 miles. Middle point of Natal, nearest part of Africa, bears N. $56^{\circ} W.$, 140 miles distant.

30th. First part, light air, increasing breeze from E.S.E., and cloudy weather; 2 A.M. a sudden shift of wind to N.E., increasing to a gale, with dark gloomy weather, brought us down to close reefs; noon, a gale from north, with a large confused sea; clear weather; barometer at 2 A.M. 29·90, noon, 29·80; air 74° , water 70° ; current N. $67^{\circ} 30' E.$, 37 miles: lat. $33^{\circ} 52' S.$, long. $30^{\circ} 44' E.$ Cape Recife bears W. $\frac{1}{4}$ S., 265 miles.

Oct. 1st. Comes in light N.N.W. winds, veering to west, with a smooth sea; 7 P.M. calm; 8 P.M. a breeze sprung up from E.N.E., and freshened until 8 A.M., when it changed to north; 10 P.M. barometer fell to 29.35; sent down royal and top-gallant yards, and prepared for a gale; noon, thick dark gloomy weather, a light N.N.W. wind; barometer 29.35; noon, lat. 34° 50' south, long. 30° 6' east; current S.S.W., 28 miles.

2nd. An increasing breeze from W.N.W., until 5 P.M., when it set in a tremendous gale from W.N.W., with violent squalls, and a mountainous sea; hove to under close reef main-top-sail, and continued so all day; noon, wind veered to W.S.W., blowing strong; barometer 29.80; lat. 35° south, long. 29° 33' east; current S.W. $\frac{1}{4}$ W., 70 miles.

3rd. Strong breezes, and a large sea from S.W. to W., with fiery hard squalls, with dark squally appearance in westward; hard squalls passing over incessantly; very cold weather; noon, barometer 30.10; lat. 35° 05' south, long. 28° 40' east; current W.S.W., 40 miles.

4th. Strong S.W. gales and hard squalls; 8 P.M. again hove to; 5 A.M. moderate wind, baffling from W. to S.W., at times violent squalls, and then calm; very squally appearance to westward; ship under close reefs; barometer up to 30.40, still the weather is very dark and squally. I think this weather cannot last long, as the barometer is so high, and has continued so during the day, but at present no appearances of a change; noon, dark squally weather; baffling winds from W. to S.S.W.; no current to day: lat. 34° 51' S., long 28° 10' E.; barometer 30.40.

5th. Comes in moderate breezes, veering from W. to S.S.W., with severe squalls; after the squall passes over, dying away calm; wild dark heavy appearance in S.W., continuing until 10 P.M., when it cleared up very pleasant; wind S.S.W.; pleasant during the night; set sails again; noon, clear and pleasant; wind S.S.W.; barometer all day 30.40; noon, 5th Oct., Cape Recife bears north, 69° west, distant 176 miles; Cape of Good Hope N. 86° W., distant 520 miles; current this day due west, 27 miles: lat. 35° 8' S., long. 27°, 7' E.; air 63°, water 68°.

6th. Beautiful weather; first part of the day wind south, latter part strong east gales; Cape Lagulhas bears at noon W.N.W. $\frac{1}{4}$ W., 286 miles; Cape of Good Hope N.W.b.W., 380 miles: lat. 36° 1' S., long. 24° 33' E.; air, 68°, water 68°; barometer 30.15.

7th. Strong N.E. gales all day, and a large sea; 8 A.M. sounded, no bottom, 190 fathoms line; current 39 miles, S.W. $\frac{1}{4}$ W.: lat. 36° 24' S., long. 22° 15' E.; air 71°, water 66°; barometer 29.90.

8th. Light winds from N.E. to W. and S.S.W., and hazy; 4 P.M. sounded on Lagulhas bank, in lat. 36° 21' S., long. 22° 9' E., 118 fathoms, coral and yellow sand; 8 P.M. sounded, in lat. 36° 16' S., long. 20° 51' E., 80 fathoms, yellow sand and shells; current W.N.W., 27 miles: noon, lat. 36° 7' south, long. 20° 40' east; air 66°, water 64°; barometer 29.85.

9th. Light N.N.W. winds first part; 11 P.M. a gale from W.N.W.; hove to under close reef main-top-sail; 8 P.M. sounded, in lat. 36° 7' S., long. 20° 30' E., 90 fathoms, green sand and mud; 7h. 30m. A.M. sounded, lat. 36° 12' S., long. 20° 28' E., 85 fathoms, green sand and mud; 8 A.M. more moderate, made sail, wind veered to S.W.; noon sounded, 90 fathoms, green sand and mud lat. 36° 15' S., long. 20° 27' E.; current S.W.b.W. $\frac{1}{4}$ W., 23 miles; air 62°, water 64°; barometer 30.18.

10th. Fine S.S.W. wind, clear weather all day; 4 P.M. sounded; lat. 36° 13' S., long. 20° 17' E., 90 fathoms, green sand; 8 P.M. sounded, lat. 36° 12' S., long. 20° 10' E., 100 fathoms, green sand and mud; 7h. 30m. A.M. sounded, got no ground, 170 fathoms, lines in; lat. 35° 59' S., long. 19° 2' E., having gone off the bank to the westward; current N.W. $\frac{1}{4}$ N., 23 miles; noon, lat. 35° 50' S., long. 18° 30' E.; air 62°, water 59°; barometer 30.20. Passed a French barque, bound eastward.

11th. Strong breezes from S.S.W., veering at noon to S.S.E.; clear weather.

Saw a Cape pigeon, with a pine tally attached to its leg; noon, lat. $35^{\circ} 5' S.$, long. $15^{\circ} 17' E.$; barometer 30.25; current N.W.b.W. $\frac{1}{2}$ W., twenty miles.

12th Strong S.S.E. gales, and clear weather, first part; latter part dark cloudy weather; current west, ten miles; noon, lat. $33^{\circ} 46'$ south, long. 12, 30' east; barometer 30.25.

14th. Moderate S.S.E. winds, dark cloudy weather a smooth sea winds, baffling at noon from S.S.E. to S.W.: lat. $31^{\circ} 7'$ south, long. $8^{\circ} 2'$ east; barometer 30.5.

15th to 16th. Light baffling winds from north-west to south-west, and dark cloudy weather; all the Cape birds have left us: noon, 16th, lat. $21^{\circ} 40'$ south, long. $5^{\circ} 30'$ east: barometer 30.10; current W.S.W., twenty-four miles.

18th. Took the trades quite strong from S.E.b.S., after three days' adverse winds from western quarter: lat. $25^{\circ} 29'$ south, long. $1^{\circ} 59'$ east; current south-west half south, twenty-six miles; barometer 30.19.

19th. Brisk trades veering from S.S.E. to S.E.b.E., and passing rain squalls; crossed the Tropic of Capricorn this day:

20th to 23rd. Brisk trades; passing rain squalls.

24th. Saw the island of St. Helena, and passed close to the shipping at James Town.

C. F. WILLIAMS.

The Milky Sea spoken of in the journal has already been a subject of remark in this work. In our volume for 1839 are some papers upon it, in which it is considered to be produced by the infinite quantity of animalculæ in salt water, in an irritated state. But it is a subject which will always be interesting to seamen, some of whom may have occasion to remember the alarm which the phenomenon has produced in their minds while passing through a sea affected by it. And as all information respecting it, cannot be otherwise than acceptable, we transfer the following experiments from the transactions of the Royal Society, in which it will be seen that, the same effect has been produced by fish in a state of putrescence. We need have no recourse to the nature of the bottom, submarine volcanic eruptions, or other conditions, but simply consider a mass of dead matter in a certain stage of putrefaction, and the milky sea is at once accounted for.

Experiments to prove that the luminousness of the Sea arises from the Putrefaction of its Animal Substances.—By John Canton, M.A., F.R.S.

Exper. 1.—Into a gallon of sea-water, in a pan about 14 inches in diameter, Mr. C. put a small fresh whiting, June 14, 1768, in the evening; and took notice that neither the whiting, nor the water when agitated, gave any light. A Fahrenheit's thermometer in the cellar, where the pan was placed, stood at 54 degrees. The 15th, at night, that part of the fish which was even with the surface of the water was luminous, but the water itself was dark. Mr. C. drew the end of a stick through the water, from one side of the pan to the other, and the water appeared luminous behind the stick all the way, but gave light only where it was disturbed. When all the water was stirred, the whole became luminous, and appeared like milk; giving a considerable degree of light to the sides of the pan that contained it; and continued to do so for some time after it was at rest. The water was most luminous when the fish had been in it about twenty-eight hours, but would not give any light by being stirred, after it had been in it three days.

Exper. 2.—Mr. C. put a gallon of fresh water in one pan, and a gallon of sea-water into another, and also into each a fresh herring of about three ounces. The next night the whole surface of the sea-water was luminous without being stirred, but much more so when put in motion; and the upper part of the herring, which lay considerably below the surface of the water was very bright. The fresh water was quite dark, as was also the fish that was in it. There were several very bright luminous spots on different parts of the surface of the sea-water; and the whole, when viewed by the light of a candle, seemed covered with a greasy scum. The third night, the light of the sea-water while at rest was very little, if at all, less than before; and when stirred, its light was so great, as to discover the time by a watch; and the fish in it appeared as a dark substance. After this, its light was evidently decreasing, but was not quite gone before the seventh night. The fresh water, and fish in it, were perfectly dark during the whole time. The thermometer was generally above 60°.

Exper. 3.—Into a gallon of fresh water Mr. C. put common or sea-salt, till he found by an hydrometer it was of the same specific gravity with the sea-water. In another gallon of fresh water he dissolved 2lbs. of salt: and into each of these waters he put a small fresh herring. The next evening the whole surface of the artificial sea-water was luminous without being stirred, but gave much more light when it was disturbed. It appeared exactly like the real sea-water in the preceding experiment, and its light lasted about the same time, and went off in the same manner. The other water, which was almost as salt as it could be made, never gave any light. The herring, which was taken out of it the seventh night, and washed from its salt, was found firm and sweet; but the other herring was very soft and putrid; much more so than that which had been kept as long in the fresh water of the last experiment. If a herring, in warm weather, be put into ten gallons of artificial sea-water, instead of one, the water will still become luminous, but its light will not be so strong.*

The artificial sea-water may be made without the use of an hydrometer, by the proportion of 4 oz: avoirdupois of salt, to seven pints of water, wine-measure.

From the second and third experiments it is evident, that the quantity of salt contained in sea-water hastens putrefaction; as the fish that had been kept in water of that degree of saltiness was found to be much more putrid than that which had been kept the same time in fresh water. This unexpected property of sea-salt was discovered by Sir John Pringle, in the year 1750, and published in the 46th vol. of the Phil. Trans., with many curious and useful experiments on substances resisting putrefaction; but the greatest quantity of salt there mentioned, is less than what is found in sea-water: it is probable, therefore, that if the sea were less salt, it would be more luminous. And here it may be worth remarking, that though the greatest summer heat is well known to promote putrefaction, yet 20 degrees more than that of the

* Several river fish, as the bleak, the dace, the carp, the tench, and the eel, were kept in artificial sea-water to putrefy, without producing any light that could be perceived, but a piece of a carp made the water very luminous, though the outside, or scaly part of it, did not shine at all.—Orig.

human blood seem to hinder it: for, putting a very small piece of a luminous fish into a thin glass ball, the water of the heat of 118 degrees destroyed its luminousness in less than half a minute; which, on taking it out of the water, it would begin to recover in about 10 seconds, but was never after so bright as before.

Mr. C. then adds to these experiments the two most circumstantial accounts he could find of the sea's luminous appearance. Mr. Boyle, in the third volume and 91st page, of Birch's edition of his work, says, "When I remember how many questions I have asked navigators about the luminousness of the sea; and how in some places the sea is wont to shine in the night as far as the eye can reach; at other times and places, only when the waves dash against the vessel, or the oars strike and cleave the water; how some seas shine often, and others have not been observed to shine; how in some places the sea has been taken notice of, to shine when such and such winds blow, whereas in other seas the observation holds not; and in the same tract of sea, within a narrow compass, one part of the water will be luminous, whilst the other shines not at all: when, I say, I remember how many of these odd phenomena, belonging to those great masses of liquor, I have been told of by very creditable eye-witnesses, I am tempted to suspect that some cosmical law or custom of the terrestrial globe, or, at least, of the planetary vortex, may have a considerable agency in the production of these effects."

ON THE MARINERS' COMPASS.—By *Mr. W. Walker, Master R.N.*

IF our knowledge of the properties of the loadstone had still been confined to its power of attracting iron, we must have remained ignorant of the form and magnitude of the earth; of its proportions of land and water, and of the various races of men and other animals that inhabit it. The mariner must still have continued to row or sail slowly along the land, during fine weather, with a fair wind, and a clear sky; and if he ventured beyond the ordinary limits of his knowledge, it would have behoved him to look out for a place where he might "beach his boat," or, secure her in some sheltered creek, before darkness or foggy weather should overtake him! But the magnetic properties of the loadstone were ordained for an useful purpose; for although the discoveries of these properties were made but slowly, and even although they yet remain covered as it were, by a semi-transparent veil, their practical utility has been very great.

The introduction of the mariners' compass, even in its primitive and rude state brought about a complete revolution in the theory and practice of naval architecture and seamanship. It extended our geographical knowledge, opened a social and commercial intercourse between different nations of the earth. By it, countries previously unknown to Europeans were discovered, and colonized; and the ends of the earth were actually joined together by circumnavigation.

Practical magnetism has already done much for the increase, as well as comfort of mankind. It has stimulated scientific research, and done

more for the advancement of the physical sciences than any other branch of human knowledge.

The mariners' compass is held in veneration by a thorough sailor! In a dark and cloudy night, or during a thick fog, he steals softly aft, under pretence of putting something to rights; but, his real object is to take a glance at the compass to see how the ship's "head lies." Seamen know but little of the doctrines of magnetism, but they know full well that the compass is their only guide at sea, and that by it the ship's course is shaped. If a sailor discover an iron nail, or a marline spike, left by some "lubber," near the binnacle, he slyly consigns it to "Davy Jones's locker,"* without any qualms of conscience, for he knows intuitively that iron has no business there.

To those seamen who are navigators, it is considered that a brief essay on the mariners' compass will not only be amusing, but really useful in their profession. It is my opinion as an experienced seaman, that if *more* were known by navigators of practical magnetism (as for example, how the stowage of a ship's cargo, or the arrangement of the iron within a ship, might affect her compass,) *fewer* ships would be lost; for all those ships that actually *run on shore with a fair wind*, when steering a compass course, *intended* to lead the ships clear of all danger, are without doubt *wrecked*, through a want of skill in the navigator.

It is, therefore, my intention to present the reader with a condensed account of the mariners' compass, and of the very slow progress that practical magnetism has made, and how this knowledge has been applied to purposes on land as well as at sea. I shall give a short notice of the theoretical views that have been from time to time, entertained by philosophers of magnetism, and shall conclude by shewing the *practical application* of what is really known of the principles of magnetism, and in what way a ship's reckoning is liable to be influenced by the local magnetism of the ship and her contents.

Although the Greeks, Egyptians, Phœnicians, Carthagenians, and Romans, had ships fitted for coast navigation, and generally capable of entering shallow waters, or, of being hauled on shore. They have left us no historical record of any thing like a compass being used in their vessels. They knew so very little of the magnet and its properties that their priests had not attempted to impose the mysteries of magnetism on the credulity of the people; all they knew of the magnet was, that iron was attracted by it. From the days of Homer to the time of the Crusades in the 12th century, there are good grounds for believing that the magnet was not in any way applied to purposes of navigation in Europe.

The Chinese are without doubt a very ancient people; and although I am not disposed to believe *all* that has been translated to us from their history, yet a good deal of the Chinese history has been *connected with the history of the Heavens*; and, therefore, verified to a certain extent. The Reverend Pere Gaubil examined the records of thirty-six eclipses of the sun in the Chinese history and found only two doubtful and two false. The author of the "Histoire Universelle," in speaking

* That is he throws it overboard.

of China says, "La Boussole, ainsi que la Poudre à tirer, étoit pour eux une simple curiosité." And in another place, "La Boussole, qu'ils connoissoient, ne servoit pas à son véritable usage de guider la route des Vaisseaux, ils ne navigoient que près des côtes." We are informed by Du Halde, who was a missionary in China, and who wrote a history of China from data he procured from Chinese books, that about the year 2634 B.C. the Emperor Hoang-ti, being at war, an instrument was invented, which being placed in a *car it pointed to the south*, and enabled the imperial army to direct its march, and surprise the enemy during a thick fog! If this statement be correct it affords evidence of the Chinese making use of the directive power of the magnet 4477 years ago! The same author informs us that 2883 years ago an embassy reached China from Cochin; that the ambassadors had experienced great difficulty in finding their way to the imperial court; but on taking their final audience, Du Halde says, "Tcheou-kong gave them an instrument, of which, one end pointed to the *north* and the other to the *south*, that they might find their way home with less embarrassment than they had experienced in their route to his dominions. The instrument was then called Tchi-nan, and this is the name which the Chinese now give to the mariners' compass."

In a Chinese Dictionary, compiled about the end of the fourth century, there is the following passage,—“They had then ships which directed their course to the south by the magnetized needle.*” “The *fortune-tellers* rub the point of a needle with the *stone of love*, for rendering it proper to indicate the south.” These extracts shew that the Chinese made use of magnetism for land and sea voyages, at a very early period of their history. The old Venetian traveller, Marco Polo, whilst in the service of Koublia Khan, obtained the command of a Chinese fleet of fourteen ships, each ship having *four masts and nine sails*. This fleet was prepared to convey a Chinese princess to the Persian Gulf; it sailed from the river of Pekin early in the year 1291, and was eighteen months in making the passage to the Persian Gulf. Some of these junks had crews of 250 men. This expedition is mentioned, in order to shew that, in former times, the Chinese undertook longer sea voyages than they now undertake. It is extremely probable that the compass was in common use in the fleet referred to, although no mention is made of it in Marco Polo's Narrative.

The compass of the modern Chinese is probably nearly similar to those used two thousand years ago: one in the writer's possession may be thus described;—A very small steel bar about an inch in length, and of the diameter of a sewing-needle, poised with great correctness, and *strapped* to the top of a small copper hemispherical cup, which serves as a socket to receive the point of a vertical steel pivot, (the point of a small needle,) rising from the centre of a circular hole in the wooden compass-box. The bottom of this circular hole is covered with a thin film of silver or zinc, upon which a meridian line is drawn as a *diameter*. There is a round hole in the centre of the metallic circle, large enough to allow the needle to traverse freely above it, but small

* The sea coast of China generally runs in a north and south direction, and the monsoons prevail on the coast.

enough to prevent the lower part of the copper hemispherical cup from rising above the pivot of support, so as to endanger the "unshipping of the needle." The circular hole and needle are covered by glass, held in its place, by a circular wooden ring. The south end of the needle is coloured red. The compass-box is of boxwood, four inches in diameter and three-quarters of an inch in depth; on its upper surface are drawn seven concentric circles, that nearest to the needle is divided into *eight* equal parts; circles Nos. 2, 3, and 4 have each 24 divisions, No. 5 has 72 equal parts, circle No. 6 appears to have 48 divisions, and the outer one is divided into 72 equal parts; the whole are inscribed with Chinese characters, in black or red ink; the machine is varnished and neatly finished. It is used in China by land and sea voyagers, by surveyors, architects, jugglers, &c.

Now, a compass of this kind is by no means convenient to steer by; because, if such a compass be placed in the binnacle with its meridian line, or one of its symbolical characters towards the ship's head, then all the other points, or characters being painted *on the box* would necessarily remain in a *constant position* with reference to the ship's course; in fact, the *point*, or character, might with equal propriety be drawn upon the ship's deck, as upon a box fixed in the binnacle! It would be impossible for a European helmsman to steer a ship by a Chinese compass.

The introduction of the mariners' compass into Europe was probably due to the Arabs, during the Holy Wars of the Crusaders on the eastern shores of the Mediterranean. The Italians, French, Norwegians, and even the English, have endeavoured to claim this most useful instrument as an invention of their own; but, it appears to me that, such claims cannot be sustained. The earliest mention made of the compass in Europe is to be found in some old poetry written by a certain Guyot de Provins, about the end of the 12th century, and preserved in MSS., in the Royal Library of France. Cardinal de Vitri, a native of France, who had been engaged in the Crusades, and was appointed Bishop of Jerusalem, wrote an Oriental history, wherein he described the compass as being in familiar use *among the Saracens*, on the coast of Syria, although a novelty to himself.*

There is in the Royal Library of Paris, an Arabian MS., written in 1242, by Bailac Kibdjaki, wherein the sea compass of this early period is described.† "We have to notice amongst the properties of the magnet, that the captains who navigate the Syrian seas, when the night is so dark as to conceal from view the stars which might direct their course, according to the position of the four cardinal points, take a basin full of water, which they shelter from the wind, by placing it in the interior of the vessel, they then drive a needle into a wooden peg, or a corn stalk, so as to form the shape of a cross, and throw it into the basin of water, prepared for the purpose, on the surface of which it floats. They afterwards take a *loadstone* of sufficient size to fill the palm of the hand, or even smaller; bring it to the surface of the water, give to their hands a rotatory motion towards the right, so that the

* British Annual, 1837.

† Letter of M. Humbolt, translated by Klaproth.

needle turns on the waters' surface; they next suddenly and quickly withdraw their hands when the two points of the needle face the *north* and *south*. They have given me ocular demonstration of this process during our sea voyage from Syria to Alexandria in the year 640, (or 1242 A.D.)”

Here then, we have a clear description of the primitive European compass, and how magnetism was communicated to the needle, stuck into a reed of straw, and made to float in a bowl of water. In those times, the Saracens had possession of the sea coasts, but still the mariners of Syria and Egypt had to manage their navigation under the government of their Mahomedan conquerors. Their manner of communicating magnetism to a needle made to float on water, “so as to form the shape of a cross,” as described by the Arab in the above quotation is worthy of notice. There is magic as well as superstition in it! During a period of 200 years (from 1100 to 1300) the western world was convulsed with wars of no ordinary kind. From the farthest limits of the East the Turks and Tartars had extended their conquests towards the West, overturning all the old governments and civil institutions; and whilst the infidels were propagating their religious opinions by the sword, the Pope had established the inquisition. Under such circumstances, need we be surprised, that arts declined and science slumbered, and that we hear little or nothing of a machine, which, however rude or mysterious, was in use for directing the course of ships.

In consequence of the vast multitudes of Crusaders that precipitated themselves on Palestine, all those maritime ports of any note, engaged their vessels, either as transports for the pilgrims or the troops, or, else they were employed as traders to supply the armies with provisions and stores. The Venetians, Genoese, and the people of Amalphi rose in wealth and power by their profitable employment during the wars between their Christian brethren and the Mahomedans of Western Asia. A bitter hatred, heightened by religious fanaticism, was kept up between them, and generally speaking, it would have been unsafe for a christian sailor, to adopt, and openly use, a Saracen compass.

The Holy Wars or Crusades terminated about the year 1291, leaving the mercantile navies of the Mediterranean to follow their commercial occupation. About the year 1302, one Flavius Giojo a native of Amalphi, is said to have invented the Mariners' Compass. “Seven miles to the west of Salerno and thirty to the south of Naples, the obscure town of Amalphi displayed the power and rewards of industry. The land however fertile, was of narrow extent, but the sea was accessible and open. The inhabitants first assumed the office of supplying the Western world with the manufactures and productions of the East, and this useful traffic was the source of their opulence and freedom. The Government was popular under the administration of a Duke and the supremacy of the Greek Emperor. Fifty thousand citizens were numbered in the walls of Amalphi, nor was any city more abundantly provided with gold, silver, and the objects of precious luxury. The mariners who swarmed in her port excelled in the theory and practice of navigation and astronomy, and the discovery of the compass, which has opened the globe is due to their ingenuity or good fortune. Their

trade was extended to the coasts, or at least to the commodities of Africa Arabia, and India.”*

Here we have a free, rich, and enterprising mercantile and maritime people, (and without an Inquisition,) who, if they did not actually invent, were likely to greatly improve the compass, upon which the prosperity of their little territory so mainly depended. We have seen that the ancient compass of the Chinese, and that used by the Saracens were altogether unfit for general purposes at sea. Any intelligent shrewd captain unshackled by authority, and not having the terrors of “the Holy Office” before his eyes, would soon hit upon a method to improve the compass! The man of Amalphi no doubt did improve the mariners’ compass, by simply introducing a needle, large enough to carry a card, having the cardinal and other points painted on it. Such a compass would differ from the more ancient one, in this all-important property, of indicating at once, the direction of the ship’s keel and the bearing of all external objects.

The compass of China as has already been seen, had its points painted on the box, which would turn along with the ship, the little magnetic needle being the only part about it that preserved its position with reference to external objects in the heavens or on the ocean: but a compass such as we now use, or such as I believe was introduced by the Amalphan captain, having a card of the cardinal and intermediate points, borne up and traversing on a pivot, but held in a *permanent position* by the directive force of the magnetic needle to which the card is attached. The ship, compass-box, pivot, and every part of the apparatus is moveable under the needle and its attached card, which card remains in a constant position with reference to the magnetic meridian! So great and yet so trifling an improvement, would secure to Flavio Giojo the honour due to original genius. The practical utility of such an instrument would force itself upon the public, and the successful application would soon secure its adoption by practical navigators, although many of the old superstitious coasters might continue to doubt its directive powers, and fear to speculate on magnetic doctrines, or even venture to use the new instrument, without free permission from the directors of their consciences!

From this time ships began to be improved in form and magnitude, the oar was laid aside for the sail, vessels were no longer fit for being beached, they required to carry provisions and water for longer passages; instead of coasting along shore, they shaped a direct course; sea charts had to be drawn, navigation began to assume something like a scientific appearance, and people became better acquainted with each other and ascertained what they might advantageously exchange. A competition in maritime adventure arose in Europe greatly to the advancement of geographical and hydrographical knowledge. We have already noticed that from the time of Homer to the end of the 13th century, discoveries had been few and far between, but when the magnetic needle had been so far improved, and fitted to a compass that could be safely used at sea, we find Europeans making most rapid advances in all the sciences; adventurers instead of confining themselves to the shores of the then

* Decline and Fall of the Roman Empire,—Vol. IV., p. 72.

known world, advanced without fear into unexplored seas in search of new countries.

In 1378 the Venetians discovered Greenland. The Normans discovered the Canary Islands in 1405. The Portuguese discovered the Madeiras in 1420, and they sailed to the Coast of Guinea in 1482. In the year 1489 the brother of Columbus, brings maps and sea-charts to England, and in the year 1492 Columbus himself discovers America, and five years afterward Vasco de Gama a Portuguese, sails round the Cape of Good Hope, and enters the Indian Ocean. Here the Portuguese found a great number of ships, a well regulated trade on the Coasts of Arabia, Africa, and India, as well as with the Red Sea and Persian Gulf.

When Vasco de Gama reached Melurda, he applied to the King for a pilot to conduct him to Calicut on the coast of Malabar: he obtained as a pilot, a native of Guzerat, and the Portuguese shewed this man an astrolabe, but he paid but small attention to it! They were greatly surprised to find this pilot well skilled in the use of the compass, the quadrant, and Geographical charts; but the compasses in use in the Indian seas were found to be inferior to those in the Portuguese fleet. Hence we may infer that the Indians sailing with their periodical winds, had little need of great nicety in the construction of their compass; they were content with a very imperfect instrument, as the Chinese continue to be up to the present time; their arts and sciences were probably on the decline; whereas Providence had decreed, that the barbarians of Europe should emerge out of ignorance, explore the world and its wonders, shew its connexion with the solar system, explain the phenomena of nature, and prove that the whole is the work of a bountiful Creator.

(To be continued.)

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.
Port Royal and its Associations.

(Continued from p. 243.)

THERE is a good deal of negro wit and waggery among the male portion of the domestic servants; and according to the wealth of those whom they serve, so is their own self-importance measured; there is, however, nothing more in this than may be observed in other countries among serving-men. It is not unusual for one of these important gents, whose own face may be as black as a sea-cocoanut, to upbraid another Quashee with being a "black fellow!" I have heard the following "cracking of jokes," between two waiting lads: "I say, Prince, warra for you look so *black in de face* dis morning?"—to which Prince replied, laughing: "You *nega man*, you no know? mamme drink coffee in de morning; dat de reason."

A crowd collected round a boat belonging to a colonial schooner that was landing some monkeys. Great merriment was created among the lookers on, by the grave countenances of these wild *piccaninnies* of the

woods; one of the animals seemed alarmed at the collection of black faces that pressed forward to obtain a peep at his phiz. A negro who had been gazing intently upon it, exclaimed "Dat fella first cousin to nega, but him much clobberer; he can 'peak, do he no 'peak,—fa him sabby well enough, if him once 'peak, buckra man make him work! dat de truth." A loud "wha!" followed this piece of negro wit; and the alarmed chatterers were conducted up the beach amid the joyous huzzas of their "first cousins."

The negroes hold stinginess in great contempt; and the girls have a curious mode of ascertaining, to their entire satisfaction, whether a person is parsimonious or otherwise. Between the supporting tendons or muscles of the neck, on the posterior side of the head, there is more or less a depression; this they term the "cubbish hole." If it happen to be much indented they lay the person down as in possession of a stingy disposition, and despise him;—so that, in some measure they may be termed phrenologists, although no disciples of Dr. Gall. If the overseer, or "busha," as they call that functionary, happens to be over careful of the supplies of food, they at once class him among the parsimonious beings who they say, "Naym fish wid *one yie*." *i.e.* Eat *half* a red herring for breakfast, reserving the other half for the next day! "As cubbish as a busha;" is a common proverb with them, to designate a covetous or parsimonious person.

Speaking of "bushas," I may here relate a very curious circumstance respecting one of those gentlemen, which was related to me at Lucea. At a sugar estate in the neighbourhood, there was an aqueduct thrown across a deep gully or ravine to conduct a stream of water to the works. I do not remember whether the channel for conveying the water was of wood or stone; that, however, is of no consequence; it was about two feet wide, and more than one hundred feet across. The overseer of the estate was affected with somnambulancy, or, noctambulism, or the dangerous habit of walking in his sleep. It was crop-time, and the mills were constantly working night and day. About one o'clock in the morning, before dawn, he was observed to come out of his bed room and go into the stable, saddle his mule, bring him forth into the yard, and mount him. The negroes who were busy at work did not think anything extraordinary in the matter, except that, "It was an unusual hour for massa to be abroad." After mounting, he spurred his mule, and passed through the yard towards the brink of the ravine, exactly opposite to the aqueduct,—on arriving there the mule stopped,—the whip was applied; but, he was extremely reluctant to proceed, and snorted loudly. At last, after being urged, the sagacious animal placed his fore-feet into the trough of the aqueduct, and drew up his hind legs by one effort! The negroes' attention being directed to the spot by the snorting of the mule, proceeded thither, calling out loudly to apprise basha of the dangerous route the mule was pursuing for they were not aware of his infirmity; but thought he was drowsy, and did not see where the animal was carrying him.

The poor mule from instinct appeared to be sensible of the danger; he stopped repeatedly, snorting loudly, and evidently trembled from fear; but he went on cautiously. It was a critical moment for the busha, for had he been suddenly roused from his deep sleep by the noise

of the negroes, it is highly probable that he would have fallen into the gulf below, and been, of course, killed, as the chasm was very deep. Fortunately, however, his slumber was profound, and he remained undisturbed by the noise; the mule cautiously proceeding, and making known by his snortings the dread he was under in the execution of such a perilous feat.

Some of the more intelligent among the assembled negroes suggested that the overseer might be asleep, and unconscious of the act he was performing; and the headman assenting to this belief, despatched a party round to the other side of the chasm, with directions not to disturb the rider, but to seize the bridle, and lead the mule quietly to the stable. By the time the party arrived at the opposite side, the mule had safely completed his task, and was standing still, as if to recover from the alarm which it manifestly had been under whilst threading its way through the gutter. The nocturnal equestrian sat without motion, and was evidently enjoying a sound nap. The sagacious animal was led to the stable, and the overseer cautiously roused. His astonishment on being informed of the exploit which he had performed, may be imagined, for he was perfectly unconscious of having been out of his bed; and, as may readily be believed, declared that he would not undertake it in day-light to become possessor of the estate!

It is difficult to conceive what would have been the effect upon the mind of the overseer had he awoke immediately after successfully performing the dangerous exploit: sudden alarm even when a person is wide awake has led to insanity, and terminated in suicide. The remarkable case of Mr. Cutler is one in point:—In June 1827, this gentleman, whilst rambling in the fields near Gravesend, came to a deep chalk-pit over which a narrow plank had been placed, on which he attempted to pass, but when near the middle, his foot slipped, and he came down on one knee; the horror which his narrow escape from certain death had produced, was so intense that, he never recovered from its effect, and ultimately in a state of insanity destroyed himself!

As I have been describing an incident of the mountains, I will here add a trifling episode that memory has revived. Two or three brother officers and myself went in a hasty visit to a friend in the highlands of this charming island. The house was situated on the summit of one of the most elevated peaks, and commanded an extensive prospect of the surrounding and romantic country, and a long line of coast, with the blue expanse of the ocean, which appeared to be risen above the level of the mountain tops.

In the evening we strolled about visiting the negro-huts, not alone to enjoy the refreshing land-wind, which had now begun to move towards the sea, but to observe the mode in which the sable denizens of a slave land passed their moments of leisure, after a day of toil. It was, to us tars, an extraordinary, but gratifying spectacle; and at once served to correct some of the hasty impressions which had been formed from the published opinions of others respecting the extreme misery of a life of slavery in the West. A wood fire blazed before the door of each cottage, with a group of negroes seated round it, whilst the children were sporting about in joyous merriment. A large iron pot stood on the fire, filled with good things in preparation for supper, and which

mitted a very savoury flavour, such as would have delighted the heart of an alderman. This, upon enquiry, we found to be the celebrated "pepper-pot;" a sort of hodge-podge, which our friend informed us was a delicacy "fit to lay before a king." A subsequent trial fully assured us that its praises had not been exaggerated; a more delicious repast could scarcely be imagined by the most fastidious gourmand: so much for the "Poor dear negroes being half starved!"

A great deal of good humour prevailed among the parties, whose huts (which by-the-by are very comfortable dwellings) though detached, were but a short distance apart; jokes were passed, which occasioned much laughter; and, in this way, the happy multitude, (for the number composing it could not have been less than a hundred of both sexes,) passed the time whilst the evening meal was preparing. When it was ready, the whole contented beings retired to the houses, and enjoyed the frugal and nutritious repast, with a zest unknown to many a buckra in a higher sphere of life.

On our return we tarried on the lawn, before the dwelling-house, to look at the starry Heavens,* and enjoy the cool and spicy air. It was a blessed night, calm and cloudless; for the light air which sprang up after sun-set had died away again; the moon was high up in the concave, wheeling her untired way, and casting her pale light unchecked over the land and sea; the mountain tops alone received the effect of her luminous rays, for the valleys lay concealed in a white and dense fog,—a transition that so altered the features of the surrounding landscape as that nothing of its sun-lit reality could be traced. It was altogether a remarkable scene, and was in keeping with the extreme stillness that accompanies a tropical night in the mountains.

It required little stretch of the imagination to fancy that we had suddenly been transported to fairy-land, the features of which, by the flourish of a magician's wand, had been transposed into a new picture of an opposite character to the one we had been gazing upon a short time before. Whilst yet the sun was up, we had been admiring the rich and gorgeous tints, and the deep shadows thrown on the diversified objects around,—of mountain and vale,—rock and ocean,—with the various embellishments of nature and art: But now all had changed, before us lay, in appearance, extensive lakes, and many islands contrasting with opposite effect—their dark and ill-defined outlines with the snow-like whiteness of the imaginary fluid which surrounded them.

If all was sparkling brilliantly above, engaging deeply the attention and conjuring up thoughts of the myriads of worlds poised in interminable space, and beyond every other sight impressing the mind with a due sense of the unlimited power of the great Author of the universe, there were not wanting other objects close at hand to attract: the fire-

- * "Bespangled with those iles of light,
So wildly, spiritually bright;
Whoever gazed upon them shining,
And turn'd to earth without repining,
Nor wish'd for wings to flee away,
And mix with their eternal ray?"

Seige of Corinth.

fly with its little blue intermittent flambeau was darting here, there, and every where. In the imagination of romance, the whole arena seemed peopled with nocturnal spirits, tiny fairies, keeping their orgies when mortals seek repose; neither did we want music, but it was such only as belongs to the lowest scale of pleasing sounds, it vibrated from the spring of a Jews'-harp! nevertheless it was music, and exquisitely performed; infinitely surpassing any I had ever before heard from that simple instrument.* The musician was a remarkably pretty Mulatto girl. The negroes are extremely partial to music, and as the Jews'-harp is the least costly of instruments, it is in the hands of many of the children, some of whom as in the instance given, have obtained considerable proficiency in the art of using it; indeed, when this simple instrument is not at hand, they make use of a comb and paper, determined at any rate to produce sounds which to their taste are pleasing.

Whether our kind friend had secretly directed the young "Dignity" to serenade us with her primitive notes, in order to surprise us by a contrast that was most agreeable, I know not, but scarcely had the last faint sounds of the little harp died away, when we were regaled with the delightful notes of the key-bugle, an instrument peculiarly adapted to the creation of pleasing emotions, during the silent hours of the night, in calm weather. "Rule Britannia," the most inspiring of tunes, at least to the ear of an Englishman, came floating on the buoyant air from afar; the variation most admirably performed, and as the whole power and skill of the performer seemed to be concentrated in giving full effect to the soul inspiring chorus of—"Britons never shall be slaves," it required all the mastery of the will to restrain the "sons of the waves" who were present, from making the welkin ring with their attuned voices. On such occasions the sensations thus roused, are of the most thrilling and exquisite nature, the senses seem to be taken by storm, and the mortal to be exalted, as it were, above the vulgar thoughts of earth, the soul spurns all meaner and selfish feelings, and clings to the one pure, refined, and disinterested sentiment—love of country—unsullied patriotism! There are few beings who have not felt and enjoyed these sensations upon particular occasions, whose hearts have not warmed, and whose feelings have not been in an instant risen to enthusiasm, at the sound of the national anthems, and who have not felt it the pinnacle of honour to be enrolled among the sons of Britain! But in the forcible language of the great Caledonian bard, if there should be an exception:—

" If such man, if such wretch there be,
Thanks to this aching heart I am not he !"

We were aroused very early in the morning, and sallied forth to hail the rising sun. What a difference in bodily sensation at such an elevation, and at such an hour, from that experienced at the sea-side at

* " It rose —————
Like some lone spirits o'er the plain;
'Twas musical, but sadly sweet,
Such as when winds and harp-strings meet,
And take a long unmeasured tone,
To mortal minstrelsy unknown." *Byron.*

noon day! Here the air was so cool that we of the ship felt chilly, but the freshness and fragrance of the air were delightful; a multitude of rose bushes covered with blossoms dripping with dew, exhaled their sweets around, and were alike gratifying to the sense of sight as of smell. On the lawn we were met by a group of pretty young negroes each carrying a bowl of fresh milk, which they very gracefully presented to us, accompanied with the usual salute of "Hope, Massa, sleep well last night". After a little badinage with the good-natured creatures, we strolled on to the brink of the hill, to view the curious scene which lay below. It was indeed a most extraordinary sight, and well worth a journey of fatigue to see, even up to the famed *Monte Diablo*, to accomplish which is attended with more labour than perhaps any other in the island, and with perils little short of those assailing the enterprising traveller over the *Cordilleras* of the *Andes*. We had in some measure been prepared for the scene, by the glimpse which we had obtained during the "dubious" light of the last evening; but the view then was only undergoing the first stage of the transformation of its parts, for, the earth's transudation was reduced to a visible form only in the lowest vallies.

We were several thousand feet above the level of the sea, and at such an elevation, it may be supposed that the prospect was very extensive; it was so in fact, but at the moment, the greater portion lay hid under the vapoury canopy; the higher peaks of the mountains alone peeping through it, and appearing like scattered islands in a sea of white foam. In the space where lay the ocean, not a trace of it could be seen, it was perfectly undistinguishable from the compact mass of floating clouds that stretched along horizontally in front, and joined its fleecy veil with the snow-like coverlid of the land.

The first "blush" of morn had displayed itself as we left the house; by the time (a few minutes only) we had reached the brink, the golden rays began to darken upwards, and very shortly after the glorious orb came sliding, as it were, up from beneath a now sufficiently obvious dark line, lighting every thing into shape and colour in an instant. In an equally rapid manner does darkness spread around after sunset, for there is scarcely any aurora or twilight in these latitudes, on account of the path of the sun being generally near to the Prime Vertical.

We remained more than an hour watching the changes that took place, as the vapoury curtain and covering were gradually withdrawn, and then retired to breakfast. By nine o'clock scarcely a speck of the vapour remained, and the magnificent prospect lay before us like an embossed map. The eye at last became fatigued, though reluctant to yield, by shifting its view from one point to another, spread before it in endless variety, and by straining its power of vision to define the individuality of the more distant objects; for it was impossible to rest satisfied with any particular part above another: the restless orb of reflection, in spite of the will, would rove over the whole, inquisitive not to lose one item of the detail. But that which excited my curiosity most, was, the dark blue expanse of ocean, which to the sense seemed to be lifted horizontally, far above the highest elevations of the land. Upon the whole it was the most extensive and gratifying sight I ever

beheld ; none, in the various parts of Europe which I have seen, and I have looked down from the Alps upon the plains below, can at all be compared with it.

After having enjoyed ourselves most delightfully, we mounted the same horses which our kind friend had sent down to the coast for us, and bade adieu to his hospitable mansion, accompanied by one of his trusty domestics.

The extreme attention, the marked kindness which had been shewn to us, had made it a matter of regret to part so soon from our worthy host and his amiable family ; and there was not one among his visitors but would keep the remembrance of this transient visit to the mountains of Jamaica, as among those sunny incidents in the voyage of life which, however trivial, abstractedly, makes an impression on the mind that is never lost.

Our descent seemed almost as fatiguing as the ascent, and it certainly was attended with more risk of serious accident ; but, the horses were sure-footed, and went on cautiously, and cleverly, until arriving at a bend of the road, when one of the officers in the act turning round to speak to another behind him, fell off in consequence of the saddle slipping under the horse's belly ; he escaped unhurt, but had to sustain the general laugh.

Towards noon the clouds began to gather in dense masses, and to threaten rain ; we asked our guide, Peter, what he thought of the weather—" Oh ! plenty rain come presently—better get off horse, and lead him down quick—watchman hut 'tand lilly way down." This was done, and although we proceeded with increased speed, it soon became evident that unless we obtained shelter somewhere, we should get a thorough drenching, for the hut was a good mile below us. In a short time a few large drops fell, at the instant a flash of lightning and a distant clap of thunder was seen and heard—precursors of the coming deluge. " What's to be done Peter ?"—He pointed to a bridle path through thick tangled bushes, and directed us to follow him up it ; that there was a cave or overhanging cliff which would afford shelter ; we followed his example of remounting, pushed into the thicket one after the other, and fortunately reached the " harbour of refuge" just in time to save a land foundering ! It was a capital place of shelter, and a singular natural curiosity. I have never met with any thing similar to it before or since. It was neither a cave nor a break in a cliff, as from Peter's brief description, we had imagined it to be. It was a recess in a huge lime-stone rock, of an oblong form about twenty-five or thirty feet in length, and receding ten or twelve feet ; the walls were very nearly vertical, and the roof, like a great slab, quite horizontal, smooth, and white ; it was surrounded with bushes, shrubs, and tall timber trees. In the ascent, which was very precipitate, the noble animals pushed up in gallant style as if sensible of the cause for such extra exertion. We all dismounted, and it was fully a quarter of an hour before the poor jaded horses recovered their ordinary easy respiration. In a few moments after, " heaven's artillery" opened, and the shower came down like a cascade, attended with sudden and furious squalls of wind, bringing with them a very sensible change of temperature.

The storm continued for an hour, the flashes of lightning most awful,

and the thunder absolutely deafening, appearing, to the sensations, as if it were a material body of vast dimensions rolling down the mountains, which seemed to be shaken to their foundations: and the rain, or rather the deluge, for it fell like the volume of a Niagara, and obscured even near objects from view, certainly surpassed every other shower I had ever witnessed at home or abroad; and with good reason, for we were here in the midst of the clouds, the meteoric cisterns themselves. It seemed, too, as if the sun had been suddenly eclipsed, for the weather became almost as dark as at midnight. Altogether it was a most impressive circumstance; and it is probable that there was not one heart present but was sensibly, though secretly affected, at such a display of Nature's majesty! a description of which falls far beyond the power of human words to express. Such a storm must be seen to be perfectly understood.

As the thunder's roar became more distant, the rain lessened, and in a short time ceased; the clouds dispersed, and the sun—"the glorious sun", burst forth "from concealment's span" to gladden the earth again by his presence. Every rain drop that hung dependent from the leaves, sparkled with the brilliancy of the diamond, and the birds left their coverts. The sudden contrast was exhilarating, and hailed with acclamation. Even the poor horses seemed to acknowledge the change, for one after the other, shook himself, snorted, or yawned, rising his head, which had been depressed whilst the storm lasted, and cocking his ears.

The weather now having every appearance of being settled, according to the common expression, we were preparing to lead the horses down the path, when our sable friend Peter, as the guardian of our safety, with an energy that showed how strongly he felt the importance of the trust reposed in him, exclaimed: "'Top, Massa, 'top; no go yet; water come down 'trong presently, carry you all down gully bottom; 'tand 'till,—Peter tell you when for go."

There was an involuntary laugh among us; a display of that self-sufficiency in which young men of little experience, and less reflection are but too apt to indulge. But, the negro with no schooling, yet possessing practical knowledge of the country, knew what he was about, and gave us a lesson by which we might profit on some future occasion. That he was right, we very soon found out,—"What is that?" was simultaneously uttered. What is that, indeed!—a rush of "many waters!" We all hurried to the brink of the bank, and looking down upon the precipitate road below, beheld, with no small degree of astonishment, the solution of Peter's apparent enigma;—a mighty wave rolling its foaming and turbid crest, headlong down the steep, with an impetuosity that was irresistible, clearing away every loose particle before it, beating down the bushes, and bending the small trees that stood in its course;—masses of matted earth, shrubs, and fragments of rocks, in wild confusion, shot past with the velocity of an arrow! It was a *moving* sight truly. "Dere, massa, I tell you so—I tell you water come presently, and he come!" exclaimed our guide. But, this was not said exultingly; his words were evidently intended to make us sensible of the fact that he was fully equal to the trust reposed in him by his master. "Well, Peter, you are a clever fellow; you have saved

us from a launch into the gully." "No, sa, Peter no clebber, him poor nega, but him sabby how tings go in dis country. You, massa, know ebbery ting 'bout ship: but you no hab mountain in de salt-water." The mind of our sable guide was not open to flattery; he felt alone that which experience had taught him, and in knowing which he conceived there could be no merit attached; but assuredly there was merit of the first order in his neat reply; for, although the expression seemed merely to imply a simple truth—"every man to his calling," yet it rejected the compliment paid, as one which he did not think himself entitled to, for it is probable our sable friend had never heard the old saw: "Praise unmerited is censure in disguise;" and was, therefore, under no apprehension of its application in his case.

The impetus attained by the body of water was astonishing, setting the boasted power of the "Lords of the Creation," at naught; it was gravitation exemplified with a vengeance! There was still more of philosophy in the circumstance than the single principle of water rushing onwards to gain the lowest level. The materials which it hurried along with it, showed how alluvial tracts were formed, and the outlets of rivers obstructed, a simple process, mighty in its aggregate results, embracing thousands of years by which Nature levels the loftiest mountains,* and rises the bed of interminable oceans!

In a short time, according to Peter's prediction, the torrent had passed away, and left us a clean-swept road; pretty well grooved it is true, but not so slippery as we had expected; for, the evaporation being strong, the moisture was soon drawn up. After a tortuous course of miles, we at length reached the valley at the base of the mountains. The small stream which we had crossed on our way up, was now rushing and roaring along an impetuous torrent, bearing on its turbid breast, fragments of trees, logs of wood, canes, reeds, and other floating bodies, all hurrying away towards the great receptacle—the ocean.

Upon its bank we halted, the fording place was obliterated; and had there been a ferry-boat, it would not have been prudent to risk the safety of our friend's horses, in an attempt to cross with them. After surveying it a short time, Peter shook his head, and said, "Massa, river no go down long time; you must ride up to de bridge, 'tand tree, four mile up. There being no other alternative, we set off on a canter. It is said that, notwithstanding there are few countries better watered than Jamaica, there is but one river navigable for boats of any size—Black River, in the parish of St. Elizabeth. In some of the others, canoes can proceed a short distance up, but most are precipitate, and some, as the Rio Colre, extremely tortuous in their course.

Having reached the bridge just in time to prevent delay from a series of droves of mules laden with sugar-canes, we "packed on," and finally arrived at our destination, the sea-side, before dark.

* This calls to mind an interesting debate at one of the meetings of the British Association when a Clergyman, and a Captain, R.N., gave their remarks on the circumstance of the sun's declension being delayed of late years, as seen over the summit of a mountain in, we believe, one of the islands of Scotland, to what it was formerly.

May not the progressive decrease of the mountain's elevation arising from degradation, account for the circumstance? This simple solution did not, it appears, strike either of the reasoners.

(To be continued.)

THE BOTTLE CHART.

Stockholm, June 27th, 1843.

SIR.—I am afforded much satisfaction in replying to Captain Fishbourne's answer to my communication respecting the "Bottle Chart" because the discussion will best enable our readers to form correct opinions on the subject. But I hope I shall be excused if I do not follow the gallant officer, through those parts of his elaborate epistle which are irrelevant, or those, which I confess, are to me, quite unintelligible.

I must begin by assuring you, that I was no less surprised than he could be at my opinions, to find myself accused of "misuse of data," when this "misuse" as applied to ascertain the direction and velocity of currents, was the very thing I complained of; but if the lines on the chart are, as he says, "merely intended to connect the places of departure and termination and not the direction which currents and drifts pursued," I have no fault to find with the practice, nor does my former communication propose that it should be discontinued, and on the contrary, besides being of utility, I think it may be interesting to those immediately concerned, as well as amusing to all.

For reasons already mentioned I pass over what follows until I come to Captain Fishbourne's remarks on my experiments off Dover. Surely he could not suppose, that when I saw the ship had tended, I was in doubt that the ebb had made? I regret that I am obliged to contradict his supposition also, that the log had sunk below the surface, and was improperly thrown, and I might also have mentioned that several pieces of wood thrown overboard at the same time, as well as in subsequent experiments, have taken the direction of the tide or current when the bottle took that of the wind and sea.

Captain Fishbourne's observations respecting the loaded wood and bottle are too absurd to require a comment, and the "whirling eddies" which kept the Defence's topmast in the same place for 21 years, yet allowed the bottles to escape, are quite beyond my comprehension! His conclusions on the facts relative to icebergs, are the very reverse of mine, and I must be permitted to smile at the gratuitous remark on the *weakness and wants of man*. Captain F. is no less unfortunate in his attempt to account for the destruction of my copper cylinders by the galvanic action of the sea water; for it so happened that, being desirous to know how long I might depend on their keeping above water, I brought two of them home, and kept them immersed or just floating for 7 years in salt water. I found that they sustained no perceptible injury, and having in my opinion "served their time," I have deposited them in my small collection of specimens, where they may be seen by any person desirous of such a proof of their durability. I can only add that my plan was highly approved of by the late Sir Joseph Banks, who observed that the copper cylinders were more likely than bottles, to be preserved from destruction, because three-fourths of the shores which bound the Atlantic are rocky.

The current on the bank of Lagulhas is a no less inconclusive allusion, for it is notorious that the current there runs almost always to the westward, and I myself have rounded it from the eastward several times under close reefed main top-sail and fore-sail. I shall pass the obser-

vations on the Gold Coast, never having had the good fortune to be but at a very respectable distance off it, and I come now to the "white bottles," which I regret I cannot acknowledge would be any improvement, as upon the sea shore, they would be taken for froth, and on the sea for gulls at a distance, (and no one would think of chasing a gull!). I had at one time an idea of painting the bottles red, which is the colour universally admitted to be seen at the greatest distance, but that might (for obvious reasons) give offence to a corps for whom I have the most profound respect, and I then proposed to paint the bottles or cylinders different colours, but then again they would have appeared like fowls (the Scotch would call them fowls,) and as I had no wish to make a fool of myself, I abandoned the scheme of painting altogether, and, indeed, I only mention these ideas now, to shew that the subject of currents, &c., had long been one to which I had paid attention, and which I still regard to be of much importance.

Captain Fishbourne says, that "facts are stubborn things," yet he has not given one single fact, to corroborate his numerous assertions, but substituted a string of opinions and hypotheses which though amusingly blended with air, water, and the motion of the earth, are in no way calculated to support the argument that, empty bottles thrown overboard, shew the true direction and velocity of the currents in the ocean.

In conclusion, I disclaim any intention of condemning the practice in question, it is the "misuse" I condemn, and that "misuse" is the assertion that the drift of empty bottles shew the direction and velocity of the currents in the ocean, which I have no hesitation in pronouncing a fallacy; and the attempt to account for the losses of ships lately sustained on the Coast of France thereby, I consider injurious to navigation, inasmuch as it is calculated to divert the attention of the mariner from what, I believe, to have been the true cause of these lamentable occurrences, namely, a want of due attention to the local attraction, and consequent deviation of the magnetic needle, when steering an easterly course, and which I trust will apologise for my addressing you a second time on the same subject.

I am, &c.,

JOHN ROSS, *Captain, R.N.*

To Captain Beaufort, R.N., F.R.S.

[The idea of the current "almost always" setting to the westward round the Cape is erroneous, and has occasioned the loss of ships. Those unfortunate vessels (the Northumberland and others of recent date,) considering that they had made sufficient westing, have stood to the northward, and run ashore in the ignorance that they had been met by an easterly current. Without referring to Horsburgh, who quotes Major Rennell on the subject, an instance may be found in the first page of this number, where the Unicorn found an easterly current of sixty miles on her voyage to Manila, and on her return voyage found it westerly. It was to meet this that the light on the Cape was proposed, on which so much was said and written; but which has all passed away without leaving a shadow, much less a lighthouse behind it! When and where shall we look for consistency?]

SANDALWOOD ISLAND.

THIS Island has become of much interest from the intercourse on the part of the natives with Europeans, having been renewed within the last few years, after having almost entirely ceased for half a century. I have now passed along the coasts of this island without having been so fortunate as to communicate with the inhabitants. The entire north coast consists of a range of high hills, rising abruptly from the sea, but on the east and south sides of the island, close along which we passed during this voyage, are extensive plains, divided from each other by mountain ranges running N.E. and S.W. The plains are highly cultivated, denoting a numerous population, and the country hereabouts will not yield to Java in beauty of appearance, nor according to all accounts, in point of fertility.

The natives, a few of whom I have seen, bear a greater resemblance to the people of Java and Bali than to those of Timor, and from their being acquainted with the use of the plough, it seems probable that the Hindus have been established here also. The Dutch formerly had a small post on the north side of Sandalwood Island, but it was abandoned towards the close of the last century, owing to a war with the natives, that arose from the Dutch persisting to cut sandalwood, which the inhabitants, from some superstitious notions, do not like to see destroyed. Very soon after Singapore was established, our manufactures found their way here through the Bughis colony at Ende on the south side of Flores.

The Bughis carry a considerable quantity of cinnamon, edible birds'-nests, &c., from Sandalwood Island to Singapore, but as they trade with only one port on the island, a large quantity of produce, which might be turned to very good account, must be wasted. Horses, which are much larger in size than any others in the Archipelago, are at present the most important export.

For the last three years nearly all the Java ships that resort to Timor touch at Padewawy, or Baring's Bay, on their return for a cargo of horses, which meet with an excellent market at Batavia.

As the country horses are very cheap at Batavia, this speaks well for the superiority of those from Sandalwood. From there having been a few years ago, a considerable trade in horses carried on by ships from our Australian colonies, which were in the habit of taking cargoes to the Mauritius, New South Wales, Swan River, &c., this trade has now fallen off very much, owing to an increase in the price of horses at Timor, and a difficulty in obtaining animals of a sufficient size.

For the last two years the Dutch government has intended renewing their post at Sandalwood Island, but it has not yet been effected. English manufactures are the only European articles taken by the natives, the Dutch ships trading to Sandalwood Island being obliged to obtain supplies of them *via* Singapore.

Three ships have been lost this year in Torres Strait, all within the Barrier, and all, I believe, on known dangers. More ships have been lost this year in the seas of the Indian Archipelago than is usual; one, the "Richard Webb," among a group of islands to the southward of Macas-

sar, where she certainly had no business, as they have never been surveyed.

I find among the merchant captains a strong feeling in favour of entering the Barrier Reefs in the neighbourhood of Sir Charles Hardy islands. The passage by Murray Island seems almost entirely abandoned, those ships passing through Torres Straits this season that did not enter by Sir Charles Hardy Islands having (without exception as far as I have been able to discover) come the inner passage.

Sourabaya still continues to be the port in which vessels resorting to Java effect the repairs they may require. The ship-builder is an Englishman; indeed the yard, an extensive one, has always been the property of one of our countrymen. There are two heaving down hulks, each about 800 tons burthen, belonging to the establishment, and even the government, although they have a dock-yard here, are obliged to use these hulks when requiring repairs for their larger vessels. Will you believe it possible, that the government will not permit the proprietor of this establishment to construct a dock, although he has imported the necessary steam machinery to pump it out, and keep it free.

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, *with an account of the attendant phenomena, abstracted from the Official Journals of the respective Ships, and from other authentic sources of information.*—By W. S. Harris, F.R.S., &c.

(Continued from p. 461.)

FIGGARD, 36.

1799. February 22nd, English Channel, off Plymouth; sails scorched and turned black, so that they were all rendered unserviceable; no other damage. After a fine morning there came up from the westward a heavy dense cloud, attended by lightning and a deluge of rain; the top-sails were lowered in consequence of the squall. When the ship was struck, the electrical discharge appeared to blaze all over the wet ropes and sails. H.M.S. Cambrian, about a quarter of a mile distant, struck at the same time and damaged.—(See Cambrian.)

Particulars of this case given by Admiral Sir J. B. Martin, G.C.B., who then commanded the ship.

FOUDROYANT, 74.

1799. November 4th, Mediterranean, north end of Gaza, four leagues; 6 A.M. fore-top-gallant-mast and top-mast shivered in pieces. One seaman killed and several wounded.

The previous weather had been moderate and cloudy; on the 3rd the ship at 3 P.M. had shortened sail in chase; rain with thunder and lightning; 5th at 4 A.M. rain, hail, and lightning; wind E.b.S., N.N.E., and variable; the weather continued unsettled.

FREDRECKSTEIN, 32.

1812. March 1st, at anchor in the Piræus; a flash of lightning struck the fore and main masts, damaged the main-top-mast, splintered one of the cheeks of the mast, and burst one of the hoops; a fire-ball seemed to explode over the decks; it set the studding-sails on the booms on fire, and stunned two seamen on the fore-castle; some of the sails aloft were also considerably burned, and notwithstanding the prodigiously heavy rain, some minutes elapsed before the fire in the main-top-sail could be quenched.

February 28th, A.M. wind south-west, light airs; at 8h. wind, fresh breezes and cloudy; 10h. wind flew in to the north-west; P.M. moderate; 8 P.M. north wind; 29th, wind N.N.W. and fine; 3 P.M. west; 5h. north-east, after which variable and calm. March 1st, variable with small rain; at noon fresh breezes and cloudy, wind south-west; at 3h. heavy squalls with rain, thunder, and lightning; at 4h. moderate with rain; 2nd, moderate and clear, wind variable, W.S.W., light breezes and cloudy.

GLATTON, 54.

1794. May 20th, lat. 29° 26' N., long. 67° W., Cape of Good Hope N.b.W., 247 leagues; the Lion, 74, in company, not more than two cables' length distant; 3 P.M., both ships struck by a discharge of lightning, mizen-mast, top-mast, and top-gallant-mast shivered, and much damage done below. The electrical discharge passed along a wire into the surgeon's cabin, and escaped through the side by blowing out one of the ports.

The Lion was struck on the mizen-mast, and the mast nearly destroyed.

The wind had been easterly, fresh breezes and cloudy; on the previous day light airs, moderate, cloudy, and calm; wind on the 20th, N.E.b.N., variable from N.N.W. to south-west; fresh gales occasionally with distant thunder to the north; heavy black clouds rising in the south-west: at 3h. thunder squalls with rain and vivid lightning; two flashes came extremely near; one of them fell on the Lion, the other on the Glatton.

The wind became variable, and went by south to south-east and east; much continued lightning in the south-east. The next day fresh gales with small rain, and east winds, which continued up to the 5th of June.

GIBALTAR, 80.

1802. Sept. 19th, Gibraltar Bay; 9 A.M. fore-mast, fore and main top-masts struck by lightning, and much damaged. Three seamen wounded. All the hoops on the fore-mast were started, and came down on deck; the lightning is said to have assumed the appearance of a fire ball, it passed below and exploded in the gunners' store-room with a report like a cannon. A man who sought shelter near the fore-mast was scorched along his back; his clothes, consisting of two shirts, (one

of them flannel,) a waistcoat, jacket, and great coat were all completely burned through to his skin.

The wind had been for some time from the east; about the 18th the weather became hazy and nearly calm; 19th A.M. heavy rain with thunder and lightning, wind east; 20th, variable winds; on the 23rd the wind came in from the south-west.

This electrical storm like many others, appears to have taken place on the meeting of opposite currents of air. It did considerable damage to the fleet in the bay; H.M. ships *Active* and *Superb* were both struck at the same time, and thus were three important ships, of the Mediterranean squadron, damaged or disabled in an instant.

The *Active*, as already stated, was supplied with new fore and main masts, whilst this ship, the *Gibraltar*, had to get a new fore-mast.

GOLIAH, 74.

1802. August 29th, lat. 23° 40' N., long. 74° 30' W., in the West Indies; 7h. 40m. P.M. a flash of lightning struck the fore-top-gallant-mast and shivered it, with the fore-top-mast in pieces; fore-mast also damaged severely. Two seamen killed, thirteen wounded.

The electrical discharge descended by the fore-mast into the fore light-room, split the bulk-head of the magazine, and destroyed several lanterns. On opening the door of the passage to the magazine, the smell of sulphur was such as to excite great alarm.

At 8 P.M. the fore-top-mast, top-gallant-mast, top-gallant-yard, top-sail-yard, &c., went overboard, hands employed clearing the wreck, made signal No. 311 to the Commodore, and No. 338.

The wind had been from the east, but the day the damage occurred it became variable; after which, at 7 P.M. squally with heavy rain, thunder and lightning; at 7h. 30m. a sudden squall, which split the fore-top-sail in pieces; 20th A.M., variable winds, fresh breezes and cloudy, with rain: wind E.S.E. to E.b.N.

The ship went to Halifax for refit.

GLORY, 98.

1805. July 17th, off Cape Finisterre, 30 leagues; 9h. 20m. A.M. tremendous lightning, which shivered main-top-mast, carried away main-top-gallant-mast, and damaged the main-mast in several places. The paunch on the fore part of the mast was shivered in pieces; and the main-top-gallant-yard was driven through the fore-top-sail, the main-sail was split, also main and fore top-sails.

The wind on the 16th blew fresh from the eastward; 17th A.M. light breezes and hazy weather, reefed sails; 9h. wind shifted to N.N.W., and varied to N.b.E.; 9h. 20m. reefed, heavy rain, thunder and lightning; in this squall the ship was struck. Midnight the wind came from the west, and on the 18th N.E.b.N., with light airs.

This damage occurred just before Sir Robert Calder's action, in which the *Glory* was engaged, all the carpenters of the fleet were employed to give the mast a temporary repair so as to enable the ship to join the Admiral off Ferrol. The ship after this went to Plymouth for a new main-mast.

GALATEA, 44.

1805. July 7th, Off Dominica, West Indies. 1h. 30m. P.M., a heavy clap of thunder and lightning struck the ship, and considerably damaged the masts; five men were wounded.

The wind on the 6th E.b.S., 7th and 8th E. On the morning of the thunder storm, moderate and cloudy.

GUERRIERE, 38.

1811. March 16th off Charlestown. 4h. A.M. fore and main-top-gallant-masts damaged by lightning, main-mast splintered. The electrical discharge passed down the aft side of main-mast, in the direction of the iron wedges which secured the hoops, and after falling on the quarter-deck, passed out of one of the ports; the top-gallant-mast was destroyed.

15th, E.N.E, squally; 16th, calm; 3h. 30m. taken aback from the south; squally, with heavy rain, thunder, and lightning; 17th, north-east again, and squally.

This damage occurred only a short time before the ship fought the large American frigate *Constitution*. James states in his *Naval History*, vol. vi. p. 132, that she went into action with her main-mast in a tottering state from lightning.

GOLDFINCH, 10.

1811. June 17th, Basque Roads; 5 A.M. moderate, with rain, thunder, and lightning; fore-mast, top-mast, and top-gallant-mast struck by the lightning, and shivered; mast and sails set on fire, so that they were obliged to cut some of them away.

The weather had been previously moderate, and the winds variable; 16th, W.N.W., moderate breezes with rain and lightning; 17th A.M. wind north; at 5 A.M. E.S.E.; at 12h. east; at 10 P.M. south-east. The wind continued easterly, light breezes.

The brig warped alongside the *Poictiers*, 74, and shifted her fore-mast. She joined the squadron the night before the accident.

GLOUCESTER, 74.

1830. August 2nd, Malta; 9h. 25m. A.M., main-top-mast shivered by lightning; main-mast badly wounded from the trussel-trees to the quarter-deck; top-gallant-yard damaged.

The wind had become variable, all round the compass; 3h. 30m. A.M. squally with rain, thunder, and lightning; 11h. A.M. the storm abated.

The ship was obliged to refit and have a new main-mast, she was detained until the 7th of September. H.M. Ship *Melville* was also severely damaged in the same storm, and obliged to shift the main-mast. Thus were two sail of the line disabled at once, they were perfectly ready for sea, and were about to sail, to join the Admiral.

This ship was again struck by lightning in the same year at *Cephalonia*, and lost her main-top-mast.

HAERLAM, 74.

1800. December 3rd, Mediterranean, Cape Nicola south-west four leagues; 6h. A.M. squally, heavy rain, thunder, and lightning. The main-top-mast shivered throughout. Main-mast shivered to the deck, three of the iron hoops burst open and the mast much scorched.

Wind on the 2nd S.E.b.E. and squally; on the 3rd strong gales from S.W.; on the 4th the wind shifted back to N.N.E. with much lightning.

The electrical discharge is said to have burst at the deck with a great explosion, and to have passed out into the sea over the side. A man standing by the mast was scorched by it along his back.

The ship went to Malta, but her services were in such request, that the mast could not be shifted.

HYDRA, 36.

1808. May 14th, Augusta Bay, Sicily; 5h. 35m. A.M. a ball of fire struck the main-mast, and shivered the top-gallant-mast, top-mast, and lower-mast in pieces.

The wind had been from N.E., after which variable. It again became easterly with strong breezes, squally, rain, thunder and lightning; on the succeeding days N.N.E. and N.E. moderate and fine.

The royal-mast, top-gallant-mast and yards lay in splinters in the water on each side the frigate. The heart of the main-top-mast was fairly taken out, leaving a mere shell. The lead lining of the water tank at the foot of main-mast was partially melted. The discharge penetrated the head of the main-mast.

They cleared the wreck, and fished the lower-mast, and went to Malta for refit, where they got a new main-mast.

HEBE, 36.

1809. October 13th, at anchor in Port Royal, Jamaica; about daylight, main-top-gallant-mast and top-mast shivered by lightning. This occurred in the same storm described in the case of the *Dædalus*; the winds were variable with heavy rain, thunder, and lightning.

Two large frigates severely damaged by this storm.

HELDER.

1811. June 24th, Moen Island, Copenhagen; W.N.W. six leagues, 10h. 30m. P.M. a flash of lightning shivered the main-top-mast, and main-top-gallant-mast in pieces, and damaged the main-mast severely; came to an anchor. On the following morning the log runs thus. "A.M. moderate with thunder, lightning, and rain, employed in shifting top-mast and top-gallant-mast; found the two jib-booms on deck split by the lightning, carpenters employed in fishing the main-mast."

The masts above were shattered in splinters, the main-top-mast had the appearance of a strand of rope, partly unlaidd from head to heel. The main-mast was shaken throughout, the front fish and fittings were blown out, so that the ship was ordered home in consequence.

The wind had been easterly with fresh breezes; 24th fresh breezes and hazy; 25th, moderate.

HELICON, 18.

1812. February 25th, Plymouth, between Drakes Island and the Main; 11h. 30m. A.M. a flash of lightning struck the main-mast and wounded a seaman.

Wind had been from the S.S.W., fresh gales and squally, about 10h. A.M. rain with heavy squalls and vivid lightning, a great many empty powder barrels were lying on deck, which they covered over, wet swabs were placed in the pumps and all hands went below. The thunder and lightning approached nearer and nearer, and the rain poured down in torrents, at last a stream of flame appeared to come through the gun-room skylight, attended by a tremendous crash. The discharge passed down under the feet of the officers at the table. Several people below were knocked down, and a boy leaning against the main-mast was scorched through his jacket, waistcoat, and shirt.

About the same time, the electrical discharge fell on the Tonnant, 80, in Cawsand Bay, and the St. Savalador in Hemoaze. Wind after this flew back to the west; P.M. moderate and cloudy.

The ship went into Hemoaze to have her mast surveyed, which was slightly splintered.

HIBERNIA, 120.

1813. August 2nd, at anchor in the Gulf of Foz; A.M. light breezes and cloudy, with thunder, lightning, and rain, the lightning struck the fore-mast and main-top-mast, and wounded two men below.

The wind was from the S.E. had been moderate with light breezes, on the 2nd, cloudy with rain and lightning; on the 3rd, moderate and foggy.

HERALD, 20.

1815. July 4th, at anchor off Chagres, West Indies; 1h. A.M. the ship was struck by lightning which shivered the main-top-gallant-mast and top-mast in pieces, and injured the main-mast very much; main-top-sail and mizen-stay-sails much torn.

Weather on the 3rd moderate and calm, with heavy rain, thunder, and lightning; 4th light airs and fine, W.S.W., followed by thunder, and lightning; 5th, moderate and variable.

The ship fished her mast, and refitted, and went to Port Royal to take charge of a convoy for England. It appears by the log that on the 20th of August following, spars were sent on board the ship Francis to repair and fish the fore-mast in consequence of damage it received by lightning.

HERON, 18.

1828. March 9th, at anchor off Buenos Ayres; P.M. fresh breezes and hazy. Sunset squally with rain, down top-gallant-yards; 10h: 45m. observed a flash of lightning strike the fore-mast; several of the watch knocked down.

The wind was from the S.E. and S.E.b.E.; at 12h. P.M. more moderate; A.M. 10h. squally with rain, after which moderate and cloudy, Wind E.N.E. to E.S.E., the weather continued unsettled and squally.

The electrical discharge carried away one of the fore-top-mast shrouds and backstays, and burned part of the fore-royal, damaged the fore-top-sail-yard, and split the paunch on the fore-mast in pieces. It passed through the heart of the mast, and completely ruined it, then falling on the chain cable, passed into the sea. Two or three men under the fore-castle were knocked down.

The ship went to Rio Janeiro for refit, whilst lying there without her fore-mast, the Thetis frigate was also disabled in a similar way. It is stated by Captain the Hon. F. Grey who commanded the Heron, that out of five ships of which the Brazilian squadron then consisted, two were for some time disabled, so that convoys could not be effectually provided, for the protection of our trade. In consequence of the war between the Brazils and Buenos Ayres, the services of these ships were most important.

HYACINTH, 18.

1833. September 23rd, Indian Ocean, lat. 1° 18' S., long. 72° E.; A.M. 4h. 30m. fore and main-top-masts and top-gallant-masts shivered in pieces by two fire balls. The fore-mast-head rent, and several men struck down.

The wind had been westerly; at 2h. 20m. lowered the top-sails to a squall; at 3h. 50m. the wind came up from the N.E. and took the ship aback; at 4h. 30m. a heavy squall, with thunder and lightning; immediately after this, two fire balls were observed to strike the ship, these came instantly one on the other. The fore-mast was first struck, the electrical discharge got hold of the chain top-sail sheet, and from thence to the anchor and so on to the sea, producing fearful explosions through the intermediate air. The discharge which fell on the main-mast seized upon the main chain top-sail sheet, and passing down this, exploded upon the pump for bringing water into the ship, it followed it without further damage to the vessel, through the side into the sea, just underneath the carpenter's cabin.

The lower deck was filled with a sulphureous odour and smoke, one of the seamen had the chain sheet in his hand, he experienced a severe shock, but was not hurt. Several planks and cross pieces, close to the main bolts to which the chain sheets led, were started; the suction pipe of the pump was burst open.

The top-masts were so split, that they were literally in ribbands, and if the squall had not quickly passed by, they must have fallen on deck.

The discharges occurred within something less than a minute of each other.

The ship went to Calcutta, and had a new fore-mast, the mast being found on examination much damaged in the head.

The weather after this squall became moderate and calm.

HYACINTH, 18:

1838. May 13th, at Penang; 4 A.M. vivid lightning; 5h. 30m. main-top-mast and top-gallant-masts shivered in pieces.

11th and 12th, calm with variable winds inclining to north.

13th, light airs, variable, and rainy; P.M. wind north and fine.

They purchased a spar and towed it to Wellesley to make a new top-mast.

It appears by the log, that whilst on the equator, long. 18° 40' west, in January preceding, the ship encountered much lightning, which struck her lightning-conductors three times; the weather was calm. The conductors from some cause were taken down previously to the ship being damaged at Penang.

HAWK.—Revenue Cutter.

1840. January 1st, at anchor in Broadhaven, north-west coast of Ireland; 9 A.M. top-mast and mast struck and splintered by lightning.

The wind was westerly, blowing a heavy gale, the sky became overcast by a dense black cloud, which seemed to be rent asunder by a burst of vivid fire. It was observed by those on shore to fall on, and envelope the vessel in a flame of lightning, and she appeared to yield to the crash of the thunder; the copper spindle was melted, the lightning after descending by the mast exploded violently between decks, and passed into the sea by the chain cable; all the berths, and the vessel below, were filled with a thick sulphureous vapour of a suffocating odour: the discharge passed down the main hatchway between a man and a boy.

About the same time, a discharge of lightning burst over the Neptune, a small cutter, in Ely Bay, about twelve miles to the southward, and struck the sea so near the vessel, as to cause her to reel considerably; several of the crew were stunned by it.

IMPLACABLE, 74.

1810. July 8th, English Channel, off the Isle of Wight; 7 A.M. all the three masts struck by lightning, which damaged the fore and mizen-top-gallant-masts and fore-top-masts, and left traces on the hoops of the fore and main-masts.

The wind had been from W.S.W. to W.N.W. moderate and fine, on the 6th it changed to S.S.E.; on the 7th east and fine, on the 7th S.b.W. to E.b.N. light breezes and hazy, 8th easterly and moderat, with rain, thunder, and lightning.

A man near the main-mast was knocked down, the skin of his back exhibited the appearance of a tree extending its branches over the whole back, as if caused by the rupture of the veins.

The ship had a new top-mast supplied from the Portsmouth yard. Further particulars by Admiral Sir G. Cockburn, K.C.B., &c., who then commanded the ship.

KENT, 74.

1811. July 31st, off Toulon; 4h. 15m. A.M. main-mast and mizen-mast struck by lightning, which damaged the masts, top-masts, and mizen-top-gallant-mast, also the main-top-sail-yard. One seaman was killed and two wounded.

It appears by the evidence of Lieut. Godfrey, R.N., then in the ship, that the main-mast was set on fire and quite ruined, that all the spars were more or less damaged.

Wind E.N.E., A.M. fresh breezes with heavy thunder and lightning; 3h. lowered the top-sails to a squall, in this squall the wind veered to north-east, and the ship was struck by lightning at 4h. 15m.; after this, at 7h. the wind went back to the east, then E.b.S., and E.S.E. The ship went to Mahon to refit.

N.B. It is stated in the eighth vol. of the *Mechanics' Magazine*, and in various public Journals, that at the time this accident occurred, two lightning conductors were up, and that of twenty sail of H.M. ships in company *without* such conductors, not one was damaged. It will be seen however by the ship's log, and by the House of Commons report on "Shipwreck by lightning," February 1840, that this statement is quite untrue.—*Vide* page 92.

The ship had usually a common conductor at the main-mast, but in consequence of its having become defective from use it was taken down for repair; there were several of the fleet struck at about the same time, about eight miles distant.

LION, 74.

1794. May 20th, lat. 34° 50' S., long. 32° 35' E., Cape of Good Hope, north 89° west, 274 leagues; mizen-mast destroyed by lightning, and other damage.

This ship was struck in the same storm with the Glatton, already described.

LOWESTOFFE, 36.

1796. March 8th, Mediterranean, Minorca, 5° 46' west, 134 miles; 12h. 30m. P.M., main-top-mast and main-mast shivered in pieces; fore-top-mast split open; fore-topsail-yard carried away; hoops of main-mast burst open; ship set on fire in various parts of the mast and rigging; three men knocked off the mast-head, one of them killed; several men struck down in the main-top, one of them killed; the people struck down between decks by violent explosions.

Wind south-east to east, with heavy squalls, thunder, lightning, hail, and rain; about 2h. 30m. P.M., the weather began to clear; on the 9th A.M., fine, with light breezes.

They were obliged to cut away the main-mast and proceed to Mahon for refit. The storm was attended by a heavy sea.

This frigate was one of the look-out ships in Admiral Hotham's squadron; she was disabled at a time when the services of our ships were of the greatest importance, the French, supported by a powerful fleet, having just invaded Italy. Not long after the refit, the ship fought a hard battle with a large frigate, which she captured.

LIVELY.

1805. November 24th, at anchor in Naples Bay; 11 P.M. a flash of lightning struck the main-mast. The log says little of the consequences; but Captain White, R.N., who was in the ship, states, that it

was so much damaged as to require its being removed, so that the ship had a new mast at Malta.

The previous day had been calm; on the 25th an east wind, with fresh breezes; P.M. squally, with rain; at 11 P.M. calm again, with heavy rain, thunder, and lightning, at which time the ship was struck.

ST. LAWRENCE, 104.

1814. October 19th, Lake Ontario, entrance of Magara, south-west 42 miles; 6 P.M. main-top-mast shivered in pieces, main-mast badly rent; five men wounded.

Wind on the 18th north-west, with strong breezes, which continued; on the 19th squally; P.M., 5h. 50m., a heavy squall, with hail; the wind on the 20th west, with strong breezes.

LARNE, 20.

1820. February 16th, standing in for the land off Corfu; A.M. heavy squalls, with thunder and lightning; 7 A.M. a thunder-bolt struck the ship and killed James Waters, seaman, and badly wounded James Williams. Wind S.b.W., and S.

MINERVA, 36.

1791. November 5th, Coast of Malabar laying in Tillicherry Roads; A.M., from 1 until 3, squally, with thunder and lightning, and heavy rain; 2h. 30 m. the main-top-gallant-mast and main-top-mast was shivered in pieces, and fell about the decks; the main-mast was rent, and much damaged. One man killed and two wounded.

Wind on the 8th south-east, moderate and cloudy; 9th south-east, north-east, and E.N.E.; 10th south-west, light breezes.

When the ship was struck smoke appeared to come up the hatchway, and lightning like fire-balls ran along the decks; the after part of the main-mast was fairly carried away, and all the wouldings burst off; four hoops knocked off; top-sail sheet bits split, and one side of the chain pumps split from top to bottom. There was a chest of cartouch boxes full of powder on the quarter-deck when the lightning struck the ship.

The journal of Capt. Sutton gives a full account of this accident.

MERCURY 28.

1801. February 24th, Mediterranean, Cape Mole, W.N.W., thirty miles; 2 P.M. main-mast shivered by lightning.

23d, fresh breezes and squally from north-west; this weather continued for some days.

The ship was obliged to go to Mahon to refit.

MONMOUTH, 74.

1802. August 21st, Naples Bay; 7 A.M. main-top-gallant-mast and main-top-mast shivered in pieces and rendered useless; main-mast much damaged.

The previous weather had been squally, with variable winds, thunder

and lightning; 20th ditto with rain; 21st squally, rainy weather; winds variable, thunder and lightning; A.M. light breezes and clear; 22nd moderate and cloudy.

MIGNONNE, (Corvette) 18.

1804. July 4th, Port Antonio, West Indies, five miles; 1 A.M. ship struck by lightning; main-top-mast and main-mast shivered. Five men killed, and nine wounded.

The top-mast was shivered into above fifty pieces, and the splinters scattered in all directions; the main-mast was split open down upon the keelson, and the hold filled with a sulphureous smoke; two of the men were killed in the main-top, they were burned black; of two men sleeping near the Armourer's bench, one was found dead, he had a black speck on his side; the other was not hurt.

Wind from the east and north on the 3rd, fresh breezes and cloudy; the ship had been on shore on the north-east end of Jamaica, and was being accompanied by the Desiree to Port Royal; the morning of the 4th most intolerably hot, without a cloud, wind E.N.E.; soon after sun-set clouds appeared to rise from every part of the horizon, with thunder and lightning; about midnight the heavens appeared to be one continued flame; 5th, fresh breezes, wind E.N.E.

MINERVA, 36,

1811. August 26th, Bay of Biscay, lat. 14° 4' north, long. 48° 30' west, Cape Rea 126 leagues; 2h. 20m. A.M. a flash of lightning took the head of fore-top-gallant-mast, and shivered it and fore-top-mast in pieces.

The wind had been from the south-west on the previous days; on the 26th, fresh breezes and clear, after which squally, with heavy rain, thunder, and lightning; P.M. moderate and clear; 27th wind south-east and calm.

MORGIANA, 18.

1814. February 27th, West India, Cape Look-out Shoals, north 23° west, 113 miles; 7 P.M. violent squalls with heavy thunder and lightning, main-mast splintered in several places: three men wounded.

26th, Wind west fresh gales; 27th westerly; 28th A.M. moderate and cloudy, with rain and lightning, wind W.N.W.; P.M. strong gales and squally, with heavy rain.

The ship had the main-mast shifted at Bermuda on the 23rd March following.

(To be continued.)

VICTORIA AND ALBERT STEAM YACHT.

It is scarcely possible, in the present state of the works on board the Victoria and Albert, to convey any thing like an idea of the complete-

ness of the arrangements and the good taste which prevails throughout the whole, for the comfort and general convenience of Her Majesty, when inclined to enjoy the pleasure of excursions round her sea-girt island. The whole of the deck of this beautiful vessel has been laid with solid mahogany, joined together with Jeffery's "Marine Glue," the qualities of which appear to have given great satisfaction, as under the most powerful sun it will not dissolve or soil the most delicate satin shoe, at the same time that it retains its adhesive qualities, and resists the action of water on the expanding and contracting seams. The grand entrance to the state cabin is at a short distance from the wheel for guiding the helm, and is elevated above the deck in the form of a conservatory, with large plate glass windows, formed to suit the oval nature of the construction, and moving on pulleys for the purpose of admitting the pure air of heaven in genial weather. The entrance consists of two folding doors, fitted with large plate glass windows to match with the others, and the roof is raised in the form of a cupola, on an oval base. The roof has been covered with the skins of some of the prize oxen, and when completed, will have the appearance of a highly finished and beautifully varnished coach, if the similarity of the materials and workmanship may be compared to the land vehicle. A solid mahogany staircase descends from the deck into a large open space, on each side of which are elegant bed-rooms for the use of Her Majesty and Prince Albert on one side, and for Her Majesty's immediate attendants on the other. The state cabin occupies the entire breadth of the stern of the vessel, and is lighted with large windows of plate glass, and superbly fitted up in every part with solid mahogany. On the exterior of the stern is an excellent carving of the Royal Arms, and on the deck an open species of platform has been constructed, elevated to some height for the steersman to stand upon, when employed at the wheel. This arrangement appears an ingenious plan, to prevent the noise and movements of the steersman's feet being heard in the cabin below. The whole of the partitions separating the state cabin and the bed, and other rooms, from each other, have been ingeniously contrived to deaden or completely remove the effects of the vibration generally experienced on board steam-vessels, and present the appearance as if they were constructed for a substantial dwelling on land, being formed of a substance like strong canvas fixed about six inches apart, and having the hollow between the pieces padded with felt. Over the canvass will be placed some of the richest and finest kind of room ornaments to be obtained in this country. In what may be termed the ceiling of the state cabin, and the other rooms, have been placed perforated zinc plates, for the purpose of communicating with Dr. Reid's invention of ventilation, which has been applied in such a manner as to be available in every part of the vessel. The cornice, joining the ceiling to the sides of the rooms, is formed in every part from a very chaste and light pattern mould, representing alternately the exterior and interior of a cockle-shell, and affords a most pleasing, and at the same time unobtrusive relief to the eye.

The dining room for the Royal attendants, consisting of Her Majesty's suite, is situated between the engine-room and the rooms already des-

cribed, and in each are convenient, although not very large sleeping rooms.

The engine-room does not occupy much space compared with the power of the engines (450 horse,) Messrs. Maudslay, Field, and Co's, engines fitting in the vessel, occupying one-fifth less space, and consequently less weight than any other steam engines hitherto used for naval purposes. The engines are exactly of the same size as those used in the *Devastation*, steam-frigate, which have given such great satisfaction since they were actively employed in that vessel, under the command of Captain Henry, on the Mediterranean station. Mr. Baker, the chief engineer of the *Devastation*, and the oldest engineer in the afloat service, has been appointed chief engineer to the *Victoria and Albert*, and has returned from the Mediterranean, and joined the Royal steam-vessel, to be present during the erection of the engines on board. The engine-room is so constructed as to be in a manner detached from every other part of the vessel, and is so compact in the centre, that when passing under deck from one extremity of the vessel to the other, the presence of the engines will hardly be discerned, the whole being surrounded by bulkheads, or, as will better be understood when described, as being completely encased in iron tanks filled with water, on a plan suggested by Mr. Holdsworth, to deaden the noise of the engines.

The fore part of the vessel contains every accommodation for the officers and crew of the vessel, the former next to the engine-room, and the latter in a more forward part of the vessel. The Royal kitchen has been very compactly and comfortably constructed and lined first with sheet lead one eighth of an inch in thickness, and over that metal a lining of tinned iron. The fire place and warming ovens made by Brown and Redpath, are of a most substantial and safe description; which will be read with the highest pleasure by Her Majesty's subjects who feel a deep interest in every thing tending to afford happiness and pleasure to the Royal pair, but they will be more appropriately given when the vessel is finished and ready for sea.

On leaving the Docks, Prince Albert, with the Lords Commissioners of the Admiralty, embarked on board the Queen's barge at the Brunswick pier, and returned to Whitehall stairs. The royal barge had a splendid appearance, the richness of the gilding on the carvings being quite dazzling in the brilliant sunshine, and had a beautiful effect when reflected from the water. The Queen's barge was rowed by 22 watermen in scarlet liveries, and the Admiralty barge which accompanied it by 10 men in scarlet coats. The only boats accompanying the Royal party, were two under the control of the Harbour Master, to clear the river, should their services in that way have been rendered necessary by any unforeseen obstruction, but it is gratifying to know that the Prince's excursion was every way satisfactory.

The *Victoria and Albert* steam-vessel will be commissioned this day, July 1, and the following officers have been appointed to her:—
Captain, Right Hon. Lord Adolphus Fitz-Clarence, G. C. B.; Commander, W. H. Hall; Lieutenant, G. Snell; W. Tringham; Sir W.

Hoste ; Master, W. Ellis ; Purser, W. Bell ; Mates, Robert Coote, F. P. Warren, Hon. P. F. Pellew, and Hon. F. Curzon.

VOYAGE OF THE BEAGLE.

THE voyage of Her Majesty's surveying vessel *Beagle* having been completed, it may not be uninteresting to the readers of this journal to be informed of the result of the work that has been performed by the tenants of her wooden walls since her arrival from England, in the year 1837.

The objects of her voyage were not confined to one spot or portion of the coast, but, generally, to complete all parts that had hitherto escaped the notice of, or had not been visited by, previous navigators : particularly, portions of the north-western coast which were not seen by Captains Flinders and King, or by the French expedition under Commodore Baudin, in the year 1802.

The *Beagle* left England originally under the command of Captain J. C. Wickham. This officer, however, after two harrassing voyages to the north-west coast—in which several interesting points were established, and two rivers (the *Adelaide* and the *Victoria*) discovered—was necessitated to return to England, on account of bad health, brought on by the extreme heat of the climate, when the command devolved upon Captain J. L. Stokes, who has completed the objects of her voyage, and now takes her home—to receive, it is hoped, the reward of his long and useful services.

To describe the work performed, in the succession in which it was executed, would be out of place here. It is better, therefore, to give a general summary of the different portions of the survey in the order, as to position, in which they follow each other.

Commencing, therefore, with the eastern coast. The inner route towards Torres Strait was twice navigated on the way to the north coast, and several important corrections and additions made to the charts now in use. Of the latter may be mentioned, the determination of a better outlet than the one to the north of Wednesday and Hammond Islands, viz., by passing through Endeavour Strait, which hitherto has been considered to be too shoal for vessels of large burthen. Captain Stokes has however ascertained, that by keeping nearer to Wallis' Isles, a good channel or outlet exists, in which there is not less than five fathoms water. The passage, therefore, through this part of Torres Strait has been very much improved.

The next important feature of the *Beagle's* voyage, was the discovery of two considerable rivers at the bottom of the Gulf of Carpentaria, flowing through a fine country in a south-westerly direction for sixty miles, navigable for thirteen miles for vessels of thirteen feet draft, and to within five miles of where the water is fresh ; the boats, however, traced it for nearly fifty miles further, to the latitude of $17^{\circ} 59'$ and longitude $139^{\circ} 30'$. The climate was found, in the month of August, to be of an agreeable character, the thermometer in the month of August indicating an average temperature of 60° , the minimum being 50° . To these rivers the names of "Albert" and "Flinders" were given. The character of the country is low, and the soil chiefly alluvial. No satisfactory reason has been given for the low temperature of this tropical region, which, as the latitude is about 17° , ought to have been at least 70° or 75° . The situation of these rivers may at no distant period open a road to the interior, which is at present wrapped up in doubt and mystery.

The next discovery in succession to the west, was that of the "*Adelaide*" river, at the north-west part of the Gulf of Van Diemen, similar in character to the Alligator rivers, which were discovered in the year 1818, falling into the gulf at its southern part. Proceeding farther, another river was found of more importance, and size, than any previously known in Intertropical Australia. It was called the "*Victoria*." It extends for about one hundred and fifty miles

to the S.E.b.E., and is navigable for vessels of burthen for sixty miles from the entrance; its further examination was made by a pedestrian party to the latitude of $15^{\circ} 36'$, and longitude $130^{\circ} 52'$, and was left still flowing from the south-east. This position is about five hundred miles from the centre of the continent. The character of the river may better be understood from the following extract from Captain Stokes' journal.

"The valley through which the river passes varies in its nature, from treeless, stony plains, to rich alluvial flats, lightly timbered with a white stemmed gum; the banks are steep and high, thickly clothed with the Acacia, drooping Eucalyptus, and tall reeds. There was no perceptible stream in the upper reaches; but, if we may judge from the inclination of the stems of the trees growing in the bed, and heaps of large boulders in the channel of the river; the Victoria, at some recent period, must have been a large and rapid river."

Whilst employed in making observations at Cape Pearce, which forms the north entrance of this river, Captain Stokes was treacherously speared by the natives. The wound was a severe one; but assistance being rendered, his life was happily saved. It is a curious coincidence that the three officers whose services as surveyors in the late expedition have been most prominent, viz., Captain Stokes, Mr. A. B. Osborne, master, and Mr. Fitzmaurice, mate; each met with serious wounds in the prosecution of their duty, Messrs. Osborne and Fitzmaurice, from muskets accidentally exploding: the former was obliged to be invalid in consequence, and the latter, who however has persevered to the last, will be lame for life.

The rivers Albert and Flinders to the eastward, and that of Victoria to the westward, converge in the direction of their sources apparently to one common point; to which also do the intermediate rivers—the Alligators and the Adelaide. It seems probable that all derive their origin from some large inland marsh or lake, to which they serve as drains. It is not unlikely that there may be a low tract of land between the Gulf of Carpentaria and the great Horseshoe swamp, found by Mr. Eyre in the northern part of the province of South Australia.

With respect, however, to the climate of the country in the neighbourhood of the Victoria, the temperature, ranging between 95° and 110° , was found by the Beagle's officers in the month of November to be almost insufferable, and quite different to that experienced at the Albert, in the Gulf of Carpentaria. It would seem from Captain Stokes' description above inserted, to resemble in character the country about Cambridge Gulf, which has its embouchure to the sea, a short distance to the westward.

The next part of the north-west coast visited by the Beagle, was the opening that was supposed to exist at the back of the Buccaneer's Archipelago. Perhaps no part of the whole coast promised to be of greater interest, and raised hopes of the existence there of a large river, hopes that were justified by the great rise and fall of the tides, which exceeded thirty-six feet. It was, however, found to be but a comparatively unimportant indentation, the eastern part or Collier's Bay being nothing more than a shallow sinuosity of the coast line, and the western part narrowed gradually into a tolerably extensive sound, terminated by Fitzroy river, which was traced for twenty-five miles in a southerly direction, draining the lowland from and through which it flowed. The opening near Cape Latouche-Treville, which was thought also to be another outlet of the supposed river, or else the mouth of a second, was an open bay not affording even sheltered anchorage. The interval between this part and Depuch Island, was also explored, but not found to contain any inlet or feature of importance. It is generally a sandy and low sterile coast, fronted by a shoal approach and several sand-banks, the positions of which were ascertained. The Monte-Bello Islands were also correctly and minutely surveyed, as also some rocks in the neighbourhood, which are doubtless the Trial Rocks of former navigators.

On the west coast, the Houtman's Abrolhos was also explored and surveyed,

together with the coast within it, where the fertile appearance of the coast gave strong indications of the presence of a country favourable for settling. It is here that Governor Grey recommended the Australind Company to establish themselves. Fortunately, however, they had located themselves at the inlet called Port Leschenault: for they afterwards ascertained that the former would not have suited their wants. Several new anchorages about Rottenest and Gage's Road, off Swan River, were also examined and surveyed, in which much advantage will be derived by the colonists at Western Australia.

South Australia has also had the advantage of the Beagle's services in the survey of the anchorage and port at Adelaide.

But perhaps the most important—because useful—work performed by the Beagle has been the detailed survey of Bass' Strait, which has been just completed by Captain Stokes, with the aid of the Government of Van Diemen Land; which, in the most liberal way, at once acceded to the request of Captain Stokes, by devoting to his services the use of the colonial cutter Vansittart, for the survey of the southern portion of the eastern entrance of the Strait. The command of the vessel was temporarily given to Mr. C. C. Forsyth, mate of the Beagle.

The result of these labours has been the completion of the survey, in which the proper and relative positions of the various headlands, capes, and islands, which are so prominent and numerous in the Strait, are laid down, with the tides, soundings, and description of several new anchorages, in a manner that cannot but be of immense importance to the commercial interests of the colony. Much important information, relative to the entrance of Port Dalrymple, as well as that of Port Philip, and the channel within it; the approaches to and anchorages to the southward of Corner Inlet have also been furnished by the operations of the Beagle during this important survey. Much labour and personal exertion have been bestowed upon this work, and too much praise cannot be given to those who have been prominent therein. It may be, however, necessary to say, that it was commenced by Captain Wickham, and completed by Captain Stokes.

This, however, would not have been the last work which the Beagle would have performed for the colony, but for obstacles which unexpectedly presented themselves, and prevented Captain Stokes from making a survey of the neighbouring coasts of Port Jackson. The necessity for a chart of the coast is very urgent, from discrepancies which have been found to exist in the chart now in use, and the principal materials for it have been from time to time prepared as the Beagle passed up and down the coast. It is to be lamented that this desirable matter could not have been accomplished.

It is unnecessary to follow the Beagle with more detail through her various movements upon the long and tedious service upon which she has been employed. Suffice to say, that the fruit of her voyage has been of the greatest importance to the navigation of the coasts, which will be amply proved when the charts of her voyage, particularly that of Bass' Straits, are published, and placed within the reach of navigators, by whom alone, from the unpretending manner in which the work has been performed, it can be estimated as it deserves.

P. P. K.

NAUTICAL NOTICES.

SLASHER REEF, Australia.—We take the following from that valuable journal, the *Naval and Military Gazette*, and with some surprise, like the writer, that we have not met with it before: had he sent it to the *Nautical Magazine*, it would have appeared immediately. These ships had no business out of the usual track, from which the reef on which they struck is distant about twenty miles. Was it to conceal this mistake that it has so long been kept quiet?

Camp Kurrachee, Lower Scinde, March 25th, 1843.

SIR.—It has been a subject of the greatest surprise to us here, that although now

a period of nearly nine months has elapsed since Her Majesty's 28th regiment had a providential escape from shipwreck, not a single notice (that we have seen) has ever appeared on the subject in any paper, although I know a full account was forwarded to one of your leading journals in London, in September last; and one would think that a detail relating to a corps which "has done some service to the State," might be as worthy of notice as the numerous and melancholy calamities which have lately befallen Indian cotton and merchant ships, and with which the English press is teeming.

Concluding, sir, that you have been silent only because you have never heard the circumstances, I now regret that I did not, at the time, send you an account, as after so many months I can now only briefly state the facts in general, for such is, perhaps fortunately, our nature, that the events of the past fade as their distance from the present increases; and hours of anxiety and excitement are all comprised in one general recollection of the main cause which gave rise to them.

On the 16th June, 1842, the whole regiment, consisting of 26 officers and 709 men, embarked at Sydney, and on the 19th sailed for Bombay on board the ships *John Brewer*, (head quarters,) *Kelso*, and *Arab*, to proceed by the inner passage, Torres strait, and to keep company through, the *Kelso* leading as Commodore.

On the night of the 29th, being now two or three days in the straits, it blew very fresh, and the ships were going very fast before the wind as we ran along by the coast, which was some thirty miles from us.

You must be aware that this is, perhaps, one of the most dangerous passages known, as it is studded with reefs and rocks, hidden and visible, and that the vessels are obliged to anchor each day with good light. We had not done so yet, and whether *we ought* to have done it is a question I do not mean to venture an opinion on; it is sufficient for my present object to state we did not do so, but continued running through the night and the following morning. About half-past five o'clock, just as day was breaking, the three ships above named, with a barque that joined us the day before, named the *Hopkinson*, were almost at the same moment *fast*, having *struck against a coral reef*? It was, indeed a curious scene to see them almost within hail. The *Brewer*, *Kelso*, and *Hopkinson*, almost in a line, were held by the bows; the *Arab* had gone more a-head, and got her broadside on, in which position she was rocking and striking in a manner that led us to conclude she must either go to pieces or never get off.

The limits of a letter will not permit my entering at any length into the various means we resorted to, or the many fortuitous circumstances to which we owe our escape. Kedg anchors were got out, as we were afloat astern, while we had not *two feet* water at the bows, and, after a hard day's work, we succeeded in dragging the ships, all but the *Arab*, out of the reef, and into deep water again; but here we were in almost greater danger than before, as it blew hard, and we were *surrounded* by rocks *so close*, that if the anchors yielded the least, we must have gone against them. During the night the *Arab* swung off, when the tide rose, and was afloat. In fact, we worked unceasingly for six days, until the 5th July, during which time we had recourse to every possible expedient. At length all was ready to attempt *getting out* of what the Americans would call our present "fix," and this was the greatest difficulty of all. To give you some idea of this, I must try and explain our position.

It seems that on the 29th we had kept too much to the eastward, and that right a-head of us, stretching from west to east, ran a long barrier of coral reef, not visible, and, of course, stretching across our course. Had we struck against *this*, our doom would have been sealed; but here, as in many other instances, Providence interposed in our behalf: in the line of this barrier was a gap of about a mile, within which was formed a bay, running about two miles back; in fact, forming a sort of harbour under water. Through this opening the four vessels entered almost together, and from the tide being full at the time, we must have sailed *over* some of the rocks, which shewed themselves everywhere

behind us at its fall, and presented a fearful opposition to our attempts at getting out. Another difficulty was, that the wind, which is always favourable to the onward course, as it blows from the south, for that same reason must be *against* us in our efforts to return.

However, on this morning, with God's blessing, we did make the effort, and succeeded, after truly many "hair-breadth 'scapes," in clearing this reef, and that night anchored at the Palm Islands.

That my letter may have something to recommend it, I shall give you a copy of the only document I now have relating to this event; it is the position of the reef which we called "28th, or the *Slasher's reef*."

Lat. 18° 32'	} Bear. by	{	from Palm Islands W. & by S. ½ S. 29½ miles.
Long. 147° 3'			" Mt. Hinchinbrook, W. & by N. ¼ N. 45
	Comp.	{	" Magnetical Island, S.S.W. ¼ W. 38

After clearing this, and making for the Palm Islands, we passed another long reef, bearing 9½ miles W.b.S; this we called "John Brewer Reef."

As to the causes which led to our getting into this place *at all*, I do not feel myself competent to give an opinion; but had I time or space to enter more into detail, I think I could show you that our getting out of it forms one of the most wonderful instances of escape on record.

I am, &c., A SLASHER.

SANTA CRUZ, *Tenerife, Anchorage*.—We request our readers to correct the following in the marks for the anchorage at Tenerife, in our number for April (p. 217.)

For the "Square Church Tower *on with the cupola* bearing W.S.W.," read "Square Church *with a cupola* to bear W.N.W.;" and in the subsequent bearing of Fort Paso Alto for "N.N.W." read "NNE."

The foregoing will be sufficient; but another good anchoring mark is *not* to bring the *Mole Head* any thing north of W.N.W.

BALTIC NAVIGATION, — OSCAR BANK, *Calmar*, June 14th.—In beating up the North Calmar Sound, the master of the galliot Oscar Vornander, discovered a strong shallow on which was no more than eight feet water. The bearings are as follow:—

The church of Achlboke on Orland, E.S.E. ¼ E., and the castle of Borgholm S.W. ¼ S. by compass.

The above-mentioned galliot grounded on the said spot the 11th inst., but the weather being fair got off again.

Duke Street, Liverpool 12th June, 1843.

SIR.—I have the honor to transmit to you a communication from Mr. Cornforth, commander of the ship Otterspool of this port, a gentleman who I am sure would not willingly be the means of multiplying "Vigias," and one who always causes a good look-out to be kept when in the proximity of any (even doubtful) danger laid down on the chart.

I am, &c.,

To the Editor, &c.

ANDREW LIVINGSTON.

"Wednesday, May 24th, 1843.—Moderate breezes and clear weather at past meridian, sent a hand aloft to look out for Green Rock, also good look out was kept on deck. At 1h. the temperature of the water by Jamieson's marine thermometer was 58°, T. A. 56°: at 2 P.M. T. W. 57½, T. A. 56°; at 4 P.M. T. W. 57½; at 6 P.M. T. W. 57½°. At 7h. 30m. P.M. breakers seen on our lee bow about four miles off very distinctly by the look-out, chief officer and self aloft; when first seen by the look out it appeared like water breaking over a wreck, or, splashing of many oars at different points, and when abreast of it a circular space of water about the length of a ship in diameter was plainly seen quite smooth *after* the sea broke, it was very near the surface, and so near dark, or I would have tacked, and gone towards it; in passing it every one was so

engaged looking at it, that I quite forgot to try the temperature of the water, as soon as I got on deck did so, and it had fallen a degree ($56\frac{1}{2}^{\circ}$). At 8 P.M. T.W. $56\frac{1}{2}^{\circ}$, and latitude by obs. alt. of the polar star $45^{\circ} 10' N.$, from the falling of the thermometer, and my situation not much from the latitude and longitude of Green Rock, as laid down in Purdy's Memoir, and no account of it since 1766, except the notice by Captain Coombes, 1819.

The breakers I do not think would have been seen had it been smoother, but there was at the time about 4 feet scud. I do consider it a danger of some kind. By chronometer checked by lunar observations, and rate confirmed on making Cape Clear, I make the latitude of the breakers to be in $45^{\circ} 1' N.$, and longitude $25^{\circ} 45' W.$ I think this will be found pretty near the truth, and recommend any one running near the above latitude and longitude, to keep a good look out. The above latitude and longitude places it 9 miles more north, and $25\frac{1}{2}$ miles more to the eastward than Purdy does.

JOSEPH CORNFORTH, *Commander,*
Ship Otterspool, of Liverpool.

H.M.S. Lily, at anchor off Mozambique, Feb. 11th, 1843.

SHOAL OFF QUILLEMINE.—While cruising off Quillemine on the 3rd Jan. last, we came suddenly at 5h. 15m. P.M. on a shoal patch, not laid down in Owen's Admiralty Chart.

At noon we were in $18^{\circ} 23' S.$ by observation, $37^{\circ} 2' E.$, by excellent chronometers, Quillemine flag-staff bearing N. $34^{\circ} W.$, 26 miles, the current had set us about N.N.E. true, 30 miles, in the last twenty-four hours. We had stood since noon about 27 miles S.W.b.W. by compass, with southerly wind, force 6, and a good deal of sea.

The water being discoloured, although no land was in sight, (yet no uncommon thing,) a leadsman was sent into the chains, whose first cast was 13 fathoms, his second immediately following $8\frac{1}{2}$, and the next $6\frac{1}{2}$, when the helm was put down, (the ship's company being at supper,) the masthead-man, at the same moment reporting land on the lee bow, thus corroborating the distance by reckoning, the land being low, which would make it distant about 16 miles. In stays, we had $6\frac{1}{2}$, and standing off $8\frac{1}{2}$ and 13 fathoms in successive casts, as approaching it.

An American master of a trader now here, who has frequented these seas for several years past, states that *he*, as suddenly, got into 6 fathoms on the same spot, at night, when bound to Quillemine, when he believed himself to be 16 or 18 miles off shore.

By afternoon sights and back reckoning the master of the Lily made it in $18^{\circ} 35' S.$, and $36^{\circ} 40' E.$

Trinity-house, London, 7th June, 1843.

CONSTABLES BANK, *Little Orms Head*.—Notice is hereby given, that this Corporation has caused a Red Nun Buoy, marked with the word "Constables," to be placed on the Northern Edge of Constables Bank, off Little Orms Head, upon the coast of Denbighshire. The Buoy lies in 3 fathoms at Low Water, and with the following Marks and Compass Bearings, viz. :—

Priestholm Islands, its apparent width open North of Great Orms Head W. b.N.

Little Orms Head, W.b.S. $\frac{1}{2}$ S.

Lysfaen Telegraph, S.b.W.

Rhyddlan Church Tower, S.E. $\frac{1}{2}$ S.

N. W. Patch Buoy, E.S.E.

By Order,

J. HERBERT, *Secretary.*

Trinity-house, London, 28th June, 1843.

BEACON ON THE RUNDLESTONE.—Notice is hereby given, that the works which, during the last two summers, have, by direction of this Corporation, been in course of execution for constructing a Beacon upon the dangerous Rock called the Rundlestone, off the Land's End of Cornwall, are now completed, and a conspicuous Beacon has been erected thereon.

This Beacon consists of an artificial cone, bearing a mast, having a ball upon its summit, at an elevation of 19 feet above the level of the sea at high water, spring tides;—and mariners are to be observe that spring tides rise at this Station 19 feet, and that at low water of those tides the Rock is uncovered to the height of 7 feet.

It being of great importance that this Beacon should not sustain injury, Masters of Vessels and other persons are hereby cautioned and enjoined not to approach it on any consideration, lest their own safety, as well as the security of the structure, should be thereby unnecessarily endangered.

N.B. The Buoy which has been for several years past moored near this Rock, will be forthwith taken away.

By Order,
J. HERBERT, *Secretary.*

Trinity-house, London, 28th June, 1843.

RACE'S SHOAL, COAST OF NORFOLK.—It having been ascertained that the South End of Race's Shoal has grown up in a southerly direction,—Notice is hereby given, that the White Buoy of that Shoal has been moved $1\frac{1}{4}$ Mile S.b. E. from it's former Station, and now lies in 5 fathoms at low water with the following compass bearings, viz.—

Dudgeon Light Vessel, N.N.E. $\frac{1}{4}$ E.

Buoy on the North End of Race's Shoal, N.N.W.

Blakeney Church, S.b.W.

By Order,
J. HERBERT, *Secretary.*

Trinity-house, London, 11th July, 1843.

The following notice having been communicated to this Corporation, the same is reprinted by order of this Board, for the general information of mariners.

J. HERBERT, *Secretary.*

ROYAL HARBOUR OF RAMSGATE.—Notice is hereby given that the Light-house of this harbour is now rebuilt; in consequence of which, the temporary light lately exhibited will be removed, and a red light will be exhibited from the new light-house at the usual times of tide, on and after the 10th inst.

The lantern is elevated on the west pier, 37 feet above high water mark, spring tides.

N.B. Masters of vessels using Ramsgate Channel, (commonly called Cudd's Channel,) in the night time, are cautioned to keep the light open to the westward of the Two Guide Lights, on the West Cliff, which are placed to the westward of all the gas lights of the town; and further, to notice that these two small lights kept in one, will lead through Cudd's Channel in the best of the water, towards the harbour's mouth.

Royal Harbour of Ramsgate office, 22, Austin Friars, London—July, 1843.

THOMAS M. SHADWELL, *Secretary.*

Trinity-house, London, 6th July, 1843.

SHIPWASH LIGHT VESSEL.—This corporation having completed the equipment of a new Light Vessel for the station at the north-east end of the Shipwash Sand,
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the said vessel will be forthwith moored thereat: and the masters, pilots, and other persons are to observe, that her appearance during the day-time will be that of a vessel having one mast only, surmounted by a red ball, instead of three masts, as heretofore:—

The appearance of the light in the night-time will remain unchanged.

By Order,

J. HERBERT, *Secretary.*

PLANET SHOAL, Bay of Bengal.—The following intelligence touching a shoal in the Bay of Bengal, not hitherto noticed, extracted from the *Mauritius Price Current and Shipping List*, of 26th October, 1842, is published for general information.

By order of the Marine Board,

Fort William, Dec. 20, 1842.

C. B. GREENLAW, *Secretary.*

“EXTRACT from the log of the barque ‘Planet.’—Wednesday, 7th Sept., 1842, at 1 P.M. observed the water on the starboard bow much discoloured, kept the ship away, and sent a hand aloft to look out, who observed the same patches as far as the eye could reach, running about W.S.W. and E.N.E.; passed over the tail of one patch, and had as near as we could suppose, 9 fathoms on a sandy bottom,—a quantity of sand fast to the lead when hauled in. The extent of the shoal appeared to be about three miles, lat. 16° 23' N., long. 84° 10' E.

“Capt. Thompson further states, that in the centre of this shoal, there were heavy breakers, the weather had been squally in the forenoon, but was then more moderate, though the breeze was fresh, and a swell in consequence. They had no meridian observation, but the longitude was determined and laid down by good sights taken that morning with an excellent chronometer.”

(True Extract),

C. B. GREENLAW, *Secretary.*

THE YANG-TSE-KIANG.—H.M. brigs Childers and Algerine continue employed in surveying the mouth of the Yang-tse-Kiang, the Pylades and Columbine cruise among the islands of the Chusan Archipelago, and the Thalia, Minden, and the steamers Driver and Medusa are stationed in the harbour. A survey of this island is nearly completed, under the direction of Lieutenant De Havilland, 55th, and Ensign Sargent, 18th regiments. Supplies are abundant, but high priced, and labour is plentiful and cheap. Last night the garrison, battery, and slaughter-house accidentally caught fire, and was burnt to the ground; but by the great exertions of the military, the cattle and stores were all saved.

PAUMBUN PASS.—The steamers Nemesis and Pluto, formerly part of the Chinese expedition, came into harbour, the one in the morning, the other in the afternoon of the 10th May. They came round from Calcutta and Madras, having threaded the Paumbun passage, between Ceylon and the main land. No difficulty was experienced on the river of want of water, but the enormous length of the Nemesis, 170 feet, occasioned some trouble at the entrance, where the channel is peculiarly narrow, and impeded by sudden turnings. The Nemesis draws nearly five feet water; she is provided with a false keel, which slips down through water-tight chambers, in several places, along her bottom, and so helps to prevent her making leeway during a gale in the open sea. She is, however, but an indifferent sea boat, but first

rate for the purposes of river warfare. She appears to draw too much water, and to be too long for being of service in the *Indus*. The *Pluto* is the same style of vessel, but of smaller dimensions, as also are the *Proserpine* and *Phlegethon*, the latter of which was lately damaged in attempting to ascend the river *Foo-Chou-Foo*.—*Indian News*.

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### WINDS OF NEW ZEALAND.

SIR.—As every recorded fact relating to Meteorology, in any particular part of the world is of value; and especially so with respect to the winds and weather, in a recently established Maritime Colony; I have great pleasure in being able to transmit to you, a copy of the Meteorological Table for the last quarter of the year 1840, and the years 1841 and 1842,\* inserted in the *Wellington Almanack*, for this year, (the first of its publication,) with the hope that it may prove of service to navigators who are bound to New Zealand.

From this document we learn that the greatest mean height of the barometer was 30·105 in the month of January; and the lowest mean height was 29·412, in the month of June. The highest mean of the thermometer 81° in January; and the minimum 36° in June, during the period above mentioned.

It also appears that the most prevalent winds here, blow from the northward, and from the southward; the former being to the latter as —432 to 266. At first we may feel surprise that these northerly winds should be predominant, as coming from a direction where the general temperature of the atmosphere must be considered as being much higher than that surrounding New Zealand. But, it is not improbable that the movement is occasioned by the copious fall of rain without the southern tropic; and that from the large extent of lands exposed to the sun's rays, in a climate where the thermometer does not range to a low point or degree, even in winter season, those lands become an attracting medium to the more northern air, cooled by pluvial discharges. In a similar way that we account for the south-west winds, which are so prevalent on the English coasts, the contrariety to the general theory of air in motion, if the explanation be admitted, would be only apparent, not real; but we are by no means certain that these northerly winds blow from their original points of rise upon rectilinear courses, or, that they may not be regressive. The variable winds number 60, in the same period of time; and the westerly 21.

It is probable that, the positions of Australia, and Van Diemen Land, may be the cause of the interruption of the general continuance of the westerly winds, as experienced to the westward of the Southern Ocean. Had these great lands been absent, and an open ocean laid westerly of New Zealand, like Ireland and Great Britain, the former islands would experience a predominancy of the westerly winds over those from other quarters.

I am, &c.

ARGONAUT.

July 5th, 1843.

To the Editor, &c.

\* Received the 1st of July.

METEOROLOGICAL TABLE.—NEW BALAND.

| Months.           | Mean height of the Barometer. | Mean of Thermometer. |    | Mean Temperature. | Prevailing Winds.   | Quantity of Rain. | Summary of the weather, in days. |              |              |                             |                   |                 |                            |
|-------------------|-------------------------------|----------------------|----|-------------------|---------------------|-------------------|----------------------------------|--------------|--------------|-----------------------------|-------------------|-----------------|----------------------------|
|                   |                               | °                    | °  |                   |                     |                   | No. of days Rain.                | Calm & fine. | Calm & rain. | Mod. winds, or calm & fine. | Str. winds, fine. | Clm, cldy, rny. | Mod. winds, cloudy, rainy. | St. w. cldy, rny. |
| 1840.<br>October. | In. Dc.<br>29·937             | 73                   | 43 | 60·5              | N. 23, S. 6, V. 2.  | 1 10 9            |                                  |              | 11           | 8                           |                   | 1               | 11                         |
| 1841.<br>October. | 29·908                        | 66                   | 45 | 59·5              | N. 19, S. 8, W. 4.  | 2 28 16           |                                  |              | 9            | 5                           |                   | 9               | 8                          |
| 1842.<br>October. | 29·548                        | 66                   | 44 | 55                | N. 17, S. 9, V. 5.  | 3 76 7 12         |                                  |              |              | 4                           | 7                 |                 | 8                          |
| 1840.<br>Novem.   | 29·777                        | 80                   | 46 | 61·4              | N. 24, S. 6.        | 2 90 10           |                                  |              | 12           | 7                           |                   | 3               | 8                          |
| 1841.<br>Novem.   | 29·890                        | 69 5                 | 54 | 63·5              | N. 15, S. 11, W. 4. | 3 58 14           |                                  |              |              | 11                          |                   | 4               | 6                          |
| 1842.<br>Novem.   | 29·920                        | 71                   | 55 | 61·2              | N. 18, S. 7, V. 5.  | 1 75 12 10        |                                  |              | 9            | 8                           | 8                 |                 | 4                          |
| 1840.<br>Decem.   | —                             | 78                   | 51 | 65                | N. 19, S. 11, V. 1. | 1 51 6            |                                  |              | 8            | 6                           |                   | 3               | 4                          |
| 1841.<br>Decem.   | 29·587                        | 69 5                 | 54 | 63·5              | N. 24, S. 7.        | 5 53 14           |                                  |              | 7            | 10                          |                   | 7               | 7                          |
| 1842.<br>Decem.   | 29·928                        | 69 53                | 58 |                   | N. 11, S. 7.        | 2 93 5 6 5        |                                  |              |              | 1                           | 5                 |                 | 6                          |
| 1841.<br>January. | —                             | 81                   | 52 | 68                | N. 11, S. 18, V. 2. | 1 65 10           |                                  |              | 19           | 6                           |                   | 3               | 3                          |
| 1842.<br>January. | 30·105                        | 74                   | 57 | 64                | N. 17, S. 13, W. 1. | 1 16 5            |                                  |              | 17           | 10                          |                   |                 | 4                          |
| 1841.<br>February | —                             | 76                   | 50 | 65                | N. 8, S. 20.        | 1 61 6            |                                  |              | 15           | 7                           |                   | 4               | 2                          |
| 1842.<br>February | 30·026                        | 77                   | 50 | 65                | N. 14, S. 12, V. 2. | 2 03 9            |                                  |              | 14           | 7                           |                   | 3               | 4                          |
| 1841.<br>March.   | 30·045                        | 75                   | 50 | 63                | N. 18, S. 12, V. 1. | 2 39 5            |                                  |              | 19           | 1                           |                   | 8               | 3                          |
| 1842.<br>March.   | 30·016                        | 75                   | 50 | 65                | N. 19, S. 11, V. 1. | 4 06 9            |                                  |              | 18           | 3                           |                   | 5               | 5                          |
| 1841.<br>April.   | 29·990                        | 73 5                 | 43 | 6·13              | N. 22, S. 5, W. 3.  | 3 25 9            |                                  |              | 16           | 1                           |                   | 6               | 7                          |

In November 1840, slight shocks of earthquake felt on the 2nd, 3rd, and 28th.

In January 1842, lightning and thunder the night between the 18th and 19th.

In March 1841, slight shock of earthquake on the 21st. March 1843, light frost early on the 24th.

|                  |        |    |    |      |                              |   |    |    |   |    |   |    |    |
|------------------|--------|----|----|------|------------------------------|---|----|----|---|----|---|----|----|
| 1842.<br>April.  | 29·897 | 77 | 51 | 59   | N. 15, S. 7, V. 3.           | 0 | 39 | 9  |   | 20 | 1 | 1  | 2  |
| 1841.<br>May.    | 30·031 | 61 | 39 | 51·9 | N. 17, S. 9, V. 5.           | 2 | 25 | 11 |   | 10 | 5 | 7  | 9  |
| 1842.<br>May.    | 30·078 | 66 | 43 | 55   | N. 18, S. 10, V. 3.          | 4 | 21 | 17 |   | 15 | 5 | 4  | 7  |
| 1841.<br>June.   | 29·815 | 59 | 41 | 49·5 | N. 8, S. 10, W. 3,<br>V. 9.  | 3 | 11 | 18 |   | 13 | 4 | 11 | 4  |
| 1842.<br>June.   | 29·412 | 65 | 36 | 51   | N. 16, S. 9, W. 2,<br>V. 2.  | 4 | 74 | 15 |   | 13 | 6 | 4  | 5  |
| 1841.<br>July.   | 29·976 | 57 | 37 | 48·5 | N. 15, S. 11, W. 1,<br>V. 8. | 4 | 94 | 17 |   | 17 | 3 | 4  | 7  |
| 1842.<br>July.   | 29·915 | 62 | 40 | 52·5 | N. 19, S. 5, W. 1,<br>V. 1.  | 6 | 87 | 15 |   | 13 | 2 | 7  | 9  |
| 1841.<br>August. | 30·545 | 69 | 37 | 50   | N. 18, S. 8, W. 2,<br>V. 3.  | 4 | 6  | 14 |   | 12 | 2 | 7  | 9  |
| 1842.<br>August. | 29·920 | 59 | 53 | 50·6 | N. 11, S. 14, V. 6.          | 3 | 55 | 13 | 5 | 7  | 2 | 7  | 12 |
| 1842.<br>Septem. | 30·077 | 63 | 45 | 53   | N. 17, S. 12, V. 1.          | 4 | 51 | 14 |   | 13 | 3 | 6  |    |
| 1842.<br>Septem. | 30·023 | 66 | 45 | 55·5 | N. 15, S. 15.                | 4 | 0  | 12 |   | 10 | 3 | 8  | 9  |

In June 1841, slight shock of an earthquake on the 10th.

The total quantity of rain which fell during the year 1841, amounted to 39 inches. The greatest quantity which we have known to fall in one day, was 2·25 inches, on the 16th of September, 1841.

The following custom-house duties at Wellington, New Zealand, may be of service to the Captains of ships.

|                                                                                                                                           |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|
| British or W. I. spirits, via Britain, not exceeding proof strength by Syke's hyd., and of Van Diemen Land, and New South Wales, per gal. | £. | s. | d. |
| On all other spirits.                                                                                                                     | 0  | 5  | 0  |
| Tobacco, manufactured, except snuff, and cigars.                                                                                          | 0  | 1  | 0  |
| Manufactured, per lb.                                                                                                                     | 0  | 0  |    |
| Cigars                                                                                                                                    | 0  | 2  | 0  |
| Tea, sugar, flour, wheat, and all other grain, and pulse for every £100 value.                                                            | 5  | 0  | 0  |
| Wine for every £100 value.                                                                                                                | 15 | 0  | 0  |
| All other foreign goods, for every £100 value.                                                                                            | 10 | 0  | 0  |
| All British goods, and goods the produce of manufacture of New South Wales, and Van Diemen Land, except spirits free.                     |    |    |    |

The first Corporation of Wellington, and of any place in New Zealand.

George Hunter, Esq., J.P., Mayor; W. Lyon, Senior Alderman, W. Fitzherbert J. Scott, J. Dorset, F. A. Molesworth, J. Wade, R. Waitt, W. Guyton, J.P., A. Hort, E. Johnson, and R. Jenkins, Aldermen; G. White, J.P., Town Clerk, R. Park, Town Surveyor.



NOTE ON TIDES AT PORT LOUIS, *Falkland Islands.*

OBSERVATIONS were made every half hour between the 10th May and 6th September, 1842, and at every quarter of an hour about the times of high and low water, from which the following general results may be inferred, without going into any of the very remarkable irregularities which occurred, and which belong to the phenomena of periodical inequalities of time and height.

Time of high-water at new moon is 4h. 45m. after her transit.

|   |                  |   |    |   |
|---|------------------|---|----|---|
| " | at one quarter   | 5 | 5  | " |
| " | at full moon     | 6 | 28 | " |
| " | at third quarter | 5 | 9  | " |

At new moon the highest tide occurs at the 3h., high-water after the change.

The greatest rise or fall amounts to on an average, six feet two inches.

At full moon the highest tide occurs at the 3h. high-water after the full, and the average spring tide amounts to five feet five inches.

The spring tide at the new moon is more regular in its amount than at the full moon; in the latter case it varied from 4 feet 10½ inches to 6 feet 2½ inches in four lunations. The spring tide at the new moon of three lunations had no sensible difference in amount, 6 feet 2 inches, except on one extraordinary occasion which does not belong to the regular phenomena of the tides, a fall of 6 feet 6 inches occurred.

The largest spring tide or difference between high and low-water *invariably* occurred with a *fall*, and as *invariably* the tide nearest to midnight.

I have not had time to go into the question of inequalities, but I can see there are some very interesting results to be obtained from this series.

I have deduced the mean level of the sea from the five months observations, and fixed two marks 5 feet 8 inches above it, by cutting off the top of a rock in one case, and by cutting a *ledge* in the face of a cliff in the other case, and have inserted two copper-plates engraved "Five feet eight inches above the mean level of the ocean, August, 1842; H.B.M. ships Erebus and Terror," by which any difference that may occur in the mean level of the sea in these parts may be determined, in which case it may be presumed that a similar mark on the rocks at Port Arthur, Van Diemen Land, would indicate an opposite effect.

This is all I have to say about the tides here at present, and I have taken it from our own register, without knowing at all what has been done before by Fitz-Roy or others, although his book is no clue to me.

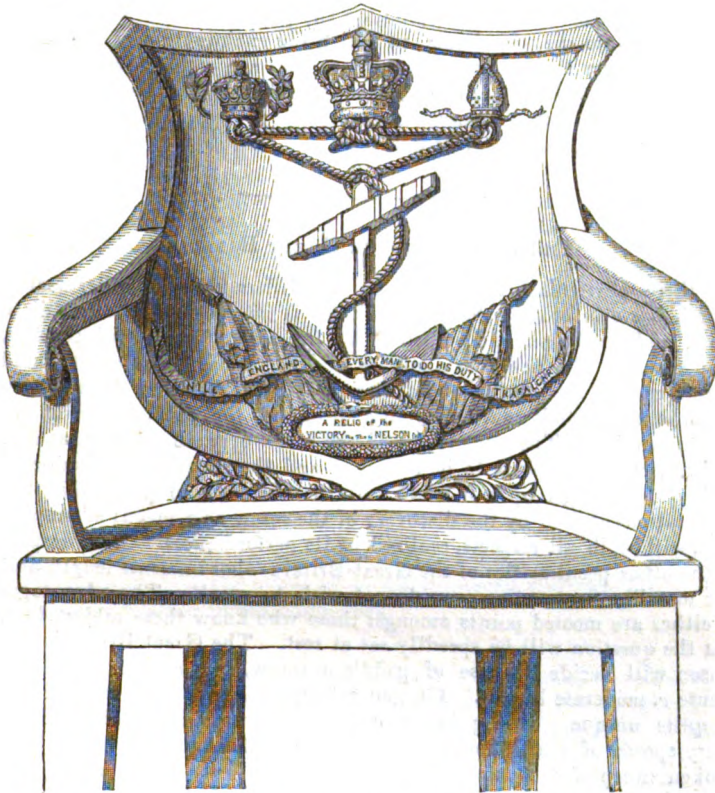
J. C. Ross.

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 THE ROYAL NAVAL SCHOOL.

THE annexed sketch represents a chair which has been presented by Admiral Sir Charles Rowley, to the Royal Naval School, at Camberwell, and for which the school, we understand, is also greatly indebted to the exertions of Capt. Henderson, at present in command of H.M.S. Victory. We cannot but add our tribute of approbation at the good

taste, which has dictated and secured, this very appropriate present to an establishment like the Royal Naval School; where it will be preserved both as a remembrance of by-gone days, and as an incitement to future Nelsons as they pass through the institution, to emulate, in days to come, the fame of England's Naval Hero.



It is formed of oak, from the timbers of H.M.S. Victory, selected from those nearest to the place where Nelson breathed his last. On the shield which forms the back of the chair, is an anchor and cable, with the British ensign and Union Jack elaborately carved. These are surmounted by an Imperial crown, on either side of which are a Mitre, and Lord Nelson's Coronet within a wreath of laurel. A riband inscribed with the words "Trafalgar" and "Nile" and the well known signal "England expects that every man will do his duty," crosses the shield, and on a tablet encircled by a serpent, emblematical of the imperishable fame of Nelson is the following "A relic of the Victory, the ship in which Nelson fell." The design of the Crown and Mitre is intended to associate the memory of Nelson with those institutions of church and state, which his victories tended to preserve.

We understand that the design and ornaments of the chair are by Mr. R. Blake, the master builder of Portsmouth Dockyard. The carving was executed by Robert Bray, a joiner, and the chair was formed by Samuel Arnold, a shipwright, of the same yard. The drawing from which our engraving is taken was made by Mr. Sturdie, Junior.

To render the whole in keeping, on the presentation of the chair, it was borne into the schoolroom, in which the examination of the pupils takes place, by the following four veteran seamen of Greenwich Hospital, all of whom had fought on board the Victory, at the memorable battle of Trafalgar,—James Bergam (lost a leg), William Welch, George French, and Peter Moses.

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#### THE LAUNCH OF THE GREAT BRITAIN.

IN three particulars the Great Britain differs from any other steamer which has ever crossed the Atlantic: she is the largest; she is built of iron; and, lastly, she is propelled by the screw, instead of paddles. Important as the two first qualities are, the latter is the point round which centres the interest and attention of all who either theoretically or practically study marine architecture, and the construction of the marine engine. The advantages of the screw over the paddle, at first sight, certainly appears to be immense, and the experiments conducted hitherto, although upon a small scale, would seem to prove that the expectations excited by the discovery of the screw as a means of propulsion, will be, in all respects, realized by its performances. With respect to the other peculiarities of the Great Britain—her immense length and her metallic construction—we do not wish to speak. The advantages of either are mooted points amongst those who know these subjects best, but the question will be speedily set at rest. The Great Britain's first season will decide the case of paddle *v.* screw, iron *v.* wood, and immense *v.* moderate length. The general appearance of the Great Britain is quite unique. In rigging, size, and construction, she differs from every species of craft afloat upon the ocean. Her immense length, unbroken sweep of deck, and multitude of fore-and-aft rigged masts, will make her everywhere known and conspicuous. Nothing can be more beautiful than the model of the Great Britain. Her stem is as sharp as that of a river-boat, and her bows are moulded like a wedge. Her sides are beautifully rounded; she may be a trifle too full amidships, but her run is as clean and finely-proportioned as the eye could wish to dwell upon. Altogether, everything that skill, enterprize, and capital can do to make the Great Britain worthy of her name, has been done. We shall anxiously watch her career. It having been publicly announced that Prince Albert would be present at the launch of the Great Britain, the event thus acquired an additional interest.

On Wednesday, shortly after ten, the special train, carrying Prince Albert, the Marquess of Exeter, the Earl of Liverpool, Lord Wharnclyffe, Lord C. Wellesley, Col. Bouverie, Mr. G. E. Anson, Mr. Russell (the chairman of the Great Western Railway Company,) and Mr. Saunders

(the Secretary,) &c., arrived at the terminus. Prince Albert had previously stopped and received an address from the Mayor and Corporation of Bath. On his arrival at Bristol he was met by the Mayor and the Corporation. Addresses were presented by the Corporation, the Clergy, and the Society of Merchant Venturers, the latter of which presented him with the freedom of their body in a gold box. The Prince then, attended by the Mayor, proceeded through the principal streets of Bristol and Clifton to the vessel, the people everywhere vying with each other in their demonstrations of loyalty and attachment. Upon arriving at the steam-ship, the Prince was shown over her, and he appeared much delighted. The Prince and the company sat down to the *déjeûner* prepared in a handsome pavilion, erected for the purpose. Mr. Kingdon, the chairman of the Great Western Company, presided. After the refectation had been disposed of, and the usual loyal toasts done justice to, the chairman proposed the health of the illustrious guest, who had come among them to christen their great steam-ship by the name of his adopted country. The toast was drunk amid loud applause. Prince Albert returned thanks. He said, "I thank you for your kindness. It has given me great pleasure to be here. I shall always feel interested in your happiness, and I now propose—Prosperity to the City and Trade of Bristol." The toast was drunk with all the honours, as were several others, after which the company adjourned to the open air, to witness the great ceremony of the day. Launch, in the proper acceptation of the term, there was none—the steamer was merely floated from the dock in which she was built; and as she passed slowly and majestically out amid the acclamations of the vast multitudes, Prince Albert broke a bottle of wine upon her bows, and christened her the Great Britain, with the usual ceremonies. This over, the company rapidly dispersed. Prince Albert returned to town, by a special train, at four o'clock, and the vast steam-ship, the object of so much interest and speculation, was left quietly floating in the outer-dock.

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MELANCHOLY OCCURRENCE.—*H.M.S. Camperdown, Sheerness, Wednesday, 12th July, 1843.*—A serious accident has happened on board the *Camperdown*, caused by the explosion of about 35lbs. of powder, under the following circumstances:—About 3 o'clock P.M. the King of the Belgians was passing down the Thames, when a salute was fired on board the *Camperdown*. One of the guns under the fore-castle missed fire, which caused them to fire one farther aft than usual, close to which was a powder-box containing ten rounds or 35lbs. weight of powder. They have a custom on board of holding a shovel over the touch-hole of the gun to preserve the paint on the beams overhead, and it seems this directed the fire to the box containing the powder, which exploded with great violence, blowing up fourteen strakes of the quarter-deck and capsizing all the guns on it, throwing down all the ladders and gratings, the whole of the bulkheads in the Admiral's cabin, and blowing out all the sashes. Several persons were injured, among whom were Mrs. Gaze, the Master-Attendant's wife, the Rev. Mr. Barton, of East Church, his daughter, his niece and wife's sister, and others,

in all eleven persons. Miss Barton is so much injured that doubts are entertained of her recovery. Mrs. Barton's sister is also seriously injured. A Lieutenant of Coast Guard, with his wife and daughter, and Lieutenant Blackmore and two seamen, are very much hurt. The Rev. Mr. Cooper, the chaplain, had his clothes literally torn off. Many of the seamen and officers were driven half the length of the ship, but fortunately not much injured. It was truly melancholy to see the fragments of hats, bonnets, and dresses, lying scattered on the decks; in fact, as may be supposed, the ship presented an awful appearance.

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**TRADE TO HONG-KONG.**—As a great proof of the importance of our trade to China, and the extensive nature of our exports to that quarter, we would direct the attention of our readers to the fact that, on the evening of Tuesday, the 4th instant, three fine ships, namely, the John O'Gaunt, the Emperor, and John Dalton, all fully laden with British manufactured goods, sailed from this port for Hong-Kong. The aggregate value of their cargoes must amount to several hundred thousand pounds. The sailing of the two first-named ships has caused considerable interest amongst our merchants and shipowners. The John O'Gaunt, under the command of Captain Robertson, has been long famous for her quick and regular voyages to China and the east, so much so that Captain Robertson has been lately requested to furnish his charts of the Chinese seas for the inspection of the Admiralty. On the other hand, the Emperor is a remarkably fine new ship, of larger tonnage than her consort, and also under an able master, Lieutenant Keane, of the royal navy. Both are known to be well provided with picked crews, and to be perfect in all their equipments; and it is said that considerable bets are depending on which shall first arrive at Hong-Kong.—*Liverpool Paper.*

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On 13th of July, a distressing and fatal occurrence caused the death of Captains Drew and Jenkin Jones, two of the Elder Brethren of the Trinity House. These gentlemen, with others of the brotherhood, whose lives were providentially saved, had been engaged in surveying the lighthouses in the Bristol Channel; and when off Trevoise Head they attempted to land in a boat on the Quies Rocks, but owing to the heavy surf they were unable to do so. On returning, the boat came in contact with the steam-yacht, and all in the boat (nine in number) were thrown into the water, by which the two unfortunate gentlemen were drowned.

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**CONCUSSION SHELLS.**—Extract from the official report of Captain Sir Thomas Hastings, to the Lords of the Admiralty, dated 30th June last. "I consider a shell fitted with Captain Norton's concussion fuze, to be more sure, as well as more ruinous in its effects, than when fitted with the common fuze. Captain Hastings has recommended that Captain Norton be called on to instruct the operatives in the Laboratory at Woolwich, under the supervision of the Directors, in the manner of preparing his fuzes, and that, one hundred and fifty shells fitted with them be prepared at once, for further trial; which Captain N. has promptly signified his willingness to do.

TABLE LXXII.

For reducing Chinese Covids to English Feet, and English Feet to Chinese Covids.

1 Chinese Cavid = 1·058333 English Foot.  
1 English Foot = 0·944882 Chinese Cavid.

| Chinese covids<br>or Eng. feet. | English<br>feet and<br>Dec. parts. | Chinese<br>covids and<br>Dec. parts. | Chinese covids<br>or Eng. feet. | English<br>feet and<br>Dec. parts. | Chinese<br>covids and<br>Dec. parts. | Chinese covids<br>or Eng. feet. | English<br>feet and<br>Dec. parts. | Chinese<br>covids and<br>Dec. parts. |
|---------------------------------|------------------------------------|--------------------------------------|---------------------------------|------------------------------------|--------------------------------------|---------------------------------|------------------------------------|--------------------------------------|
| 1                               | 1·058                              | 0·945                                | 40                              | 42·333                             | 37·796                               | 79                              | 83·608                             | 74·646                               |
| 2                               | 2·117                              | 1·890                                | 41                              | 43·391                             | 38·740                               | 80                              | 84·667                             | 75·591                               |
| 3                               | 3·175                              | 2·835                                | 42                              | 44·450                             | 39·685                               | 81                              | 85·725                             | 76·535                               |
| 4                               | 4·233                              | 3·780                                | 43                              | 45·508                             | 40·630                               | 82                              | 86·783                             | 77·480                               |
| 5                               | 5·292                              | 4·724                                | 44                              | 46·567                             | 41·575                               | 83                              | 87·842                             | 78·425                               |
| 6                               | 6·350                              | 5·669                                | 45                              | 47·625                             | 42·520                               | 84                              | 88·900                             | 79·370                               |
| 7                               | 7·408                              | 6·614                                | 46                              | 48·683                             | 43·464                               | 85                              | 89·958                             | 80·315                               |
| 8                               | 8·467                              | 7·559                                | 47                              | 49·742                             | 44·409                               | 86                              | 91·017                             | 81·260                               |
| 9                               | 9·525                              | 8·504                                | 48                              | 50·800                             | 45·354                               | 87                              | 92·075                             | 82·205                               |
| 10                              | 10·583                             | 9·449                                | 49                              | 51·858                             | 46·299                               | 88                              | 93·133                             | 83·150                               |
| 11                              | 11·641                             | 10·394                               | 50                              | 52·917                             | 47·244                               | 89                              | 94·192                             | 84·094                               |
| 12                              | 12·700                             | 11·339                               | 51                              | 53·975                             | 48·189                               | 90                              | 95·250                             | 85·039                               |
| 13                              | 13·758                             | 12·283                               | 52                              | 55·033                             | 49·134                               | 91                              | 96·308                             | 85·984                               |
| 14                              | 14·816                             | 13·228                               | 53                              | 56·092                             | 50·079                               | 92                              | 97·366                             | 86·929                               |
| 15                              | 15·875                             | 14·173                               | 54                              | 57·150                             | 51·024                               | 93                              | 98·425                             | 87·874                               |
| 16                              | 16·933                             | 15·118                               | 55                              | 58·208                             | 51·968                               | 94                              | 99·483                             | 88·819                               |
| 17                              | 17·992                             | 16·063                               | 56                              | 59·266                             | 52·913                               | 95                              | 100·542                            | 89·764                               |
| 18                              | 19·050                             | 17·008                               | 57                              | 60·325                             | 53·858                               | 96                              | 101·600                            | 90·709                               |
| 19                              | 20·108                             | 17·953                               | 58                              | 61·383                             | 54·803                               | 97                              | 102·658                            | 91·654                               |
| 20                              | 21·167                             | 18·898                               | 59                              | 62·442                             | 55·748                               | 98                              | 103·717                            | 92·598                               |
| 21                              | 22·225                             | 19·842                               | 60                              | 63·500                             | 56·693                               | 99                              | 104·775                            | 93·543                               |
| 22                              | 23·283                             | 20·787                               | 61                              | 64·558                             | 57·638                               | 100                             | 105·833                            | 94·488                               |
| 23                              | 24·341                             | 21·732                               | 62                              | 65·616                             | 58·583                               | 150                             | 158·750                            | 141·732                              |
| 24                              | 25·400                             | 22·667                               | 63                              | 66·675                             | 59·528                               | 200                             | 211·667                            | 188·976                              |
| 25                              | 26·458                             | 23·622                               | 64                              | 67·733                             | 60·472                               | 250                             | 264·583                            | 236·220                              |
| 26                              | 27·517                             | 24·567                               | 65                              | 68·792                             | 61·417                               | 300                             | 317·500                            | 283·465                              |
| 27                              | 28·575                             | 25·512                               | 66                              | 69·850                             | 62·362                               | 350                             | 370·417                            | 330·709                              |
| 28                              | 29·633                             | 26·457                               | 67                              | 70·908                             | 63·307                               | 400                             | 423·333                            | 377·953                              |
| 29                              | 30·692                             | 27·402                               | 68                              | 71·967                             | 64·252                               | 450                             | 476·250                            | 425·197                              |
| 30                              | 31·750                             | 28·346                               | 69                              | 73·025                             | 65·197                               | 500                             | 529·167                            | 472·441                              |
| 31                              | 32·807                             | 29·291                               | 70                              | 74·083                             | 66·142                               | 550                             | 582·083                            | 519·685                              |
| 32                              | 33·866                             | 30·236                               | 71                              | 75·142                             | 67·087                               | 600                             | 635·000                            | 566·929                              |
| 33                              | 34·925                             | 31·181                               | 72                              | 76·200                             | 68·031                               | 650                             | 687·917                            | 614·173                              |
| 34                              | 35·983                             | 32·126                               | 73                              | 77·258                             | 68·976                               | 700                             | 740·833                            | 661·417                              |
| 35                              | 37·042                             | 33·071                               | 74                              | 78·317                             | 69·921                               | 750                             | 793·750                            | 708·661                              |
| 36                              | 38·100                             | 34·016                               | 75                              | 79·375                             | 70·866                               | 800                             | 846·667                            | 755·906                              |
| 37                              | 39·158                             | 34·961                               | 76                              | 80·433                             | 71·811                               | 850                             | 899·583                            | 803·150                              |
| 38                              | 40·217                             | 35·906                               | 77                              | 81·492                             | 72·756                               | 900                             | 952·500                            | 850·394                              |
| 39                              | 41·275                             | 36·851                               | 78                              | 82·550                             | 73·701                               | 1000                            | 1058·333                           | 944·882                              |

## STATIONS OF H.M. SHIPS, IN COMMISSION.

- Acheron*, st. v. 2, Lieut. Com. B. Aplin, Mediterranean.  
*Acorn*, 16, sloop, Com. J. Adams, Cape of Good Hope.  
*Alder*, 1, st. v. Master-com. J. Hammond (act). Pembroke.  
*Advice*, 1, st. v. Lieut.-com. A. Darby, Pembroke.  
*Ætina*, 1, receiving ship, Lieut.-com C. G. Butler, Plymouth.  
*African*, 1, st. v. Master-com. A. C. Mackey, Sheerness.  
*Agincourt*, 72, Captain H. W. Bruce, China.  
*Aigle*, 24, corvette, Com. H. R. Henry, (act) Mediterranean.  
*Alban*, 2, st. v. Lieut. J. Jeayes, part. serv. Ireland.  
*Albatross*, 16, sloop, Com. R. Yorke, North America.  
*Albert*, 3, st. v. Tender to Madagascar, Coast of Africa.  
*Alecto*, 1, st. v. Lieut.-com. W. Hoseason, Mediterranean.  
*Alfred*, 50, Commodore J. B. Purvis, South America.  
*Algerine*, 10, brig, Com. L. Maitland, China.  
*Alligator*, 26, Master-com. R. Browne, China.  
*Apollo*, 8, troop-ship, Com. C. Frederick, China.  
*Ardent*, 3, st. v. Com. John Russel, (b.) South America.  
*Ariel*, 1, st. v. Master-com. L. Smithitt (act), Dover.  
*Arrow*, 6, ketch, Lieut.-com. W. Robinson, Cape of Good Hope.  
*Asp*, 1, st. v. Lieut.-com. W. W. Oke, Portpatrick.  
*Astræa*, 6, Capt. Alexander Ellice, Falmouth.  
*Avon*, 2, st. v. Lieut.-com. S. Morris, West Indies.  
*Basilisk*, 6, ketch, Lieut. H. S. Hunt, (act) South America.  
*Beacon*, 6, sur. v. Com. T. Graves, Mediterranean.  
*Beagle*, 4, sur. v. Com. J. L. Stokes, (act) Australia.  
*Beaver*, 1, st. v. Lieut.-com. R. Mudge, Dover.  
*Belleisle*, 20, troop ship, Capt. J. Kingcome, China.  
*Belvidera*, 38, Capt. Hon. George Grey, Mediterranean.  
*Bittern*, 16, sloop, Com. the Hon. B. C. F. P. Cary, Cape of Good Hope.  
*Black Eagle*, 2, st. v. Master-com. S. B. Cook, (act) Woolwich.  
*Blazer*, st. v. Capt. J. Washington, surveying, North Sea.  
*Bonetta*, 3, brig Lieut-com. E. E. Gray, Coast of Africa.  
*Bramble*, 10, Lieut-com. C. B. Yule, East Indies.  
*Caledonia*, 120, flag-ship, Admiral Sir D. Milne, G.C.B., G.C.M.G., Capt. A. Milne, Plymouth.  
*Cambrian*, 36, Captain H. D. Chads, C. B., China.  
*Camelion*, 10, brig Lieut-com. G. M. Hunter, East Indies.  
*Camperdown*, 104, flag-ship, Vice Admiral Sir. E. Brace, K.C.B.; Capt. F. Brace, Sheerness.  
*Castor*, 26, Captain C. Graham, Chatham.  
*Carron*, 2, st. v., ordered home from Bermuda.  
*Carysfort*, 26, Captain the Right Hon. Lord G. Paulet, South America.  
*Ceylon*, 2, receiving-ship, Lieut. W. R. Mends, flag-lieutenant, Malta.  
*Champion*, 18, sloop, Com. R. Byron, South America.  
*Charon*, 1, st. v. Second-master, E. C. Rutter, Dover.  
*Childers*, 16, sloop. Com. E. P. Halsted, China.  
*Cleopatra*, 26, Capt. C. Wyvill, Cape of Good Hope.  
*Clio*, 16, brig, Com. J. Fitzjames (act), East Indies.  
*Cockatrice*, 6, sch. Lieut.-com, J. Oxenham, South America.  
*Columbia*, st. v., Lieut.-com. J. Harding, Bay of Funday.  
*Columbine*, 16, Capt. W. H. A. Morshead, K.C.B., Chatham.  
*Comet*, 2, st. v. Com. G. A. Fraser, part. serv., Ireland.  
*Confiance*, 2, st. v., Second-master J. Jagoe, (act), Plymouth.  
*Conway*, 26, Capt. R. N. Fair, Cape of Good Hope.  
*Cormorant*, st. v. Com. G. T. Gordon, Sheerness.

- Cornwallis*, 72, Vice Admiral Sir W. Parker, ксв., Capt. P. Richards, св., China  
*Crane*, 6, brig, Lieut.-com. T. A. Lewis, (a), Falmouth.  
*Crescent*, rec. ship, Lieut.-com. M. Donellan, Rio de Janeiro.  
*Crocodile*, troop ship, Com. T. Elson, North America.  
*Cuckoo*, 1, st. v. Lieut.-com. A. Parks, Weymouth.  
*Curacoa*, 24, Capt. Sir T. S. Pasley, Bart. Chatham.  
*Curlew*, 10, brig, Lieut.-com. J. Foote, South America.  
*Cyclops*, 6, st. frigate, Capt. H. T. Austin, св., part. serv.  
*Cygnets*, 6, brig, Lieut.-com. E. Wilson, coast of Africa.  
*Daphne*, 18, Capt. J. J. Onslow, South America.  
*Dasher*, 1, st. v. Master-com. R. White, (act), Weymouth.  
*Dee*, 2, st. v. Master-com. T. Driver, North America.  
*Devastation*, 6, st. frigate, Com. Robinson, Mediterranean.  
*Dido*, 18, Capt. Hon. H. Keppel, China.  
*Doterel*, 1, st. v. Master-com. J. Grey, (act), Holyhead.  
*Dover*, iron st. v. Master-com. E. Lyne, (act), Dover.  
*Driver*, 6, st. v. Com. S. Harmer, East Indies.  
*Druid*, 44, Capt. H. Smith, св., China.  
*Dublin*, 50, flag ship of Rear Admiral R. Thomas, Capt. J. J. Tucker, South America.  
*Electra*, 18, sloop, Com. A. Darley, West Indies.  
*Emerald*, tender to the Royal George, Second-master G. Allen, Portsmouth.  
*Endymion*, 44, Capt. the Hon. F. W. Grey, св., East Indies.  
*Erebus*, discovery vessel, Capt. J. C. Ross, part. serv.  
*Espoir*, 10, Com. A. Morrell, Portsmouth.  
*Excellent*, gunnery ship, Capt. Sir T. Hastings, Knt., Portsmouth.  
*Express*, 6, brig, Lieut.-com. E. Herrick, Brazils.  
*Fair Rosamond*, 2, Lieut.-com. A. G. Bulman, North America and West Indies.  
*Fantome*, 16, brig, Com. H. G. Haymes, South America.  
*Favorite*, 18, sloop, Com. T. R. Sullivan, Portsmouth, to be paid off.  
*Fawn*, 3, brigantine, Lieut.-com. J. Nourse, (act) Cape of Good Hope.  
*Fearless*, st. v. Com. W. L. Sheringham, Portsmouth surveying.  
*Ferret*, 6, brig, Com. J. Oake, coast of Africa.  
*Figard*, 42, Capt. J. A. Duntze, Plymouth.  
*Fly*, 18, Capt. F. P. Blackwood, Torres Straits surveying  
*Formidable*, 84, Capt. Sir C. Sullivan, Bart. Mediterranean.  
*Frolic*, Lieut.-com. W. A. Willis, Brazils.  
*Geyser*, st. v. Com. E. J. Carpenter, Mediterranean.  
*Gleaner*, 2, st. v. tender to the Illustrious, West Indies.  
*Gorgon*, 6, st. v. Capt. Hotham, South America.  
*Grecian*, 16, brig, Com. W. Smyth, Brazils, and Cape of Good Hope.  
*Griffon*, 3, brigantine, Lieut.-com. C. Jenkins, Bermuda.  
*Growler*, 6, st. v. Com. F. H. Buckle, South America.  
*Harlequin*, 16, sloop, Com. the Hon. G. F. Hastings, China.  
*Hazard*, 18, sloop, Com. C. Bell, East Indies.  
*Hecate*, steam-frigate, Com. J. H. Ward, Mediterranean.  
*Hecla*, st. v. Com. P. Duffil, Mediterranean.  
*Heroine*, 6, brig, Com. ——— Africa.  
*Hornet*, 6, brigantine, Lieut.-com. R. B. Miller, North America and West Indies.  
*Howe*, 120, Capt. T. Forrest, св., кн., Portsmouth.  
*Illustrious*, 72, flag-ship, Vice Admiral Sir C. Adamr, ксв., Capt. J. E. Erskine, North America.  
*Imaum*, 72, rec. ship, Com. the Hon. H. D. Byng, Jamaica.  
*Inconstant*, 36, Capt. Freemantle, Portsmouth.  
*Indus*, 78, Capt. Sir J. Stirling, Knt., Mediterranean.  
*Iris*, 26, Capt. G. R. Mundy, Coast of Africa.  
*Isis*, 44, Capt. Sir J. Marshall, Kt. с.в., к.с.н., Cape of Good Hope.



- Jasper*, 1, st. v. Master-com. E. Rose, Holyhead.  
*Jupiter*, troop-ship, Master-com. G. B. Hoffmeister, East Indies.  
*Kite*, st. v. Lieut.-com. W. M. J. Pascoe, Coast of Africa  
*Lark*, surveying schooner, Lieut.-com. G. B. Lawrence, North America and West Indies.  
*Lightning*, 2, st. v. Lieut.-com. W. Winniett, part. serv. Woolwich.  
*Lily*, 16, sloop, Com. George Baker, Cape of Good Hope and Coast of Africa.  
*Linnet*, 6, brig, Lieut.-com. F. R. Coghlan, Brazils.  
*Lizard*, 3, st. v. Lieut.-com. C. J. Postle, Mediterranean.  
*Locust*, 3, st. v. Lieut.-com. John Lunn, Mediterranean.  
*Lucifer*, 2, st. v. Capt. W. F. Beechey, surveying coast of Ireland.  
*Lynx*, 3, brigantine, Lieut.-com. Godolphin J. Burslem, part. serv. Ireland.  
*Madagascar*, 44, Capt. J. Foote, Coast of Africa.  
*Magicienne*, 24, Capt. R. L. Warren, Mediterranean.  
*Maggie*, 2, surveying vessel, Com. T. S. Brock, Mediterranean.  
*Malabar*, 72, Capt. Sir G. R. Sartorius, Kt., part. serv., Ireland.  
*Mastiff*, 6, surveying vessel Master-com. G. Thomas, Orkney Islands.  
*Medea*, 4, steam frigate, Com. Frederick Warden, Mediterranean.  
*Medina*, 2, st. v. Master-com. W. Smithitt, (act), Liverpool.  
*Medusa*, 2, st. v. Lieut.-com. J. P. Philipps, Liverpool.  
*Melampus*, 42, Capt. C. H. Freemantle, Plymouth.  
*Merlin*, 2, st. v. Lieut.-com. E. Keane, Liverpool.  
*Meteor*, st. v. Lieut.-com. G. Butler, part. serv. Ireland.  
*Minden*, 72, Capt. M. Quin, China.  
*Modeste*, 18, Com. J. Baillie, Sheernees,  
*Monarch*, 84, Capt. S. Chambers. Mediterranean.  
*Monkey*, 1, st. v. second master W. Bryant, Woolwich.  
*Myrtle*, crew of the Black Eagle, part. serv. Ireland.  
*Niagara*, 20, Capt. Williams Sandom, Lakes of Canada.  
*Nimrod*, 20, sloop, Com. Frederick H. H. Glasse, China.  
*North Star*, 26, Capt. Sir J. E. Home, Bart. c.b., China.  
*Ocean*, 80, Capt. P. Fisher, guard-ship, Sheerness.  
*Orestes*, 18, Com. the Hon. T. S. Carnegie, part. serv. Ireland.  
*Otter*, 1, st. v. Lieut.-com. H. P. Jones, Holyhead.  
*Pantaloon*, 10, brig, Lieut.-com. C. H. Lapidge, Coast of Africa.  
*Partridge*, 10, brig, Lieut.-com. J. T. Nott, South America,  
*Pearl*, 20, sloop, Com. R. H. Stopford, South America.  
*Pelican*, 16, sloop, Com. P. Justice, China.  
*Penelope*, 24, st. frigate, Capt. Jones, Chatham.  
*Penguin*, 6, packet, Lieut.-com. W. Leslie, West Indies.  
*Perseus*, receiving ship, Lieut.-Com. Greet, Tower.  
*Persian*, 16, brig, Com. T. R. Eden, Coast of Africa.  
*Peterel*, packet, Lieut.-com. W. Crooke, Falmouth.  
*Philomel*, 6, brig, Com. B. J. Sullivan, Falkland Islands.  
*Pickle*, 5, sch. Lieut.-com. F. B. Montresor, North America and West Indies.  
*Pigmy*, 1, st. v. Lieut.-com. C. Atridge, Pembroke.  
*Pike*, 1, Lieut.-com. A. Boyter, Portpatrick.  
*Pilot*, Portsmouth.  
*Pique*, 36, Capt. the Hon. M. Stopford, West Indies.  
*Plover*, sur. v. Capt. R. Collinson, c.b., East Indies.  
*Poitiers*, 72, Capt. Sup. W. H. Shirreff, Chatham.  
*Polphemus*, st. v. Lieut. J. Evans, (b) Mediterranean.  
*Prometheus*, 1, st. v. Lieut.-com. T. Spark, Mediterranean.  
*Prompt*, sch. W. McDermott, (act), Coast of Africa.  
*Prospero*, 1, st. v. Lieut.-com. , Pembroke.  
*Pylades*, 18, sloop, Com. L. S. Tindal, China.  
*Queen*, 110, flag ship, Vice Admiral Sir E. W. C. R. Owen, ксв., ксн.; Capt. Rich, Mediterranean.

- Racer*, 16, Com. A. Reed, part. serv., Ireland.  
*Rapid*, 10, Lieut.-com. E. C. Earle, Coast of Africa.  
*Rattlesnake*, troop ship, Master-com. J. Sprent, China.  
*Raven*, 4, cutter, Lieut.-com. J. W. L. Shiels, Portsmouth.  
*Redwing*, st. v. Com. T. Bevis, Liverpool.  
*Resistance*, st. v. Com. E. G. E. Patey, part. serv.  
*Rhadamanthus*, 2, st. troop-ship, Master-com. T. Lean, part. serv. Ireland.  
*Ringdove*, 16, sloop, Capt. Sir W. Daniel, North America.  
*Rodney*, 92, Capt. R. Maunsell, c.b., on passage to Cape of Good Hope.  
*Romney*, receiving ship, Lieut.-com. R. M'Lure, Havannah.  
*Rose*, 16, sloop, Com. H. R. Sturt, part. serv. Ireland.  
*Royal Sovereign*, yacht, Capt. Sir W. O. Pell, c.b., Pembroke.  
*Royalist*, Lieut.-com. P. Chetwode, East Indies.  
*St. Vincent*, 120, flag-ship, of Admiral Sir. C. Rowley, Captain R. F. Rowley, c.b., Portsmouth.  
*Salanander*, 4, st. v. Com. A. S. Hammond, Rio de Janeiro.  
*Samarang*, Capt. Sir E. Belcher, c.b., East Indies.  
*San Josef*, 110, Rear Admiral Sir S. Pym, κ.c.b.; Capt. F. W. Burgoyne, guard-ship, Plymouth.  
*Sappho*, 16, Com. the Hon. G. Hope, Cape of Good Hope.  
*Sapphire*, troop-ship, Master Com. G. H. Cole, part serv.  
*Satellite*, 18, Com. R. F. Gambier, South America.  
*Savage*, 10, brig, Lieut.-com. J. H. Bowker, Mediterranean.  
*Scout*, 18, sloop, Capt. Hon. J. R. Drummond, Mediterranean.  
*Scylla*, 16, Com. R. Sharp, part. serv.  
*Seaflower*, 4, cutter, Com. N. Robilliard, Portsmouth.  
*Serpent*, 16, sloop, Capt. W. Nevill, East Indies.  
*Shearwater*, 2, st. v. Capt. J. Washington, Woolwich.  
*Siren*, 10, brig, captain, W. Smith, (b) China.  
*Skylark*, 6, brig, Lieut.- J. A. Wright, Chatham.  
*Snake*, 16, sloop, Com. Hon. W. B. Devereux, Mediterranean.  
*Snipe*, Lieut. G. Raymond, Portsmouth.  
*Soudan*, iron st. v. Ascension.  
*Spartan*, 26, Capt. Hon. C. G. J. B. Elliot, N. America and West Indies.  
*Speedy*, 2, cutter, Lieut. G. Beaufoy, Chatham.  
*Spider*, 6, sch. Lieut.-com. R. E. Pym, South America.  
*Spiteful*, 6, st. v. Com. W. Maitland, East Indies.  
*Sprightly*, 1, st. v. Master-com. J. P. Moon, (act), Holyhead.  
*Spy*, 3, Lieut.-com. G. Raymond, Cape of Good Hope.  
*Starling*, cutter surveying vessel, Capt. H. Kellett, c.b., China.  
*Stromboli*, 4, steam frigate, Com. W. Louis, Mediterranean.  
*Styx*, st. v. Capt. A. T. Vidal, Azores.  
*Sulphur*, Com. G. Smith, engineer depot, Woolwich.  
*Swallow*, 1, st. v. Master-com. R. Sherlock (act), Dover.  
*Swift*, 6, brig, Lieut.-com. J. Douglas, Brazils.  
*Sydenham*, st. v. Lieut.-com. Crozier, Lakes of Canada.  
*Sylvia*, 6, Lieut.-com. E. E. Turnour, Portsmouth.  
*Talbot*, 26, Sir R. T. Thompson, bart., South America.  
*Tartarus*, st. v. Capt. F. Bullock, survey, Ramsgate, &c.  
*Terror*, 10, discovery vessel, Com. F. R. M. Crozier, part. serv.  
*Thalia*, 42, Capt. C. Hope, East Indies.  
*Thunder*, 6, surveying vessel, Com. E. Barnet, North America and West Indies.  
*Thunderbolt*, 6, st. v. Com. G. M. Broke, Cape of Good Hope.  
*Thunderer*, 84, Capt. D. Pring, Cape of Good Hope.  
*Tortoise*, 2, store ship, Master-com. J. Wood, New South Wales.  
*Tweed*, 20, Com. H. C. D. Douglas, North America and West Indies.

- Tyne*, 26, Capt. W. Glasscock, part. serv. Ireland.  
*Urgent*, 2, st. v. Master-com. J. Emerson, Chatham.  
*Vanguard*, 80, Capt. Sir D. Dunn, Kt. к.с.н. Mediterranean.  
*Vernon*, 50, Capt. W. Walpole, Mediterranean.  
*Vesuvius*, 4, steam frigate, Com. E. Ommanney, Mediterranean.  
*Victoria, and Albert*, st. v. Capt. Lord A. Fitz-clarence, к.с.в. Woolwich.  
*Victory*, 104, Rear Admiral H. Parker, с.в. Capt. W. H. Henderson, с.в., к.н. Woolwich.  
*Vindictive*, 50, Rear Admiral Sir T. J. Cochrane, Kt. Capt. J. T. Nicolas, с.в.к.н., China.  
*Viper*, 6, brigantine, Lieut.-com. J. Carter, South America.  
*Virago*, st. v. 6, Com. E. Otway, Chatham.  
*Vixen*, steam frigate. Com. G. Giffard, East Indies.  
*Volage*, 26, Capt. Sir W. Dickson, bart. North America and West Indies.  
*Volcano*, st. v. Lieut.-com. J. Featherstone, part. serv.  
*Wanderer*, 16, sloop, Com. G. H. Seymour, East Indies.  
*Warspite*, 50, captain Lord J. Hay, с.в., West Indies.  
*Wasp*, 16, Com. A. Drew, West Indies.  
*Waterwitch*, 10, brig, Lieut.-com. H. J. Matson, Cape of Good Hope.  
*Widgeon*, 1, st. v. Master-com. T. Swain Scriven, Dover.  
*Wilberforce*, st. v. (iron) Com. H. F. Seagram, Woolwich.  
*Wildfire*, 1, st. v. Lieut.-com. C. A. Petch. Deptford.  
*William and Mary*, yacht, Captain Sir F. Augustus Collier, Kt., с.в., к.с.н., Woolwich.  
*Winchester*, 50, flag-ship of Rear Admiral the Hon. Jocelyn Percy, Captain Eden, Cape of Good Hope.  
*Wolf*, 18, Com. C. O. Hayes, China.  
*Wolverine*, 17, T. S. W. Johnson, China.  
*Zephyr*, 1, st. v. Lieut.-com. J. Small, Holyhead!

H.M.S. *PENELOPE*.—The attention of the nautical world is at this moment especially directed to the experiment that has been made upon the *Penelope*, in converting her from a sailing frigate to a first class war steamer. If the result should prove satisfactory, and of that there does not now appear to be the least doubt, two very important advantages will be gained. In the first place, a steamer of a novel class, and of greater magnitude than any now in the service, will be introduced into the navy, which will be enabled to carry what none of the present war steamers can, a powerful armament on her main deck as well as on her quarter-deck and fore-castle. She will have engines of 700 horse power, whereas the largest engines now in use are under 500 horse power. In addition to which she will be rigged in the same manner, and carry as great a spread of canvas, as when she was only a sailing frigate. But the more important part of this experiment is the fact that we shall be enabled to obtain a powerful steam frigate at a saving of upwards of £40,000, for, from a calculation that has been made, it appears that the conversion of this vessel into a steamer, notwithstanding all its greater capabilities, does not cost so much by the above sum as the building and equipping one of the present first class steamers. The *Penelope* was of a class of the old school of frigates, of which there are at present lying in ordinary in the river and at the outports, somewhere about forty sail, all in good preservation, but all, nevertheless, useless as sailing ships, owing to their inferior qualities.

The *Penelope* steam frigate was commissioned on Wednesday by Captain William Jones, who formerly commanded the *Vestal*. The attention of the naval word has of late been directed to this vessel, recently converted from a sailing frigate, of a useless class, to a powerful war steamer, 215 feet long, and fitted with engines of a power surpassing anything hitherto made, either for

land or sea purposes, the cylinder being 92 inches in diameter. The *Penelope* is one of the old class 46 gun ships, built on the lines of the French *Hebe*, at Chatham, in 1830. There are nearly forty of this class of vessels lying in ordinary at the several ports, none of which are, from their comparative dimensions, suited to cope with the frigates of foreign navies, either in size, capability of armament, or equipment, and have, therefore, become nothing more than blanks in the list of the British navy, although they could not have been built at a less cost than £2,000,000 sterling. The Lords of the Admiralty, with the commendable view of rendering these vessels serviceable to the country, have caused the *Penelope* to be converted, as an experiment, into a steam frigate, in order to ascertain if they can be made available to the service as war-steamers. If the experiment should prove successful, and of that there is now hardly a doubt, these ships can be converted into a steam-fleet of enormous power, and at a cost of less than one quarter of the amount it would require to build them.

The *Penelope* can stow fuel to last her sixteen days with full steaming power; and by husbanding the consumption of coals by working at the full, half, or quarter-stroke in cutting off the steam, the capabilities can be increased to twenty-four days' steaming, which, with the aid of sail, will take the ship to the Cape of Good Hope in about a month from England, with a regiment of 800 soldiers, in addition to her crew of 300 men, giving ample accommodation to all. She will be furnished with an armament that is astounding to all who are acquainted with the power of naval gunnery—namely, 2 10-inch pivot guns of 84 cwt. each, 8 68-pounders (all shell guns), and 14 32-pounders on the spar and main-decks, making in all twenty-four guns of a description that will enable her, having the power from her steam of taking a commanding position, to bid defiance to any two ships of the line. She is to be fitted with her masts, yards, and spars at Chatham, to which port she will proceed, having yesterday been inspected by the Lords of the Admiralty.—*Naval and Military Gazette*.

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### NEW BOOKS.

THE CLOSING EVENTS OF THE CAMPAIGN IN CHINA; *the operations in the Yang-tse-Kiang*.—By Capt. Granville G. Loch, R.N.—London: Murray, 1842.

This is the work of an officer and a gentleman. Capt. Loch sees passing events and scenes with the eye of an officer of experience and judgment, and relates them with the tone and expression of an English gentleman. We are indebted for this account of the closing events of a war, which will be memorable in history as the first ever effectually waged against the Chinese by any European power, and which humbled the pride of the celestials, let us hope to their improvement, and to the advantage of this country. All the principal events of this war, have been successively placed before our readers, in the public despatches, but the journal of Capt. Loch, before us, supplies many an interesting anecdote of personal adventure, attending those events which throws considerable light on this extraordinary people, and their country. We shall therefore turn at once to the main object of the expedition, the capture of Nanking, which produced the celebrated treaty, the first interview leading to which is thus related:—"Operations would have commenced at daylight, but *Mandarius*," says Capt. Loch, "came off at midnight beseeching that another interview might be arranged for the following day, when the Imperial commission would be produced.

"14th, after breakfast I accompanied Major Malcolm and Messrs. Morrison and Thom, on shore to the interview, which was to decide whether the Chinese would yield to our demands.

"It took place in a large temple situated in the suburbs under the south wall, and a short distance from the canal up which we proceeded in the *Queen's*

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cutter, by an opening cut through heavy rafts of timber drawn across its entrance to block up the passage. Several large junks full of stones had also been sunk athwartships, but these were burst and broken up into various portions by the strength of the current, leaving ample room for an unobstructed onward progress to the largest boat.

"We landed on a rickety bamboo pier constructed for our accommodation, and were instantly surrounded by a crowd composed of the lowest order, who appeared eager to see specimens of the formidable 'barbarians,' and the sight to men, who judge by size and muscle, must have been humiliating to their self love, as we were all of slight build, and moreover, had come quite unprepared for the show. Linen, clean I hope, but for weeks unacquainted with iron or mangle; shoes that would have done good service on the moors, and coats of modest cut and old acquaintance, with the exception of the gallant Secretary's gaily braided affair, which by the by, was most unhappily contrasted with his nether garments.

"Two of the party, if not all four, were under thirty,—an age in a Chinaman's eyes undeserving of respect.

"We were received at the entrance of the spacious court of the temple, by a levy of mandarins, from the blue to the brass button. Different from us, they rustled in embroidered silks and flowered muslin of a design and beauty of texture, worthy even to deck the forms of our own fair dames. They marshalled us with many obsequious bows, and really much graceful courtesy into the great hall of audience, where Mr. Secretary Whang, and the Tartar General 'Chin,' were standing to receive us. After Mr. Morrison had severally introduced us, we sat down in chairs that would have held two Daniel Lamberts, round a square table. Whang opposite Malcolm, I next to Chin, and Mr. Thom opposite to me. Mr. Morrison retired to another table to translate some papers.

"Whang, a man of seven or eight and thirty, is considered one of the most rising statesmen in China, and his manners and conversation marked him a perfect gentleman. I do not remember ever having met, even in my own country a person of more gentle and polished manner or courteous breeding than this Chinese, so different from the majority of his countrymen in their intercourse with foreigners. The General was a portly old veteran of about sixty, wearing a little grey tufted beard, a plain dress, crystal ball and peacock's feather. His red ball had been taken away for some offence shortly before our arrival.

"The other mandarins stood round among the servants, and listened, as is the universal custom to all that was discussed.

"At the door were a few peacekeepers or police, wearing red felt conical caps, each topped with a peacock's feather, which traversed round upon a swivel. They were armed with cow-hide whips, which they kept in pretty frequent use upon the shoulders of the pressing and chattering rabble outside.

"While Mr. Morrison was transcribing copies of his papers, tea was handed round by the attendants, and whether drank or not, a hot cup every two or three minutes superseded the colder beverage.

"When the writing was finished Malcolm produced the patent from Her Majesty, appointing him Secretary of Legation; this was to shew that he was the accredited and proper person to negotiate on the part of the Envoy. After this was looked at he displayed Sir Henry Pottinger's, which was translated *verbatim* by Mr. Thom, and the Queen's seal and signature pointed out to the deputies.

"Major Malcolm then demanded to see the Emperor's commission, which, after some little delay and great ceremony, was brought forth from a chest by a mandarin under whose special charge it appeared to be. He carried the roll of yellow in both his hands, and proceeded, his eyes reverentially fixed upon it, with slow and solemn steps towards the table, and placed it in the hands of Whang with tenderness and forced resignation. The produce of the silk wrap-

per was a little shabby yellow box, badly made and worse painted, containing the power, which Morrison on examination pronounced, as far as he was able to judge, authentic.

"I was greatly amused watching the anxious and horrified faces of the various Chinese, when Mr. Morrison touched the commission, and I thought the old keeper would have fainted on the spot when he, for an instant, held it in his hand.

"In China the same respect is paid to an imperial edict, or the mark of the vermilion pencil, that with us, the sovereign only receives in person. There are many powers delegated by sign manual throughout the empire, and in these cases the same homage is bestowed upon the written name of the emperor, that is, in other countries, only yielded to the prince himself.

"After our skeleton treaty was satisfactorily arranged, and written both in Chinese and English, one copy being kept by the Mandarins, the other by Malcolm, for Sir Henry's inspection, we rose to depart, and the old general laughingly remarked that the conditions were hard, but after all, were only what they would have demanded under similar circumstances; that a war between nations might be likened to a game of chance, in which the loser must pay the winner; that this time they were the unfortunates, from having neglected the art of war during centuries of peace and prosperity; that our ships were our stronghold and glory, and had proved their curse."

The Chinese general will prove wrong in the course of time, and could he live long enough, would gladly acknowledge it. The time has arrived, when the *exclusive* policy of the Chinese, forbidding the approach of all external benefits, must cease. With the outline of their treaty the party repaired to the ships to prepare for the subsequent ceremony, which our space tells us must be reserved for our next number.

**THE SHIP OWNERS' AND SHIPMASTERS' DIRECTORY to the Port Charges, and all the depths of water, at the various places for loading and discharging vessels in Great Britain and Ireland; together with similar information respecting many of the principal Foreign Ports, &c.—By James Daniel.**—Taylor, 103, Minories; and Daniel & Co., Aberdeen.

A valuable collection of important facts, which every one having an interest in shipping affairs should possess for reference. The conception of such a work was excellent, and here is a good beginning to what must hereafter become another standard work for mariners; but it can only become so by constant watchfulness on the part of the compiler, to enhance its value by the particulars of each new port as they become known. We recommend the author to follow it up with another series as soon as possible, there are many important ports such as Funchal, the Cape, Callao, &c., and scores of minor ones which should not be neglected.

**A TREATISE ON ARITHMETIC IN THEORY AND PRACTICE; with an appendix, containing an introduction to Mensuration.—By James Thompson, L.L.D., Professor of Mathematics in the University of Glasgow.**—London, Simms and McIntyre.

We can commend this as a concise treatise on arithmetic, to those of our readers on shore or afloat, engaged in, or entering on, the subject. The different terms of arithmetic are well explained, the rules for the various branches clearly laid down, and the examples explicit and satisfactory. The rules for brief or mental calculation are given in an appendix, which may be consulted with advantage, and a note is also added on Horner's Method of Resolving Equations. To these commendations we must not omit to add that the work before us is the twenty-third edition, in itself no unimportant mark of its value.

**ELEMENTS OF PLANE AND SPHERICAL TRIGONOMETRY, with the first principles of Analytic Geometry.—By James Thompson, L.L.D. &c.,** 3rd. edition.—Belfast, Simms and McIntyre.

It will be sufficient to state here, that the author's aim has been, "throughout

the whole work, to comprise, in a small compass, much useful and interesting matter; and, that he who shall make himself well acquainted with what it contains, will find it easy to acquire a knowledge of all that is yet known in trigonometry, and to apply it in astronomy, and other branches of science. To the ordinary branches of the subject, are added miscellaneous investigations, and problems for exercise, dialling, multiple arcs, miscellaneous propositions, concluding with analytic geometry.

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#### NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

**YANG-TSE-KIANG RIVER**:—*Surveyed by Capt. C. R. D. Bethune, H. Kellett, and R. Collinson.*

Thanks to the exertions of our indefatigable naval surveyors we have here a chart of this noble river, with which a ship may easily find her way up it, as far as Nanking. The scale is a quarter of an inch to the mile, by which the whole is included on a double elephant sheet: we trust this will soon become a well worked chart.

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#### BIOGRAPHICAL MEMOIR.

**REAR ADMIRAL SIR JAMES HILLYAR, K.C.B. and K.C.H.** (See Obituary) was universally known to all classes of the profession as having gloriously vindicated the supremacy of the British arms during the late war. By his death a good-service pension of £300 will revert to the Admiralty. It was this distinguished officer who, when in command of the frigate *Phœbe*, captured the American frigate *Essex*, after a most gallant action. The two vessels were in a neutral port, and the officers and men of the *Phœbe* were constantly subjected to severe taunts and insults from the Americans, which, under their gallant Captain's advice, they endured with firmness, he promising them a better opportunity of avenging themselves, and serving their country at the same time, than by resorting to the usual practice of individual conflict. And he performed what he had promised. On both vessels getting into "blue water," so eager was the crew to chastise their insolent enemy, that they implored Captain Hillyar to board, but he refused, saying he would play at long balls, and would take the enemy and save his men. It is but a just tribute to the humanity of the gallant deceased and his brave crew, to remark that after the *Essex* had surrendered by striking her colours, and the boats from the *Phœbe* were pulling towards the *Essex*, they sacrificed their natural feelings of exultation, and their desire as speedily as possible to take possession of their prize, by turning out of their course to pick up some of the enemy who had been swamped in a boat, and were crying out for assistance. Previous to this action he led the boats in cutting out two Spanish corvettes at Barcelona, and assisted in the *Phœbe* in the reduction of the Mauritius, and in the capture of *La Nereide*, French frigate. The dates of his commission are as follow:—Lieutenant, 8th March, 1794; Commander, 16th April, 1800; Captain, 29th February, 1804; Rear-Admiral, 10th June, 1837.

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#### ADMIRALTY ORDERS.

Admiralty, May 30th, 1843.  
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.

A fee of One Pound being required by the officer of the Bishop of London's Court for registering such marriages, that sum is to be received from the parties and remitted to this Office with the above Certificate.

By Command of their Lordships,  
SIDNEY HERBERT.

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Admiralty, June 3d, 1843.  
The Board of Ordnance having caused boxes to be made, lined with tinned copper, for the package of the Percussion Tubes, for the great guns on board Her Majesty's ships, their Lordships are pleased to desire, that the boxes

shall be deposited in lockers fixed against the after bulkhead of the Gunner's Hanging Store Room, in line of battle ships and frigates, and in smaller ships, without Hanging Store Rooms, they are to be placed in lockers against the after bulkhead of the Gunner's Store Room.

The boxes are not on any account whatever to be placed in the Magazines, and the keys of them, as well as the Lockers, are to be returned with the keys of the Magazines.

By Command of their Lordships,  
SIDNEY HERBERT,

Admiralty, June 5th, 1843.

Much inconvenience having been felt on board Her Majesty's Ship *Excellent*, on account of the necessary notations being frequently omitted on many of the Pay Documents and Certificates of Seamen Gunners who do not claim their discharge, their Lordships desire that in the event of a Seaman Gunner belonging to any of Her Majesty's Ships volunteering for a second period of service, the circumstance shall be noted in all cases both on the Ship's Books and on Men's Tickets, immediately underneath the date of their Passing Certificates in Gunnery; and also on the Mens' Parchment Certificates.

The same course is to be observed in respect to Men who decline to re-enter as Seamen Gunners.

By Command of their Lordships,  
SIDNEY HERBERT.

Admiralty, June 30, 1843.

In pursuance of her Majesty's pleasure, signified to the Lords Commissioners of the Admiralty, the following alterations are to be made in the dress uniform of Officers in the Royal Navy.

**COATS.**—The coats of all officers, now having scarlet collars and cuffs, to have white collars and blue cuffs and the slash in the sleeve, which is now blue, to be white.

**EPAULETTES.**—The bullions of dress epaulettes to be loose, instead of fixed, as at present.

**HATS.**—All cocked hats to be of the same dimensions as that to be worn by the Admiral of the Fleet, as hereafter described, and with the same distinction heretofore used except that the binding, which was formerly of black silk lace, two and a half inches, is to be two inches in width, and of the oak leaf pattern.

**ADMIRAL OF THE FLEET.**

**COATS.**—To have, in addition to the present lace, four rows of five-eighths inch lace round

the sleeve above the cuff, at such distance from each other as place them within the length of the slash, and one and a quarter inch lace along the bottom of the lapel, and down the front and back edges of the skirt.

**HAT.**—The fan or back part eight and a half inches—seven and a half inches in front—five and three quarter inches at each corner—bound with gold lace two inches wide, showing one inch on each side, black silk cockade five inches wide, looped with six gold dead and bright bullions, three and half eighth of inches wide, and the two centre twisted, with the button—the same size and pattern as that of the coat and tassels with five gold and five blue bullions each.

**ADMIRALS.**

**COAT.**—The same as Admiral of the Fleet but with only three rows of five-eighths inch lace round the sleeve.

**VICE ADMIRAL.**

**COAT.**—The same as Admiral, but with only two rows of five-eighths inches round the sleeve.

**REAR ADMIRAL.**

**COAT.**—The same as Vice Admirals, but with only one row of five-eighths inch lace round the sleeve.

**COMMODORES OF THE FIRST CLASS AND CAPTAINS OF THE FLEET, WHEN NOT FLAG OFFICERS.**

**COAT.**—The same as Rear Admirals.

**COMMODORES OF THE SECOND CLASS AND CAPTAINS.**

**COAT.**—The hip buttons to be inclosed with one inch lace, to form a point above them, on the side seam, and to finish under the plait below.

**EPAULETTES.**—Captains, under three years standing, to be distinguished by an embroidered silver crown within the crescent, instead of the anchor, as heretofore.

**COMMANDERS.**

**EPAULETTES.**—To have an embroidered silver anchor within the crescent.

**LIEUTENANTS.**

**EPAULETTES.**—Two gold epaulettes, the bullions to be only three inches long and one-eighth in circumference, in dress and undress.

Patterns or drawings of each of the before-mentioned articles of dress may be seen at this Office, and at the Office of each Port Admiral; and the Lords Commissioners of the Admiralty direct that no uniform shall, after this date, be made of any other pattern.

Uniforms which have already been made of a different pattern from the foregoing, may be worn until the 30th of June, 1844, after which no deviation whatsoever from the establishment will be permitted.

By Command of their Lordships,  
SIDNEY HERBERT.

## PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

### PROMOTIONS.

**CAPTAIN**—E. J. Parry.  
**COMMANDER**—C. W. G. Griffin.  
**LIEUTENANTS**—Edward Marshall of *Caledonia*—Byron G. Rogles of *St. Vincent*—Montagu Burrows; W. B. Wills.  
**PURSER**—William Weaver.

### APPOINTMENTS.

**COMMANDERS**—Edmund Peel (1841) to *Bittern*—William Henry Jervis (1834) to *Pilot*.  
**LIEUTENANTS**—David Elliot (1839) to *Resistance*—John Mc D. Smith (1840) and Irwin Maling (1839) to *Penelope*—John N. Norman (1842) and H. Stokes



(1842) (addit.) to *Winchester*—S. Otway Woodriddle (1837) to command *Spy*—Stephen Stocker (1815) to *San Josef*—Owen P. Knott (1840) (add.) to *Dublin*—E. P. B. Von Donop (1838) and James Lowry (1837) to *Eurydice*—G. Morrill (1837) and G. M. Monk (1812) to *Conway*—Edward Herrick (1815) to *Astrea*—Charles Richard Marquard (1840) and Geo. Le G. Bowyear (1840) to *Pilot*.

MASTER—W. J. W. Burney to *Pilot*.

MATES—J. F. C. Hamilton to *Warspite*—W. H. Haswell (1838) to *Dolphin*—W. T. F. Jackson (1842) and F. C. Herbert (1839) to *Inconstant*—R. W. Clark, J. A. L. Wharton, and W. F. Warren to *Fisgard*.

SECOND MASTERS—E. M. Fox to *Victoria* and *Albert*—E. C. Homersham, E. H. Rowe, and G. Moore to *Anson*—Henry Webb to *Lucifer*.

SURGEONS—T. Fraser (1838) to *Penelope*—W. M'Kinlay (1838) to *Pilot*—John Ward, acting (add.) to *Caledonia*—W. Faskin, acting (add.) to Plymouth Naval Hospital—Alexander J. Pilmor (1843) to *Pilot*.

ASSISTANT-SURGEONS—James Mitchell M.D., (1817) to *Anson*—W. Tucker, M.D., to Royal Hospital Plymouth—J. Gallag-

her to *Dolrhin*—W. H. Sloggett to *Penelope*—T. B. Pukstrom to *Warspite*—Frederick Morgan (addit) to *St. Vincent*—J. A. S. Addison (addit) to *St. Vincent*.

MIDSHIPMEN—John Montgomerie to *Conway*—Francis Hewson to *Penelope*.

VOLUNTEERS 1st Class—D'Arcy E. W. Wynward to *St. Vincent*—W. Roysce to *Eurydice*.

PURSEERS—C. W. Roone (acting) to *Tweed*—Thomas Goddard late *Royal George* yacht to *Victory*—W. Soady (a) to *Penelope*—W. Weaver to *Pilot*.

CHAPELLAIN—Rev. N. Proctor to *Malabar*.

NAVAL INSTRUCTORS—C. J. E. R. Archdeacon to *Dublin*—R. E. Saunders to *Conway*.

CLERKS—L. B. Martin to *Penelope*—W. R. Bush (add.) to *Caledonia*—James Tapson to *Pilot*—William Jones (Assistant) to *Pilot*.

#### COAST-GUARD.

REMOVALS—Lieut. R. L. Stephens to *Yealm*—Lieut. Knight to *Swale Cliff*—Lieut. J. M'Gladyery to *Sheephaven*—Lieut. W. S. Pearne to *Shanklin*—Lieut. H. J. Jones to *Dartmouth*—Lieut. W. Pinhorn to *Sunderland*.

### MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

#### AT HOME.

CASTOR, 36, Capt. C. Graham, 10th July, arrived at Portsmouth from *Chatham*.

CROCODILE, 26, Mr. Elson, Master-Com., 9th July at Portsmouth.

CYCLOPS, (st. v.) Capt. W. Austin, at *Cork* from *Barbados*.

DOLPHIN, 3, Com. W. O'Bryan Hoare, 8th July left *Portsmouth* for *Cork*.

EURYDICE, 26, Capt. Elliott, *Portsmouth*.

HOWE, 120, Capt. Sir W. O. Pell, 31st June, arr. at *Spithead* from *Gibraltar*—*Sheerness* paying off.

NAUTILUS, 10, re-commissioned as a tender to *Victoria* and *Albert* steam yacht.

PARTRIDGE, 10, Lieut.-com. J. T. Nott, arr. at *Portsmouth* 18th June, 26th paid off.

PENELOPE, (st. frigate) commissioned June 28th, by Capt. W. Jones, *Chatham* fitting.

PILOT, 16, recommissioned at *Plymouth* on the peace establishment by Com. W. Jervis.

RESISTANCE, 42, July 13th, sailed for *Cork* after refitting.

STROMBOLI, Com. Louis, June 27th, paid off at *Woolwich*.

WARSPITE, 50, Capt. Lord J. Hay, 22nd June arr. at *Portsmouth* from *New York*, 8th sailed for *Cork*.

WATERWITCH, 10, Lieut. Com. H. J. Matson, 29th June, at *Portsmouth*, 4th July paid off.

WILBERFORCE, Lieut. Moore, 30th June arr. at *Portsmouth* from eastward.

#### ABROAD.

AIGLE, 24, Capt. Lord E. Paget, 23rd June at *Smyrna*.

BEAGLE, (sur. v.), Com. J. L. Stokes, 18th Feb. left *Sydney* for *Hobart Town* on way to *England*.

BELVIDERA, 38, Capt. Hon. G. Grey, 23rd June, at *Ionian Islands*.

CLEOPATRA, 26, Capt. Wuyvill, 27th April at the *Cape*, having captured a slaver.

DEVASTATION, (st. v.) Com. Henry, 23rd June at *Malta*.

ELECTRA, 18, Com. Darley, 7th June, left *Jamaica* for *Newfoundland*.

**EREBUS**, Capt. J. C. Ross, May at St. Helena from Cape.

**FANTOME**, 16, Com. P. G. Haymes, 23rd April off Buenos Ayres.

**FORMIDABLE**, 80, Capt. Sir C. Sulivan, 23rd June at Malaga.

**GEYSER**, (st. v.), Com. Carpenter, 14th June arr. at Malta from Constantinople

**HECATE**, (st. v.) Com. H. Ward, 23rd June at Malta.

**HECLA**, (st. v.), Lieut. Com. J. B. Cragg, 23rd June at Alexandria.

**HORNET**, 6, Lieut. Com. R. B. Miller, 5th June, at Barbados.

**ILLUSTRIOUS**, 72, Capt. J. Erskine, 7th June, left Bermuda, for Halifax.

**INDUS**, 84, Capt. Sir J. Stirling, 23rd June at Malta.

**LILY**, 16, Com. J. J. Allen, 11th Apl. at the Cape, having captured two slavers

**LIZARD**, (st. v.), Lieut. W. G. Escourt 23rd June, at Malaga.

**MAGICIENNE**, 24, Capt. Warren, 23rd June at Athens.

**MEDEA**, (st. v.), Com. F. Warden, 23rd June at Barcelona.

**MONARCH**, 14, Capt. S. Chambers, 23rd June, at Barcelona.

**PIQUE**, 36, Capt. Hon. M. Stopford, 5th June at Barbados.

**QUEEN**, 110, Capt. G. F. Rich, 23rd June at Malta.

**SAPPHO**, 16, Com. Hon. G. Hope, 26th May, left Madeira for the Cape.

**SAVAGE**, 10, Lieut. J. H. Bowker, 23d June at Barcelona.

**SCOUT**, 18, Capt. Hon. J. R. Drummond, 23rd June, at Malta.

**SNAKE**, 26, Com. Hon. W. Devereux, 23rd June, at Athens.

**STYX**, (st. v.) Capt. A. Vidal, 25th June at Foyal.

**TALBOT**, 26, Capt. Sir T. Thompson, 15th Jan. arr. at Tahiti from Valparaiso.

**TERROR**, Com. F. Crozier, arr. at Simons Bay, after three years cruise.

**THUNDERER**, 84, Capt. Pring, 28th April, arr. at the Cape from England.

**TWEED**, 20, Com. H. C. D. Douglas, 5th June at Barbados.

**VERNON**, 50, Capt. W. Walpole, 23rd June, Beyrout,

**VESUVIUS**, (st. v.) Com. Ommaney, 23rd June at Constantinople.

**WASP**, 16, Com. A. Drew, 5th June, at Barbados.

## BIRTHS, MARRIAGES, AND DEATHS.

### Births.

July 4th, the lady of Dr. McKechnie, RN., of a son.

### Marriages.

On the 19th July, at Fareham, by the Rev. W. Harrison, vicar, Com. J. G. Harrison, RN., to Mrs. Eastwood, daughter of the late J. Pooke, Esq., of Fareham.

At Fulham, July 11, Capt. Louis, RN., son of Rear Admiral Sir J. Louis, Bart., to Mary, daughter of J. Daniel, Esq., of Parson's Green.

At Brussels, June 28, J. S. Dwyer, Esq., Limerick, to Frances, the daughter of the late J. Gill, Esq., RN.

At St. George's, Bloomsbury, F. O. Haynes, Esq., son of the late Capt. H. Haynes, RN., to Miss Child, Russell-sq.

At Clifton, July 29. Com. W. Thomas, RN., to Thomasine, daughter of the late Capt. H. Haynes, RN.

At Edinburgh, H. W. Davenport, Esq. son of Rear Admiral Sir S. Devonport, CB., KCH., to Catherine, daughter of the late J. Durie, Esq., of Astley House, Lancashire.

At Stonehouse, July 3, Capt. McAdam,

RN., Plymouth Division, to Harrietta Maria, daughter of the late Major Savage

### Deaths.

At Tor House, near Devonport, Rear Admiral Sir J. Hillyar, KCH., KCB. aged 73 years.

Lately in Dorset-place, London, Vice Admiral J. K. Shepherd, the oldest commissioned officer in the Navy, being a lieutenant of 1777, and the senior Ward Room officer in the Service, with the exception of Mr. J. Rose, a Surgeon of 1776.

July 14th, Cap.. J. Jones, RN., one of the elder brethren of the Trinity-house, who was accidentally drowned off Padstow, whilst engaged on a survey in the Bristol Channel.

July 13th, at Kent House, Knightsbridge, the Hon. A. A. Villiers, RN.

At Clifton, June 28, Ann, sister of the late Admiral Sir W. Hargood, CCB.

At Sydney, New South Wales, Flora, wife of H. Tinycombe, Esq., and daughter of the late Capt. M'Leod, RN., CB.

At Tor Point, June 23, Mary, widow of the late M. Foster, Master RN.

At Greenock, W. Turner, Esq., surgeon RN.

**SHIPPING DESPATCH.**—The superiority of Liverpool over other ports, in her facilities and accommodation for shipping has, we think, been fully proved in the case of the *Phoenix*, Captain W. R. Greaves, from Antigua, belonging to C. W. and F. Shand, which vessel, with a cargo consisting of 464 hhd. sugar, and 221 puns. molasses, besides a number of smaller packages, hauled into dock on Thursday last, discharged, and took on board 100 tons of ballast and 150 tons of goods, and sailed again for Antigua on Saturday, having been only the short space of *sixty hours in dock!* We believe this exceeds anything of the kind ever accomplished in Liverpool before.—*Gore's Advertiser.*

### 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, 1843.

| Month Day. | Week Day. | BAROMETER. |         | FAHRENHEIT THERMOMETER, In the Shade. |      |     |     | WIND.    |      |         |      | WEATHER. |            |
|------------|-----------|------------|---------|---------------------------------------|------|-----|-----|----------|------|---------|------|----------|------------|
|            |           | 9 A.M.     | 3 P.M.  | 9AM                                   | 3PM. | Min | Max | Quarter. |      | Streng. |      | A.M.     | P.M.       |
|            |           |            |         |                                       |      |     |     | A.M.     | P.M. | A.M.    | P.M. |          |            |
| 21         | W.        | In. Dec    | In. Dec | 0                                     | 0    | 0   | 0   | W        | W    | 3       | 3    | bc       | bc         |
| 22         | Th.       | 30-15      | 30-11   | 56                                    | 70   | 44  | 72  | NW       | NE   | 2       | 2    | o        | o          |
| 23         | F.        | 30-02      | 30-04   | 60                                    | 68   | 52  | 70  | N        | N    | 3       | 3    | b        | b          |
| 24         | S.        | 30-10      | 30-10   | 56                                    | 72   | 44  | 74  | N        | N    | 3       | 3    | o        | o          |
| 25         | Su.       | 30-04      | 30-04   | 60                                    | 66   | 49  | 67  | NE       | NE   | 3       | 4    | bc       | bc         |
| 26         | M.        | 29-96      | 29-93   | 53                                    | 63   | 50  | 64  | NE       | NE   | 3       | 3    | bc       | bc         |
| 27         | Tu.       | 29-91      | 29-92   | 57                                    | 71   | 47  | 72  | NE       | NE   | 3       | 3    | bc       | bc         |
| 28         | W.        | 29-83      | 29-77   | 60                                    | 72   | 48  | 73  | SW       | NE   | 2       | 2    | bm       | bc         |
| 29         | Th.       | 29-66      | 29-68   | 54                                    | 58   | 50  | 60  | N        | N    | 4       | 4    | bc       | bc         |
| 30         | F.        | 29-76      | 29-82   | 54                                    | 60   | 44  | 62  | N        | NW   | 4       | 4    | bc       | bc         |
|            |           | 29-88      | 29-93   | 60                                    | 61   | 52  | 62  | W        | W    | 4       | 5    | bc       | o          |
| 1          | S.        | 30-02      | 30-04   | 62                                    | 68   | 51  | 69  | W        | W    | 3       | 4    | bc       | bc         |
| 2          | Su.       | 30-00      | 30-02   | 63                                    | 72   | 53  | 74  | SW       | SW   | 4       | 5    | bc       | qbc        |
| 3          | M.        | 30-03      | 30-03   | 64                                    | 74   | 58  | 76  | SW       | SW   | 5       | 5    | b        | qbc        |
| 4          | Tu.       | 30-03      | 29-99   | 59                                    | 77   | 58  | 78  | NE       | SW   | 1       | 1    | od (2)   | bc         |
| 5          | W.        | 29-79      | 29-71   | 73                                    | 87   | 57  | 88  | SW       | SE   | 3       | 4    | bc       | bc         |
| 6          | Th.       | 29-82      | 29-86   | 62                                    | 69   | 57  | 70  | SW       | SE   | 4       | 2    | ber 1)   | o          |
| 7          | F.        | 29-98      | 30-00   | 60                                    | 68   | 53  | 70  | SW       | SW   | 4       | 5    | bc       | qbc        |
| 8          | S.        | 29-94      | 29-86   | 58                                    | 58   | 53  | 65  | SE       | NW   | 2       | 2    | or 1)    | bcp (3)    |
| 9          | Su.       | 29-98      | 30-00   | 56                                    | 73   | 48  | 74  | N        | N    | 2       | 2    | o        | bc         |
| 10         | M.        | 30-00      | 29-98   | 61                                    | 63   | 50  | 65  | N        | N    | 4       | 6    | o        | go         |
| 11         | Tu.       | 30-04      | 30-10   | 57                                    | 60   | 55  | 61  | NW       | N    | 4       | 6    | go       | go         |
| 12         | W.        | 30-20      | 30-20   | 60                                    | 74   | 53  | 75  | N        | N    | 2       | 2    | o        | o          |
| 13         | Th.       | 30-08      | 30-10   | 65                                    | 62   | 58  | 66  | SW       | NW   | 2       | 2    | go       | ogr (3 4)  |
| 14         | F.        | 30-10      | 30-10   | 56                                    | 68   | 55  | 70  | N        | N    | 3       | 3    | o        | b          |
| 15         | S.        | 30-12      | 30-12   | 63                                    | 74   | 54  | 76  | SW       | W    | 3       | 3    | bc       | bc         |
| 16         | Su.       | 30-25      | 30-27   | 65                                    | 77   | 59  | 78  | S        | W    | 2       | 3    | bcm      | b          |
| 17         | M.        | 30-30      | 30-26   | 68                                    | 81   | 59  | 82  | SW       | W    | 2       | 3    | b        | bc         |
| 18         | Tu.       | 30-04      | 29-94   | 66                                    | 70   | 62  | 74  | SW       | SW   | 3       | 5    | bc       | qor 3) (4) |
| 19         | W.        | 29-79      | 29-75   | 58                                    | 64   | 53  | 65  | NW       | NW   | 3       | 3    | bc       | bc         |
| 20         | Th.       | 29-77      | 29-81   | 56                                    | 64   | 47  | 65  | W        | W    | 4       | 4    | bc       | od (4)     |

JUNE—Mean height of the Barometer=29.853 inches; Mean temperature=56.7 degrees; depth of rain fallen=1.27 inches.

### TO OUR FRIENDS AND CORRESPONDENTS.

All Communications for the ensuing number should be sent before the 20th of the month.

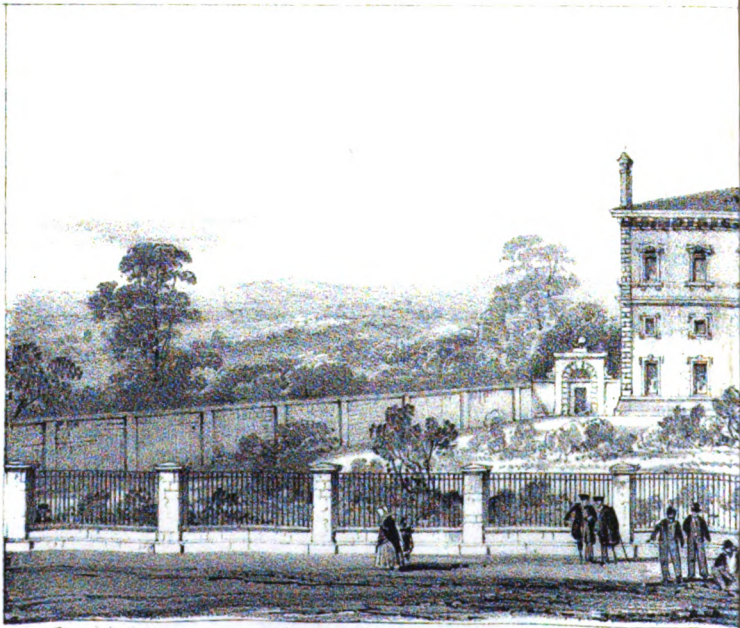
SIR JOHN ROSS's letter has been received, and will be inserted in our next.

The Drawings of MR. GRYLL's WHELPS have been received."

**Erratum.**—Page 552, line 8, for "scud," read "sand."

Hunt, Printer, Carlisle-street, Maida-hill.





John Shaw Arch<sup>t</sup>

COPY OF AN ADDRESS

PRESENTED TO

**His Royal Highness Prince Albert,**

BY

THE SCHOLARS

OF THE

**ROYAL NAVAL SCHOOL,**

ON HIS

**LAYING THE FOUNDATION STONE**

OF THE

**NEW SCHOOL AT COUNTER HILL, DEPTFORD,**

**JUNE 1st, 1843.**

---

**London :**

**PRINTED BY GEORGE ODELL, 18, PRINCES STREET,  
CAVENDISH SQUARE.**

**1843.**

**May it please your Royal Highness,**

**Deeply sensible of the honour, which your Royal Highness has conferred upon us, by graciously consenting to lay the Foundation Stone of our New Building, we, the Scholars of the Royal Naval School, humbly beg leave to express our gratitude to your Royal Highness, for this act of kindness and condescension.**

**We trust we may be permitted to cherish a hope, that our School, which was founded in the year 1833, has grown up, under the fostering patronage of our Most Gracious Sovereign, into an object of national interest: but we are fully persuaded, that the mark of high distinction now bestowed upon it by a Prince, who is justly dear to the British nation, will effectually promote its future prosperity.**

**We rejoice, also, that your Royal Highness should have selected the Anniversary of a great Naval victory, for the commencement of a work, which cannot fail to prove a lasting benefit to the naval profession.**

**That Her Most Gracious Majesty, and your Royal Highness, together with your Illustrious Family, may long be preserved in the enjoyment of all happiness, is the earnest prayer of**

**Your Royal Highnesses'**

**Most humble and devoted Servants,**

**The Scholars of the Royal Naval School.**

# ROYAL NAVAL SCHOOL.

PATRON :—THE QUEEN.

THE ROYAL NAVAL SCHOOL was provisionally opened at Camberwell, in 1833, until the erection of a suitable building.

The object of this Institution is, to enable the less affluent Naval and Marine Officers, to give their Sons a sound general education at the least possible expense; bearing in mind, *the further object, of affording the same advantages, gratuitously, or at a very reduced charge, to a limited number in necessitous circumstances, giving a preference to the Orphans of those who have fallen in the Service of their Country.*

The School Establishment consists of a Head-master, (a clergyman of the Church of England, being a Graduate of one of the Universities,) with the requisite assistant-masters. Every one must be sensible of the disadvantages under which all Institutions labour on their first establishment; and the ROYAL NAVAL SCHOOL has experienced its full share of them; but, the Council are now happy to state, that these difficulties have been surmounted, in a degree far beyond their most sanguine expectations; and, they have much pleasure in stating, that the School stands high in public estimation—that *the Lords of the Admiralty have been pleased to grant two nominations annually, to be selected from merit in the School, as volunteers of the first class in Her Majesty's Navy*—and that all accounts speak most favourably of the exemplary conduct and character of very many of the scholars, who have completed their education at this School. Time, alone, could determine the usefulness of such an Institution; and it was not, until it had been opened a few years, that any positive opinion as to its great benefit to the Service, and of its utility to the Nation, could be formed.

Among the large number of the Sons of Naval and Marine Officers, who have been educated at this School, many have entered the Navy and Marines;—several were at the Bombardment of Acre, and on the Coast of Syria. IT MAY, THEREFORE, BE PREDICTED, THAT THE ROYAL NAVAL SCHOOL WILL EVENTUALLY BECOME A MOST IMPORTANT NURSERY FOR THE NAVY.

A most desirable site, for the permanent establishment of this National Institution has, at length, been purchased from the Right Worshipful the President, the Treasurer, and Governors of Christ's Hospital; and the Master and Wardens of the Worshipful Company of Cloth-workers, whose readiness to meet the views of the Council throughout the negotiation cannot be too highly appreciated. The land consists of seven acres, most favourably situated at New Cross, in the Parish of St. Paul's Deptford, four miles from London—commanding a view of that proud monument of British glory, Greenwich Hospital, and the unrivalled trade of England on the bosom of the Thames, and affording every facility for communication with all parts of the kingdom.



The Council, therefore, earnestly appeal to all whose patriotic and benevolent feelings may prompt them to encourage and support the Naval service, to aid them in erecting a suitable edifice.

It is proposed to commence the building as soon as the Funds be considered adequate to the purpose; and the Council are sanguine in believing, that, as the Royal Naval School is the only establishment in this great maritime country for the education of the Sons of Officers in the Navy and Marines, this appeal will be productive of such pecuniary assistance, as will enable them to complete the undertaking. Lithographic Plans—showing the general appearance of the exterior, and the interior accommodations for four hundred Pupils (and the requisite Officers), are subjoined.—Due regard has been paid to economy; but, it must be admitted, that, in erecting a Royal Naval School, the edifice should be worthy of the profession for whose benefit it is intended.

The necessity of such an Institution has been most keenly felt by the members of that service, to which, under the blessing of the Almighty, our country stands mainly indebted for the glory she has acquired, and still maintains. In no class more than in the Navy, do we see so ardent a desire to acquire, in early life, the elements of sound and useful knowledge. To the education of their children, our Naval and Marine Officers are now compelled to dedicate a great portion of the income they derive from the Nation for their services;—but it is melancholy to consider the difficulties with which they have to contend, in their endeavours to obtain an object they all have so closely at heart. The great expense attendant on a good general education, which compels many Officers to take their families to Foreign countries, where instruction may be procured at a cheaper rate; the forlorn situation in which children must be left by the father, when the service of his country calls him, for years, to distant shores; the injury often done to the minds of those children, by men, whose talents and fitness are too frequently unascertained by any examination;—are only a few of the disadvantages to which the families of our gallant Officers are exposed, while they are fighting the battles of their country *and protecting its commerce*; and this, too, at a time when the whole energy of their minds should be devoted to their arduous duties. It is the object of the present Institution to remove these difficulties:—to afford the means and opportunity of imparting to a portion of the British youth, sound principles of religion, morals, and knowledge; together with those truly British feelings which are almost incompatible with a Foreign education; to carry comfort and happiness into the families of our Naval Officers, and to enable the father, when he quits his home, to feel confident that the children he leaves behind him, shall not suffer by his absence: this would indeed be a work, alike honourable to the patriot and to the philanthropist.

In making this appeal the council cannot omit drawing the attention of the Public to the fact—that, were it not for such an Institution, many of the Sons of most deserving Officers of the Navy and Marines, must sink far beneath the grade of society to which their fathers had attained; and, in many cases, (in consequence of the inability of the parents to have afforded them a fit education,) are incapable of occupying such stations as their friends might have procured for them.

The Merchants of this wealthy country can bear testimony to the bravery of the British Navy, who kept the door fast locked against the enemy, while their ships covered the seas. Many of those gallant Officers, who returned at the close of the war, are now numbered with the dead; having left their helpless Orphans in abject misery: in confirmation of these assertions, it is only necessary to select a few cases (indiscriminately) from the crowded list of applicants, waiting for admission on the *gratuitous, or reduced foundation*.\* Many cases of Orphans, equally distressing, have already received the advantages of an education at this School; but until the erection of a suitable building, there is no hope of admitting those unfortunate claimants, whose cases merit the warmest sympathy of the public.

Under these circumstances, the Council urgently solicit the benevolent attention of all who feel interested in the Wooden Walls of Old England; and they trust, that with the gratifying examples of the liberality of civilians, the Navy will be true to itself, and come forward to aid in this national work; bearing in mind, that one day's half-pay from all ranks in the service, would realize a sum sufficient for the erection of the building; but, from their limited means, the majority are unable to spare even this small amount, the Council confidently look to all patriotic individuals *unconnected* with the Navy, to assist them in making up the deficiency.

The Council cannot conclude this appeal, without earnestly entreating all who are connected with the Navy, and also those who are desirous of promoting the object in view, and whose avocations will permit them, to form Lists of Subscribers to the Building Fund in their own immediate vicinity; The Council feeling fully convinced that, in the aggregate, a large sum would by these means be collected, however small the amount of each subscription.

CHARLES OGLE, ADMIRAL,  
*President.*

\* See Appendix.

*Subscriptions, which will be published from time to time, are received by—*

|                                                                                      |                                                                                               |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Barclay & Co. Messrs., 54, Lombard-street                                            | London & Westminster Bank, Lothbury                                                           |
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## APPENDIX.

*The following Cases are selected indiscriminately from the List of Applicants on the Gratuitous and Reduced Lists, comprising various ranks in the Service.\**

Nine Orphans, without either Father or Mother, and the whole income £70 per annum. Father was engaged in the battles of Copenhagen and Trafalgar, The elder girls take in needlework.

Five Orphans without either Father or Mother, and nothing but compassionate fund allowance of £48 per annum. Father was Seven Years a French Prisoner of War.

Four children, under eight years of age; left without either Father or Mother, who died within three weeks of each other. No income to support them, except £10 each from the compassionate fund at the Admiralty; chiefly supported by private charity. The Father was present at the capture of Monte Video, Cape of Good Hope, Flushing, &c., and died in the coast guard service; the unhealthiness of his station producing the disorder which caused his death.

Four Sons, left without either Father or Mother, and their income only £48. Dependant on friends who are far from affluent.

A widow, left with two children by her husband's former wife. Not entitled to a pension, in consequence of her husband having left the service just previous to his death: her sole income is derived from taking in needle-work, and a slight assistance from an aged father. This officer served at the battle of Navarino, and a piece of plate was presented to him, for rescuing four seamen from drowning, at different periods, at the imminent risk of his own life. The applicant has lost an uncle and a brother in the service.

A widow, with six children, and nothing but her pension of £50 a year. Applicant's husband was Eight Years a French Prisoner of War.

An officer, with thirteen children, and nothing but his half-pay. Was present at the attack and surrender of Java, in 1811.

A widow, with four children, and her whole income £68. Eldest daughter prevented earning her livelihood by epileptic fits.

An officer, with nothing but half-pay of six shillings per day to support his family, five in number. Served in the San Josef, San George, and at the action off Copenhagen, with Lord Nelson. Was also engaged at the battle of Trafalgar, and at the taking of Martinique.

A widow, with two children under six years of age. Income £46 per annum. Not entitled to a pension, in consequence of her husband not having been ten years on the commissioned list.

A widow, with seven children, and nothing but a pension of £50 per annum, Her husband was at the battles of Trafalgar, Copenhagen, Walcheren, &c., and during the forty years he was in the service, he was only on half-pay one year and seventeen days.

\* The names of these parties are withheld, as those already admitted on the gratuitous, or reduced foundation, are unknown to any in the establishment.

# SUBSCRIPTIONS ALREADY NOTIFIED £2,700.

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**DIRECTIONS FOR THE WESTERN COAST OF THE ISLAND OF CHEDOوبا,  
ON THE COAST OF ARRACAN; and for the Islands, and Shoals,  
south of it to the neighbourhood of Foul Island; from a Survey of  
these parts made by H.M. Sloop Childers, in 1841.—by Capt.  
E. P. Halstead.**

THE extreme rocks of the reef lying off the north-west point of the Island of Chedoوبا, are in latitude  $18^{\circ} 55' 30''$  N., and in longitude  $93^{\circ} 26' 30''$  E., bearing from the point N.W.  $\frac{1}{2}$  N., distant five miles. From them the reef runs E.b.N. four miles, having along this line two small islands; Beacon Island, lying east three-quarters of a mile from the extreme rocks, which has on it a beacon of stones about 60 feet above high water mark, and which is visible nine miles; and Sandy Island less high than the other, lying three-quarters of a mile from the eastern extremity of the reef, which bears from it N.E.b.E.  $\frac{1}{2}$  E. Both islands have been planted with cocoa-nut trees, in order to increase their height.

The soundings in the neighbourhood of the reef are regular, varying from four fathoms, a quarter of a mile off its northern face, to eight and nine fathoms three miles off it; while at that distance off the north-west and west ends sixteen and seventeen fathoms are found. An out-lying rock with seven feet water on it is found N.E.b.E. of Beacon Island, distant half a mile. In the north-east monsoon, anchorage is good in all these soundings; but the reef would afford no shelter from the heavy swell of the south-west monsoon, at which season the channel between Chedoوبا and Ramree Islands, (after carefully rounding the eastern extreme of the reef,) is open for such purposes.

The tides run east and west along the reef, one and a quarter knot in the neaps, and nearly three knots in the springs, when they sometimes rise eight feet. They are irregular in time. High water on the north coast of Chedoوبا at full and change is at 9h. 30m.

The north-west point of Chedoوبا is a round hill (a volcano) of 200 feet in height, having casuarina trees only growing on it. It is connected with the north-west reef by a series of detached rocks above and below water, with deep water between them; and through a channel so formed, an entrance was found into a small, and (in the north-east monsoon) good harbour, on the north coast of the island, and which was named "Port Childers."

Its Harbour Rock lies S.S.E. from Beacon Island distant one mile and three-quarters. It is twenty feet high, fifty or sixty yards in length, the largest of all around it. From its western side a reef whose extreme is above water, extends one mile; 300 yards from which are seven fathoms water; S.S.W. of it one quarter of a mile is a small rock above water; south of which another quarter of a mile is one under water, and having another bearing from it again, E.  $\frac{1}{2}$  N. distant 700 yards. These two sunken rocks form the northern limit of the channel into the Port, which runs east and west, has six fathoms in its centre, four fathoms close to the two northern rocks, and five fathoms close to the reef forming the southern limit of the channel, which for the remarkable resemblance it bears to the ribs of a wreck is named "Rib Reef."

The channel is half a mile wide, with the land and sea breezes blowing alternately through it either way. There is no passage for other than boats of large size, eastward of it into the Chedooبا channel; but in coming out a clear channel exists to the southward and close to the Rib Reef, which cannot, however, be recommended. In entering the Port, when the north-west point of Chedooبا bears S.S.E., steer E.N.E. until it bears S.b.W., when with Sandy Island bearing north, the best anchorage will be found in four fathoms water on a bottom of clay and mud.

*Henry's Rock* is a detached mass thirty-five feet in height, visible six or seven miles, bearing from the north-west point W.S.W. distant two miles. It is the largest mass off this part of Chedooبا, and it marks the position of a considerable sized reef which surrounds it, a channel in six fathoms, inside of which exists; but which from the strength and irregularity of the tides is very dangerous.

Throughout the line of coast to which these remarks refer, the safe limit of approach in all ordinary cases of navigation, is twenty fathoms by day, and from sixty to seventy fathoms by night, the former clearing all dangers by about two miles. To the westward and to the northward of Beacon Island however, soundings extend to a much greater distance off shore than southward of it, where at a distance of less than ten miles no bottom is obtained with 120 fathoms of line; and the coast of Foul Island has little less than thirty fathoms close to it all round with the exception of its north-east point.

The western coast of Chedooبا, has small detached masses of rock straggling along it throughout, at a distance of less than two miles off the shore; but these do not prevent the practicability of anchoring along it in various parts during the north-east monsoon, when it is frequented by native craft for rice.

This article may then be procured in quantity, cheap, and good, as well as cattle, poultry, and fruit; water is procurable with trouble, wood with ease. But there is little inducement to anchor on its coast even at this season, while in all ordinary navigation of these seas, the whole line of coast to which these notes refer, will be well kept clear of by ships not bound to any of its ports in the south-west monsoon, while to facilitate the entrance into those ports during that season, whether on commercial business or for refuge and refit, was the principal view with which the survey of these outlying dangers was undertaken.

The west hill of Chedooبا which rises 1300 feet, and has one large tree on its summit, may be seen by any ship approaching the north-west part of Chedooبا from a very great distance; and its south peak 1700 feet in height, will warn at a distance far beyond the limit of soundings of approach to the southern parts of the island. As these are approached, will be seen Pyramid Rock, a remarkable pinnacle rising nearly 200 feet out of the water, and distant one mile from the shore. It marks the situation of dangerous reefs lying southward and westward of it, and of the western shore of Flat Island, so that even in fine weather when working along this coast, to the northward of Hill Island, the Pyramid should never be brought to bear to the northward of N.b.E., as there is no passage but for boats between Chedooبا and Flat

Island, and the channel between them is for the most part both shoal and rocky.

The tides take the general course of the trend of the coast, running at the same rates as those found off the north-west reef, averaging the same rise in the springs viz., six feet, but more irregular as to their period of rise; the north-east monsoon though not interfering on the coast with the regularity of the land and sea breezes, appearing to create a set to the southward. The indraught between Chedooba and Flat Island is very great.

*Flat Island*, as its name denotes, is very low, near four miles in length, separated by a channel from two to four miles wide from Chedooba, and having near its centre a volcanic hill about 200 feet in height.

*Hill Island* is a small high island about the same height as the volcano of Flat Island, from which it is separated by a channel of three-quarters of a mile; and which it much assists in recognizing, lying from it due south.

*South Rock*.—An isolated rock, twenty feet in height, lies south of Hill Island, distant half a mile; and this rock, together with an extensive reef four miles from it, bearing from the centre of Hill Island, S.S.E.  $\frac{1}{2}$  E., forms the sea entrance to the channel, which, southward of Chedooba leads to and from the Bay of Bengal, to the port of Amherst harbour, and the secure anchorages inside the islands of Ramree and Chedooba.

*Heywood Channel*.—This channel, taking its name from Captain Peter Heywood, who seems to have been the first to use it, runs between the shores of Hill and Flat Islands on the west, and the reefs and rocks extending from the West Shoal (above referred to,) to False Island on its south-eastern limit. Its centre course is N.E.b.N., in from thirteen to five fathoms, sandy bottom as False Island is approached, and at a distance of about two miles from the shore and the reefs; anchorage in it is good in all moderate weather.

*False Island* is a small low sandy islet, bearing from the volcano of Flat Island E.b.S., southerly, and distant five miles and a half. It is ordered to be planted with cocoa-nut trees.

*West Shoal* is a dangerous reef, half a mile in diameter, with very irregular soundings around it. Half a mile from it twenty fathoms water may be found, and close to it thirteen fathoms. The sea is constantly breaking on it, and at low water the points of the rocks are seen between the rollers. Unless when entering by the channels, in order to get eastward of Chedooba, Hill Island should never be brought to bear to the northward of N.b.E., in order to avoid this danger.

*Tree Island*, about one mile in length, 250 feet in height, and visible ten or twelve miles, bears from Hill Island S.E.  $\frac{1}{2}$  S.,  $11\frac{3}{4}$  miles. A reef of stragglng rocks extends three-quarters of a mile off its southern point, and detached rocks are found lying half a mile distant from its eastern shore; and one patch with four fathoms water on it, lies at the same distance off its north-west point; with these exceptions Tree Island may with safety be approached; and it forms with the west shoal, the sea entrance to a second channel from the Bay of Bengal, into the inner anchorages to the eastward, West Shoal bearing from the north-west point of Tree Island N.W.  $\frac{1}{2}$  W., six miles. The north-west



limit of this channel, is the range of reef from West Shoal to False Island; its south-east limit is formed by a large rocky reef, bearing from the north-east point of Tree Island, N.b.E.  $\frac{1}{2}$  E.,  $3\frac{1}{2}$  miles, between which and the Sail Rock of the north-west limit is a width of four miles and a half. The fairway is N.N.E. in soundings of from fifteen to nine fathoms water.

Its superior depth and width, and the means afforded by a clear approach to Tree Island of avoiding the danger of the West Shoal, seem to give to this channel a very great preference over the Heywood Channel. It was named Childers Channel. The tides set strong through both channels. Tree Island by triangulation and observations was found to be in lat.  $18^{\circ} 26' N.$ , long.  $93^{\circ} 56' E.$

*Nerbudda Rock* bears from the centre of Tree Island S.E.  $\frac{1}{2}$  E., distant from the extremity of its southern reef four miles. It is a very small pinnacle of rock, awash at low water, with a small break of sea on it. Six fathoms of water are found close around it, and ten fathoms within a mile, and to avoid it from the westward Tree Island must not be brought to bear to the westward of north. There is a clear channel between it and the southern reef of Tree Island, but it is preferable to round the latter.

*Four Fathoms Shoal* is an extensive patch of rocky bottom, with very irregular soundings, from thirteen to four fathoms. It bears from the Nerbudda S.S.E. seven miles, and the channel between is clear, but not to be recommended. A heavy swell constantly rolls over the shoal, breaking no doubt in bad weather, but with very close soundings; nothing under four fathoms could be found.

*Foul Island*, near two miles in its greatest length, and some hundreds of feet in height, being visible ten or twelve leagues, bears from Tree Island S.S.E. distant twenty-five miles, and by observations on its summit lies in lat  $18^{\circ} 3' 25'' N.$ , and long.  $94^{\circ} 8' E.$  On its northern side is a bank of sand and mud, affording anchorage at the distance of half a mile from the shore, in eight and ten fathoms water: Off its south point is a rocky reef of some few hundred yards in length, and with the exception of these the island is quite steep to all round, in from thirty to eighteen fathoms, rocky bottom.

*Brougham Shoal* lies from Foul Island N.b.E.  $\frac{1}{2}$  E.,  $3\frac{1}{4}$  miles. It is a patch of rock half a mile long, with the sea always breaking on it. There are five fathoms water alongside it, and from twenty-four to twenty-seven fathoms, within a mile. It is, therefore, dangerous to approach: Foul Island affording a good mark to avoid it by.

*Vestal Shoal* bears from the nearest part of Foul Island E.b.S. six miles. It is small, with breakers constantly on it, and twenty fathoms of water close around it. In sailing northward or southward along these parts of the Arracan Coast, it is recommended to choose the passage between the Vestal Shoal and Foul Island, at a distance of about two miles from the latter.

*William Shoal*, bears from the nearest part of Foul Island, E.b.S.  $\frac{1}{2}$  S. twelve miles and a half. It is a rocky reef extending one mile east and west, having two fathoms of water on its extremes, and from five to seven fathoms between them. The sea rolls heavily over the reef, breaking on the shoaler parts.

*The Satellite Shoal*, after a week of close search could not be found but its existence is not, therefore, to be doubted, though, of course, its correct position in the chart is not given. Indeed, the peculiar way in which pinnacles of rock obtrude themselves from deep water on this coast, makes it highly desirable that the portion within the line of dangers examined by the Childers, should be subjected to a close search, ere it be navigated with confidence by the increasing trade on this coast, when it is probable that other dangers than the *Satellite* would be discovered.

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List of stations whence triangulations by theodolite were taken, while effecting a survey of the above island and shoals:—

|                               |                                          |
|-------------------------------|------------------------------------------|
| Beacon Island.                | Nos. 1 and 2 stations on the west shore, |
| Tree Rock.                    | whence limited triangulations were       |
| North-west Point, (Chedooba). | found necessary to connect the work.     |
| Henry Rock.                   | Flat Island volcano.                     |
| North-west Peak.              | South Rock (Hill Island.)                |
| West Hill.                    | False Island.                            |
| Pagoda Hill.                  | Sail Rock.                               |
| South Peak.                   | Tree Island.                             |

After clearing the summit of Foul Island, the use of the theodolite was found impracticable, from the periodical thick dry haze which had then set in on the coast.

A base was measured by frequent observation on Beacon Island and Henry Rock, and its correctness tested by a base measured by chain on the flat beach of the north shore of Chedooba.

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In order to facilitate the incorporation of the survey with the charts of the eastern coasts of the Bay of Bengal, by Captains Ross and Lloyd, Marine Surveyors General to the Honourable Company, the meridian of the flag-staff of Kyook Phyoo harbour, as fixed by those officers, was taken as a standard in the survey; and the chronometers carefully rated and compared at that port before and after the survey, as well as at our own stations during its execution.

The original fair chart as finished by Lieut. Milbank of the Childers, was lodged in the hands of the Government of Bengal, by whose order copies of it were supplied to me. Capt. Lloyd, late officiating Marine Surveyor General, having incorporated it into the charts then preparing by him, I have had no means of comparing the copies with the original, but on close inspection have no cause to doubt their correctness. The rough notes, books, &c., are in the possession of Lieut. Milbank.

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NOTES ON DEPUCH ISLAND.—*By Captain Wickham, R.N.*

DEPUCH ISLAND, on the N.W. coast of New Holland, is in lat.  $20^{\circ} 37\frac{3}{4}'$  S., and long.  $117^{\circ} 44'$  E., and presents a singular contrast with the low, flat shores of the mainland, from which it is only a little more

than a mile distant. It is of a circular form, nearly 8 miles in circumference, and its summit is 514 feet above the sea.

This island is merely a vast pile of large blocks of greenstone, heaped up in rugged and irregular masses: it has much the appearance of basalt, and in many places the long, flat-sided blocks resemble columns of that formation. Here and there in the valleys, and upon the more level spaces near the summit, is a slight sprinkling of soil that nourishes a few stunted gum-trees, shrubs, and a coarse wiry grass; but, generally speaking, the island is void of vegetation, and has altogether a very different appearance from the mainland and the other islands of Forester's group, of which it is the largest.

With the exception of Depuch Island, the other islands of this group are very low; each being merely an accumulation of sand, upon a base of light-coloured rock, that is composed chiefly of sand and shells. They are in some places thickly covered with brushwood and coarse grass, and their greatest elevation is not more than 50 feet.

All these islands are connected to the mainland by extensive flats and ridges of sand, which in many places become quite dry at low-water spring-tides, and afford great facility to the natives in reaching them for the purpose of procuring turtle and fish. Indeed, as nothing was seen to lead us to suppose that canoes are used on that part of the coast, it appears more than probable that it is only at such periods they are able to visit them.

Depuch Island appears to be their principal resort, probably on account of the water they find amongst the rocks after rainy weather, and the facilities afforded them in the exercise of their talent for drawing representations of whatever they have seen upon the flat surface of the rocks of which that island is formed.

From the vast number of specimens of the art, the natives seem to have amused themselves in this way from time immemorial; and from the very hard nature of the stone, and the accuracy with which many animals and birds are represented, they deserve great credit for patient perseverance, and for more talent and observation than is usually bestowed upon the natives of New Holland; and to their greater credit be it told, that, amongst the numerous representations we saw, none were observed to tend in the slightest degree towards obscenity.

The method pursued in tracing the different subjects appears to be by cutting the surface of the rock with sharp pointed pieces of the same stone; and as the exterior of all parts of it is of a dark reddish brown colour, the contrast becomes great when that is removed and the natural colour of the greenstone exposed. It is difficult to conjecture what many of their drawings are intended to represent, but others are too well done to admit of a moment's doubt. Probably many of the inferior performances were the work of the children.

From the summit of the island we had a good view of the mainland for several miles from the sea; and, with the exception of a few isolated rocky hills of the same greenstone, or basaltic formation, that are six or seven miles from the shore, it appeared to be very low and level. Many places had a very white appearance, as if covered with a salt incrustation, and the whole was intersected by creeks that extended a long distance in, and probably flood a great part of this extensive flat,

when spring-tides are accompanied by the strong north-westerly winds that are at times felt upon this part of the coast during the prevalence of the westerly monsoon.

While the *Beagle* remained at Depuch Island no opportunity offered of communicating with the natives, nor did they visit the island during that period. They were seen on the shore of the mainland upon one or two occasions; but as soon as any attempt was made to approach them in the boats they fled precipitately. Like most of the natives of that country who have never seen Europeans, they are timid, and probably treacherous, when their numbers exceed those of the opposite party. The following trifling circumstance justifies this apparently harsh suspicion. Mr. Fitzmaurice (Mate), while employed in a whale-boat in surveying a part of the coast a little to the eastward of Depuch Island, entered a creek for the purpose of ascertaining its extent, but had not proceeded far before his progress was stopped by the near approach of the mud-banks, rendering it too narrow for the oars. He was not long in this position before he was startled by a loud shout, and the appearance of a party of natives rushing simultaneously from the mangroves on each side of the creek: they stopped at a short distance from the boat and made threatening gestures, by brandishing their spears. No doubt violence would have ensued had he persisted in his attempt to proceed farther into the creek, but he very properly backed his boat out, and retreated; it being, perhaps, better, when practicable, to allow the natives to imagine themselves the stronger party than to teach them experience upon such a subject by the use of fire-arms, which must have been resorted to had spears been thrown.

This is a very good and well sheltered anchorage off the sandy beach on the N.E. side of Depuch Island; but with this exception, it offers no inducement to visit it again. A trifling supply of fire-wood may be procured from the stunted trees that grow in some of the valleys; but water is not to be depended upon at all seasons of the year, although there were evident marks of a very bountiful supply during the rains. We dug wells wherever a level spot held out any prospect of success, but our labours were generally obstructed by reaching a bed of white calcareous rock, from 9 to 15 feet below the surface. With one well in the sandhills at the N.E. bay we succeeded in reaching to the depth of 21 feet, where we found a bed of sand-stone, sufficiently soft to yield to the united effects of pickaxes and crowbars: the laborious work of cutting through this was carried on a few feet farther, when our exertions were stopped by a stream of water flowing in as salt as the ocean. Fortunately a small reservoir was discovered by Mr. Bynoe, the surgeon, while climbing amongst the rocks in search of a fresh meal, from which we got about 6 tons of indifferent rain-water, but at the expense of very harassing labour, as it was carried on the men's shoulders, in 7-gallon barricoes, over the most rugged path one can well imagine. This supply enabled us to remain a few days longer on the coast, when we were compelled to cross over to Timor, for what was not to be procured on the inhospitable and sandy shores of N.W. Australia.

## ON THE TIDES OF THE INDIAN ARCHIPELAGO.

DURING the year 1839, a correct observation of the tides took place in several parts of these (the Dutch Indian) colonies, as at Palo Chinco, on the west coast of Sumatra, Minto, in the Straits of Banca, Amboyna, in the Moluccas, Macassar, on the island of Celebes, Klampis, on the north coast of Madura, Tagal, on the north coast of Java, Karimon Java, a group of islands in the Java Sea, Onrust Island, near Batavia, and at Chalachap, on the south coast of Java.

In comparing the results of the observations on the tides made at the places above mentioned, a remarkable difference will be observed between those taken outside the Archipelago, as on the west coast of Sumatra, south coast of Java, and also at Amboyna, and those taken within the Java Sea.

It appears that, at the former places the generally known rules of the tides are followed; high and low water occurring twice in twenty-four hours, there being two tides within this period, while at the same time they are influenced by the age of the moon. A table can, therefore, be given, by which the variations of the tide can be reckoned with correctness before hand. This is by no means the case with places within the Java Sea, where the tides cannot be tested by the same rules, appearing to depart chiefly on the locality of the solstice, and in the state of the monsoons in connection with it.

It may be premised that, throughout the Java Sea there is high water only once in the twenty-four hours, and that besides these long tides, (or rather rising and falling of the water, which together occupy rather more than twenty-four hours,) small or short tides take place, whose tolerably well regulated return appears to be dependent on various causes, but, more especially on the solstice, or on the prevailing monsoon. These short tides may also, probably be brought under fixed rules since the natives seem to be well acquainted with their motions. At the periods of new and full moon, high water generally occurs at a certain fixed time, but the intervening tides are so irregular that a correct tide table cannot be formed.

The general yearly retrogradation of the daily period of high and low water, which also appears to depend on the solstice, is like the short or middle tides, peculiar to the Java Sea, or probably to all inlets and seas enclosed by an archipelago; and it is farther to be remarked that the currents in this sea are even more irregular than the rising and falling of the tides, these appearing to be influenced chiefly by the prevailing winds.

To commence with the places at which the tides follow the general rules:—

1st.—At Palo Chinco, on the west coast of Sumatra, high water occurs at full and change at 5h. 30m. The mean rise and fall is 0·78 ells,\* the highest and lowest being 1·49 and 0·06 ells. It may further be stated that the stream of flood comes from the south-east, following the line of the coast, the ebb running in an opposite direction. Both

\* The Netherland ell is rather more than the English yard,—1 Netherland ell being 1·094 English yard.

are weak, seldom running more than a mile in the four hours, and they are considerably influenced by the prevailing winds.

2nd.—At Chalachap, on the south coast of Java, the time of high water at full and change is 8h. 30m.; mean rise and fall 1.25 ells; greatest and least rising and falling 2.42 and 0.10. In the channel on which this place is situated, the direction of the flood tide is to the west, and the ebb to the east, following the direction of the channel. This is also the case in the western entrance of the channel. The tides meet in Segara Anakan, a bay just within the western entrance, where there is a rising and falling of the tide, but no stream. It appears, however, that along the south coast of Java, at least in the east monsoon, a current sets to the eastward, running at the rate of two miles in the four hours.

3rd.—In the bay of Amboyna the time of high-water at full and change is 0h. 30m.; the mean rise and fall is 1.14 ells; the greatest and smallest rising and falling being 2.50 and 0.00 ells. In this bay the stream of tide is very inconsiderable, there being scarcely any to be perceived in the centre. The flood comes in along the north (north-west) side of the bay, and returns along the south side only, occasionally the stream was found to run eight and ten miles in the four hours.

Places in which the tides do not follow the general rules.

1st.—At Klampis on the north coast of Madura, the current during the east monsoon runs to the west, sometimes, as in the month of May, at the rate of ten to twelve miles in the four hours, this always occurring during the day; while during the night there is scarcely any current observable; what little there is, however, running to the east. The only exception to this occurs in the month of July, when the stream runs to the westward during the night also, at the rate of eight to twelve miles, in the four hours. In this (the east) monsoon, the water falls generally during the day, and the stream is then the strongest, while during the night the water usually rises, there being at this time very little current; from which it would appear that if there are indeed streams of flood and ebb, the former must come from the west, and the latter from the east, the stream of flood being held in abeyance by the prevailing easterly winds. In the west monsoon the stream of flood has a weak set to the eastward, the tide, at this season, rising by day; while the ebb, which should run in an opposite direction has scarcely any force, probably from its being held in abeyance by the prevailing westerly winds. High and low water each occur only once in the twenty-four hours, although it appears that slight risings and fallings, called small or middle tides, sometimes occur within this period. It may further be stated, that in the east monsoon, high water always occurs before noon, hence the falling of the water, and therefore the ebb occurs during the day. In the west monsoon high water always occurs after the sun has passed the meridian, the ebb, therefore, occurring during the night.

Although no regular tide table can be given, it may be stated as a general rule that, during the east monsoon at full and change, high

water occurs between 8h. and 10h. in the morning, and in the west monsoon between 8h. and 10h. in the evening.

At the other places in the Java Sea where the tides have been observed, the result is so similar to that of Klampis, that it is unnecessary to translate this paper any further. On the north coast of Australia, the flood tide also comes from the westward, and at Point Smith, at the entrance of Port Essington, I have noticed the same peculiarity in the tides that has been observed at Klampis, the flood and ebb sometimes, each running nine hours, the tide remaining at its highest and lowest points rather more than three hours.

In the inner harbour, however, we have regular tides, but we have noticed that in the springs the lowest tide always occurs during the night, and the highest during the day.

I subjoin a sketch of the current prevailing in the Molucca, Timor, and Arafura Seas, (the result of the observations I have made during my occasional trips from Port Essington,) which appears to be the same in both monsoons, except that during the westerly monsoon there is a set of nearly two miles an hour to the eastward, between the north-east extreme of Timor and Port Essington, while during the easterly monsoon this set is scarcely perceptible. The current in these seas, which in some parts, the Ombay passage for instance, sets constantly to the south-west, at the rate of from two to five miles per hour, is evidently caused by the body of water driven in from the North Pacific by the easterly winds which prevail there. May not this current, which must strike the north-west coast of Australia, have some influence in causing the enormous high tides which occur about Buccaneers Archipelago.

G. W. E.

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ON THE MARINERS' COMPASS:—*By Mr. W. Walker, Master R.N.*

(Continued from p. 522.)

DURING a period of 180 years that the Mariners' Compass had been in use among the Christians of the 14th and 15th centuries, its character had been slowly, but surely established, notwithstanding the intolerant and superstitious spirit of the times. Every thing likely to expand the faculties of the human mind, or, appearing above the comprehension of the vulgar, was represented as profane or abominable, and dealt with accordingly. Men of superior abilities in their pursuits, instead of being patronized, were either actually persecuted, or else, met with no encouragement in advancing the progress of useful knowledge. It was dangerous for men to meddle with doctrines or opinions of any kind, not sanctioned, received, or approved by the clergy, and this intolerant spirit extended to a much later period than I refer to, as witness the persecution of poor Galileo, who was thrown in the dungeons of the inquisition at Rome in the year 1633, for having ventured to assert that the earth was round, and turned daily on its own axis!

It was under such unfavorable circumstances as these that maritime discovery, and the art of navigation and seamanship advanced, guided

by the compass, and a few maps or diagrams of erroneous construction. Experience had taught seamen that, the compass was a faithful guide, that its needle pointed towards the pole star, and that the *card* which the needle preserved, or held in an apparently permanent position pointed out to them the course they ought to steer in returning from their commercial exploratory, or predatory expeditions.

Christopher Columbus having sailed from Spain,* in search of new regions, or in search of a new track to an old continent. Whilst sailing westward with the trade wind, on the 14th September, 1492, he discovered that the north point of the compass-needle no longer pointed towards the pole star! A deviation of this kind would take place but slowly, as the ships changed their geographical positions. The oscillations of the compass card on its pivot, whilst running down the trade, would, in a great measure tend to disguise the variation; the depression of the pole star in a more southerly latitude, cloudy weather and other circumstances might combine to prevent even a Columbus from observing the variation of the compass, until its amount would banish all doubt about it. This discovery so alarmed the ship's company that they mutinied, asserting and believing that they would never be able to return to Spain, since the compass itself began to deceive them! Columbus had the address to calm their fears and command their services. But mark what followed. On his return to Spain his statement, that the compass had *varied* in its direction was not believed. The opposition to his correct views, and the mortification and persecution this great man had experienced, must have taught him the propriety, or rather, the *expediency* of being silent about magnetic variation, especially as his compasses had, in all probability, resumed their usual direction on the ship's return to Spain.

Although other navigators had observed and announced the variation of their compasses, the *learned* of those times would not admit the fact; they rather chose to charge seamen with ignorance, and inaccuracy in their observations, than admit errors in the principles established by themselves.

"Pedro de Medina," at Valladolid, in his '*Arte de Navegar*,' published in 1545, *denies* the variation of the compass; but the concurring reports of commanders of ships in distant voyages, obliged the landmen in *their closets*, to give up the point. Martin Cortez, in a treatise on navigation, printed at Seville before 1556, treats it as a thing completely established." † So, here we see that, a period of at least sixty years, had elapsed from the time of Columbus's observing and reporting the variation of the compass, *before* the truth of its *existence* was admitted.

About the year 1580, one Robert Norman, an Englishman, and a maker of "Compasses for Mariners," found that, however nicely he balanced his needles *before* he *magnetised* them, he was always obliged to *counterbalance* that end which pointed to the north, by a bit of wax, or other substance, in order to keep the card in a horizontal position. Mr. Norman suspended a steel needle on its centre of gravity, and having touched it with a magnet, it dipped, or pointed downwards, in the

* See his history, and the difficulties he had to surmount before he obtained the means of undertaking his voyage.

† Encycl. Britannica, Article Variation.

plane of the magnetic meridian, but about 72 degrees below the horizontal plane. This property is called the "magnetic dip." Mr. Norman published his discovery; experiments were made in various parts of the world, and it was ascertained that the magnetic needle remains nearly horizontal within the tropics, but that it *dips* towards the poles in both hemispheres. This property of the magnetic dip, began to shake the confidence of seamen in the stability of their compass, it furnished data for philosophical speculation. The magnetic dip did not appear to derange the horizontal direction of the magnetic needle, nor to influence the variation of the compass, and consequently a ship's dead reckoning. It will, however, be seen in the sequel, that the magnetic dip is a very important element in the theory as well as practice of navigation.

Observations began to be carefully made and recorded of the variations and dip of the needle. In the year 1780, the variation, at London, was $11\frac{1}{2}^{\circ}$ east, and in 1622 only $6\frac{1}{2}^{\circ}$, and in twelve years later it had decreased two degrees. These facts were made known to mariners by the publication of "A Discourse, mathematical, on the variation of the magnetic needle, by Mr. Henry Gillebrand Gresham, Professor of Astronomy". These announcements threw mariners into new alarms and perplexities, for in those days there were no published tables of amplitudes or modes whereby seamen might compute the sun's *Azimuth* and thereby find the variation of the compass at sea. Since the year 1580 up to the present time, the variation has been observed to change about 36 degrees towards the west; that is to say, it has changed its direction, one-tenth part of a complete circle, in Great Britain.

Azimuth compasses were invented for finding the variation, and tables were computed and published, for facilitating calculations at sea. Variation charts were drawn, and sea charts had the variation of the compass inserted on them. But navigators had frequent occasion to observe that, their observations of the variation made at sea, did not agree with previously recorded observations made by others in the same localities, nor even did their own observations agree among themselves! The celebrated William Dampier, whose voyages and adventures gave an impulse to maritime enterprise, observed (Dampier noted everything worth notice!) discrepancies of this kind in his observations for the variation; making it either more or less, than he knew it should be, and he says, "These things, I confess, did puzzle me."* This was about the year 1680. About one hundred years later, and during the voyages of Capt. Cook, the same kind of magnetic disturbances were apparent in their observations. Mr. Wales states that "Variations observed with the ship's head in different positions, and even in different parts of her, will materially differ from one another, and much more will observations observed on board different ships."

The observations made during Cook's voyages would necessarily command attention, and excite observation. In the year 1790, Mr. Downie, a master in the Royal navy, when serving in H.M.S. *Glory*, has remarked,— "I am convinced that the quantity and vicinity of *iron* in most ships, has an effect in attracting the needle, for it is found by

* See *Nautical Magazine*, 1837, p. 247.

experience that the needle will not always point in the same direction, when placed in different parts of a ship, also it is very easily found that two ships steering the same course by their respective compasses, will not go exactly parallel to each other, yet when their compasses are on board the same ship they will agree exactly." Whenever large fleets were assembled to sail under convoy of ships of war, it was usual for the Commodore to intimate by signal, the course to be steered by the fleet during the night, and it was usual to find these fleets much dispersed the following morning, the compass courses of the ships composing the fleet having differed considerably among themselves. It was no longer doubted that the iron within a ship exerted an influence upon the compass, but it was not known in what way this influence was exerted; it was then supposed and it is still believed by many, that iron *attracts* the compass, that is to say, the north end of the compass needle is attracted by the iron, and hence the term *local attraction*, applied to the kind of magnetic disturbance under consideration.

Captain Flinders, R.N., had been employed in surveying Australia, and of course had ample opportunity of noticing and noting anomalous observations in magnetic bearings, and in observations made on board for the variation of the compass, in the *southern*, as well as in the *northern* hemisphere. On his return to England, his observations were communicated to the Admiralty, and their Lordships were pleased to direct a series of experiments to be made on the compass on board one of her Majesty's ships at Sheerness. The result of these experiments may be briefly stated.

1st. That the compass-bearing of a *distant object* was different in different parts of the ship.

2nd. That the binnacle compass, gave true bearings of a distant object, when the ship's head was north or south.

3rd. That, the greatest error in the bearing by compass, was when the ship's head was east or west.

Flinders concluded (and correctly) that the local attraction in the same ship would be different in different parts of the world, and that it would change with the magnetic dip.

Captain Flinders died in 1814; a paper of his, which appeared in the Philosophical Transactions of the Royal Society, upon "the differences in the magnetic needle on board H.M. Ship Investigator, arising from an alteration in the direction of the ship's head" may inform us of the author's views.

1st. He supposed an attractive power with different bodies, in a ship capable of affecting the compass, to be collected into something like a centre of gravity or focal point, and that this point is nearly in the centre of the ship where the iron, shot, &c., are deposited.

2nd. He supposed this point to be endowed with the same kind of *attraction* as the pole of the hemisphere where the ship might be. Consequently in New Holland, the south end of the needle would be attracted by it and the north end repelled.

3rd. That the attractive power of this point is sufficiently strong in a ship of war to interfere with the action of the magnetic poles of a compass placed in the binnacle.

Captain Scoresby who had commanded several ships in the Northern

Whale fishery, and being an intelligent and well informed man, directed his attention to the Mariners' Compass. His employment in high northern latitudes, where the magnetic *dip* and magnetic intensity are very great, furnished him with opportunities of making useful observations on magnetism. In his paper "on the anomaly in the variation of the needle" in the Philosophical Transactions for 1819, we have the results of his observations, viz.—

1st. That all iron on board a ship has a tendency to become magnetical, the upper ends of the opposite bars being south, and the lower, north poles in the northern hemisphere, and *vice versa*.

2nd. The combined influence of all the iron is concentrated in a focus, the principal south pole of which being upwards in the northern hemisphere, is situated in general near the middle of the upper deck.

3rd. This focus of attraction, which appears to be a south pole in *north dip*, attracts the north point of the compass, and produces the *deviation* in the needle.

4th. This deviation varies with the dip of the needle, the position of the compass, and the direction of the ship's head. It increases and diminishes with the *dip* and vanishes at the magnetic equator. It is a maximum when the ship's head is west or east, and it is proportional to the sines of the angles between the direction of the ship's head, and the magnetic meridian.

5th. A compass placed in either side of the ship's deck, directly opposite to the *focus* gives a correct indication on an *east* and *west* course, but is subject to the greatest deviation when the ship's head is south.

Captains Flinders and Scoresby were both practical and theoretical seamen and navigators, and were endowed with a considerable amount of philosophical and mathematical skill. They made careful observations on the action of the ships' iron on their compasses, and communicated the result of their valuable observations to the public. Had they been less *practical* we might never have heard of their opinions of local magnetism, or had they been *more mathematical and theoretical* we might have been favoured with an hypothetical treatise on magnetism, founded on an imaginary base, and supported by mathematical formula contrived for the purpose. Investigations of this kind, although of the utmost importance in searching for those "laws of nature" that govern our planet, are generally beyond the comprehension of seamen, and tend rather to bewilder than to enlighten their minds.

In the mean time our ships continued to receive additional quantities of iron in their construction and equipment. *Iron knees* were substituted for wood, *iron tanks* for wooden casks, *iron ballast* for shingle, *iron bolts* for wooden tree-nails, *iron cables* for rope cables, *iron rigging* for hempen; and vessels began to be *built entirely of iron*. The consequence of all this was to render ships more difficult to be navigated, by reason of the local magnetism of the iron they contained. Attention was aroused to the subject and Professor Barlow took it up, and received the countenance and support of Government in his investigations. Mr. Barlow made and recorded a great number of valuable experiments on the compass; he advanced a theory of magnetism, which was received with favour, and he proposed a plan for *correcting the deviation of the*

compass, by means of an iron disc, placed near the binnacle, so as to counteract the effect of the greater masses of iron lying forward in the ship, and below the horizontal plane of the compass. This plan, if it did not entirely correct the local attraction in these latitudes, greatly lessened the errors that arose in the reckoning.

The failure of Mr. Barlow in his endeavours to correct the compass, arose from his theoretical views of magnetism not being in accordance with experimental facts. He supposed with Flinders, Scoresby, and others, that there was a central magnetic focus in a vessel, which acted on the compass. He supposed that the magnetism of an article of iron depended upon the position of its centre, and not upon the position of its extremities, with reference to its action on the steering compass; and he did not believe "that ever any particular action had been discovered between two pieces of iron." He was not aware of the fact that any two pieces of iron will act upon each other as magnets, as well as upon an artificial magnet!* After several trials of the correcting plates, in both hemispheres, they began to be disused, and are now almost entirely laid aside. These magnetical discussions and experimental trials, were not followed by that public advantage to Navigation that might have been derived from them. Seamen again relapsed into indifference about their compasses; they began to think that iron, being so largely employed about ships, was really not so dangerous as their forefathers had taught them to regard it. The results have been as might have been expected. Our ships became more difficult to be navigated, and the masters less prudent and skilful in keeping their dead reckonings; the numbers of shipwrecks have consequently been greatly increased, many sailing vessels shaping a compass course and running on shore with a fair wind, whilst steam vessels, in great numbers, have from errors in their compasses run on the rocks, at the full speed and power of their engines, and have been of course destroyed, and many of their people drowned!

We have now given a short history of the Mariners' Compass, and the reader will have noticed that its improvement, and the discoveries of its properties have been made but slowly. Seamen have seldom been allowed to meddle with it, or pass an opinion upon its merit. The importance of the compass appears to have transferred it to the care of philosophers or ship-chandlers, and many a compass has been made "to sell," and not to steer by! There are a vast number of Patent Compasses, differing in price, and in degree of utility, now in use; but seamen should bear in mind that the compass needle when saturated with magnetism, must necessarily point in the direction of the magnetic meridian, unless it be acted on by some external magnetic force within the vessel. The compass is influenced by three considerations arising from a single cause; viz., its variation, its dip, its local attraction and repulsion by the ship and her contents.

Before we treat of the practical application of the known principles of magnetism and magnetic attraction and repulsion, it is proper that a short notice should be given of the magnet itself. The Loadstone is

* See Professor Barlow's valuable work on Magnetic Attraction, second edition, 1824.

an ore of iron, and contains as much as 80 or 90 per cent of the pure metal; it is very extensively disseminated over the globe, but is generally found in large masses, in those rocks which Geologists denominate as primitive. The property of the Loadstone for attracting iron, was well known to the ancients, and in several countries this property procured it the appellation of "leading stone, touch stone, stone which attracts iron, the stone of love," &c., names which it still retains.

In almost every country where the loadstone is known it has received a name, indicative of some inherent property in that mineral. We here add a list of nations, with the name of the magnet in the language of the country, and its signification.*

Nations.	Name of Loadstone.	Signification.
English	Loadstone	Stone that carries a load or weight.
French	Aimant	The lover.
Spanish	Iman	The stone that attracts iron.
Portuguese	Iman—Padre de Cevar	Ditto.
Italian	Calamita	(?)
Greek	The iron stone	The stone that attracts iron.
Dutch	Geyl stein	The sight stone.
Danish	Magneit	From Magnus, the shepherd.
Swedish	Segel stein	Seeing stone, victorious stone, &c.
Icelandic	Leider stein	The leading stone.
Irish	Tarrangart	The drawer.
Welsh	Tywysfaen	The conductor.
Hungarian	Maynit-Kö	The love stone.
Russian	Magneit	From the Greek shepherd Magnus.
Polish	Magnit Kiamen	The loving stone.
Dalmatia	Gvozdetegh	The drawer of nails.
Finland	Randan-wetarga	The attractor of iron.
Chinese	Che-Chy	The stone that directs or conducts.
Mandchow	Selei-edchen	The master of iron.
Japanese	{ Thru-chy } { Zi-syakf }	Conducting stone.
Thibetan	Rdho-r-hatlen	Stone for rubbing the needle.
Tankin-in	D'ánamtcham	The stone for the steel needle.
Siamese	Milik	The stone which shews the south.
Birman	Than-lvik Kyouk	The stone which attracts iron.
Malayan	Batu-brani	Ditto.
Cingalese	Kandhoksgaluk	The stone of enterprise.
Arabic	Hadjarechcheiyatm	The stone which loves.
Persian	Makuathes	The devil's, or, wizard's stone.
Grecian	Stone of Heracliù	The magnetic stone.
Sanscrit	Thoumbaka	Attractor and repulser of iron, &c. The kisser.

This wonderful stone has, therefore, been eminently distinguished above every other kind of mineral, by names given to it by different nations, which at once convey to our minds a sense of some of its singular properties: thus, we find it called the stone, that carries a load, that loves, that attracts, that points out, that directs, that leads, that

* From the British Annual, 1837.

conducts, which shews the south, the nail drawer, the master of iron, the attractor and repulsor, the stone for the steel needle, the wizard's, or devil's stone, the stone that loves, the kisser, the stone of enterprise, &c. These names were probably given to the loadstone at very remote periods of antiquity; that is to say, before the Mariners' Compass was invented, or before it was known that the loadstone possessed an almost unlimited power of transferring its own virtues to any number of steel bars, without being sensibly weakened in its magnetic intensity. If it had been known to what important uses, magnetised steel bars could be applied,—as to navigation, to mining, and other important purposes, how many more names might have been added, and every one of them conveying a new application of its principles!

It does not appear that any of the names in the list we have collected, conveys any idea of the loadstone's having been applied to navigation, and yet it is to this wonderful mineral, and its transferable magnetic properties to steel, and the practical application of it, to the steering and conducting of ships (when all other resources fail us,) that we owe the greater part of our knowledge of the world we inhabit, the ocean we have explored, and the intercourse we keep up with the remotest habitable regions!

It was believed that the loadstone *fed upon iron!* this was by no means an unreasonable supposition, since natural magnets actually acquire additional magnetic intensity by being kept in contact with iron. It is on this principle that loadstones are armed with soft iron, in order to increase their power.

It was seriously believed by the ancients, that if much iron was used in the constructions of their ships, magnetic rocks on the sea shore, might attract the vessels, and hold them firmly attached! Who has not read the wonderful adventures of Sinbad the sailor, as detailed in the tales of the "Arabian Nights?" How would Sinbad's historian have managed an iron steam vessel? The moderns as well as the ancients, have ascribed wonderful physical, as well as moral effects to the magnet; its properties have been applied by impostors, in their systems of astronomy, astrology, divination, prediction of future events, divinity, law, and physic; and even in this enlightened age, "mesmerism," is practised and patronised!

The property of a magnet, in communicating a permanent magnetism of its own kind to hardened steel, and the directive power of a freely suspended steel magnetic needle arranging itself in a north and south direction, induced a belief that some mysterious agency in the heavens held the compass needle in the direction of the pole star. It was afterwards considered, that magnetic rocks might abound in the polar regions of the world, and draw the needle in that direction, and some supposed that, the earth itself contained a great magnet in its central parts. The variation of the magnetic needle proved that these views could not be correct, because, if the north star itself had been a magnet, if the rocky regions towards the poles had been formed of loadstones, or, if the earth had held a great magnet in its central part, any of these agencies, if permanently fixed in the heavens, or, in the earth, would not have induced a change in the direction of the compass needle.

It is more reasonable to suppose that magnetism, electricity, and gal-

vanism, combine to form a mysterious agency prevailing the world, for electricity has been known to invert or destroy the magnetism of a ship's compass; and by galvanism, needles may be magnetised. We know, comparatively, but little of the internal structure of the earth; the cuttings of the engineer, the punctures of the miner, or, the scratches of those who dig or quarry its surface, have penetrated but a very small portion of the distance between the surface and centre of the earth! We are however, certain that the earth's mean density is greater than that of any rocks known to exist near its surface. Our Geological researches, enable us to assert that the globe contains masses of metals, and metaliferous veins, abundantly disseminated among the stratified and chrystalized rocks, which form its external crust. There is evidence to shew that the central parts of the globe, possess a higher temperature, than its part near the surface; that subterranean fires exist in it; and that the masses of matter composing our planet, may be regarded as a galvanic arrangement, its solid parts being connected or covered by an ocean of brine. There are chemical formations, as well as decompositions, constantly going on in it, and the electrical, magnetical or galvanical currents we witness, may result from the physical structure of our earth. If we adopt this view of the globe's being a galvanic mass, many difficulties in our magnetical speculations may vanish, for example, the changes in the daily variation of the compass; and the great change that has taken place in this variation, during the last 260 years, may have arisen from changes in the internal, or external temperatures of the earth, in its various parts, as in Greenland and elsewhere.

It is still believed by many, that iron or steel are the only substances susceptible of magnetism; whereas every known substance is more or less susceptible of magnetic action. Mr. Barlow found that the brass box of a very fine compass with which he had been making experiments, had acquired a permanent magnetism. Mr. Harris* in his paper on the transient magnetic state of which various substances are susceptible † has given the following table of the comparative magnetic inductive susceptibility of the following substances.

METALS, ETC.	Rolled Silver.	Rolled Copper.	Cast Copper.	Rolled Gold.	Cast Zinc.	Cast Tin.	Cast Lead.	Solid Mercury.	Fluid Mercury.	Cast Antimony.	Cast Bismuth.	Glass.	Marble.	Mahogany	Water.
Comparative Magnetic Energy.	39	29	20	16	10	6.9	3.7	2	1	1.3	$\frac{1}{4}$	0.35	0.27	0.27	0.27

Mr. Harris found that by condensing the metals, their magnetic energy was increased, and that all substances receive or take up magnetism more rapidly than they part with it. The above conclusions were drawn from experiments, made on metals subject to the action of

* The talented author of the papers on Electricity, in this journal, and to whom we are indebted for an efficient method of protecting our ships from lightning.

† Philosophical Transactions, 1831.

artificial magnets vibrating within discs, or rings of the metals, included in the above table.

Professor Whewell in his *Bridgewater Treatise*, "on the power, wisdom, and goodness of God," (p. 113,) has remarked, "when we consider the vast service which magnetism is to man, by supplying him with the *Mariners' Compass*, many persons will require no other proof of this property being introduced into the frame of the world for a worthy purpose. Magnetism he adds has been discovered in modern times, to have so clear a connection with galvanism, that they may be regarded as different aspects of the same agents; all the phenomena we can produce with magnetism, we can produce with galvanism. That galvanism exists in the earth, we need no proof. Electricity which appears to differ from galvanism, the same manner in which a fluid in motion differs from fluid at rest, appears to be galvanism in equilibrium; and recently Mr. Fox* found by experiment, that metaliferous veins, as they lie in the earth, exercise a galvanic influence on each other. Something of this kind might have been expected from masses of metal in contact; if they differ in temperature, or, in other circumstances, are known to produce galvanic currents; hence we have undoubtedly streams of galvanic influence moving along the earth, but whether or not such causes as these produce the directive power of the magnetic needle, we cannot here pretend to decide; they can hardly fail to affect it."

The opinion here given is from *high authority*, and I cordially agree to it. The whole of the materials forming a ship are susceptible of magnetism by induction from the earth, the sea, and the atmosphere; the mechanical construction is such, that the whole fabric of the ship may be in a transient magnetic state, not only the iron, copper, lead, brass, and the other metals; but, also, the *wood* forming the hull, fastened or covered as it really is with these metals and their oxides. Need we then be surprised when we find the steering compasses deviating from the true direction of the magnetic meridian, or, vibrating several points on each side of the course, when a vessel rolls from side to side.

(To be continued.)

ON BAR HARBOURS.—By Mr. E. K. Calver, master H.M.S. Blazer.

THE whole of the ports along the Eastern Coast of Great Britain, from Father Thames to John o'Groats, may be classed, with one or two exceptions, under the head of Bar Harbours. Some remain in the state determined by nature; others have undergone alteration by the erection of piers, sluices, breakwaters, &c., having for their object the removal of some existing evil. In one or two instances the effect produced has been favorable, in others the advantage is problematical; but, in the majority of cases, the intended remedy has proved worse than the disease, entailing, as a consequence, accumulated difficulties; a fact, suffi-

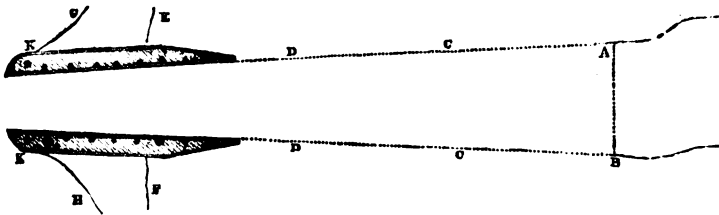
* Of Falmouth, in Cornwall.

cient of itself to prove, that the projectors cannot possibly have been guided in their operations by any established law of cause and effect.

The following has suggested itself to me upon this interesting subject, though it will be seen that my sphere of action is very confined, as it only embraces, within its limits the cases of those rivers whose waters meet the ocean nearly at right angles.

Plan of Harbour Improvements.

From a quarter of a mile above the junction of the river with the sea, gradually narrow its downward course, by embankment or otherwise, as most convenient, taking care that the divergence of the sides be not so great, as to cause the velocity of the outset at the entrance to exceed the rate of five miles per hour. The piers would be a prolongation of the river embankments, with the position of their extremes determined by the local conformation, &c.—(See following sketch.)



A to B, limits of operation.—C to D, embankments.—E to F, high water line.—G to H low water line.—K, capstans on Pier Head with warping posts.

For the application of this principle, let us take for example three rivers, whose breadth, and mean sectional depth at a quarter of a mile above their entrances is 500 feet and 9 feet respectively, but the rate of tide at half-ebb is severally one, two, and three miles per hour. Now, as the velocity of the outset must principally depend upon the conductor it has to pass through; and, allowing that the first effort of the contraction would scour the bottom between the pier-heads one-third lower from a mean level, the breadth of entrance proper in each case is arrived at by a simple proportion,—to attain the specified velocity of five knots, in the above instances it would be roughly 70, 140, and 200 feet.

Thus, in all cases, estimating the capacity of a river by its breadth, depth, and velocity, at a given distance from the sea, the width of entrance proportioned to it in accordance with the foregoing principle, may at once be arrived at.

Results to be expected.

The advantages to be gained by this arrangement are numerous, though I shall briefly advert to the following, as among the most important:—

1. If the above plan, or any other having the same object in view, be found equal to the ordeal of a practical test; the mistakes which are daily committed in one section of marine engineering will be avoided,

a ruinous and useless expense saved, and a depressing check be removed from the commercial spirit and enterprise of numerous localities.

2. Throughout our Eastern Coasts, piers of all descriptions, and in every variety of position are to be met with, thus, some are seen with circular, some with angular, and some with square terminations; some are straight, some are crooked, some curved, some are parallel, and others again retire from each other as they extend outwards, or, as they are termed, bell-mouthed; opening their jaws as it were for the reception of all the moveable matters in their vicinity. Piers with either circular, square, or angular ends have the effect of admitting a high and dangerous cross sea; which, on the flood, by disturbing the bed of the river, materially assists the internal sea deposit; but, with piers of the proposed description, a portion of the advancing wave would be cut off, this would advance upward by easy undulations, until it was finally overcome by friction, and the increased width of the channel.—(For the effect in each instance see figures 2 and 3.)

Fig. 2.

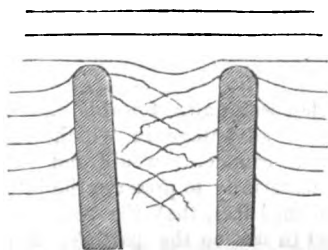
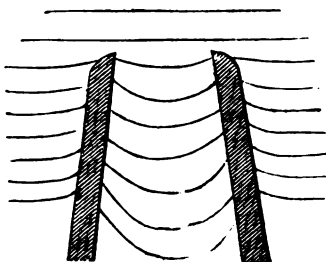


Fig. 3.



3. The ebb of the river, as it approached the pier heads, would gradually increase in velocity in proportion to the contraction, and the inclination of the embankments and piers, would have the effect of causing the body of the descending current to concentrate itself at a point considerably beyond the limits usually occupied by bars, outlying shoals, &c. At the same time it cannot be denied, that cross-going tides at the entrance, would partly neutralize the effect of the scourer; this, however, might be obviated by placing the ends of the piers well out, so that the deposit on their exterior sides caused by their own obstruction, might form a bight sufficiently extensive to cause the stream of the sea-tide to harmonize with the outgoing set of the river.—(For illustration see figure 4.)

4. According to the authority of Du-Buat and others, it appears that a velocity at the bottom of 36 inches per second, will sweep along angular substances of the size of an egg. If so, the rate of the proposed scourer, which is nearly double the amount, will hold in subjection all interruptions for a considerable distance outside the pier heads.

5. An accumulation of sea-deposit at the entrance, which, under existing circumstances, is generally the obstacle to be surmounted, would prove an important auxiliary in securing the success of the proposed

place. From the force of the outset, the deposit must necessarily assume the form of a continuance of the piers, and would serve to convey the scourer to a greater distance, and into deeper water than would otherwise be the case.—(See figure 5).

Fig. 4.

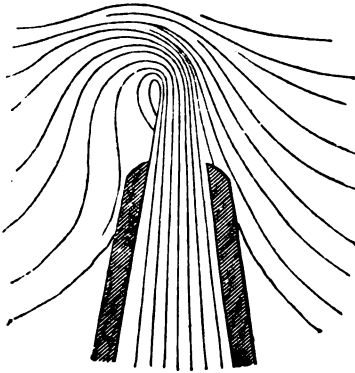
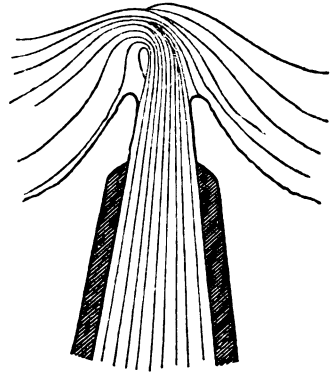


Fig. 5.



6. Quays or wharfs might be erected well down towards the mouth of the river. This would prove a great advantage in whichever way it may be considered; the demands of commerce would not only be facilitated, but it would also tend materially to preserve the integrity of the entrance, for it is a well established fact, that the action of the current under a ship's bottom is to set in motion the particles collected there; and it is clear, that if once set going, they would find their way out of the harbour's mouth; the agent which conveyed them in, is surely equal, with increased powers, to take them back again.

In conclusion, an important auxiliary to the foregoing principle, would be the establishment of a reservoir as near the source of the river as possible. The water from which (if the river was of moderate length) would find its way down to the sea about half ebb, and materially assist the scouring effort.

It will be perceived, that while advocating a trial of this particular principle of harbour making, I have assumed the inexpediency of a greater rate for the scouring power than five miles per hour; also, that it would be useless to take into consideration the minor points of local formation, &c., as they appear to be so completely outbalanced by this one great object—"the right constitution of the scouring power,"—this hypothesis might not hold good for a single instant, if tried by the test of experience; nevertheless, I offer it merely from never having seen a harbour constructed on the principle; and from the knowledge, that if the foregoing proposals be found possessed of the least particle of novelty, they cannot fail of provoking a very useful species of enquiry.

OUTLINE OF THE SULPHUR'S VOYAGE.—By *Mr. C. George, R.N.*

In placing the outline of the Sulphur's voyage under your notice, I have endeavoured to give the results of the expedition, as connected with the hydrographical department. To relieve the dry reading of astronomical data, I have endeavoured to introduce a few remarks to amuse the reader who may not be exactly intent on the result of computation.

It will be shown that the Sulphur has equalled, if not surpassed, any vessel that has left England in the like interesting expedition.

Many of your nautical readers have, doubtless, been anxiously expecting to hear what the Sulphur has added to scientific knowledge; had time permitted Sir E. Belcher to have gone over the re-computations, and made the final arrangement of the documents himself, they doubtless, would have appeared long before this; but, as they have fallen into humbler hands, I trust they will be found to have received every care and attention which could be bestowed on their completion.

The Zoology* resulting from the Sulphur's voyage under the command of Sir E. Belcher, C.B., F.R.G.S., is edited and superintended by Richard Brinsley Hinds, Esq., Surgeon, R.N., attached to the expedition, and the following gentlemen, animated by a devotion to science, have liberally engaged to undertake those departments, with which each respectively is best acquainted; viz. :—

Mammalia, by Mr. J. E. Gray, F.R.S.	Crustacæ,	by Mr. Bell.
Birds, " Gould.	Shells,	" R. B. Hinds.
Fish, Dr. Richardson.	Radiata,	" J. E. Gray.

The extensive series of magnetical observations resulting from this voyage, have been placed under the care and arrangement of Colonel Sabine, and will shortly appear before the public. The addition to the Hydrographical department in charts and other documents will be shown, as we proceed in the details of the voyage.

The Sulphur was commissioned by Captain J. W. Beechey, F.R.S., on the 25th of September, 1835, and sailed from Spithead on the 22nd of December following, to survey on the western coast of America, and examine the ports from Callao, in lat. 12° 4' S., as far northward as Prince William Sound, in long. 6° 21' N.

After making the circuit of the globe, she returned to Spithead, July 19th, 1842, under the command of Sir E. Belcher, having been absent six years, seven months, and thirteen days. In this voyage she passed over 64,560 miles, and was at last paid off at Woolwich, August 2nd, 1842, having been in commission nearly seven years.

Leaving Spithead the 22nd December, the Sulphur on going down channel called off Plymouth for her consort, the Starling, under the command of Lieut. Kellett, who had been despatched a few days previous to pick up some chronometers, and then bidding farewell to "the

* The work will extend to about twelve royal 4to. parts; the publication commenced on 1st of April, and will be continued on the 1st of every third month, in the order as before mentioned; Mammalia and Birds are therefore published.

shores of Old England," commenced the voyage. After a passage of fifteen days we reached Madeira, and found here H.M. surveying vessels *Ætna* and *Raven*; these vessels had fitted out at the same port and time as the *Sulphur* and *Starling*,—former friendships were renewed, which made the meeting very agreeable, during the short time we remained together. Upon exchanging notes it was found that the *Ætna* and *Raven* had sailed from Portsmouth, a week or so before the *Sulphur*, and, had taken a more westerly route, but had experienced bad weather in some parts of the passage: both vessels seem to have taken the same time in running from port to port; they had, like ourselves been making traverse courses over the reported position of the Eight Stones, a dangerous nest of rocks said to exist a few miles to the northward of the island of Madeira. The track of these four vessels, when projected, prove the danger does not exist in the position assigned them,—they were reported to be in lat. 34° 30' N., long. 16° 30' W.

As the *Ætna* was on her way towards that part of the African shore which lay in our track, we proceeded on the 7th of January in company towards Tenerife. On the evening of the 11th of January, two days before we arrived at Tenerife, we were gratified with one of those interesting sights, which alone fall to the lot of seamen to witness; a short time before sun set the "lofty peak of Tenerife" shewed out in delicate outline, the sun setting behind it, gave it a most beautiful appearance; by computation it was 110 miles from us, and appeared like a small peaked, sugar-loaf shaped hill on the distant horizon. This was the only time we saw it, for during our stay at Tenerife it was enveloped in clouds and mist.

Having procured a few refreshments; tried the performance of the chronometers, and tested some of the magnetical instruments, we sailed in company with the *Ætna* and *Raven*, and when in lat. 21° 10' N., long. 20° 20' W., the vessels parted company. On separating we exchanged the usual parting farewell of "three hearty cheers": the united effort of the whole crew being concentrated by a known signal into one loud shout, has a most thrilling effect; and this being responded by the other vessel, the feeling of excitement is thus kept up. If three cheers produce such an effect among friends, that we can scarcely describe it, what must be the sensation produced when we know it comes from a determined enemy, bent on destruction.

I have heard it remarked that, in many of the Naval engagements with France during the last war, the French officers noticed that the cheers of the British tars in the act of boarding, had the effect of daunting the spirits of their seamen, more than if a whole broadside had been poured in.

The power of conception will not I trust be painfully strained to picture these vessels on the wide *Ocean*, out of sight of land, and to all appearance the only moving objects on the surface of the globe; the effect of thus parting was somewhat heightened by the time and circumstances attending it; the sea was smooth, and the breeze sufficient to "*lull every sail to sleep*"; the vessel was passing through the water so noiselessly, that she scarcely appeared to be moving, and the sun, now sinking in the western horizon, threw its subdued lustre along the surface of the ocean, which being mellowed by the reflection of the sea and

sky into a pleasing softness, was in unison with the feelings produced by the parting farewell.

The officers and men still remained on deck. All seemed to enjoy the pleasing melancholy of the scene; many doubtless suffered their thoughts to wander from the friends they had just given a parting cheer, to those much dearer in the circle of domestic or paternal affection. Darkness now threw its veil insensibly over us all, and both vessels thus lost sight of each other, and quietly proceeded on their respective voyages.

We shaped our course towards the Equator, and crossed it in longitude 23° West. On reaching this important boundary of Neptune's domains, the ancient custom of introducing strangers was scrupulously adhered to. The account of this peculiar ceremony may be interesting to the juvenile portion of your readers, who have not yet had the pleasure of an introduction, and will therefore prepare them for it; to those who have witnessed this ceremony it may remind them of bye-gone times, when in early days they were setting out in life, every thing passing before them was new, and interesting, and especially the excitement attending this watery ordeal.

On the evening of the day previous to crossing the line, the weather was fine, the wind light from the westward, and the ship going steadily through the water. At about three bells in the first watch, the ship was hailed by a voice which was instantly recognised by the old seamen to be that of Neptune himself. The look-out man reported to the officer of the watch, "*Some one ahead Sir, hailing the ship*"; the officer coming to the fore part of the quarter-deck, exchanged compliment with old Neptune, and asked the purport of his visit; Neptune replied that on passing close to the ship, he had merely hailed, to pay his respects to the Captain and hoped he was well; the officer reports the same to the Captain who desires him to tell Father Neptune that he would be glad to see him on board.

Neptune accepted the invitation by saying, as it was now rather late he should wait upon the Captain the following morning, and so wished us good night. It being dark, none of us abaft could see how Old Neptune arranged this part of the business. He certainly was somewhere a-head, most probably on the flying jib-boom.

All hands now went to work in making preparations to receive Father Neptune, and here for the present we will leave them busily employed.

(To be continued.)

ON THE MUSCULAR POWER OF SEAMEN, ETC.

SIR.—The general opinion being, that a tall stout seaman must necessarily possess strength according with his size, perhaps, the following extracts from a paper on the locomotion of animals, may be useful to those who have to select crews for vessels.

1st. "Muscles are the *active* organs of motion in animals, and are endowed with great power.

2. "The contractile force of the muscles in a healthy man, according to Dr. Young, is equivalent to about 500 pounds for each square inch of surface presented by their transverse sections. We may then easily understand why it is that the most powerful men have their muscles most developed, and why the largest muscles are placed in those parts of the body where they are subjected to the greatest quantity of work."

The remarkable stout thighs of seamen must strike the most careless observer. This arises from their constant practice of exercising the muscles in the action of going aloft, and whilst upon the yards, by which they become more developed, and their power increased to a much greater degree than in men of other laborious pursuits, who do not employ the legs in ascent and descent. The muscles of the arms in the same class, from constant exercise, are also much enlarged, and their strength increased. Seamen in sound health are, probably, the strongest of men with respect to muscular power, and the reason why they should be seems sufficiently obvious.

3. "It is well known that the quantity of labour which the muscles will endure, and the length of time they will continue to act, increase, within certain limits, in proportion to their daily exercise."

Experience proves the above assertion. The practice, however, in the Merchant Service, of "getting the worth out of a seaman," as the phrase is, may be carried too far, and prove detrimental to his health, if it should not ultimately lead to loss of life, especially in tropical climates.

The habit, too, of supplying the seamen with *drams* whilst employed on some active duty which requires extra, or continued exertion, for the purpose of increasing their energy, by imparting an artificial strength to the muscles, is highly detrimental to health. The effect desired, it is true, may be produced, but it will be but temporary, (which perhaps, is all the employer cares for!) and seldom fails of creating re-action, which acts upon the whole nervous system. This practice appears to be more pernicious in cold than in tropical climates, probably on account of evaporation, &c., being stronger in the latter than in the former; but it should be discontinued altogether. From actual experiment it has been found that, if two large bodies of men, engaged in the same laborious work, the one being supplied with spirits, and the other with a strong coffee beverage,—the former lost the power of exertion some hours (if I remember right, five,) before the latter, who continued to work on with apparent ease.

4. "If the muscles of the arms and legs, or any others, be called suddenly into action for a longer period than that to which they have been accustomed, they soon communicate to the individual a sense of weakness, and evince a disposition to yield to the action opposed to them, and unless they are allowed some repose, mischief speedily succeeds."

This is a plain matter-of fact exposition of an every day occurrence, over-exertion; but, which, when circumstances press, and authority directs, is not always attended to, or averted by timely relief from fatigue; indeed, parsimony, and the utter want of that christian feeling, the precept of which is admired, but often neglected in practice,—

“ Do unto others as you would be done by ;” often, nay, generally, is the cause of such occurrences. Let the ship-owners ponder on the consequences that may, and do often occur from their ships being undermanned. Let them consider for a moment the dreadful situation of one of these *short-handed* ships after having weathered a furious hurricane, springing a leak ! Let them fancy the small band of stout hearts being obliged to take spell and spell at the pumps ; the leak as the muscular power of the devoted men declines, increasing rapidly, and preventing the possibility of a thrumbed sail being passed over the bows, until at last, wearied to exhaustion they drop as the vessel sinks under them ! Let them think seriously of such a result arising from the economy of sailing a ship at the least possible expense, regardless of the souls within her—and, *apply a remedy.*

5. “ But there is a limit to the amount of exertion which the muscular system will bear ; if this limit is passed, the muscles lose their vigour, and lassitude and a flaccid state supervene.”

This is inevitable, and addressing myself to the captains of ships, I beg to remark that, when a weighty cargo is to be hoisted in, and stowed away *by the crew*, the performance of which would necessarily require the whole power of the muscles to be exercised, the sooner the labour is commenced after daylight the better, and it would be advantageous to all parties to lengthen the period allowed for meals by at least half an hour ; and to leave off work half an hour, or even an hour sooner than on ordinary occasions. More work would be performed, and what is of equal importance performed well. The material point for the judgment to aim at, in laborious duty, being to avoid over-working the muscles, by which the change from a healthy tone or tension to one of flaccidity is prevented.

6. “ I have before stated that the weight of the body is proportioned to the cube, and the power of the muscles to the square, of some one of its dimensions : for instance, in two similar-formed men, whose heights are respectively five and six feet, the muscular power of the former to that of the latter will be as 25 to 36, but their weights will be as 125 to 216, or, as 25 to 43 very nearly ; the weight, therefore, increases much more rapidly than the muscular power, and, consequently, a smaller man is stronger, in proportion to his size, than a larger one.” And, I may add that, he will do more general work, and endure more fatigue, and that for a longer time than the larger man. In our men-of-war activity is much prized, hence in the selection of top-men this point is always attended to.* If, therefore, the shipowner and captain, would leave prejudice, which is founded on error, aside, and, the former not allow his spirit of economy to interfere with the efficiency of his vessel, ships would be navigated with more ease and safety than they are at present.

There is a curious phenomenon exhibited in the paper from which these extracts have been taken, respecting the predisposition to corpulency from the neglect of the proper means of checking it ; but I pass

* What the object was for weighing lads I do not know, but if it was from an opinion that weight implied strength, the above will show that it was likely to prove erroneous !

it by, as there is little fear of a seaman becoming plethoric, or adipous, whilst serving in a merchant-ship; the owner and the skipper taking especial care to prevent such from arising from good or over-feeding, or from lack of exercise!

MUSCLE *versus* WEIGHT.

WRECKS OF BRITISH SHIPPING.

(Continued from p. 200,—cs, crew saved; cd, crew drowned.)

VESSELS' NAMES.	BELONG TO.	MASTERS.	FROM.	BOUND TO.	WRECKED.	WHEN.
Abeona	210 Newcastle				C. Antonlo	Ap. 22. cs
Adelina		Price	Hartlepool	St. John	C. Sable	Ap. 28. cs
Aldrman Thompson			Quebec	London	Anticosti	Nov. 29, '42
Amos	Whitby	Wilson	Stockton	Lincoln M.	off Saltfleet	May 8. cs
Ariel		Turnbull	Limerick	London	Margate S.	May 19. cs
Barbara Ann	215		P. Talbot	Alicant		
Carribbean	Foundered	in ice	Glasgow	St. John, NB	C. Bollard	Mar. 8. cs
Catherine		Billing	run foul of	and sunk off	Longship	Ap. 29.
Charlotte		Ryan	Cardiff	Waterford	S. Bishop	Ap. 16. cs
Clyde	Barbados		Barbados	La Guayra		April
Conservative	220 Liverpool	Lind	Liverpool	Cape GoodH	Saldanha B.	Mar. 18.
Croft			Grangemuth	Berwick	Foundered	Ap. 23. cs
Dalo		Farley	Liverpool	New Orleans	Abandoned	Ap. 8.
Ebenezer	Nrth Shields		run foul of	and sunk off	Lowestoft	Ap. 29. cs
Elizabeth			Liverpool	Quebec	St. Pauls	May 2. cs
Emerentine	225	Audette	Quebec	Dalhousie	Anticosti	Nov. 23.
Emily		Webster		Halifax	Liverpool	Ap. 13. cs
Enterprize	Whitehaven	Corbett	not heard of	since Nov. 30	from	Scilly.
Fame	Cape Town	Farwin	Batavia	Cape	Abandoned	Feb. cs
Farnaeres	Sunderland	Rain	Sunderland		Corton Sand	May 16. cs
Great Britain	230	Shuckson	Newport, W.	New York	Abandoned	Ap. 2. cs
Harrington		Mercer	Liverpool	Benguela	Benguela	
Henry	Sunderland	Cogle	Wurkworth	London	Blakeney	May 9. cs
Hercules	Liverpool	Postle	Liverpool	Mobile	Mobile B.	Ap. 7. cs
Hibernia		Whiteside	run foul of	and sunk off	Linas	Ap. 1. cs
Isabella Brown	235 Aberdeen				Castle I reef	May 20.
Isabella'	Sunderland		Liverpool	Calcutta	abandoned	Dec. cs
Isabella	Mundsley		run down	off the	Humber	May 23. cs
Industry		Jenkins	Yarmouth	St. John	B. of Fundy	May 4. cs
Jemima	Glasgow					
James Lock	240		Swansea	Madeira	Abandoned	Ap 1. cs
John and Ellen			Bantry	Clyde	Howth	Ap 15. cs
Laurel	Providence				Wash	March
Mary Jane		Gatcomb	St. Mary's B	Gr. Manan	Long I. Bay	Ap. 17. cd
Mary and Isabella	Lieth		Sunderland	Murray Fth.	burnt	Ap. 23d cs
Mary	245 Montrose	Blues	Montrose	Riga	Hobourgh rf	Ap. 21. cs
Majestic					Maldives	Mar. cs
Ocean	Glasgow	M'Ree	Maryport	Belfast	Orlook Pt.	Ap. 30. cs
Portree	Halifax	Johnson	Jamaica	Cuba	Cuba	Ap. 14. cs
Reward		Wilson	Shields	Dublin	off Bell rock	May 24.
Robert	250	Stephensn	Newcastle	London	Sizewell B	May 8. cs
Sarah	Bristol	Nankivell	Newport	Plymouth	Foundered	Mar. 29. cs
Solway	R.M. steamr	Duncan	Coruna	W. Indies	Ct. of Spain	Ap. 7.
Tamar	English	vessel			C. St. George	Dec. 10. cs
Thompson	Hartlepool	Thompson				May 20.
Thos. & Elizh.	255		Shields	Dublin	Sinclair B.	May 13. cs
Thos. & Elizabeth	Yarmouth	Fell	Newcastle	Dublin	Kells S.	May 15. cs
Trinidad Packet	Liverpool	Lamb	Demerara	Liverpool	supposed off	lost.
Union	Colchester	Mills	Gainsbro'	Colchester	off Blakeny	
Victory		Thomas			Tarifa	May. cs
Vere	260 Poole	Badcock	Poole	St. John, NB	Hd. Hr. Pt.	Ap. 29. cs
Washington			Grangemuth	Rotterdam	Binks S.	May 18. cs
W. Rippon		Brown	Sunderland	Quebec	Sunk in ice	Ap. 29.

TABLE LXXIII.

For reducing Chinese Changs to English Fathoms, and English Fathoms to Chinese Changs.

1 Chinese Chang = 2·166666666 English Fathoms.

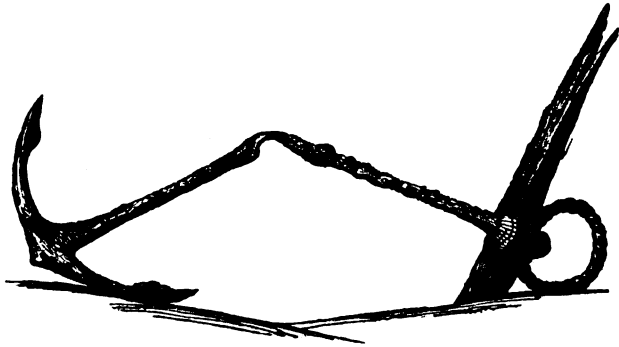
1 English Fathom = 0·4615374629 Chinese Chang.

Chinese chang or Eng. fms.	English fms. and Dec. parts.	Chinese changs and Dec. parts.	Chinese chang or Eng. fms.	English fms. and Dec. parts.	Chinese changs and Dec. parts.	Chinese chang or Eng. fms.	English fms. and Dec. parts.	Chinese changs and Dec. parts.
1	2·167	0·462	40	86·667	18·461	79	171·167	36·462
2	4·333	0·923	41	88·833	18·923	80	173·333	36·923
3	6·500	1·385	42	91·000	19·385	81	175·500	37·385
4	8·667	1·846	43	93·167	19·846	82	177·667	37·846
5	10·833	2·308	44	95·333	20·308	83	179·833	38·308
6	13·000	2·769	45	97·500	20·769	84	182·000	38·769
7	15·167	3·231	46	99·667	21·231	85	184·167	39·231
8	17·333	3·692	47	101·833	21·692	86	186·333	39·692
9	19·500	4·154	48	104·000	22·154	87	188·500	40·154
10	21·667	4·615	49	106·167	22·615	88	190·667	40·615
11	23·833	5·077	50	108·333	23·077	89	192·833	41·077
12	26·000	5·538	51	110·500	23·538	90	195·000	41·538
13	28·167	6·000	52	112·667	24·000	91	197·167	42·000
14	30·333	6·461	53	114·833	24·461	92	199·333	42·461
15	32·500	6·923	54	117·000	24·923	93	201·500	42·923
16	34·667	7·385	55	119·167	25·385	94	203·667	43·385
17	36·833	7·846	56	121·333	25·846	95	205·833	43·846
18	39·000	8·308	57	123·500	26·308	96	208·000	44·308
19	41·167	8·769	58	125·667	26·769	97	210·167	44·769
20	43·333	9·230	59	127·833	27·231	98	212·333	45·231
21	45·500	9·692	60	130·000	27·692	99	214·500	45·692
22	47·667	10·154	61	132·167	28·154	100	216·667	46·154
23	49·833	10·615	62	134·333	28·615	150	352·000	69·231
24	52·000	11·076	63	136·500	29·077	200	433·333	92·307
25	54·167	11·538	64	138·667	29·538	250	541·667	115·384
26	56·333	12·000	65	140·833	30·000	300	650·000	138·461
27	58·500	12·461	66	143·000	30·461	350	758·333	161·538
28	60·667	12·923	67	145·167	30·923	400	866·667	184·615
29	62·833	13·385	68	147·333	31·385	450	975·000	207·692
30	65·000	13·846	69	149·500	31·846	500	1083·333	230·769
31	67·167	14·308	70	151·667	32·308	550	1191·667	253·846
32	69·333	14·769	71	153·833	32·769	600	1300·000	276·922
33	71·500	15·231	72	156·000	33·231	650	1408·333	299·999
34	73·667	15·692	73	158·167	33·692	700	1516·667	323·076
35	75·833	16·154	74	160·333	34·154	750	1625·000	346·153
36	78·000	16·615	75	162·500	34·615	800	1733·333	369·230
37	80·167	17·077	76	164·667	35·077	850	1841·667	392·307
38	82·333	17·538	77	166·833	35·538	900	1950·000	415·384
39	84·500	18·000	78	169·000	36·000	1000	2166·667	461·537

AN ANCIENT ANCHOR.

THE old anchor of which the annexed is a sketch was trolled up in a net in the month of July last year, about three miles from land, opposite to a place called Burmiston, in nineteen fathoms water; Scarbro' castle bearing by compass S.W.b.W.

JOHN BURY.



WOOL CARGOES.

SIR.—Referring to a point touched on in the paper on the “Merchant Service,” the wool cargo, I beg to make a few observations.

Can any other conclusion be drawn from the fact of the steam arising from the cargo being allowed to pass through the seamen’s berth, than that, such has been permitted, because it was the most economical plan; a plan, which although it may save a few pounds to the owner, jeopardizes the health and lives of the crew!

The remedy appears to be easy. Wooden flues would carry off the steam into the atmospheric air, and prevent it from affecting any person on board the vessel. Why have these not been erected?

It is deplorable to think how little care is bestowed upon the state of the seamen’s berth on board of merchant ships. In the Australian traders the bulk-head between the hold and the men’s berth is purposely left with interstices to admit the steam and fume from the wool cargo to pass through! The effect has been described, and I have been assured that when a person holds his head over the scuttle, the steam condenses on his face and runs off in drops! If the Captain is appealed to by the suffering crew, his answer is, that he cannot permit the bulk-head to be closed, as, in that case, the steam would find vent aft, and annoy his passengers! Without imputing direct blame to the Commander, we may assert it to have been his duty before quitting the home port, to have pointed out to the owner the result that would follow from the general plan adopted, and to have urged the necessity for a

remedy; the neglect of which, outrages the feelings of humanity and justice.

We have been further assured that, when a ship freighted with wool, arrives in the Docks, after a four or five months voyage, the beds of the men, to use their own expression, are as "rotten as tinder", and fall in pieces on being lifted! Alternately steamed and cooled, exuding at all pores, and suddenly having the moisture evaporated by a freezing atmosphere, it may readily be believed that, no human being could support uninjured such vicissitudes. Disease and death are the inevitable consequences, and as an awful responsibility rests somewhere, it is to be hoped that a speedy remedy will be applied to the evil.

HUMANITAS.

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MERIDIAN DISTANCES.

*H.M.S. Cornwallis, Hong-Kong, April 3, 1843.*

STR.—The following meridian distances which I have endeavoured to measure accurately, while employed in the China expedition, are sent for insertion in your valuable Magazine, should you deem such information worthy of attention.

The chronometer used (being the standard of nine on board the Cornwallis,) is by Arnold and Dent, No. 801, and during the last seven months, the temperature varying from 24 to 92! has changed its daily rate from. 65-hundredths *gaining* to 79-hundredths *gaining*, which latter rate it has preserved the last three months; such steadiness of rate under great and sudden variations of temperature is rather unusual.

No. 801 was rated off Nankin in the river Yang-tse-kiang, in the month of September last; at Chusan several times during the months of October, November, December, and January; at Amoy in the month of February; and at Hong-Kong in March.

Equal Altitudes were always used, and I have much pleasure in testifying to the superiority of the said chronometer by Arnold and Dent.

|                                                     |                   |
|-----------------------------------------------------|-------------------|
| From north point of the canal leading to Nankin     | } 10m. 41'29s. E. |
| To east point of Woosung river . . . . .            |                   |
| From east point of Woosung river . . . . .          | } 2 24'25 E.      |
| To Ratcliff-highway landing-place, Chusan . . . . . |                   |
| From Chusan (spot as above) . . . . .               | } 16 3'95 W.      |
| To south-west of Goo-long-soo, Amoy . . . . .       |                   |
| From south-west point of Goo-long-soo, Amoy         | } 15 26'10 W.     |
| To Cow-loon point Hong-Kong harbour . . . . .       |                   |

Adverting to two measurements I made in the year 1842, from Aden to Bombay, between which you discovered a difference of 6" in time. I beg to acquaint you that the first measurement was from Ras Marbat to Bombay *light-house*, and the second from Ras Marbat to Bombay *flag-staff*. The light-house being about one mile and a half to the westward of the flag-staff.

During my services in the China Sea, I have been anxious to make some remarks and sailing directions for some places which were but

imperfectly known, and I beg to refer you to my Remark Books for 1842 and 1843, where I trust you may find information which will prove serviceable to others navigating these seas.

I have, &c.,

J. JACKSON,  
Master R.N.,

To the Editor, &c.

[Meridian distances are always most acceptable, especially when obtained with good chronometers, in an unknown part of the world; but they should be *always* accompanied by particulars, which very materially affect their value, and which Mr. Jackson will perhaps be so good as to send us, such as the number of chronometers employed in each, and the number of days of interval rate they depend on, &c.—ED.]

The Vanguard, 80, Captain Sir David Dunn, went into Harbour on Monday, from the Sound, for the purpose of being dismantled and paid off. To the great credit of all on board, there is no vessel in her Majesty's service ever entered an English harbour in a state of greater efficiency, discipline, and order than the Vanguard. She is to be taken into dock, and brought forward again as soon as possible for re-commission. Her crew have since been mustered and inspected by our gallant Port Admiral, Sir D. Milne, who expressed himself highly satisfied at the efficient state in which he found her, and from the high eulogium he passed on her officers and crew, they must have felt highly gratified by the same. The Vanguard will be paid off on Wednesday next.—*Plymouth Paper.*

#### INQUEST UPON THE PASSENGERS OF THE PEGASUS.

The latter portion of the following letter, received at Lloyd's, from their agent at Berwick, will be found to contain reference to matters unconnected with the Pegasus steamer, but nevertheless interesting to those connected with the shipping interest:—

“*Berwick, August 21.*”

“SIR.—The mate, engineer, and fireman, who were saved from the Pegasus, have been here from Leith, and were examined at great length before the Coroner and Jury, which has been sitting in the Town-hall here for several evenings past, examining into the cause of the loss of the vessel, crew, and passengers. Mr. Pringle, the cashier of the Company, was also examined on two separate nights, as to the state of the vessel, captain, &c. The coast-guard were in attendance, but were not examined. Several of our ship captains were this day examined, when it was given by all of them, that going to the eastward of the Megstone at night was an unsafe passage, and only safe in daytime in clear weather, to those who know it well; and all agree that the passage through the rake between the Galestone and Plough was the best and safest in daytime with a sailing vessel; but if thick or hazy weather, it was then proper to go to the outside of the Longstone, and keep well off from it, say two miles or so. For general service to the shipping interest on our coast, it is now agreed that shifting the leading light to the Megstone would be of much service—would be better seen, and open quicker, and be a better guide for vessels coming in from sea, as also coming up from the southward, as well as vessels taking the Fairway from the northward at night.

“The following is the result of the inquest:—‘William Milne, Alexander Miller, accidental death, occasioned by the gross carelessness of the master and those on the look-out;’ and in addition to the expression of their opinion, they have added a deodand of £100 against the Company on each body—£200 in all.”

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, *with an account of the attendant phenomena, abstracted from the Official Journals of the respective Ships, and from other authentic sources of information.*—By *W. S. Harris, F.R.S., &c.*

(Continued from p. 541.)

#### MAGNIFICENT, 74.

1814. April 17th, off Ushant, distance ninety-two miles; 8 P.M. heavy rain with lightning, main-top-gallant-mast and main-top-mast shivered, main-mast damaged.

Wind had been south-west, after which at 8 P.M. it went further to the west in a heavy squall, and at midnight again went back to south-west.

The main-top-gallant-mast disappeared entirely, and the top-mast was shivered in pieces; several blocks were thrown into the fore and mizen-tops, and the decks were covered with splinters and pieces of rigging; a zig-zag line was burned down the main-mast, several wedges were forced out under the hoops and many of the people stunned; the main-deck appeared in a blaze of light, the report of the thunder seemed as if all the main-deck guns had been fired at once. (Further particulars by Lieut. Loudon, R.N.)

#### MADAGASCAR, 50.

1830. January 5th, Corfu Channel, Mediterranean, 8h. 30m. P.M. ship struck by lightning in several places; main-mast head set on fire; mizen-top-mast and main-mast severely damaged, wind N.b.W.; 4h. light airs and fine; 8h. light airs and cloudy, with rain; 8h. 25m. heavy rain, with thunder and lightning.

The ship was struck no less than five times in the course of an hour.

#### MOSQUITO, 10.

1830. January 5th, Corfu Channel, in company with Madagascar; 8h. 30m. P.M. the lightning struck the ship in several places, which burned many holes in the boom-main-sail, and set the main-top-gallant-studding-sail on fire.

Of three ships in this squadron, the only one which escaped damage was the Etna, which ship was the only one having a lightning conductor on the main-mast. In this vessel protection was afforded whenever the lightning struck the main-mast; some of the crew were knocked down on the fore-castle by one of the shocks of lightning passing in that direction. The conductor was much blistered and twisted.

#### MELVILLE, 74.

1830. August 2nd, Malta; 9h. 15m. A.M. struck by lightning, which split the main-top-mast and top-gallant-mast, and damaged the main-mast. This storm is described in the case of the Gloucester. Both ships were disabled, and obliged to have new masts.

Weather cloudy, with little wind, rain, thunder, and lightning. The ship was not again ready for sea until the 11th.

ENLARGED SERIES.—NO. 9.—VOL. FOR 1843.

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## MEDINA, 20.

1830. January 9th, Coast of Africa; 0h. 40m. P.M., main-top-gallant-mast and main-top-mast shivered to atoms by lightning; main-mast much injured

The wind had been S.W.b.S., after which N.E., squally appearance, with rain, thunder, and lightning; 0h. 20m. P.M. a tornado, with heavy rain; the wind after this went round again to S.S.W.

The ship received assistance from the Athol, then in company; she was again struck by lightning in the following November.

## NEREUS, 36:

1814. March 22nd, moored in the Rio de la Plata; 8h. 15m. P.M. strong winds and squally from south-west, thunder and lightning; main-top-gallant-mast struck by lightning, main-top-mast shivered, split nearly in two pieces, main-mast splintered, and the fish on the fore part shivered in pieces, main-top-sail and mizen-stay-sail damaged. Several men struck down.

Wind on the 20th north-west, fine pleasant weather; 21st A.M., north-east, moderate and cloudy; 10h. strong winds south-west and squally; 22nd, variable winds, moderate and clear.

The ship had a new main-mast on her return to England at the close of the year. On examination the spindle in the heart of the main-mast was found, in a great measure destroyed; the mast was swollen out in several places, as if by expansion from within, which had burst open several of the iron hoops; the discharge seemed to have escaped about ten feet above the deck. The mast was shifted and examined at Woolwich.

## NIEMAN, 36.

1814. June 29th, Halifax harbour at anchor; A.M., squally with thunder, lightning, and rain; 12h. 45m. main-top-mast and main-mast struck by the lightning.

Wind on the 28th south-east, moderate with thick rain; midnight squally; 29th A.M., S.S.W.; 30th, S.S.W., moderate and fine.

The ship had a new main-mast on the 1st of July; the top-mast was completely shivered, and the main-mast found unserviceable.

## NORGE, 74.

1815. June 3rd, moored in Port Royal harbour; A.M., variable winds, heavy rain, thunder, and lightning; 4h. main-top-mast and top-gallant-mast shivered in pieces, and the main-mast damaged.

The wind on the previous days had been easterly, moderate and cloudy, occasionally squally with heavy rain; wind E.N.E.; 3rd A.M., strong breezes E.N.E.; after which variable; 4h. heavy lightning; 8h. light airs south-east; P.M. strong gales, with heavy rain, wind E.N.E.; 4th light airs and fine, E.N.E.

The top-gallant-mast was broken into three pieces, and the centre of the main-top-mast fairly forced out, the mizen-top-gallant-mast and top-mast were carried away by it, and the ship for a time was quite a wreck. She was about to sail for England with a valuable convoy.

H.M.S. Warrior, very near the Norge, having lightning conductors, was not damaged, and amongst the other ships of the convoy only one was struck by lightning, and this ship had not a conductor.—Shipwreck by Lightning Report and Evidence, p. 58.

#### NARCISSUS, 36.

1816. April 23rd, off the Western Islands, lat. 43° N., long. 30° W.; A.M. fresh breezes W.S.W., heavy lightning; 3h. 40m. main-mast shivered by the lightning in several places; the top-mast badly shivered, and main-top-gallant-mast slightly injured.

The wind on the 21st, fresh breezes south-west; 22nd, fresh and cloudy with lightning, wind W.S.W.; P.M. shifted to north-west; 23rd W.S.W.; 24th north-west, moderate and fine; 25th S.S.E., light breezes and cloudy.

The top-mast was ruined, and the main-top-sail set on fire; the discharge reached the bits, and blinded some men at the top-sail halliards.

The ship was returning to England from Bermuda.

#### OCEAN, 98.

1813. Sept. 2nd, at anchor off the Rhone; 1h. 10m. A.M. main-mast and main-top-mast struck and shivered; four of the hoops on main-mast broken.

The wind on the preceding day S.E.b.E.; strong breezes and cloudy, with lightning; A.M. on the 2nd, north-east, strong breezes and cloudy, with thunder and lightning; 12h. 40m. a heavy squall with lightning; in the course of this squall the ship was struck. The wind on the next day changed to the south, moderate and cloudy.

They woulded and fished the main-mast, and went to Mahon, where she had a new one.

#### ORLANDO, 36:

1813. January 31st, at Smyrna; A.M. 12h. 30m. main-top-mast struck by lightning, and shivered through the heart of it; main-mast much shaken and damaged, the fore fish started, head of mast entirely destroyed. The discharge entered the head, and came out about six feet above the quarter-deck:

The wind on the 30th south-east, moderate with rain; on the 31st, moderate with rain. February 1st, moderate and fine, wind E.b.N.

The ship repaired damage, and went to Malta for refit, where she got a new main-mast.

#### OPOSSUM, 18.

i 1815. March 23rd, off the Dodman, English Channel; 10h. P.M., wind W.N.W., hard gales and heavy squalls. "A peal of thunder burst in the main rigging and split the main-top-mast cap."

The brig was lying-to at the time.

#### OCEAN, 80.

1829: March 12th, at Smyrna; 1 A.M. main-top-gallant-mast and main-top-mast struck by lightning and much damaged.



The wind on the previous days had been from the S.S.E.; on the 10th fresh breezes with rain and lightning.

#### PEGASUS, 32.

1787. December 18th, Cork Harbour; wind W.b.S., fresh breezes and squally, with thunder, lightning, and rain; 4 P.M. struck top-gallant-masts; 19th, 3h. 30m. A.M., the lightning struck the main-mast, shivered the top-gallant mast, and damaged the main-mast in two places.

The ship was then under the command of Prince William Henry,—His late Majesty William the Fourth.

#### PERSEVERANCE, 36.

1789. Sept. 11th. Bay of Bengal, Point Palmyras N.b.W., fourteen miles; A.M. fresh breezes, easterly; 6h. fore-mast struck by lightning, which damaged the larboard cheek.

Wind on the 10th N.N.E., fresh breezes; on the day following the storm, it changed to the west, moderate weather.

The discharge struck the eye-bolt in the fore-top-gallant-yard, and shivered the yard, it entered the fore-mast through the eye-bolt for the top block and went down through the centre of the mast. It came out again on the fore-castle just above the deck, two men there, were literally roasted; several wounded and scorched. The galley funnel was rent. A small vessel about a mile and a half in shore to windward, was struck at the same time and blown up.

The ship had usually conductors up; but in consequence of the rigging having undergone repair in Madras roads, they had been removed; and were afterwards omitted to be set up.—See report on Shipwreck by Lightning, p. 84, statement by Rear Admiral Carden.

It was stated by a writer in the *Mechanic's Magazine*, vol. 8, p. 13, that this ship, at the time she was damaged by lightning had two conductors up, which is evidently incorrect, being contradicted by the very authority referred to by the writer.

#### POMONE, 44.

1796. January 27th, moored in Homoeaze, Plymouth; 1h. P.M. the lightning struck the fore-mast head and shivered it; main-top-mast-stay-sail set on fire.

This occurred about the period of the wreck of the Dutton East Indiaman, under the Hoe. Heavy gales from south-west; wind on the 26th west; strong gales on 27th south-west; 28th north-west, strong gales.

The ship had but just refitted; but was now detained in order to get a new fore-mast, the lightning having ruined the mast.

#### PHENIX, 36.

1801. February 25th, lat. 40° N., long. 5° W., two days from Mahon; 2 P.M. squally, with thunder and lightning; 3h. the lightning struck the ship. One seaman killed and several hurt.

The wind had been west on the previous day; 25th variable, moderate, and cloudy; A.M. 26th, northerly and variable.

This ship was one of the look-out frigates attached to Sir J. B. Warren's squadron. The Mercury, one of the other frigates suffered about the same time.—(See Mercury).

#### POMONE, 44.

1806. December 21st, English Channel; St. Alban's Head N.N.W. three leagues; A.M. strong gales and squally; 6h. heavy gales with tremendous thunder and lightning; 6h. 30m. the ship was struck by the lightning, and every one before the main-mast knocked down, some very badly hurt, one of the hoops of the fore-mast was burst open.

Wind on the 20th west with strong gales; 21st, west, strong gales and squally; 22nd S.W.b.W. strong breezes.

#### PELICAN, 18.

1806. September 10th; 3 A.M. at anchor off Belize, in the Bay of Honduras, main-top-gallant and main-top-masts struck and shivered by lightning, main-mast splintered.

The wind had been on the previous days easterly, from N.N.E. to east, moderate and cloudy; on the 9th strong breezes from the east, occasionally squally with showers; P.M. moderate; 10th, A.M. heavy rain with thunder and lightning. The previous evening had been calm, and the heat oppressive, scarcely an air of wind, pitchy dark clouds came off the land soon after midnight with a little whirl of wind, and the ship was soon enveloped by vivid discharges of lightning, which seemed to pour down on the earth and sea, in successive streams with fearful brilliancy, leaving intervals of intense darkness, this lasted about an hour. About 8h. A.M. clear; noon, moderate and clear, wind west; on the succeeding day the wind again fell back to the N.N.E.; after which it again became variable and squally with rain.

The upper masts were shivered in atoms, and the pieces carried off to a great distance from the ship; main-mast damaged in an irregular spiral with indentations into the step where the discharge disappeared with a sharp explosion. Several men were struck down, but none hurt seriously.—Further particulars by Capt. Ward, R.N., who then commanded the ship.

#### PALMA, 48.

1814. June 12th, Carthagena, 8h. A.M. dark cloudy weather with rain; 9h. heavy rain with vivid lightning and thunder; 9h. 45m. fore-top-gallant-mast and top-mast shivered in pieces, the fore-mast grazed along its surface, but not apparently injured much. A large piece struck out of the main-deck beams. One seaman killed, six men severely hurt, and several slightly. Mid-day cloudy and moderate.

The wind had been westerly; on the 12th W.N.W. and calm. The next day southerly.

The fore-top-mast was knocked over the side, with top-gallant and royal yards across. The lightning fairly guttered its way along the mast under the hoops without damage to them, leaving a groove two

inches deep and an inch and half wide. The discharge passed to the sea by a bight of the wet cable, just shortened in, and in doing this knocked out a part of one of the beams, and fused some of the lead in the hawse hole. The fore-mast of this ship stepped in the middle of the fore-magazine, which is the case in several of the old French built ships, a destructive explosion must therefore have occurred without a conductor, had the discharge not struck off to the sea in another direction.

Electrical discharges fell on the sea repeatedly within a very short distance of the ship, sometimes within an oar's length.

Further particulars by the late Admiral Worth, R.N., who then commanded the ship.

#### PHENIX, 36.

1816. February 20th, off the Isle of Scio, Mediterranean; 2h. A.M. heavy gale south-west with a deluge of rain, thunder, and lightning, which struck and damaged the main-mast.

Wind on the 17th, west; 18th south-west fresh gales, P.M. westerly and squally with rain; 19th, A.M. north and N.N.E., moderate and fine; P.M. north-east, after which at midnight heavy squall from the eastward; 20th, A.M. south-west, heavy gale, at 4h. S.W.b.W., after which it again changed to N.b.E., and north, and there remained.

This is an interesting case of a thunderstorm attendant on conflicting and violent currents of air.

#### PHÆTON, 46.

1824. September 14th, Gibraltar Bay; 8h. P.M. fresh breezes and cloudy with lightning and thunder, fore-top-gallant, fore-top-mast, and fore-mast struck and considerably rent, the fore-top-mast head set on fire, also the fore-top-gallant and lower studding-sails.

The wind blew extremely hard in severe squalls from the east, with vivid flashes of lightning; a few minutes before eight, a condensed black cloud was observed to gather along the rock, and direct its course towards the ship, and in about ten minutes it burst on the masts with a terrific crash. The fore-top-gallant-mast and top-mast were completely shivered, also the fore-mast, and the bits; the mast was set on fire, together with the small sails in the top, and the top-mast studding-sail in the larboard rigging. The main-top-gallant-mast was also struck, and the signal halliards burned to a cinder; the discharge passed out of one of the ports. The very hearts of the masts were torn out, and five of the iron hoops on the fore-mast torn asunder and partly fused. Several men were knocked down, and continued some time insensible.—Letter from Captain Sturt to Admiral Sir G. Martin, G.C.B.

The fore-mast was cut off sixteen feet above the deck, and a spare main-top-mast rigged upon the stump for a jury-mast.

It is worthy of remark, that this ship, without lightning conductors, was at anchor within a cable's length of H.M.S. Adventure, which had conductors, and which ship was not touched by the discharge; these were the *only* ships then in the Molt.

## PELICAN, 18.

1835. February 26th, St. Catherines Point, Isle of Wight, N.N.W., forty-one miles; 9h. 45m. P.M. lightning struck the fore and main top-gallant-masts, and knocked down one of the seamen.

The wind on the previous days had been westerly, from south-west to north-west, strong breezes and squally; on the 26th A.M. cloudy with rain; 8h. P.M. heavy squalls with rain and lightning from the westward, wind W.S.W.; 27th strong gales and cloudy, W.S.W.; noon squally, south-west; midnight, strong breezes and fine, W.N.W.; 28th moderate, N.W.b.N.

The fore-top-gallant-mast, fore-top-mast, and fore-mast were found to have been damaged by the electrical discharge.

## PELICAN, 18.

1837. November 18th, at anchor off the River Bonny, Coast of Africa, in company with the *Waterwitch*; 4h. 30m. A.M. lightning struck the ship, shivered the fore-top-gallant-mast and top-mast, and very much shook the fore-mast; bunts of the fore-top-gallant-sail and royal burned.

Wind on the 16th, west A.M. and fine; midnight, E.N.E. and cloudy; 17th, cloudy and fine with lightning; a heavy tornado after dark, with vivid lightning, wind south-west; 18th A.M. light winds and cloudy with heavy rain, thunder, and lightning; electrical discharges appeared to strike the sea close to the ship; wind south; 8h. cloudy and dark, with rain, thunder, and lightning; P.M. moderate; the wind continued from the south and west, with variable weather, occasionally thick and hazy, and rain.

The fish on the fore-mast was started, also the bowsprit bitts on the lower deck. The ship had not any lightning conductors; but, the *Waterwitch*, lying at anchor near the *Pelican* had, and she did not receive any damage in this storm.

## PIQUE, 36.\*

1839. November, River St. Lawrence, at anchor; 1 A.M. fore-mast struck and damaged by lightning.

The weather was squally with hard rain, two or three discharges, described as balls of fire, struck the sea within a hundred yards of the ship. The discharge appears to have struck the fore-mast just abreast of the fore yard. It rent the mast, and blackened it in several places; the first clasp hoop below the catharpins was burst open, the two side battens knocked off, and the fish started. No damage to top-mast or top-gallant-mast; these were New Zealand spars. The fore yard was slung, with chain resting on the cap.

The mast was obliged to be fished and woulded with rope.

## POWERFUL, 84.

1840. March 25th, moored in Vourla Bay; 12h. 50m. A.M., the ship struck by lightning, which shivered the fore-top-gallant-mast and top-mast, and the paunch fish of the fore-mast in pieces, and damaged the mast slightly in several places.

Wind from the S.S.W. on the 24th; 25th south-west.

The *Asia*, 80, at anchor near the *Powerful*, having fixed conductors in all her masts and bowsprit, was not damaged by this storm. The *Powerful* was without lightning conductors.

#### QUEEN, 98.

1815. March 15th, moored in Messina harbour; 1h. 45m. P.M., main-top-gallant-mast and top-mast shivered in atoms by lightning; main-mast also severely damaged.

The wind had been from the north-east; A.M. squally with rain; at noon, squally with frequent and heavy showers of hail; P.M. the wind shifted to the west, with dismal gloomy weather; midnight, moderate and cloudy, with heavy lightning; wind north-west.

The ship repaired damage, and went to Malta for a new mast. It appears that H.M.S. *Albion* was also damaged in this same storm.—Report on Shipwreck by Lightning, pages 67 and 68.

#### RUSSEL, 74.

1795. October 1st, Coast of France, Belle Isle, north-east, nine miles; 1h. 30m. P.M., main-top-mast and main-mast shattered by lightning; fore-top-gallant-mast, mizen-top-mast, and mizen-mast also much damaged. The first-lieutenant and two seamen killed, and several men badly hurt.

A.M. calm, after which south-east, light airs; P.M. squally, with thunder and lightning, S.S.E.; 1h. 30m. wind N.N.W. The ship was taken aback by a heavy squall of wind, hail, and rain, whilst at the same moment a fearful discharge of lightning fell on the ship. The masts were so shattered that no sail could be carried on them. The electrical discharge pervaded the ship with brilliant discharges even in the hold. The first-lieutenant was killed whilst standing at the ward-room table.

The vessel was so disabled that, had the gale continued she must have been lost on the French coast; she returned to England to refit.

The wind veered to the west, then S.W.b.W., south; after which A.M. moderate and cloudy.

NB. This is an instance of a ship struck by lightning on all her masts at once.

#### RENOWN, 74.

1801. September 8th, off Toulon, 42° 43' N.; 11 P.M. severe lightning, which struck and splintered the mizen-top-gallant-mast and mizen-top-mast.

The wind on the 5th variable and fine; 6th E.S.E., moderate; 7th south-east, which shifted to the west, fresh gales and squally with heavy rain, thunder, and lightning; 8th north-west and west; fresh gales and squally with heavy rain, thunder, and lightning; 9th, wind south, and then N.E.b.E., light airs and fair.

The mizen-mast was also damaged, and was subsequently removed at Plymouth.

## ROYAL SOVEREIGN, 110.

1809. November 9th, off Barcelona, lat.  $40^{\circ} 50' N.$ , long.  $2^{\circ} 12' W.$ ; 5 P.M. a flash of lightning split the main-top-gallant mast, and killed two men whilst pumping at the winches; all the men on the main-deck were knocked down.

The wind E.b.S., strong gales and squally, with rain; 4th sharp lightning; 6th fresh gales and squally, S.E.b.E., thunder, lightning, and rain; 8th variable, moderate, and cloudy, with lightning and rain.

The men on the main-deck felt the shock, but those on the upper-deck did not. The discharge passed out of the ship by the pumps.

## RUBY, 64.

1810. July 21st, at anchor in the Great Belt, in the Baltic, off Sproe; P.M. 9h. 30m., light breezes, with heavy rain, thunder, and lightning; 11h. 30m. main-top-gallant and main-top-masts struck by the lightning and shattered all in pieces. The main-mast also much damaged.

Wind on the 20th, north-west, light airs and fine; on the 21st, A.M. west, then variable and northerly; 22nd, variable, and E.S.E.; the main-top-mast was completely demolished.

## RESISTANCE, 44.

1811. June 25th, off Gorgona; 6 A.M., main-mast and main-top-mast shivered by lightning, main-mast head on fire.

24th, wind W.N.W., light breezes and cloudy; 25th, A.M. calm and E.N.E.; 6h. 25m., a very heavy squall of thunder, lightning, and rain.

They were obliged to heave the main-royal and top-gallant-studding sail, and two main-top-mast-studding sails overboard; they fished the main-mast, and went to Mahon for refit.

This ship was damaged in company with the Ajax and Unité; the whole squadron suffered.—See Ajax and Unité.

## REPULSE, 74.

1813. April 13th, coast of Catalonia, Cape ebastian, west forty-three miles; 12h. 35m. heavy squall of rain, thunder, and lightning, two vivid flashes struck the ship, and shivered main-top-gallant-mast and top-mast; and entered main-mast head. Eight men killed in the rigging, and nine men otherwise severely hurt, so that several died.

12th variable, W.N.W. and north; 13th, A.M. W.b.N., light breezes and hazy, after which north, squally with rain; 14th north, and N.E. b.E., and variable.

The ship was quite crippled, and as severely handled as if she had been in action. Twenty of the crew were placed *hors-dé-combat*.

The main-mast was ruined so that but little sail could be carried on it for some time; and the fleet then on a critical service, lost for a time the efficient support of one of its fastest and best ships.

Further particulars by Capt. Richards, R.N., then in the ship.

(To be continued.)

## THE INDIAN ARCHIPELAGO.

TIMOR, being only 260 miles from Cape Bougainville, is nearer to the continent of Australia than any other island of the Indian Archipelago in which Europeans have established themselves. It is 240 miles long, the breadth varying from 40 to 70 miles. The coasts consist entirely of mountainous land, rising abruptly from the sea, there being very few spots of level ground near the shore sufficiently large to entitle them to be called plains. In the interior, however, are plains of great extent, well watered by lakes and mountain streams, and, from their elevation above the level of the sea, possessing a climate well suited for the growth of many European productions which will not succeed in the lower lands. Two European powers have possessions on Timor; the Dutch at Coepang, on the south-west extreme, and the Portuguese at Dilli, near the north-east end of the island; and along the north-west coast are several small establishments belonging to both nations, those of the Portuguese being most numerous. Neither power, however, possesses territory beyond the immediate vicinity of the chief settlements, and the authority of both nations over the towns along the coast is scarcely more than nominal. All hoist the flags of either the Portuguese or the Dutch, many of those near Coepang displaying that of the former; while there is a town within a few miles of the chief settlement of the Portuguese which considers itself under the protection of the Dutch. In this, as well as in some other particulars, the establishments on the north-west coast of Timor resembles those of Europeans on the west coast of Africa. The inhabitants of the south-east coast, generally called the "back" of the island, are independent. The Dutch carry on a trade with some of the villages nearest to Coepang, but the greater portion of the produce of this side of the island is brought over-land to the settlements on the north-west coast.

The population of Timor must be very great. On passing along the coasts, especially near Dilli, numbers of houses, each in the middle of a small plantation, are seen scattered over the face of the hills, even to their very summits; every spot of ground not too steep to admit of cultivation being occupied. The interior is represented as being even more populous than the coast. Near the European settlements the greater portion of the population profess Christianity, as is the case also with most of the chiefs in the interior; but the bulk of the people are Pagans.

The principle exportable productions are sandal-wood and bees'-wax. The former is exported to China, and the latter to Java, where the consumption is very great, owing to its being employed in large quantities in the manufacture of Javanese calicoes. To these may be added cattle, horses, and Indian corn, which are exported chiefly to the Australian colonies and the Mauritius.

About 150 British vessels visit Timor annually, Coepang alone having had as many as 84 in its harkour during the year 1840. Of these three-fourths consist of South-Sea whalers, ships homeward-bound by the eastern passage from China, or vessels proceeding to India from new South Wales by way of Torres Strait. These, for the most part, touch at Timor merely for refreshments, which are cheap and abundant. The remaining fourth consists of ships employed in carrying stock, &c., to our colonies, with a few small vessels from Singapore or Sydney. The number of Dutch vessels visiting Timor annually is about 20. These are all country vessels, (that is to say, vessels belonging to the Dutch Indian colonies,) no Dutch ships ever coming there direct from Europe. These are mostly brigs and schooners, which bring rice, arrack, and other colonial produce from Java and Macassar, with muskets, gunpowder, hardware, and calicoes from Singapore. A Portuguese ship from Macao or Goa occasionally visits Dilli, but the flags of other nations, beyond the three mentioned, are rarely seen in Timor. From 20 to 30 Bughis and Macassar prahus visit the island annually. The north-western is the only coast fre-

quented by ships, but, while at Dilli in the early part of this year, a small English vessel arrived from the south-east coast, where she had carried on a considerable trade for bees'-wax, which may probably induce others to follow her example.

From the nature of the trade it is impossible to give any correct account of the value of our manufactures consumed in Timor; but some idea may be formed of the importance of this market when it is taken into consideration that, with the exception of rice, sugar, wines, spirits, and a few other articles imported for the supply of the European settlement, British goods alone are employed to purchase the entire produce of the island; and this must be the case in all Dutch settlements from which we are not excluded. Nothing can more materially tend to prove the value of commercial depôts in this part of the world than the fact, that before the establishment of our settlement at Singapore, the consumption of our manufactures in Timor was very trifling. Yet Singapore is 1,500 miles distant; and, owing to the monsoons, only one voyage to and fro is made in the course of the year. From this settlement four or five voyages might be made with ease during the same period. It, therefore, seems evident, that when Port Essington is open to colonists, Timor will be supplied with our manufactures from it, as the difference in the duration of the voyage would, of course, enable the merchant to sell his goods cheaper.

Slaves were formerly exported from Timor to the amount of some thousands annually, but as the trade was abolished by the British, when they possessed Timor, during the late war, and has subsequently been discouraged by the Dutch, it is now by no means so considerable. Several individuals at Coepang, of Dutch extraction, possess many slaves; one as many as 600; but they cannot be exported, and being of little use where their masters are too indolent to superintend plantations, they would probably be manumitted, were it not for the expense that would be incurred by so doing; a fee of several guilders being demanded by the government for granting a certificate of freedom to a slave. A few boys are generally taken from Dilli by the Portuguese ships which arrive from Goa and Macao; but, with this exception, there are no European vessels, as far as I could learn, employed in the traffic. The Bughis prahus, however, export from 500 to 1,000 annually, and, perhaps, 100 are purchased during the same period by the inhabitants of the Serwaty Islands. These are prisoners taken during the war, men accused of crimes, or children that have been kidnapped. The Bughis prahus carry their slaves to Celebes, Borneo, and, as I have been informed by several of the Bughis themselves, to Siam also. The price of a slave at Dilli is a musket, or ten dollars. A child is considered to be as valuable as an adult.

COEPANG, the principal Dutch settlement, is situated near the southern extremity of a deep bay at the south-west end of the island. The town is small, but neat and clean, and is occupied chiefly by the Europeans, Dutch half-castes, and Chinese, the native population residing for the most part in huts scattered over the hills to the westward of the town. The European inhabitants are about a dozen in number, including the resident, one or two government officers, and a few soldiers, the latter acting as non-commissioned officers to the native troops, forty in number, who garrison the little fort. There is not a single European merchant in Coepang, the trade being conducted through the medium of the Chinese, who number about 300, and form the most useful portion of the population. The country-born descendants of the Dutch number about the same with the Chinese, and are remarkable only for an extreme indolence of disposition. A few of them are employed in subordinate situations under the government, but the greater portion subsist on the gains of their slaves; not a single individual among them possessing sufficient enterprise to cultivate a plantation, although the soil would amply repay their labour. A sugar plantation has lately been laid out and planted by an English gentleman from the Mauritius, and, should this succeed, some of the country-born inhabitants may possibly be induced to follow his example. It may appear surprising



that, although this settlement has been in possession of the Dutch upwards of centuries, there are no wheeled carriages, nor a road on which they could travel, and this in a country in which horses are most numerous, in proportion to its size than, perhaps, in any other in the world.

The extensive island of Rotti, lying off the south-west extreme of Timor, is the most important district within the jurisdiction of the Dutch; the inhabitants, about 20,000 in number, being rather more industrious and enterprising than the Timorese, and the accessible nature of the country rendering it comparatively easy for the government to maintain their authority there, which is not the case in the mountainous country at the back of Coepang. The buffaloes, maize, &c., brought to Port Essington by vessels from Coepang, are exclusively the produce of this island.

There is a good harbour near the north-east extreme of Rotti, called Rangong, in which vessels may lie very close to the shore; but during the south-east monsoon ships would experience some difficulty in getting to sea through its narrow entrance. This is of little consequence as far as intercourse with the settlement is concerned, since stock intended for this settlement is always shipped during the westerly monsoon, when the harbour is easy of access.

Coepang is not a favourable place for vessels to touch at for refreshments. Stock, with the exception of buffaloes, cannot be obtained in any considerable quantity without much delay, while both fruit and vegetables are scarce and dear; there are no port charges, but the duties on British goods are considerable, being 25 per cent. on calicoes, and 6 per cent. on all other, except muskets and gunpowder, the duties on these being a dollar each for the former, and a dollar a cask for the latter. The duty, however, is only demanded for the goods that are actually sold, or intended to be left for sale; our ships, therefore, carry on little trade with Coepang itself, but proceed to some of the smaller ports along the coast, where there are no duties, and where the articles they require are in abundance.

Of the numerous possession once held by the Portuguese in the eastern seas, the little settlement of Dilli is the only one that now remains to them; and this appears to be retained chiefly as a place of banishment for those who commit political offences in the Portuguese settlements in India and China. The harbour of Dilli consists of a small bay, sheltered from the sea by a reef of rocks, dry at low water, extending across it, through which there are two channels for ships, the eastern one being rarely used. Ships can lie here in safety within a cable's length of the town; it is, therefore, the most convenient port on the north-west coast of Timor. The town, which is well laid out, and enclosed by a wall, is situated close to the sea upon a plain containing about twenty square miles. This plain is bounded upon the land side by a semi-circle of hills, rising around it like an amphitheatre, to the height of from 500 to 3,000 feet. During the rainy season this plain becomes a swamp, but as the wind during this season blows in from the sea, the noxious effects of its exhalations are not then much felt. When the south-east monsoon sets in, the hills at the back of the town prevent the circulation of air, and the intense heat of the sun, unmitigated by a breeze, causes the vapours to rise from the marshes, rendering this spot the most fatal to health in the Indian Archipelago, and, perhaps, in the world; at the same period the elevated plains in the interior, only fifteen to twenty miles distant, possess an excellent climate, yet the advantage of removing there during this season seems never to have suggested itself to the inhabitants. During this season ships frequenting the port generally anchor in the outer roads, but even here the crews are by no means free from liability and to attacks of fever. The Dilli fever is rarely fatal to patients who remove quickly to more salubrious climates, but Europeans, English especially, rarely survive the numerous relapses that occur if they remain in the settlement.

There are no professed merchants in Dilli, with the exception of two or three Chinese, but nearly every individual in the employ of government engages in

trade. The present governor does not, I believe, engage in commercial pursuits.

The port of Dilli possesses about a dozen small cutters and schooners, and, perhaps, double that number of prahus, which are employed in collecting the produce of the various little settlements along the coast, occasionally making trips with the same object to Ombay, Lomblem, Pantar, and other islands in the vicinity: as their number has been increasing fast of late years, it implies that the trade of Dilli is increasing also; these coasters do not visit the south-east side of the island, the produce of which is brought over-land to the settlements on the north-west coast.

The neighbourhood of Dilli presents a far greater portion of cultivated land than that of Coepang, many of the residents having extensive and well laid-out gardens in the outskirts of the town, producing all the fruits and vegetables known in this part of the world, the orange especially being very abundant and of excellent quality. Owing to the example and encouragement of the present governor, plantations of coffee are also springing up, there being already a surplus for exportation after the wants of the settlement have been supplied. The elevated plains of the interior produce articles for which the climate of the Archipelago generally is not well adapted, and the cultivation of which is rarely therefore attempted elsewhere. The most important of these is wheat, about 3,000 bushels of which are exported during some years to Java and Macassar, but from the demand being uncertain, to ensure a supply, it is necessary to order it from the growers during the previous season; by taking this precaution 10,000 bushels, or even more, might be obtained. The price at Dilli is about 4s. per bushel, but perhaps scarcely half this price is paid by the Dilli merchant to the native growers. In the samples of this wheat that came under my observation, the grains were not so plump as those of English wheat, and I suspect that the amount of farina they contain is also less in proportion to the husk; but the flour made from it is excellent. These plains are also celebrated for the onions they produce, which are exported in very large quantities to the neighbouring countries.

Timor would prove a valuable possession in the hands of an enterprising European nation. The soil is rich in the extreme, the height of the mountains ensures a plentiful supply of moisture, and the population is numerous and inured to labour; at present the articles exported from the island are produced or collected by the undirected efforts of the natives themselves.

Several natural productions exist in Timor, which, although at present unheeded, may at some future time be rendered available for commerce. I consider sago as being one of the most important, owing to the great increase that has lately taken place in its consumption in Europe; which is evident from the fact of 1,664 tons of pearl sago, with 746 tons of sago flour, having been exported from Singapore during the six months ending in July, 1841, chiefly for the English market; this article, which abounds in Timor, is very easily prepared for exportation in its raw state; the tree is cut down, then the pith is taken out and made up into bundles; in this state upwards of 14,000 tons of sago are annually imported at Singapore, where it is prepared by Chinese, who clear the farina from the fibres of the pith, when the flour is either made up for exportation in its natural state, or is made into pearl sago. All the raw sago manufactured at Singapore is brought from islands to the eastward, principally from Borneo; a considerable portion coming from places more than 1,000 miles distant. Now, it is evident that we should here possess great advantages in this particular, being situated in the close vicinity of countries producing sago of the best quality, and in the greatest abundance, and where the natives are well acquainted with the mode of preparation; neither would the manufacture of sago at Port Essington inflict the slightest injury on Singapore, since New Guinea, Timor, Crاماند, the Arru Islands, although producing the best sago in the Archipelago, are too far distant from Singapore for it to be carried there in its raw state with any hopes of profit.

Copper and gold ore are found in the mountains, but the mines are not worked. Rock salt exists in great abundance at Lurga, a town about 40 miles east of Dilli, at a short distance from the sea-shore; it is used for preserving meat, and the prahus that touch at Lurga lay in supplies of it; but although of excellent quality it is not an article of commerce, those who require it being permitted to take what they choose. Pearls and pearl-shell are found on the south-east coast, especially at Ama Noobang, called in the charts "The Bay of the Pearl Bank," and formed an article of import at Coepang until a military excursion of the Dutch to the gold mines of Ama Noobang, which the natives, from some superstitious notions, will not allow to be worked, gave rise to a war which put a stop to the trade.

When this settlement is further advanced, a market so little distant may tend to develop the dormant resources of this country, for, although the Dutch and Portuguese residents in Timor do not exert themselves in extending the commerce of the country they inhabit, they do not appear inclined to prevent others from doing so.

*(To be continued.)*

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#### LOSS OF HER MAJESTY'S STEAMER LIZARD.

LETTERS have been received at Portsmouth, conveying the intelligence of the total loss of Her Majesty's steamer Lizard, late on the night of the 24th, or early on the morning of the 25th of July, by her having been run down by the French war steamer, *Veloce*, about 25 miles to the eastward of Gibraltar, while on her passage thence to Barcelona. It appears from the accounts received, that the Lizard left Gibraltar on the evening of Monday, the 24th, with the wind blowing moderately from the southward, which freshened toward midnight, and the atmosphere became dark and clouded. Within a few minutes of the collision, the look-out on board the Lizard descried a steamer bearing down upon them, and they immediately made signals to, and hailed, the approaching vessel. The crew, however, on board the French steamer evidently could not have seen the signals which were made to her, or heard the hailing, as she kept on her course, and ran right into the Lizard, striking her with tremendous force nearly amidships, and close to her engine-room. The concussion was so great that many of the Lizard's crew, who were on deck, were thrown down by its violence, and those below hurried up on deck in their shirts, to ascertain what was amiss. It was immediately discovered that the vessel had sustained some very serious damage, as the water was pouring very rapidly into her, and, upon further examination, it was found that any exertions on the part of the crew to keep her afloat would be utterly useless, as she was then in a sinking state. Nevertheless, every possible means were resorted to by the officers and men to save the ship, until the water gained upon her so much, that it extinguished her fires, and her machinery, consequently, became powerless.

The French steamer did not sustain any serious damage, and seeing the condition of the Lizard, remained by her, in order to render any assistance in her power. When all hope of saving the Lizard was abandoned, the attention of her officers was directed to the preservation of the ship's company, which was happily accomplished, without the loss of a single life, by the boats of both ships conveying all hands in safety on board the *Veloce*. Scarcely had the last of the crew reached the French steamer, and within two hours from the time of the collision, when the Lizard sank.

The *Veloce* proceeded to Gibraltar with the crew of the Lizard, where they were received on board her Majesty's ship *Indus*, 72. Though the lives of the officers and ship's company of the Lizard were fortunately preserved, yet

every thing they possessed on board was lost, as were also the ship's stores, furniture, &c., many of the men having had great difficulty in saving themselves. The Lizard has been a considerable time in the Mediterranean, and was the sister ship to the Locust, both of which were employed as tenders between Gibraltar and Malta, and were considered two of the best and fastest vessels of their class in the service.

(*Extract from a Letter dated Gibraltar, July 27, 1843.*)

On the morning of Tuesday, the 25th of July, when about 20 miles from Carthagena, a light was reported on the larboard bow of the Lizard. The officer of the watch, as the positive orders of the Admiralty are when steamers meet each other, immediately put his helm a-port. The master coming up just at this moment inquired if the helm was "a-port?" and on being told that it was so, ordered it to be put "hard a-port;" but owing to the other vessel putting her helm a-starboard, the Lizard was struck by her on the larboard paddle-box a little before the main shaft, the shock of which was so violent as to throw the Lizard over on her starboard side, and carry away all the funnel stays but one. The officers and men below immediately rushed on deck, the engineer in charge, blew off the steam, and was proceeding to pump out, when the rush of water was so violent, and the Lizard was apparently sinking so rapidly, that the men were ordered to save themselves by climbing up the bowsprit rigging of the other vessel.

At the instant the collision took place, the Lizard's boats were ordered to be lowered, but the passage aft was obstructed by the bowsprit and bow of the other vessel, so that the only persons on the quarter-deck were the quarter-master, man at the wheel, and one or two of the officers who had come up from their cabins, who seeing that to all appearance all others had left, followed their example. Determined, however, not to abandon the Lizard whilst there was the most distant chance of saving her, the boats of the vessel (which proved to be the French men-of-war steamer *Veloce*, of 1,200 tons and 220 horse power,) were lowered, in which, some of the officers and men of the Lizard returned, and saved a sick boy and a passenger, with some two or three others who had been left behind in the first confusion. All hopes of saving the vessel were at once abandoned when we discovered that the water had already made so much head as to put out the fires, and to float the lower deck hatches, and continued pouring in with such violence as to render it most dangerous to remain on board. The last boat had scarcely left the Lizard when she sank head foremost. The night was misty, and the *Veloce's* lights being placed on her paddle-boxes, whereas the Lizard's were at her masthead, could not be seen until close to.

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#### THE BOTTLE CHART.

*Stockholm, 11th July, 1843.*

SIR.—Observing that your correspondent Mr. W. Walker, requires some more information on the subject of the *Defence's* topmast to *help* his belief, may I request you to inform him, that at the time mentioned, • • • it was usual to cut the name of the ship out on the head, as well as the heel of topmasts, also on other places; that the name "*Defence*," was accordingly not only found on the mast, but on the cross, and trussel-trees that remained; that both the *rogues' yarn* and the broad arrow were also found; and that every officer of the *Actæon* as well as myself, was convinced that it was the *Defence's* top-

\* We have erased a personal allusion from Sir John Ross's letter, which he will excuse us for doing: indeed, we take some blame for not having taken a similar liberty with his former on Commander Fishbourne's.

mast. Moreover, being in the fleet both before and after (and having entered the Navy in 1786, I was not a youngster,) it came to my personal knowledge that the Defence, after the loss of her top-mast, *did cut* away the rigging to clear the wreck,—and I must be allowed to differ with you in opinion, “that her getting a new topmast up in 12 hours and 20 minutes was a proof that she had *not* cut away the rigging to clear the wreck,” but, indeed, the very reverse, as, had the rigging been saved, it *ought*, and *would*, have been got up in half the time.

I make a very different conclusion from the log, of which you have been kind enough to give an extract. I have only to add that it never was my intention “to put an end to the bottle experiments,” but to the fallacious conclusions, or “misuse” of them, and I regret that my letters on the subject should have been misunderstood, however much I may differ with others on the subject of their application to currents in the ocean.

I am, &c.

To the Editor, &c.

JOHN ROSS.

SIR.—Sir John Ross commences his strictures on my letter, by asserting that much is irrelevant and much unintelligible to him. Some of this may arise from the circumstances of typhographical errors having been made; but as the context would suggest the correct reading to any of *manifestly* less information than Sir John, I shall offer no explanation.

Then, though Sir John begs to be excused from following me into that which is “irrelevant,” he yet cannot refrain from a sneering smile at the “gratuitous remark on the *weakness and wants of man*,” as if he revolted at the idea of any one confessing that in the acquirement of knowledge, we obtained a sovereignty over matter only in proportion as that knowledge was held in due subordination to God, in proportion as we saw in the works of God, “not a proof of creative wisdom, but an immediate utterance of that wisdom;” or, perhaps he meant to interdict any assertion that would question the insinuation contained in one of the Bridgewater Treatises, “that unbelief was often attendant upon the study of science.”

Sir John states that, my “observations respecting the loaded wood and bottle are too absurd to require a comment;” but does not say why he thinks them so. Where is the discussion here? “that *is to enable the readers to form a correct opinion* ;” perhaps, *these* observations are amongst the parts which he says “I confess are to me unintelligible.” If Sir John’s sense of the ludicrous is so great that things which are unintelligible, appear absurd to him, it does not follow that we can admit it as a general principle that, all things which are unintelligible are also absurd, therefore, my position remains unrefuted.

As for the assertion that the Defence’s topmast was 21 years in one place, it is Sir John’s and not mine. Therefore as a fact, I cannot dispute Sir John’s right to pronounce it “beyond my comprehension.” The “escape” of the bottles is a *discovery* of Sir John’s I have not laid claim to it, nor does “the chart” imply that *you* had made that discovery, but the contrary; for it was distinctly stated that the bottles were not supposed to have followed the direction of the lines; therefore, though the lines may pass over the latitude and longitude where the Defence’s topmast is said to have laid so long, the bottles may never have been in the same latitude and longitude.

Sir John says that “his conclusions on the facts relative to Icebergs are the very reverse of mine;” but as he offers no proofs of the correctness of his own conclusions, nor of the incorrectness of mine, I am at a loss to know why he felicitates himself “that the discussion? will best enable your readers to form correct opinions on the subject,” and doubtless he thinks favourable to his views. Sir John might have agreed with a greater authority on galvanic action than Sir Joseph Banks, (with Sir Humphrey Davy,) and still be far behind in knowledge of what later-day experiments have revealed on that subject.

Your note fully answers Sir John’s remarks on the Lagulhas currents.

I cannot descend after Sir John in his questionable attempts at wit, and will conclude by congratulating you on Sir John's "disclaiming any intention of condemning the practice" in question, as its withdrawal seems to arise from the absence of reasonable grounds of objection.

I do not find it stated anywhere in your publication that currents were the cause of the losses on the French coast, as is implied by Sir John; truly, as he says, they were partly attributable to the want of attention to the amount of local attraction, but most certainly it was not the sole cause, as Sir John seems to infer.

I am, &c.,

To the Editor, &c.

G. FISHBOURNE, Commander, R.N.

[We little expected while collecting our bottle papers into one focus in the shape of a small chart, and joining their points of arrival and departure by a straight line (to assist the eye in connecting those two points, and not as the absolute track of the bottle as we then stated,) that our labours would have been cavilled at, our pains looked on as all thrown away, and our chart pointed at as the "bottle fallacy." But so it was termed, and considered as "calculated to do serious injury by misleading the Navigator," by no less an authority than Sir John Ross.\* We certainly felt no small disappointment at this decision of an experienced seaman, and began to reconsider seriously, whether not only we had done wrong in making such a compilation, but after all whether the 150 seamen out of the 500 or more who had thrown bottles overboard were not all wrong, also that they had been indulging in an idle fallacious speculation, and would have done better to have kept their bottles to themselves. The objections brought against the whole system, are all formidably arranged in Sir John's letter, in our May number, and we are much indebted to our correspondents Mr. Walker and Commander Fishbourne, for their consideration of them. They at all events, with the 500 authors of the bottle papers, and ourselves dissent from those objections, and have elucidated from Sir John that, it is the "misuse" of the chart that he means, and which led him to pronounce it the "Bottle Fallacy". We beg to express our obligations to our correspondents for obtaining for us this *denouement*, and while we are satisfied that no intelligent seaman can possibly "misuse" our chart, or, mis-comprehend the purpose for which it is intended, we may proceed to add a few concluding remarks to Sir John Ross's objections.

With regard to the experiment off Dover, the bottle drifting to leeward against the weather tide shewed that it was carried by a surface current. How deep that current extended would depend on the strength of the wind. The bottles in the chart can have been drifted in a similar way, whatever current was running beneath them.

The case of the Defence's topmast remains on the authority of Sir John Ross, which goes to shew that the official log is imperfect, as the loss of the topmast is unrecorded in it, while that of her top-gallant-mast is so. The topmast however, appears to have been found in lat. 49° N. and long. 20°, while it was lost in lat. 48° 7' and long. 7° 6', having drifted to, or arrived circuitously at, a point above 500 miles to the westward. Now this is directly contrary to the surface drift of all the bottles; and it is also contrary to the drift of the masts of the Little Belt, and other vessels on record † as having drifted from the westward on to the coast of France. Thus the mast was not "stationary" by Sir John Ross's own shewing, but has somehow found its way 500 miles and more to the westward, against known precedent, and that too, after 21½ years attacks of barnacles, weed, &c., which we should have considered with the rigging, would have consigned it to some depth below the surface, where its own displacement would be equal to its weight.

The experiment of the full and empty bottles, and the ice off St. John's

\* See his letter p. 321.

† See Purdy's Atlantic Memoir.

correspond the former with the first experiment off Dover, and the latter with the casks of the William Torr in the chart; and we are content to let the cylinders alluded to by Sir John fall into the north-east current which is known to run off Cape Farewell, although the William Torr's casks all chose to take the common set from the poles towards the Equator. All this we are content to concede to Sir John Ross, and along with it the full benefit of his "twelve and a half years' experience of "cruising in the English Channel;" and his having anchored in all weathers on the French Coast, and "often exactly off where the Conqueror was lost," which experience has shewn him "that the determination of a current setting on that coast, by empty bottles having drifted on it is a fallacy."

But along with our concessions, and our respect for Sir John, we have a great regard for our own bottles! and, if they do happen to shew a tendency for drifting on to the French coast, in obedience to winds and currents, they only conform to received opinions formed from experience also. Here are two of these opinions from old seamen, that were expressed in the *Shipping Gazette* at the time of the catastrophe, and which are well worthy of Sir John's attention. The first who signs himself "An Old Sailor" says "There is another effect which may if not very carefully attended to, lead the mariner astray in that part of the channel; and this effect it strikes me has operated very powerfully in producing the destruction of the Reliance and Conqueror, viz., the tide which sets on the flood (*according to the directions*) S.E.b.E. between the Isle of Wight and Beachy Head, and east between the Head and Dungeness, and its influence would tend to place a ship coming up channel in a position to run ashore, near where the late losses occurred: *for she would be set to the Southward and Eastward*, and thus be nearer the French coast than imagined, and further up channel; so that by continuing the course held by ships to the westward of the Ness, she would fall in with the land, about the place where the Reliance and the Conqueror went ashore, and in thick weather this would be more likely to happen undiscovered." So says the "Old Sailor," and Mr. Tucker who signs himself "A Master Mariner," agrees tolerably well with him. He says, addressing himself to the Editor of the same journal, "I beg to inform you, from minute observations in coming up, and going down, the English Channel, that vessels are liable to be led astray by the setting of the tide from the Owers to Beachy Head. From three or four leagues distance off the Owers, the course is E.b.S. or more southerly. I have upon several occasions taken the first of the flood tide, from the Isle of Wight and the elbow of the Owers, and steered the above course with strict attention to it. By the time I have considered myself in sight of the light, have seen nothing of it, and have kept running on the same course till I have thought myself abreast of the light. Upon taking a cast of the lead find *I have been considerably set to the southward*, consequently have had to haul in *due north for several hours*, before making the light, which has induced me upon latter occasions to watch the set of the tide from thence by bearings of the land, the lead, and observations."

"As regards this part of the channel, instead of the flood tide setting S.E.b.E. and the ebb N.W.b.W., I have found the flood setting S.S.E. and the ebb N.N.W., spring tides, at the rate of three and four knots per hour, in consequence of which vessels are completely led astray."

It is clear that the experience of these two seamen differs from that of Sir John Ross, who has found "no indraught" on the coast alluded to. The southerly set above alluded to, with the concurring effects of local attraction, sufficiently accounts for the Reliance finding herself where she was. With regard to "indraught" it is but another name for current, and the accounts published of the loss of the Reliance, testify that as this vessel broke up, "the fragments, which covered the sea around, were all evidently borne towards the land by the current." How they were found strewn along the shore, is too well known; what carried them there but the current, or that indraught which Sir John Ross has not found. Having in a former page fully treated

on this subject, we should not now have alluded to it, but that Sir John's attack on our bottles has led us to do so.

But, to return to our subject, Sir John does not "mean to say that the practice of throwing overboard bottles is of no use," and allows it might be of service, in telling "the fate of the President." We venture to say that, there are seamen, who can make a better use of it, even than of that nature, but as he has sufficiently warned them from making a "misuse of it," we shall be satisfied if they find it of that use which was intended.

The general tendency of the surface water of the *North Atlantic* to run to the eastward, in obedience to the prevailing wind, it is well known, has often formed the subject of remark, and is distinctly apparent on the *Bottle Chart*, which was never intended to shew the currents of that ocean, but the general effect of the surface drift. We shall continue to add to it as we receive further accounts of bottles from correspondents, without that fear of such information be *missed*, which seems to be entertained by Sir John Ross.

With regard to the replacing of the topmasts, on which subject Sir John differs from us, although it has nothing to do with the question, it is as well to recollect that the log says, *two topmasts* were got up, and it is equally important to remember that the present methodical manner of *stowing the booms* in an iron frame (the invention of Commander J. Anderson, the late first-lieutenant of the *Howe*.) is an advantage not known in the navy fifty years ago. By this frame both topmasts can be got out without *casting the booms adrift*, or, indeed without unstowing or touching a spar belonging to them; which we apprehend was not the case on board the *Defence*.

But these points are mere matter of opinion, and we shall not misuse our limited space in discussing them further, especially as Sir John Ross has himself admitted that the bottle experiments "may be interesting to those concerned, as well as amusing to all;" which is just what we intended, although they cannot be expected to conform to the precedent which he has laid down of a drift to the westward near the mouth of the English Channel.

We have added the foregoing concluding letters from Commander Fishbourne and Sir John on the subject.]

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#### PAYNE'S WOOD PATENT.

*House of Commons*.—Mr. D. Barclay, member for Sunderland, put a question to the first Commissioner of Woods and Forests, with respect to Charles Payne's patent process for preserving wood from dry-rot, and for preventing the spread of fire: these two properties he considered would render the process of national importance; but thinking it particularly applicable for ship-building, he was desirous to place it before his constituents, with the opinion of the government, as it appeared to have been adopted by them; to which the Earl of Lincoln replied, that the chemist of the Museum of Economic Geology had minutely investigated Mr. Payne's process, and reported upon it, that it had been adopted in the Claremont stables, and Regent-park. Time was required to place its effects beyond a doubt, but that his own opinion was favorable. The Admiralty had applied to the Commissioners of Woods and Forests to know the result of the experiments, when the same answer had been returned. The noble earl added, he had no objection to lay the report upon the table.—Report ordered accordingly.—*Morning Chronicle*.



## THE VICTORIA AND ALBERT.

*Portsmouth, Aug. 19.*—The royal steam yacht, Capt. Lord Adolphus Fitzclarence, will be here next Tuesday. She is now all ataut, with her sails bent, and is quite ready for sea. The specimens of paintings are said to be exceedingly neat and elegant, and are different tints of drab, with a beautiful chaste moulding for cornice and skirting board. The furniture, which has been transferred from the Royal George yacht, has undergone a complete renovation, and is of beautiful Spanish mahogany, but exceedingly plain and neat, consisting of a library of books, wardrobes, state beds, numerous tables, sofas adapted as beds for Her Majesty's attendants, and three others for the Prince of Wales and the two Princesses, who will accompany their Royal Parents on their marine excursions during the autumn.

Between seventy and eighty tons of iron ballast have been put into her, in order to give her a deeper immersion and stability in the water. The engines and boilers are exceedingly heavy, and from being placed in a contracted space, the centre of gravity of the weight is unusually high. The heaviness of the machinery, and the situation of the centre of gravity of the collective weight was only known to the Engineer. It was contemplated that the vessel should only have twelve feet immersion or draft of water to enable her to go into shallow harbours; and she was first tried at twelve feet, when it was discovered that, owing to the superincumbent weights such a draft of water was incompatible with a sufficient degree of stability. Ballast was then put into her equal to one foot more immersion, which has much improved her steadiness and stability; and, as she has still three or four feet less hold of the water than other vessels of her size and power, more weight can at any time be added, without inconvenience to produce the greatest degree of stability at the sacrifice only of additional draft of water, which can hereafter be reduced at pleasure, by lessening the weights of the boilers and wheels, and lowering the centre of gravity. She will probably be stationed in Shoreham harbour for Her Majesty's use while the court remain at Brighton.

The Black Eagle is getting ready to accompany the Royal squadron, she has been considerably lengthened, and has engines of 200-horse power by Penn and Co., of improved make.

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 LOSS OF THE PEGASUS STEAMER.

ANOTHER appalling steam-boat disaster has taken place, near the spot where the Forfarshire was wrecked a few years ago, and where the late Grace Darling so heroically distinguished herself by saving five lives at the imminent risk of her own. By the present disastrous occurrence no fewer than fifty human beings have been suddenly deprived of life. The Pegasus, which has plied between Leith and Hull for several years, left Leith harbour on Wednesday afternoon. She sailed with sixteen cabin passengers booked, and possibly one or two more may have gone on board without booking, as is the case on the sailing of coasting steamers. She had also twenty steerage passengers, and a crew of a dozen, in all forty-eight or forty-nine at the lowest computation. The vessel sped on her way till midnight; just when the watch was changed, the Captain being on the bridge, taking a look about him before he turned in. She struck on a sunken

rock inside the Ferne Islands, near what is called the Golden Island, (Holy Island the ancient Lindisfarne) forms a continuation of the main land of Northumberland at ebb of tide, and becomes insulated at flow.

The rock on which the Pegasus is supposed to have been wrecked, is called the Goldstone—a well known object, situated about two and half miles east, or seaward from Holy Island. It is seldom or never left uncovered by the tide; is well known to, and anxiously avoided by, our coasting navigators in working through the Fairway, or channel between the Ferne group and the main land—a channel generally preferred to the open sea by masters of vessels as a shorter cut; but never so preferred (especially at night) without incurring a risk, which infinitely counterbalances any saving of time thus acquired. Her head was turned towards the shore, but she did not proceed many hundred yards when the water, rushing in, extinguished the fires, and almost immediately the vessel sunk. Finding the vessel sinking rapidly, there was a rush to the boats, which were swamped.

The Martello steamer, belonging to the same company, on her voyage from Hull, descried the wreck about five o'clock on Thursday morning. The first object which attracted the attention of Captain Blackwood was a boat with a man in it, drifting with the tide, and soon after a body floated past. This made him aware that some accident had occurred in the vicinity. On coming up to the boat, which was almost full of water, the mate of the Pegasus was found in it, nearly insensible from cold and exhaustion. A person of the name of Baillie, a passenger returning to Hull, was taken from a sort of a hatch, on which he was afloat; a young man of the name of Hillyard, another passenger from the neighbourhood of Hull, and one of the crew, were discovered holding on the mast—the vessel had sunk in about six fathoms water. Six persons in all were saved—namely, two passengers (Hillyard and Baillie), the mate, and three of the crew, which, we believe, amounted in all to fifteen. Captain Blackwood remained in the vicinity of the scene of disaster for several hours, and picked up six dead bodies, which were brought to Leigh in the Martello. Three of these were females. One appeared a middle-aged married woman, apparently pregnant; she was attired in a dark checked gingham dress, a Leghorn bonnet, and black hard-spun woollen mantle. Another was a Miss Barton, who had in her arms, when found, a child a few years old. The third seemed considerably advanced in life, and was nearly undressed. The other bodies were those of the second engineer or fireman, a very stout man, whose forehead bore the mark of a violent contusion; a lad, apparently 12 or 14 years of age, dressed in a black vest and trousers, and a rough brown Petersham surtout; and the third was the child found in the arms of Miss Barton. These bodies, on arrival at Leigh, were placed in shells and conveyed to South Leigh church till claimed by their relatives. Among the victims was Mr. Elton, late of the Royal Theatre. Captain Brown had great experience in the navigation of the coast, having sailed many years as commander of one of the Leith and London smacks. He was considered an excellent seaman.

From all we can learn there must have been about sixty persons on board, including the crew, and only six of them have been saved. The vessel now lies in the Fairway between the Ferne Islands and the English coast, about six feet of her mast appearing above water at half tide. It would seem the accident occurred nearly about the period of ebb. Mr. Pringle, a gentleman in the employment of the company, has been despatched to take charge of the bodies that may be recovered. It may not be improper to state, that most of the facts have been gleaned from parties officially connected with the company, who seem desirous of affording every information upon this unfortunate subject.

The ill-fated vessel, it appears, was built at Glasgow, in the year 1835, and was a somewhat noble-looking steamer; she was 130 tons burthen, old measurement, and had two engines of 40-horse power, and was commanded by a most experienced man, Captain Brown, of Hull. Her crew and engineers consisted of about fifteen individuals. She was the property of the Hull and

Leith Steam-packet Company, who had bought her out of the Newcastle trade.

MR. EDITOR.—Whenever we hear of the loss of a ship or of a steamer, it generally happens that attempts to sooth the regret, and excited feelings of the public, accompany the accounts of the melancholy event.

The Captain whether he happens to sink or swim, and the owner whether he loses or not, are seldom taxed with blame; in fact, it usually appears that "Nobody" is to blame. Who this "Nobody" is, has long been a mystery! "De mortuis, &c.," is a proverb of old standing, and one which is generally revered—but are not the living as well as the dead entitled to respect?

When the mind is harrowed up by the details of some awful shipwreck amid the roar of the breakers, and the howling of the terrific tempest, we lose all our feelings of indignation—on the want of foresight, caution, and skill, which, had they been exercised with due circumspection, might have averted calamity, in the generous emotions of sympathy and sorrow for human suffering; but in our cooler moments, we are unwilling to allow the spontaneous exercise of the compassion of our nature, to blind us entirely against the faults and errors of those whose business it is, and ever should be, to prevent as far as human care and precaution can prevent—such distressing events from occurring.

But under what very, different circumstances was the Pegasus lost? Here we learn that this old established steamer, with an experienced Commander, was wrecked upon a rock, the position of which was well known, and during fine weather and a smooth sea, and that out of fifty-six persons, only five or six were saved, and that too by their own individual exertion and fortitude!

The distressing circumstance is remarkable, and deplorable, but cannot create wonder, since it appears that she was provided with only two boats—common boats, and these not sufficiently large to carry half the number of persons that were on board! Is "anybody" to blame?

The fact would seem to be that the desire of profit is so pressing, as to absorb all other considerations, for we find in almost all cases that very slender means had been provided to insure the safety of the passengers or crews, and this will continue until some legislative measure binds down the owners to furnish efficient means for the security of life.

In my humble opinion, if the following plans were adopted, there would at least be a greater chance, as far as human means are available, of saving the lives of the passengers and crews of such vessels.

1st. All steamers should be formed into compartments, the divisions water tight.

2nd. A certain space in the bow, and in the run, should be closed in and rendered air and water tight.

3rd. All the boats should be safety boats, and every convertible article should be rendered capable of being used as a float or life-buoy.

4th. Steamers are built with a flush deck—if, however, they were provided with a top-gallant forecastle, as it is called, and a small poop abaft, both fitted so as to be easily separated from the bulwarks, when necessary, they would serve with little additional preparation as rafts.

It would be saying too much, perhaps, to assert that a steamer ought not to be lost, as so much depends on the skill and abilities of the Commander; but, there is no question that, with the advantages she possesses over a sailing vessel, she has it much more in her power to avoid being placed in a dangerous situation than a ship, whilst her machinery is perfect, and her fuel unexpended.

It would appear that very little was to be gained by the ill-fated steamer passing through the Fairway, where the fatal Goldstone is situated, the passage outside the Farne Islands being only a little longer and clear of dangers.

X.

## LOSS OF THE COLUMBIA STEAMER.

It is with deep regret we record the loss of the Columbia steamer, which was unfortunately wrecked on the rocks of Seal Island, in a dense fog, on Sunday, the 2nd of July. The Margaret, a spare steam vessel belonging to the Boston and Halifax Royal Mail Steam Packet Company, arrived at Liverpool on Sunday evening, at half-past nine o'clock, under command of Captain Shannon (late of the Columbia), bringing the mails and the greater part of the passengers. At the time of the Columbia's departure for Boston, the wind was from the southward with moderate breezes and thick weather. At 8h. p.m. of that day the fog became dense with a calm sea, and so continued. The ship proceeded on her voyage without any material occurrence until the 2nd when she suddenly struck upon a rock or ledge at a quarter past 1 p.m. At the time when she struck she was proceeding at the rate of about ten knots an hour; the sea was perfectly calm and the fog very thick. There was the usual watch on deck and look-out in all parts of her. There was not the slightest appearance or intimation of danger one moment before she struck. She ran upon the ledge and settled down to about midships. The captain and crew when she first struck, considered she had run down a fishing boat in the Bay of Fundy, no one had any idea that she was near any land, or liable to any danger from rocks or ledges.

After she had grounded, it was ascertained that she was ahead of the pilot's reckoning, owing to the extraordinary indraught of the currents and tides into the Bay of Fundy. The fishermen who boarded the ship on her taking the ground, all spoke with astonishment of the extraordinary indraught then prevailing, and all who knew the navigation declared that for some days previously it had been greater than for any time for many years. Immediately the ship struck, signal guns were fired, which after some time were answered from the shore, and at about four o'clock p.m. a boat boarded them from the Seal Island. It was then ascertained that the rock, or ledge, on which the ship had struck was called "The Devil's Limb," and was situate about a mile and a quarter from the shore, and nearly the same distance from the lighthouse. The distance was about 150 miles from Halifax, and it was about high water when she first struck. Instantly on the vessel striking, the chain cables were hauled aft, the coals thrown overboard, and every exertion was made to lighten the ship. An anchor was carried out in order, if possible, to get her off, but all was in vain. She was firmly fixed on the ledge about mid-ships, and from soundings it was ascertained that at this time there was upwards of 27 feet of water at her stern.

At about four p.m. the passengers were, with their baggage, landed on the Seal Island. For some time after the ship struck, she was found not to make more water than could be easily got rid of by two pumps, but on the day following a gale sprung up with a heavy sea, which caused her to back upon the rock and bilged her, and the water then flowed into her and out of her with the tide. On the 3rd inst. the packet brig Acadian, on her passage from Boston to Halifax, spoke the wreck, and information was forwarded on by her to the agents of the company at Halifax, who instantly despatched the Margaret to convey the passengers and mails. On Tuesday morning, the 6th, the Margaret arrived at the wreck, the agent of the company being on board, and immediately took all on board, with the exception of some of the officers, pilot, and crew of the Columbia, who were left with the wreck for the purpose of saving any of the materials. When the captain left her she was lying bilged on the rock, a complete wreck, and without the most remote prospect of her being moved. The Margaret left Halifax on the 9th inst. at half-past five, and has made the voyage in 13 days, stopping at Cove of Cork one day for a further supply of coals. She has brought upwards of sixty passengers.

## THE SELECT COMMITTEE ON SHIPWRECKS.

On Monday the select committee appointed to enquire into the shipwreck of British vessels, and the means of preserving the lives and property of shipwrecked persons, issued their first report, in conformity with the order of the House of Commons. The report enters very fully into those points which more especially relate to the security of British shipping, and the committee, upon which, amongst others, are the names of Sir C. Napier, Admiral Dundas, Sir H. Douglas, Captain Pechell, Captain Plumridge, Captain Fitzroy, Captain Gordon, Mr. Gladstone, and Mr. Baring, report that the loss of British ships during 1841, 1842, and 1843, as compared with those lost in 1836, 1837, and 1838, so far as could be ascertained from the returns registered at Lloyd's, has been less during the former than during the latter period, more especially as regards timber-laden ships and the lives of the crews employed. There has been a reduction in the loss of ships in each year of from 56 to 23, and a saving of 200 lives of seamen. In only one instance do they find a recurrence of those horrible cases which occurred in previous years, where the crews of ships were reduced to the necessity of existing on the remains of their comrades. The committee consider that no ship is sea worthy when her deck is lumbered with cargo, and recommend an extension of the act of Parliament prohibiting the future deck-loading of ships. The report recommends the propriety of an enquiry being instituted by Government as to the necessity of introducing an act for placing all steam vessels, carrying passengers, under the superintendence of Government inspectors. The committee lay considerable stress on the necessity for appointing competent masters, mates, and pilots, for constructing efficient light-houses and beacons, and carefully revising the charts now in use. They recommend the immediate attention of Government to the construction of harbours of refuge, but offer no decided opinion as to the use of the floating breakwater, though they suggest that such national works, when constructed, should possess the advantage of having powerful batteries.—*Times*.

## NAUTICAL NOTICES.

**FALSTERBO LIGHT.**—We perceive by an advertisement that the alterations alluded to in previous notices of 15th of April, and 4th of October of last year, have been carried into effect in this light, which since the 24th of June last became a fixed light. It also appears that a light vessel with two lights will be stationed at the outer extreme of the reef off Falsterbo Point, an addition to the lights of that coast, which will contribute greatly to the security of Baltic Navigation.

**CALMAR SOUND.**—The Royal Swedish Administration, has notified that four buoys will be placed in the Calmar Sound, at the spot where formerly stakes were driven, viz., Nycket, a red buoy, E.N.E. 1,300 ells of the easterly Swinoland Point; at Oswald, a white buoy, about 1,300 ells west of the northerly end of the Ship or Wharf Holmes; near the Torno Cliff a white buoy, about 1,059 ells, S.S.E.  $\frac{1}{4}$  E. of the town rampart corner; near the Castle Ground (Skansgrund) a red buoy, 350 ells E.  $\frac{1}{4}$  S. of the south-west rampart corner of Grimskar. On all those buoys iron poles with names are attached and so painted, that where before a stake with a broom was placed, the buoys are red, and where there was only a simple stake, white.

The before mentioned bearings are by compass. The stakes, if no contrary orders are given, will, at the close of the navigation, be every year removed, and in the spring be replaced.

**DOCK COMMITTEE.**—At the meeting on Thursday there were present Messrs. Sands, (chairman,) Boyden, Bulley, Holmes, Evans, Chilton, Holt, Smith, W. R. Sandbach, Tobin, Bold, Ripley, Moore, and Middleton. The Marine Surveyor reported that, in conjunction with his assistant, Mr. Jones of the royal navy, he sounded the bar of the Victoria Channel on the evening of the 11th, and morning of the 12th inst., being tides of seventeen feet two inches by Holden's Liverpool Tide Table. The examination indicated a depth of thirteen feet in the morning, and twelve in the evening, increasing from six to twelve inches in depth towards the western side. The weather was calm, and the water perfectly smooth on both these experimental occasions. The Liver buoy tender was anchored on the shallowest part of the bar during the whole period. The City of London derry steamer, a vessel drawing 12 feet of water also passed through the channel at dead low water on the 12th; and also No. 1 pilot-boat, and several other vessels, at low water on the evening of the 11th. The depth obtained at low water, from corresponding tides in 1839, was twelve feet, as deduced from a mean of many observations made at that period. From a tide register, kept at the Liverpool Docks, it appears the tide of the 11th inst. was eight feet below the sill at the Old Dock, and that of the 12th seven feet four inches. A copy of the above was ordered to be sent to Capt. Bevis, agent to the Mail Packets, for the information of the officer conducting her Majesty's Mail Packet Service here. The committee then proceeded to the consideration of financial matters, and soon afterwards adjourned.—*The Liverpool Times*.

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#### NEW BOOKS.

**THE CLOSING EVENTS OF THE CAMPAIGN IN CHINA; the operations in the Yang-tse-Kiang.**—By Capt. Granville G. Loch, R.N.—London: Murray, 1842.

(Continued from p. 571.)

“Malcolm met the delegates on board the *Blonde*, this afternoon, for the last time. He told them to inform the Imperial Commissioners that Sir Henry would be ready for a conference to-morrow, on board the *Cornwallis*, and that the day after he would return their visit within the walls of Nanking. To this latter arrangement they, in evident trepidation, instantly objected, alleging as an excuse, that they could not depend on the forbearance of the Tartar troops, all of whom were exasperated against us for former defeats, and might do us harm; that if, on the other hand, we were accompanied by a strong guard, say 1000 men, an ebullition of feeling might excite a collision, and thereby effectually destroy the present promising appearance of a peaceful and lasting arrangement of all our difficulties; so this question is left for the present in *statu quo*.

“19th, the auspicious day has at last arrived when, as the Chinese say, “the powerful of nations are to meet and exchange the fiery eye of vindictiveness for the smile of kindness, and the red hand of hostility for the white wand of amity.

“Between 11 and 12 A.M. the quarter-deck of the flag-ship presented an unusual glitter; gay uniforms of blue and scarlet in their first freshness, after months of veiled brightness, had superseded the honest habiliments of service dye. A captain's guard was under arms, life lines on the yards, and the little *Medusa* steamer off the canal—all to do honour to our expected visitors. Three guns, the Chinese royal salute, were to be fired upon the embarkation of the Commissioners from the wharf, and at the mouth of the canal Commander Richards, of the *Cornwallis* was stationed to take them from their unwieldy conveyance to the *Medusa*.

“The guns at last announced the long expected moment, and we could some-

times see, between the trees and houses, banners, streamers, and silk umbrellas waving about as the boat floated down the stream.

Getting into the steamer, shod in their thick Tartan boots, was to them a service of danger, and which caused considerable delay. At last they paddled up and came alongside, from the steamer in the Admiral's barge.

"The yards were manned, guard presented arms, drums beat, band played, and the Plenipotentiary, between the two Commanders-in-chief, received Ke-Ying, Elipoo, and Neu-King, the viceroy of the two Yeing provinces, and commander-in-chief of all their armies.

"A number of subordinate officers and attendants, besides three or four mandarins whom we knew, from having been brought in contact with them at Chusan and Ningpo, followed in their wake. They presented in their flowing robes a lively contrast to our close fitting, and (I think) ungraceful dress.

"After a few of us had been presented, the authorities entered the Admiral's cabin, and were ushered to a large sofa, placed to face forwards, so that they might see every body and every thing. Sir Henry sat on the left, the Chinese seat of honour, the General on the right, and the Admiral as the host, I think, next to him. Tea, coffee, wine, sweetmeats, and cherry brandy were handed round, the last of which they greatly appreciated.

"As this was merely intended to be a visit of ceremony, no questions relative to future arrangements were mooted.

"Ke-Ying evinced considerable interest in all he saw, although he never trespassed on good breeding, or forgot what was due to his dignity, by asking questions. Elipoo, who was upwards of eighty, appeared fatigued, and his countenance bore a sad expression of mental suffering, which is not to be wondered at, poor old man, considering the many misfortunes and heavy displeasures of his Imperial master, that had arisen to him out of his intercourse with us. Neu-King sat without showing any outward or visible sign, beyond an occasional smack of satisfaction after each glass of cherry brandy.

"The General was as loquacious as on the first occasion that I saw him, and pretended a great interest in, and examined with a critical inquisitiveness, every thing appertaining to the art of war. The band elicited very great attention. The attendants outside were not so well mannered as their masters; they became troublesome and familiar, after their short-lived bashfulness had worn off.

"The Commissioners, at the Admiral's invitation, walked round the various decks; and I was somewhat amused to see the men, to make their messes look the smarter, had decorated the shelves with small jos images and a few other articles of choice taste that they had picked up in their perambulations. Well might the Chinese have exclaimed with Samson

"O indignity! O blot  
To honour and religion."

"But they acted the wise part of "*laissez faire, laissez passer*;" and even their noisy train were by humbled vanity recalled to a temporary sense of decorum.

"No very marked interest was shewn for anything but the music, which surprised me the more, as both Sir John Barrow, and Lord Jocelyn particularly mention their apathy and want of taste for harmony.

"They left the ship as they came, and highly pleased at their reception.

"22nd. The day appointed to return the visit of the Commissioners, who were to receive us in the temple where we first met their delegates.

"At 10h. a.m. about forty boats shoved off from different ships, full of officers of both services, all dressed in their full uniforms.

"The Admiral's barge containing the Plenipotentiary and the two Commanders-in-chief took the lead. The others followed as they best could. Vast numbers of Chinese lined the banks of the canal, and accompanied us in their punts. We landed at a wooden jetty thrown out for the purpose, and passed under a bamboo gate decorated with a few red flags.

"When our authorities stepped on shore three guns were fired, to announce

their arrival to the Commissioners; they then entered sedan chairs, and were escorted by subordinate mandarins to the temple. About a dozen other chairs were in attendance, and to them a charge was made by officers of all ranks, resembling in dignity and activity that which the members of the House of Commons occasionally make into the House of Lords, when they are summoned there to hear an address from the throne. The younger, and consequently the junior officers gained the day.

"The Commissioners received Sir Henry Pottinger and the Commanders-in-chief at the entrance of the court-yard, and led them between ranks of unarmed Chinese soldiers, clothed in new uniform, while the Plenipotentiary's guard of honour, formed of the grenadier company of the 18th Royal Irish, and drawn up in front, presented arms. The band of the same regiment struck up "Garryowen," while the penny-trumpets and hurdy-gurdys of the Chinese, were in full force; but the drummer with the big drum, who had an ear for music, took care we should not hear a single note of the tune they played.

"The large apartments were prepared, and tables spread with piles of sweetmeats, chairs placed in the form of a horse-shoe stood round the tables, while the centre ones, occupied by our chiefs were elevated above the others. Our vanity prompted us to think that the Chinese could not feel much humiliation at having been conquered by the description of men they this day saw before them; there were upwards of one hundred and thirty officers, besides the guard, which was worthy of the distinguished regiment it belonged to.

"This visit passed off in the same manner, as the first: namely in drinking tea, asking questions, and making complimentary speeches.

"The rooms were hung with festoons of embroidered cloth, round horn lanterns, as large as half hogsheads, made of one entire piece\* prettily painted, and decorated with strings of beads, and hung from the roof. The floors were carpeted with red druggat, and the tables and chairs covered with scarlet cloth, richly embroidered with silk.

"The numerous mandarins were plainly dressed, which caused an enquiry on the part of the Envoy, and apologies from the Commissioners, who asserted that the rapid dance we had led them prevented their carrying an extensive wardrobe. This could not have been true, as they travelled by water, and brought with them large establishments.

"23rd. The Chinese are gaining confidence, and abundance of bullocks have been, by request, sent to the fleet; they are fatter, and apparently of a finer breed, than those we ourselves have at different times procured.

"26th. This was the day fixed upon for the interview between Sir Henry Pottinger and the Commissioners, to discuss and finally arrange the conditions of the treaty.

"The Plenipotentiary and his suite, consisting of Major Malcolm, Dr. Woosnam, Messrs. Morrison, Gutzlaff, and Thom, (the three interpreters,) besides Mr. Eastwick, (a friend of Sir Henry's,) and myself, proceeded in the Admiral's barge up the canal to the appointed landing place, where we were met by a detachment of Tartar cavalry, and a number of mandarins of rank. Horses provided by the artillery were in waiting, as also the Envoy's guard of honour.

"Sir Henry landed under a salute of three guns, and a band struck up which set one's teeth on edge. The horse artillery admirably mounted upon Arabs, preceded the Plenipotentiary, while silk gowns and shaggy ponies offered a striking contrast to our fine fellows. We entered the first gate we came to, opening to the north-west, and passed for about a mile up a long street leading to the southward, after which we turned to the left, and, lastly, to the right into the street where the large government building appropriated to the interview, was plainly observable from the numerous flags and mandarins in front of it.

\* The separate pieces of horn are consolidated by the action of heat.



“Without dismounting, Sir Henry was conducted up the long enclosed entrance of the outer court, and up the steps of the second (a royal honour) to the door of the third, where the Imperial Commissioners were standing, surrounded by their high officers and functionaries. We were received with much dignified courtesy, and conducted through several rooms and passages of this immense house, into the chamber of audience, a square apartment, partitioned by a horseshoe railing, loaded with sweetmeats of every description. The tables and chairs were covered with crimson drugget. The bottom of this room opened into a court which was canopied by a chequered silk awning.

“A more tolerable band than we had yet heard commenced, as we sat down, a tune resembling a pibroch, and continued to play throughout the repast. Young white-buttoned mandarins handed round tea, hot wine, and sweatmeats, while a conversation upon general subjects was maintained between the Commissioners and Sir Henry, through the medium of the interpreters.

“Numerous patties of minced meat, pork, arrow root, vermicelli soup, with meat in it, pig’s ear soup, and other strange dishes, were served in succession, in small china and silver basins, and in proportion to our various capabilities in making these messes disappear, we seemed to rise in the estimation of the beholders. But human nature could not support this ordeal long, and, as a *coup de grace*, Ke-Ying insisted upon Sir Henry opening his mouth while he with great dexterity shot into it several immense sugar plums. I shall never forget Sir Henry’s face of determined resignation, after he found remonstrances were of no avail; nor the figure of Ke-Ying, as he stood planted before him, in the attitude of a short-sighted old lady threading a needle, poisoning the *bonne bouche* between his finger preparatory to his successful throw.

“After this the tables were cleared and business commenced.

“The demands, written in both languages, were again read; and, with the exception at first of a slight demur at our detention of Chusan as a guarantee until the full payment of the 21,000,000 of dollars, and a wish to exclude Foo-choo-foo from free trade, were unanimously agreed to. The Commissioners were made perfectly to understand that the final settlement of the tariff, residence of English families in the various towns and their vicinities, the future management of commerce through our own consuls, and the entire abolition of the Hong monopoly, were points only delayed in consequence of the time it would require to discuss their minutæ in detail, but that they were of such vital importance that, if when they were brought forward, any procrastination or refusal should occur, it would effectually interrupt the amity so auspiciously commenced between the two empires.

“None of the critical examination into phrases or expressions, so keenly canvassed and suspiciously viewed by European diplomatists, occupied a moment of their attention. All their anxiety, which was too powerful to be concealed, was centred upon the one main object, our immediate departure; in consequence, almost in the same breath with their assent, they requested the Plenipotentiary to remove the ships away from the canals, and to send them down to the river. To this the Envoy replied that, upon the treaty being signed, the blockade would be removed, and when the last dollar of the first instalment of six millions was paid, every town and fort within the Yang-tse-Kiang would be delivered back into their hands.

“Sir Henry then remarked, that as every difference was satisfactorily arranged, he was anxious to say a few words on a subject, the great cause that produced the disturbances which led to the war—he meant the trade in opium. When this was translated, they unanimously declined entering upon the subject, until Sir Henry assured them he did not wish to speak of it but as a topic of private conversation. They then evinced much interest and eagerly requested to know why we would not act fairly towards them, by prohibiting the growth of the poppy in our dominions, and thus effectually stop a traffic so pernicious to the human race. This, he said, in consistency with our constitutional laws, could not be done; and he added, that even if England chose to exercise so

arbitrary a power over the tillers of the soil, it would not check the evil so far as they (the Chinese) were concerned, while the cancer remained uneradicated among themselves, but that it would merely throw the market into other hands.

“ ‘It, in fact,’ he said, ‘rests entirely with yourselves. If your people are virtuous, they will desist from the evil practice; and if your officers are incorruptible, and obey their orders, no opium can enter your country. The discouragement of the growth of the poppy in our territories, rests principally with you, for nearly the entire produce cultivated in India travels east to China; if, however, the habit has become a confirmed vice, and you feel convinced that your power is inadequate to stay its indulgence, you may rest assured your people will procure the drug in spite of every enactment; would it not, therefore be better at once to legalise its importation, and, by thus securing the co-operation of the rich, and of your authorities, from whom it would thus, no longer be debarred, thereby greatly limit the facilities which now exist for smuggling.’

“ They owned the plausibility of the argument, but expressed themselves persuaded that, their Imperial Master would never listen to a word upon the subject.

“ To convince them that what he said was not introduced from any sinister wish, to gain an end more advantageous to ourselves, he drew a rapid sketch of England's rise and progress from a barbarous state to a degree of wealth, and civilization unparalleled in the history of the world, which rapid rise was principally attributable to benign and liberal laws, aided by commerce, which conferred power and consequence. He, then, casually mentioned instances of government having failed to attain their objects by endeavouring to exclude any particular article of popular desire; tobacco was one of those he alluded to; and now that it was legalised, not only did it produce a large revenue to the crown, but it was more moderately indulged in in Britain than elsewhere.

“ Mr. Gutzlaff, a perfect master of the Chinese language, was the interpreter, and performed his part well. The Commissioners and surrounding mandarins seemed greatly interested.

“ The Plenipotentiary also said, that he thought it probable that, upon the return of the treaty from England, an envoy might be deputed to Peking, and he wished to know if he would be received with satisfaction and proper respect.

“ Ke-Ying immediately replied with earnestness that, he was sure the Emperor would be very glad to receive an embassy, and took that opportunity to express his sorrow at the treatment Lord Amherst had met with, which he stated was caused by the machinations of a corrupt set of ministers then in office. Shortly after this we took our leave, and, when Sir Henry mounted, another salute was fired from two rude iron bars, hooped together, and planted perpendicularly on their breech. The crowd was greater than upon our approach, but silent and orderly.

“ Elipoo, who appeared very weak and unwell during the conference, requested Dr. Woosnam to prescribe for him. It appeared that, added to old age, he was suffering from violent attacks of fever, ague, and the liver; and from these he desired to be speedily relieved. The doctor said he would prepare medicines if a messenger was sent to the ship with us, to take them back. Accordingly a mandarin of the name of Chang, a notorious drunkard, was ordered to accompany us.”

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EDWARDS' PRESERVED POTATO.—When this article was first shown to us, we were of opinion, that when its qualities became known, it would acquire an extensive sale; and we have much pleasure in stating that it is ordered to be used by the Hon. Company's Troops, and is also sanctioned by the Army Medical Department, and H.M. Colonial Land and Emigration Committee.—See Advertisement.

## ADMIRALTY ORDER.

Admiralty, May 31st, 1843.

Much difficulty and inconvenience having arisen from disposable supernumeraries, when embarked for Foreign stations, being borne in the ships conveying them to such stations as supernumeraries, for wages as well as victuals, all disposable supernumeraries for general service are in future to be borne as supernumeraries for victuals only, until they reach the ship in which they are to be entered as part of the complement, except in cases of Men desirous to allot a portion of their pay for the maintenance of their families on shore, which disposable supernumeraries only are to be borne on the list for Wages and Victuals of the ship in which they embark for Foreign Service, to enable them the better to accomplish that object; and, when such disposable supernumeraries, who may have so allotted part of their pay, shall be discharged to the ship the complement of which they are to join, they are to take their original entry in the same manner

as if they had been borne on the list for victuals only, and not to be furnished with Pay Documents.

It is however to be distinctly understood, that disposable supernumeraries who may be in debt at the time of embarking for Foreign Service, beyond the amount of the two months advance to which they are entitled, are not to make allotments; and in filling up vacancies in the complements, either of the ships in which they may take a passage, or in any of the ships on the station to which they are destined, preference is always to be given, when practicable, to such of the supernumeraries as have made allotments, and their names, and the ships to which they are appointed, are to be immediately reported to their Lordships for the information of the department of the Accountant General of the Navy.

By Command of their Lordships,  
SIDNEY HERBERT.

## PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

## PROMOTIONS.

COMMANDER—A. Vyner.

## APPOINTMENTS.

CAPTAIN—Sir S. Roberts, Knt., CB., (1815), to the out-pension of Greenwich Hospital.

COMMANDERS—A. Vyner to *Wolf*—C. O. Hayes (1839) to *Driver*—H. B. Young (1837) to *Hydra*—H. Bagot, (1838) to *Wasp*—A. Shade to Naval College—C. J. Walton (1839) to *Alert*.

LIEUTENANTS—D. Woodruffe (1828) to *Victoria and Albert*—A. T. Freese (1842) and E. Franklin (1825) to *Conway*—H. Stokes (1842) to *Penelope*—C. Knighton (1841), J. N. T. Saulez (1841) and A. Anderson (1842), add. to *Winchester*—H. F. Elliot (1842) add. to *Illustrious*—A. P. E. Wilmot (1840) to be flag-lieutenant to Vice-Admiral Sir W. Parker—C. W. Bonham (1843) to *Volage*—W. B. Willis and T. C. Meheux to *Alert*—M. B. Cockcraft (act.) to *Albert*—C. J. Walton (1840), F. J. Diggins and D. R. B. Mapleton (1837) to *Inconstant*—B. Woolcombe (1841) to *Talbot*—MASTERS—J. Pascoe to *Alert*—F. H. Niblett to *Hydra*.

MATES—H. Phipps to *Albert*—M. B. Dunn, C. T. Cerjat, C. P. St. John, G. Hancock, A. G. West, T. P. Coode, H. B. King, J. S. Mann to Naval College—A. D. Gordon to *Illustrious*.

SURGEONS—J. Prior to be Deputy Inspector of Hospitals and Fleets, in charge of the Naval Hospital and Royal Marine Corps at Woolwich—G. Doak to *Alert*—J. Edwards to *William and Mary*—P.

Brenan to *Hydra*—J. G. Williams to *Eurydice*—J. Smith to *Inconstant*.

SECOND-MASTERS—H. M'Ausland to *Inconstant*—J. Thomas to *Albert*.

ASSISTANT SURGEONS—L. Urquhart, and J. Andrews to *Camperdown*—H. R. Banks to *Victoria and Albert*—C. Crandell, first appointment to Haslar Hospital—W. H. Slogget to *Penelope*—J. Ward, first appointment (act.) to *Caledonia*—R. P. Chapman to *Wilberforce*—F. Morgan first appointment (act.) to *St. Vincent*—W. Fasken, first appointment to Plymouth Hospital—W. J. Domville to *Eurydice*—H. Peacock to Chatham Dockyard—M. Burton, M.D., to *Albert*—N. B. Alexander to *Alert*—W. Dunbar to *Skylark*.

MIDSHIPMAN—J. H. Wilson to *Eurydice*.

VOLUNTEERS 1st Class—W. B. Urmston to *St. Vincent*—W. J. V. Baker and W. Peterson to *Penelope*.

PURSER—D. Crow to *Hydra*.

CHAPLAIN—J. W. Dickson to *Madagascar*.

CLERK—T. Ellard to *Hydra*.

## COAST GUARD.

*Appointments*—Lieut. C. G. Clarke to Shanklin—Lieut. H. J. Jones to Dartmouth—Lieut. E. M. Hogge to Burnham.

*Removals*.—Lieut. T. Hungerford to Rathmullen—Lieut. Knox to Osmeath—Lieut. G. S. Penfold to Port Redford—Lieut. J. Cambell to Rickham—M. M. Annis, chief officer, to Penorth, Cardiff—Mr. J. N. Wordsworth to Boscastle.

## MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

## AT HOME.

ALERT, 10, commissioned at Plymouth Aug. 2nd by Com. C. J. Bosanquet.

CASTOR, 36, Capt. C. Graham, July 26th left Portsmouth for Plymouth, 1st, Aug. sailed for China,

CONWAY, 26, Capt. R. Fair, July 23rd sailed for Cork, from Portsmouth.

CROCODILE, 26, paid off at Sheerness.

DEE, st. v., Mr. Driver, Aug. 2nd arr. at Plymouth from Halifax, 5th sailed for Woolwich.

FIGGARD, 42, July 16th left Plymouth for South America.

HECATE, st. v., Com. H. Ward, 7th Aug. arr. at Plymouth from Lisbon, and sailed for Woolwich.

HERMES, st. v. Lieut. W. Carr, Aug. 6th, left Plymouth for West Indies.

INCONSTANT, 36, Capt. C. Freemantle July 31st paid wages and sailed for Cork.

IRIS, 28, Captain Munday, July 30th, arr. at Portsmouth from Africa, August 15th paid off.

MODESTE, 18, Com. Baillie, Aug. 19th arr. at Spithead from Sheerness.

PERSIAN, 18, Com. Eden, Aug. 5th, arr. at Portsmouth from Africa, paid off.

RACER, 16, Com. A. Reed, July 30th at Plymouth from Cork, Aug. 4th, sailed for South America.

RESISTANCE, 42, Com. G. E. Patey, July 29th, left Cork for Quebec.

TALBOT, 26, Capt. Sir T. Thompson, July 14th arr. at Portsmouth.

VANGUARD, 80, Capt. Sir D. Dunn, July 31st arr. at Plymouth from Lisbon to be paid off.

VOLAGE, 26, Capt. Sir W. Dickson, July 14th arr. at Portsmouth, 31st sailed for Cork.

VOLCANO, st. v. Lieut.-com. C. J. Featherstone, Aug. 2nd arr. at Portsmouth from Coast of Africa.

WARSPITE, 50, Capt. Lord John Hay, July 18th arr. at Cork.

AT PORTSMOUTH—*In harbour*.—St. Vincent, Victory, Excellent, Talbot, Eurydice, and Virago, Echo, Confiance, and Fearles steamers.

*In dock*—Prince Regent, Bellerophon, Athol, Fox, and Bee steamer.

AT SPITHEAD, Prometheus, Modeste.

AT PLYMOUTH,—*In harbour*.—Caledonia, San Josef, Alert and Persian.

*In the Sound*—Pilot, and Matland transport.

## ABROAD.

DUBLIN, 50, Capt. J. J. Tucker, 13th April at Valparaiso.

FORMIDABLE, 84, Capt. Sir C. Sullivan, 6th July in the Tagus.

GORGON, (st. v.) Capt. Hotham, 21st May at Bahia, 28th at Pernambuco.

GROWLER, Com. C. H. M. Buckle, 28th May at Pernambuco.

LILY, 16, Com. G. Barker, 14th May left Simons Bay for a cruise.

MALABAR, 74, Capt. Sir G. Sartorius, July 24th at Gibraltar from Cork.

ROSE, 16, Com. Sturt, July 14th, arr. at Halifax from Cork.

SAMARANG, 26, st. v. Capt. Sir E. Belcher, c.b. May 7th, left Simon's Bay for China.

SPITEFUL, st. v. Com. W. Maitland, May 21st, left Rio, for China.

THUNDERBOLT, st. v. Com. G. N. Broke, May 16th, arr. at Table Bay from Simon's Bay, 17th returned.

WINCHESTER, 50, Capt. C. Eden, 15th May left Simon's Bay for the Mauritius.

MALTA, AUG. 5.—DISTRIBUTION OF THE MEDITERRANEAN FLEET.—In Malta harbour, the Queen, 110, bearing the flag of Vice-Admiral Sir E. W. C. R. Owen, the Commander-in-chief; Ceylon, receiving ship, bearing the flag of Rear-Admiral Sir L. Curtis, second in command and superintendent of Malta Dock yard; Monarch, 84; Hecla, war steamer; and Acheron, steam packet. At Lisbon, the Formidable, 84. At Gibraltar, the Indus, 78. At Cadiz, the Malabar, 10. At Carthage, the Scout, 18. At Barcelona, the Medea war steamer, and Locust, steam tender. At Marseilles, the Alecto steam packet. At Corfu, the Magicienne, 24.

## DEATHS.

At Brislington, August 26th, Capt. J. Miller, RN., who was a lieutenant in the Queen in Lord Howe's victory on the 1st of June, 1794, aged 83.

At Redruth, Cornwall, Retired Capt. C. Bennett, RN., aged 68 years.

At Cold Harbour, Gosport, August 2nd, Mrs. Larcom, relict of the late Captain J. Larcom, RN., Commissioners of the Island of Malta, aged 82 years.

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, 1843.

| Month Day. | Week Day. | BAROMETER. |        | FAHRENHEIT THERMOMETER, In the Shade. |        |     |     | WIND.    |      |         |      | WEATHER. |            |
|------------|-----------|------------|--------|---------------------------------------|--------|-----|-----|----------|------|---------|------|----------|------------|
|            |           |            |        |                                       |        |     |     | Quarter. |      | Streng. |      |          |            |
|            |           | 9 A.M.     | 3 P.M. | 9 A.M.                                | 3 P.M. | Min | Max | A.M.     | P.M. | A.M.    | P.M. | A.M.     | P.M.       |
| 21         | F.        | 29-71      | 29-76  | 61                                    | 65     | 55  | 67  | W        | W    | 4       | 5    | bc       | qbc        |
| 22         | S.        | 29-85      | 29-78  | 62                                    | 62     | 55  | 63  | W        | SW   | 4       | 4    | bc       | or (3)     |
| 23         | Su.       | 29-50      | 29-48  | 56                                    | 58     | 53  | 60  | NW       | NW   | 6       | 5    | bc       | bcptr (3)  |
| 24         | M.        | 30-03      | 30-10  | 55                                    | 61     | 46  | 62  | NW       | NW   | 3       | 3    | bc       | o          |
| 25         | Tu.       | 30-18      | 30-22  | 56                                    | 64     | 45  | 65  | NW       | NW   | 2       | 2    | o        | o          |
| 26         | W.        | 30-26      | 30-28  | 65                                    | 73     | 51  | 74  | SW       | SW   | 1       | 1    | o        | bc         |
| 27         | Th.       | 30-10      | 30-00  | 62                                    | 69     | 57  | 71  | W        | NW   | 2       | 3    | or (2)   | bc (3)     |
| 28         | F.        | 30-03      | 30-05  | 62                                    | 68     | 56  | 69  | NW       | W    | 3       | 3    | bc       | od (4)     |
| 29         | S.        | 29-80      | 29-74  | 64                                    | 66     | 57  | 70  | SW       | SW   | 6       | 6    | qo       | qo         |
| 30         | Su.       | 29-67      | 29-70  | 60                                    | 68     | 53  | 69  | W        | W    | 6       | 6    | qbc      | bc (3)     |
| 31         | M.        | 29-82      | 29-90  | 58                                    | 65     | 51  | 68  | W        | NW   | 2       | 2    | o        | bc         |
| 1          | Tu.       | 29-98      | 29-96  | 60                                    | 68     | 50  | 70  | W        | SW   | 3       | 4    | bc       | bc         |
| 2          | W.        | 29-80      | 29-70  | 63                                    | 61     | 50  | 66  | SW       | S    | 4       | 5    | bc       | od (3)     |
| 3          | Th.       | 29-62      | 29-64  | 63                                    | 57     | 52  | 70  | SW       | SW   | 5       | 5    | qdc      | qbcptr (3) |
| 4          | F.        | 29-58      | 29-60  | 60                                    | 66     | 55  | 67  | SW       | SW   | 6       | 6    | qbc (2)  | qbc (3)    |
| 5          | S.        | 29-80      | 29-90  | 60                                    | 67     | 52  | 68  | NW       | W    | 4       | 4    | b        | bc         |
| 6          | Su.       | 29-94      | 30-04  | 61                                    | 69     | 52  | 70  | NW       | W    | 4       | 6    | bc (1)   | qbc        |
| 7          | M.        | 30-26      | 30-25  | 69                                    | 69     | 50  | 71  | SW       | SW   | 1       | 2    | bc       | bc         |
| 8          | Tu.       | 30-28      | 30-26  | 68                                    | 77     | 60  | 78  | SW       | W    | 2       | 2    | bc       | bc         |
| 9          | W.        | 30-14      | 30-08  | 69                                    | 78     | 60  | 80  | SE       | E    | 2       | 2    | bc       | bc         |
| 10         | Th.       | 30-04      | 30-12  | 59                                    | 63     | 58  | 65  | N        | N    | 4       | 4    | o        | o          |
| 11         | F.        | 30-25      | 30-30  | 56                                    | 69     | 48  | 70  | N        | N    | 3       | 3    | b        | b          |
| 12         | S.        | 30-27      | 30-26  | 62                                    | 73     | 51  | 74  | N        | N    | 2       | 2    | b        | b          |
| 13         | Su.       | 30-25      | 30-22  | 60                                    | 73     | 51  | 75  | E        | NE   | 3       | 3    | bc       | bc         |
| 14         | M.        | 30-09      | 30-05  | 66                                    | 76     | 60  | 78  | NE       | SE   | 2       | 3    | bc       | b          |
| 15         | Tu.       | 29-97      | 29-94  | 67                                    | 74     | 62  | 78  | NW       | SE   | 1       | 1    | bc       | bc         |
| 16         | W.        | 30-02      | 30-06  | 67                                    | 68     | 61  | 69  | NW       | SW   | 1       | 1    | bc       | bc (1) (4) |
| 17         | Th.       | 30-13      | 30-13  | 63                                    | 76     | 57  | 77  | SW       | NE   | 1       | 1    | go       | bc         |
| 18         | F.        | 30-15      | 30-09  | 66                                    | 81     | 60  | 82  | NE       | E    | 1       | 1    | of       | b          |
| 19         | S.        | 29-88      | 29-82  | 70                                    | 82     | 59  | 83  | E        | E    | 3       | 3    | bcf      | b          |
| 20         | Su.       | 29-72      | 29-74  | 68                                    | 67     | 63  | 70  | S        | SW   | 4       | 2    | b        | b          |
|            |           |            |        |                                       |        |     |     |          |      |         |      | o        | bc (3)     |

August—Mean height of the Barometer 29-969 inches; Mean temperature=62.1 degrees; depth of rain fallen=2.55 inches.

NOTE.—August 9th, in the evening and night incessant brilliant lightning played along the horizon towards the north and east.

TO OUR FRIENDS AND CORRESPONDENTS.

We have not seen the letters alluded to by CAPT. SULIVAN. The nature of their contents would be quite sufficient to exclude from our pages such productions as that, the copy of which he has sent us.

FAIR PLAY is informed that we have nothing to do with the case he mentions, but that he may record any good services of any person, on any occasion, in this journal.

The Wanderer's passage will be found in our July number. p. 433. We are equally obliged to her captain.

CAPTAIN MILLER's observations at Nagore received.

## DIRECTIONS FOR THE YUNG-KEANG, OR NING-PO RIVER.

THE Tahea, or entrance to the Yung-Keang, is divided into three channels by the islets called Triangles in Thornton's chart of 1703.

The first danger in the southern channel is a rock which is covered at half tide, lying N. 70° E. from the summit of the eastern Triangle 2½ cables distant. If the inner Triangle or Passage Island be kept open of the south point of the outer one, this danger will be avoided.

Having passed the east point of the outer Triangle keep it and also the middle Triangle close on board, to avoid a sunken rock with 8 feet water on it, which lies in mid-channel to the southward of the latter. When on the rock a small islet eight miles to the westward of Chinhæ is in line with the foot of the High Bluff beyond it.

Then steer to pass a cable's length to the eastward of the inner Triangle, which must not be approached nearer than half a cable, or passed further than a cable and a half, and keep for the foot of Chung-paou or Joss-house hill, taking care that the tide does not set you over on the southern side of the river, where the two fathoms bank is five cables from the shore. The Chung-paou or Chinhæ side is steep to, and good anchorage in three and a half fathoms will be found under the hill outside the stakes.

The second channel or that between the middle Triangle and the Inner, or Passage Island, is perhaps the best, (where all are bad and should not be attempted, especially at spring tides, without a pilot or local knowledge.)

A mud spit extends westerly from the middle Triangle 1½ cable which will be avoided by keeping the Joss-house on the hill (Chung-paou) open of the west point of Passage Island. Then steer as before, so as to pass one cable to the eastward of Passage Island:

The channel between Passage and Chung-paou point is the broadest but has only two fathoms at low water. The only danger is the Tigers tail (Hoo-wei-tseao) which is a half tide rock lying rather more than one cable N. 40° W. from the highest part of Passage Island. When on it, Peaked Islet (a small islet on the south side of the river opposite to Chung-paou,) is in line with River Hill, (a remarkable brown peak,) bearing S. 16° W.

The river is staked across from immediately under the Joss-house hill to Peaked Islet, through which there are two passages one of which is close to the latter; the other, which is in the centre of the river is better. Sunken junks will be found on each side of the opening to the southward of the stakes.

From Chinhæ (which will be seen on the north side of the river immediately you are passed the Joss-house hill,) to Ning-po the distance is 11½ miles by the river, which is nearly straight, all the beaches except one, lying to the southward of west, and it has an average width of two cables. Keep a mid-channel course, and if drawing more than thirteen feet, wait for half flood, as in one or two places there is not more than two and a quarter fathoms at low water.

At the city the river separates into two branches, the one taking a N.W. and the other a S.b.W. direction. The latter is only one cable

wide, and is crossed by a bridge of boats, one quarter of a mile above the junction. A spit extends off each point, at the entrance to the former, which passes close to the city walls, and has a depth of from 2½ to 6 fathoms in mid-channel.

The Joss-house at Chinhae (Chung-paou) is in lat. 20° 57' 8" N., long. 121° 43' 6" E.; variation 0° 57' 30" easterly 1841.—High water at full and change 11h. 20m. Rise and Fall 12 feet 6 inches.

The best watering place at Chinhae is on the south shore, eastward of Peaked Islet. At Ning-po the river is fresh at the last part of the ebb.

(Signed)

RICHARD COLLINSON, *Commander.*

[The banks of this river are so low that dykes are very necessary; the whole region with the exception of long ridges of sterile hills, is highly cultivated. It was the time of wheat harvest, and all the people were in the fields, cutting their corn, which this year amply repaid their labour. Even in the houses of the peasants we remarked more comfort and neatness than in the parts we had hitherto visited. To a mandarin boat which had come up with us, we gave a report of our ship, and passed on undisturbed towards Ning-po, situated about eleven miles up the river. The noise of junk building, and the large quantities of timber which were piled on both sides of the stream, announced the neighbourhood of Ning-po. The people looked very disdainfully at us, and repeatedly called out hih-kwei, "black devils". In the middle of the city the river divides into two branches, neither of which has fresh water.

The junks here were larger and more numerous than at Fuh-chou. While in search of the principal office, we passed a broad street, well lined with the most elegant shops, which even exceed those at Canton European manufactures, as well as Chinese, were here displayed to much advantage. Mirrors and pictures also, with the most splendid silks, embellished and decorated the scene.

We were shewn to the office of the Che-heen, a magistrate of a small district, several of which make a Foo. Our names were noted down, the particulars of our voyage inquired into, and this, as well as all the other accounts, delivered in writing. As soon as we had duly reported, the Che-heen, who was an elderly man, and wore a white button, came out, and offered to introduce us to the Che-Foo. We followed him at some distance amidst a numerous crowd, and finally came to a large hall with many books, destined for the examination of the lowest graduates, the Sew-tsae. The police runners belonging to this office are very numerous, but by no means kept the people in order, who thronged the passage, and could not be prevailed on to leave their stations.

The Che-Foo a stout man, of a very pleasing countenance, with a blue button, soon made his appearance. Mr. Lindsay formally delivered his petition. He begun immediately to read it; and after having finished it, he turned towards us and said, "This matter deserves our attention; we ought to deliberate upon the subject. In the meanwhile I shall provide you with a lodging and board, don't you think this is right." Upon receiving answer in the affirmative, he immediately

ordered his servants to conduct us to our lodgings. We crossed a floating bridge, and arrived at the Cang-kung, Fuh-keen hall.

This was an extensive building, with spacious rooms, adorned with Chinese pictures and idols. A very sumptuous supper was served up in the evening, and every attention shewn us to make us comfortable.

We were fully sensible of this uncommon degree of kindness, and made no remarks upon the dirty room where we were to pass the night. In front of it were different idols, all gilt; one of them was inscribed with the name of the Emperor, and received his regular supply of incense with much more attention than his neighbours.

May 27th—During the whole night, the vociferating crowds had never wholly left us. To-day they re-assembled, and were not less anxious to satisfy their curiosity, than yesterday, yet they observed decorum towards us, and one hint from us would silence the most clamourous crowd. Several merchants made enquiries after the prices of our merchandise. Some of the inferior officers asked us what were the countries bordering on our territories in Asia, and how far our power extended. We were upon the point of going out to view the city, when we received a visit from several mandarins, both military and civil. Two of these were Turkomans by descent, and Mahomedans by profession. Ma, one of them, was a tall man, with a blue button, and had passed some time at Macao and Canton. He was a very intelligent man, well acquainted with the customs of foreigners, and versed in all the diplomatic arts of mandarins. The mandarins in general are exceedingly ignorant of all the concerns of foreign countries which are either not immediately under the sway of the celestial empire, or bordering upon it. They were astonished to hear that our Indian possessions were separated only by forests and mountains, from the Chinese province of Yunnan, and could scarcely believe that we were so near them. Ma, however waived these topics of petty alarms, and entered into a full discussion upon the European powers which traded to China. He referred to Arabia and Persia as the cradle of Mahomedanism, and tried to repeat some Arabic phrases to shew his adherence to the system of religion which was delivered in that language. He was ample in his praise of European character, highly extolled the advantages of a trade with them, and frequently addressed the other mandarins upon the subject, with true Persian flattery, and empty Chinese compliments. Yet his conversation was most interesting, and would have been valuable, but for being intermixed with too palpable adulation. We received apparently the most cordial farewell of the mandarins, who, whilst we were going to the long boat, came down towards the river, and bowed as long as we were in sight. The people, who by this time had read our "pamphlet" on the English nation, were highly gratified with such an exhibition, and showed us the utmost attention.

We bought several articles from the shops, inquired after others for exportation, and answered all the numerous questions of the natives. Returning by a circuitous route to our boat, we came to the city wall, a very massive structure, but overgrown with weeds, and in a state of decay. We had here a view of the whole city. In extent it may vie with Fuh-chow, and in population is not inferior to many of the large trading towns of Europe. It surpasses anything Chinese which we



have yet seen, in the regularity and magnificence of the buildings, and is behind none in mercantile fame. The Portuguese traded to this place as early as the sixteenth century. They found here a ready market for European products, and they exported hence to Japan a great amount of silk. After being once expelled they renewed it again, and other European nations participated with them in the trade, till the extortions became so great as to limit the foreign merchants to Canton. The English East India Company maintained a factory here till the last century.

Whilst we were at Ning-po we received a list of the ships which had formerly been at this port. They seemed to be very numerous, but at the present time no traces of the foreign trade are to be seen, though the old people retain still a faint remembrance of the foreigners. Here the celebrated Jesuits from France, near the end of the seventeenth century, landed and obtained permission to settle in Peking. Two of them became the constant attendants of the Emperor Kang-he, in all his travels, and were the partners of his dangers in the Tartarian war. What great results might one have expected from such an opportunity, both to benefit the highest personages in the Empire, and to impart to the people the blessings of Christianity.

In these hopes we have been greatly disappointed. Instead of introducing the reign of truth, they created intrigue; in lieu of pure religion, they spread popery. Though possessing the greatest talents, they never devoted them simply to the glory of their Saviour; they never employed them in giving to the benighted heathen, in their own language, the blessed Gospel of our Lord Jesus Christ. This is truly lamentable, that they should bestow such labours, encounter such sacrifices, and defend their tenets with such heroism, to found an *earthly religion* which confers few blessings in this life, and leads to a doubtful eternity. In offering these sentiments, there is no design to depreciate their talents, or to vilify their religious zeal; but it is the language of deep regret to see the salvation of the soul neglected amidst the best opportunities of securing it; and the most trifling ceremonies predominate over the eternal welfare of men, which should have been the *prime* object of their operations. But to return,—

Highly delighted with the hospitable reception we experienced, we attributed it to the influence which the perusal of our little tract had had upon the natives. Crowds of people were collected at the beach to give us a kind farewell, whilst mandarins of all ranks vied with each other in their expressions of friendship.—*Gutzlaff.*]

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#### HOW TO MAKE USE OF A HURRICANE.

[THE following instance of the advantage of an acquaintance with the theory of circular storms, affords us much gratification in recording; as it at once shews a practical proof of the correctness of the theory, as

well as how to turn it to account, and will, we trust, induce seamen generally to make themselves familiar with it.]

*Moulmein, March 8th, 1843.*

DEAR SIR.—I am happy to have it in my power to contribute another mite on the subject of tropical storms, which, if your list is not full, you may think of sufficient value for publication in the *Nautical Magazine*, as it shews that these terrific phenomena like other mighty agents of Nature, may be turned to beneficial account, if perfectly understood, and cautiously dealt with. I cannot omit to say in the present instance, that your little blue book has given me all the knowledge of these storms that I possess, where they are explained in an easy and inviting way, that every one can comprehend, unlike many other works where interesting scientific knowledge is found surrounded by such a labyrinth of rocks and shoals, in the shape of hard words, that the very sight of them makes a person's blood freeze.

In October last year I was lying at anchor in the roads of Nagore, in lat.  $10^{\circ} 50'$ , on the Coromandel Coast, and my next destination being Madras, had the prospect of a beat of fifteen or twenty days against wind and current to reach that port, when a friendly storm came on, and did the job for me in two days, nor was this altogether unexpected, for this coast is frequently visited by a hurricane about this season, and I had made up my mind beforehand what to do in case of its coming on. It is believed whether correct or not, that the storms in the Bay of Bengal, seldom reach so far south as Ceylon, and my position being only a little farther north than that Island, I supposed, and in this instance correctly, that I would be on the southern verge of the storm. With that view I wayed as soon as I had satisfied myself of its approach and steered to the northward for the purpose of getting a firm hold of it, which fully answered my expectations, by the wind increasing rapidly when I had on only, or, just as much I could manage under the close reefed top-sails; I ran off before it to the north-east, turning round the circle more northerly as the wind veered, and in 30 hours from starting, had Madras lying before me.

This hurricane did considerable damage to the ships within its influence, five wrecked and two totally dismantled at Madras; two lost and others damaged at Pondicherry, besides it is to be feared many native craft, several of which I saw during the storm flying in all directions in a forlorn plight, few having any canvass left.

Yours &c.,

J. H. MILLER.

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Extract from the Log Book of the "Lady Clifford" at Nagore; Sunday October 23rd, 1842.

During this day it blew a fresh gale at north, the sky clear and weather fine, bar. 30.05, towards evening a thick cloud or bank gathered at north-east, and a long swell set in from that quarter; at 10 P.M. the whole sky was overcast, and the barometer began to fall, at midnight the wind decreased and drew round to the north-west, the land wind; swell still increasing, sky overcast but not looking bad; bar. 29.90.

| H.   | K. | Course. | Wind.  | Bar.  | Monday, October 24th, 1842.                                                                    |
|------|----|---------|--------|-------|------------------------------------------------------------------------------------------------|
| 1    |    |         |        | 29.90 | A.M. light wind from the land, sky overcast but fine.                                          |
| 2    |    |         |        | 29.85 |                                                                                                |
| 3    |    |         |        |       | Daylight same weather, cloudy, but fine appearance, excepting the thick bank in the north-east |
| 4    |    |         |        |       | quarter which grew larger and darker, and the north                                            |
| 5    |    |         |        |       | east swell still increasing; not liking the appearance                                         |
| 6    |    |         |        | 20.85 | of the weather, wayed, and at 7 A.M. stood to                                                  |
| 7    |    |         |        |       | sea; bar. began to rise, wind freshening at westward.                                          |
| 8.3  |    | N.N.E.  | W.N.W. |       | 10h. wind increasing to a gale, reefed the sails                                               |
| 9.4  |    | N.E.b.N |        |       | and made snug.                                                                                 |
| 10.5 |    |         |        | 30.00 | At noon it blew a whole gale and a drizzling rain                                              |
| 11.6 |    | N.E.    | West   |       | came on, the weather looking stormy, but bar. still                                            |
| 12.7 |    |         | W.S.W. | 30.00 | high; a little after noon bar. began to fall rapidly,                                          |
| 1.8  |    |         |        |       | gale increasing.                                                                               |
| 2.8  |    |         |        |       |                                                                                                |
| 3.8  |    |         | S.W.   |       |                                                                                                |
| 4.8  |    |         |        |       |                                                                                                |
| 5.8  |    | N.E.b.N |        | 29.70 | 4h. gale very severe, could just steer before it with                                          |
| 6.8  |    |         | S.S.W. |       | difficulty under close reefed top sails sheeted <i>half</i>                                    |
| 7.8  |    | N.N.E   |        |       | home, courses furled and topgallant masts on deck.                                             |
| 8.8  |    |         | South  | 29.80 | 6 h. rain ceased and the sky broke into clouds, bar.                                           |
| 9.8  |    |         |        |       | began to rise, 8 h. less wind, sky clearing.                                                   |
| 10.7 |    |         | S.S.E. |       |                                                                                                |
| 11.7 |    |         |        |       | Midnight wind abating fast, out close reefs and                                                |
| 12.7 |    |         | S.E.   | 29.90 | set foresail, weather looking fine.                                                            |
|      |    |         |        |       |                                                                                                |
|      |    |         |        |       | Tuesday, October 25th.                                                                         |
| 1.6  |    | N.N.E.  | S.E.   |       | A.M. fresh gale and cloudy weather.                                                            |
| 2.6  |    |         |        |       |                                                                                                |
| 3.6  |    |         |        |       |                                                                                                |
| 4.6  |    |         |        |       | 4h. out all reefs, set jib and mizen.                                                          |
| 5.6  |    |         |        |       |                                                                                                |
| 6.5  |    |         |        |       | Daylight strong breeze, squally and showery.                                                   |
| 7.5  |    |         |        |       |                                                                                                |
| 8.5  |    |         | E.S.E. |       |                                                                                                |
| 9.4  |    |         |        |       |                                                                                                |
| 10.3 |    | North   | East   |       | Noon light breeze, settled we'ther, occasional sho'rs                                          |
| 11.3 |    |         |        |       | No observations.                                                                               |
| 12.3 |    |         |        |       | During the latter part of this day the wind fell                                               |
|      |    |         |        |       | very light, and on the following day it was nearly                                             |
|      |    |         |        |       | calm all day.                                                                                  |

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SUGGESTIONS TO BOAT-BUILDERS.—By Lieut. W. H. Church, R.N.

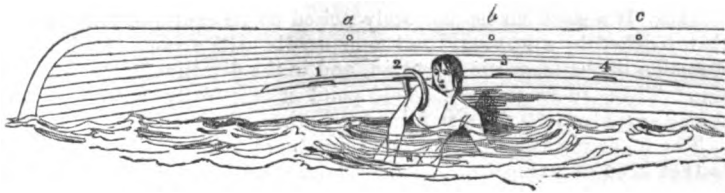
IN all clinch-built boats a chafing batten is attached to the bilge, which batten is generally about $\frac{1}{2}$ inch in thickness. Now by making it of hard wood or elm, and an inch and a half thick, and cutting open spaces in it just sufficiently large and long enough to admit all the fingers of a man's two hands, as shown in the sketch annexed at 1, 2, 3, 4, a ready means is afforded to a boat's crew in case of capsize, either to right the boat, if the sea be smooth, or to hold on by, or in case of the boat

maintaining an inverted position, of getting on her bottom. An objection was at first made to it, that it would impede the boat's way; but we find in practice that such is not the case, as she can successfully compete in pulling with some of the fastest boats here. As the battens are in the line of the column of water to be displaced, the openings can afford no extra resistance. Should a boat thus fitted be capsized, the men at each side laying hold of this, and putting their feet on the landing of the gunwale streak could mount on the bottom with facility.

I have also thought that if two or three auger holes were bored through the keel close to the garboard streak, near the middle of the boat, as at *a*, *b*, *c*, that they would be handy in case the people got on her bottom, to reeve a handkerchief or cravat through, the ends of which being tied together into a grummet, would enable a man to hold on securely by. The most experienced boat-builders here say, that it would not weaken the keel.

A capsized boat is an unhandy affair, and mayhap these simple and cheap appliances might at least render her much more manageable, and give the people confidence.

Would it not be useful to exercise the boat's crews of ships in the tropics or in warm weather, in the evening after quarters occasionally, in capsizing and filling their boats, and then systematically righting them, stationing the men as if at a gun? They could exercise righting her, baling her out Krooman fashion, or making a grummet of their handkerchiefs through the battens, resting with it under the armpit thus.—



ON THE MARINERS' COMPASS:—By *Mr. W. Walker, Master R.N.*

(Continued from p. 595.)

THE following may be stated as Magnetic axioms or principles easily demonstrated to be true by experiment, viz:—

1st. The loadstone has two permanent poles, either of which will attract iron, or steel, not rendered magnetic.

2nd. The poles of the same name or kind in different loadstones, repel each other, but poles of an opposite kind attract each other; thus the north pole of one loadstone will attract the south pole of another; but, the north poles, will repel each other, as well as the south poles.

3rd. The loadstone communicates a permanent magnetism to steel, and a transient magnetism to soft or cast iron.

4th. The poles of the loadstone communicate (by touch) magnetism to steel, of an opposite kind to their own. Thus, if the north pole of a magnet touch one end of a steel bar, the end of a bar thus brought in contact will be a south pole, and the other end a north pole.

5th. Steel bars rendered magnetic by the loadstone, become themselves magnets, and are capable of rendering other bars magnetic.

6th. The attraction and repulsion between magnets, whether natural, or artificial, whether transient or permanent, are equal and mutual.

7th. If a magnet be cut into two or more parts, each part will be a perfect magnet, with a north and south pole. But the magnetic force of any magnet will not be so great as the combined magnetic forces of all its parts, after division.

8th. The magnetic attraction or repulsion exerted between two magnets, (or between a compass needle and any piece of iron) is not *impeded diverted or lessened*, by the interposition of any substance whatever (iron excepted). If, for example, an iron gun were stowed in the bottom of a ship's hold, and a cargo of the most solid materials were stowed above it, the magnetic action of the gun upon the ship's compass, in the binnacle would be precisely the same as if nothing had intervened between them.

9th. Hard steel retains magnetism longer than soft metal, and the harder it is made the better for retaining magnetism.

10th. If the north (or south) poles to two equal and similar magnets be kept in contact, their magnetism will ultimately be destroyed, but if their opposite or contrary poles be kept in contact, their magnetism will be retained.

11th. If a steel bar be delicately poised on its centre of gravity, and then touched by a magnet, the bar or needle will arrange itself in the direction of the magnetic meridian, and in the direction of the *magnetic dip*. Thus, in England it would point magnetically *northward*, and *downward*, about 70 degrees from the horizontal plane.

The following facts are of much importance to seamen, as they relate to that kind of magnetism which has been named "Inductive," that is, not strictly of a permanent nature, although exerting the same kind of influence upon the Mariners' Compass, as a permanent magnetism would exert.

12th. The earth is magnetic, and gives direction to magnetic needles; it has a north and a south pole, and since magnetic poles of opposite names attract each other, the north point of a compass must be a south pole, because it is attracted by the north pole of the earth and *vicé versá*.

13th. If an iron sphere, or any regular or irregular solid of soft iron be imagined as cut by a plane, at right angles to the magnetic meridian, but in the same direction as the magnetic dip, and if this plane be again cut by another imaginary plane passing through the centre of gravity of the iron, and at right angles to the dip, this last plane will separate the solid into two magnetic hemispheres, where will be found a north and south polarity and a magnetic equator. If the solid be an iron

sphere it will represent a miniature world, with its magnetic poles, and if it be of considerable size, will control a *small pocket compass* when held near it. This magnetism is received from the earth and will hereafter be more fully explained.

14th. If an iron bar, bolt, or plate, be suspended by a small thread, or by any other means, so that one end shall *dip* (in England) at an angle of about 60 or 70 degrees from an horizontal level, the iron although not previously magnetised, will come to rest in the plane of the magnetic meridian; its lower and north ends pointing nearly in the direction of the magnetic dip.

15th. If a piece of soft, wrought, or cast iron, be taken and held nearly parallel to the piece above mentioned, and if the upper end of one piece be made to approach the lower end of the other piece, an attractive force will be developed; but if the upper ends, or the lower ends of the two pieces be brought near together a repulsion will take place. These pieces (as well as all others) are magnetic by induction from the earth, and will act upon each other, as well upon a compass needle as magnets.

16th. If we place a long bolt, or bar of soft iron, in a perfectly horizontal position, and at right angles to the magnetic meridian, or in an east and west direction; and if a delicate compass be placed near the end of the bar, the compass needle will not be disturbed. But, if the further end be raised but one degree, the south point of the needle will be attracted. If the further end of the bar be lowered a little, the north point of the needle will be attracted and the south point repelled in north magnetic latitude, and *vice versâ* in the southern magnetic hemisphere.

17th. If a small delicate and sensitive magnetic needle be allowed to settle in the direction of the magnetic meridian, and if a long straight bolt or bar of soft iron be laid in a north and south direction, with one of its ends near to the centre of the needle, and either east or west from it, the south point of the compass needle will be attracted by the north end of the iron (in England) and the north point, by the south end of the iron. If the end of the iron which is farthest from the magnetic equator, and nearest to the magnetic pole be raised till the compass needle returns to the true direction of the magnetic meridian, the *axis* of the iron will then be at right angles to the direction of the magnetic dip, or, in the plane of the magnetic equator, and by the application of a Gunner's quadrant, (or any other machine for measuring angles,) the angle made by the direction of the axis of the iron, and the vertical will be found equal to the magnetic dip in all parts of the world, and the angle made by the iron, from a horizontal level will be found equal to the complement of the dip.

18th. If we take a freely suspended or delicately poised compass needle, and allow it to come to rest in the direction of the magnetic meridian, either pole of the needle will attract and be attracted by any part of a small piece of soft iron, such as a small nail: but if a larger piece of iron be used, say an iron bolt, the inductive terrestrial magnetism which the iron receives from the earth, will control the compass needle, and by its position will either attract or repel the needle. Where the iron is small, the permanent magnetism of the needle controls it,

but when the iron is large in quantity, its inductive magnetism will control the permanent magnetism of the compass needle.

19th. The induced magnetism with which all articles of iron is saturated, is received from the earth, and the polar axis or line supposed to join the two magnetic poles of any article of iron, not permanently magnetic, is *parallel to the direction of the magnetic dip*.

20th. Since iron is magnetic by induction from the earth and polarised by position with reference to the direction of the magnetic dip, therefore any change in the direction of the ship's head, or any alteration in her angle of inclination, whether in its direction, or its amount, will be accompanied by a change in the polarity of the iron contained in the vessel, and by a change in the amount or direction of the local attraction, and its influence on the steering compasses.

The Magnetic Dip is really an element of far more importance in Navigation than has been imagined. The dip changes with the latitude; it is actually a measure of the magnetic intensity of the needle, and an index to the inductive magnetic polarity of the iron within a ship, as well as every where else. In high latitudes, seamen find that the upper and under sides of articles made of iron greatly affect their compasses; it is because the dip is also great, and the earth's magnetism greater in high latitudes than near the magnetic equator. But upon the magnetic equator itself, the *polarity of iron and its local attraction do not vanish*; the polarity of the iron only coincides with the earth's polarity, but the iron will still continue to act on the compass under a new form. If it were possible to sail round the world on a great circle passing over the magnetic poles, the dipping needle would perform a complete revolution in a vertical circle, and the transient magnetic polarity of the iron in a ship would also perform a revolution along with the dipping needle. The dip, then, not only ought to be known and recorded on our charts, but ships should be furnished with means for finding the dip in long voyages.

We have seen that almost every substance experimented on, has been found susceptible of a transient magnetic state by induction, and that the earth itself gives out magnetism of its own kind to solids separated from it. Without having recourse to delicate experiments by refined apparatus, the induced magnetism of iron is evident to the senses by the rudest machinery, or even without any apparatus at all. Pieces of wrought or cast iron act on each other, as magnets act on each other, exhibiting all the phenomena of attraction, repulsion, and magnetic conduction; and these metals may be made either to control a magnetic needle, or be controlled by it, in a variety of ways. This view of magnetism has not been entertained by philosophers, because they have never been in possession of a sufficient number of experimental facts.

We shall however put our nautical readers in the way of satisfying themselves on these points, by means of materials used in their ordinary vocation.

Iron, when long exposed to the atmosphere, or action of water, gets covered with rust; the outer surface being converted into an *oxide* of iron, the magnetic properties of the metal undergo a change. When spindles of capstans, weather-cocks of buildings, &c., remain long in a fixed latitude, and in a fixed position, the oxidation of the metals and the

magnetic action of the earth, communicate to the iron something like a permanent polarity; that is to say, a very considerable time must elapse before the iron will part with the magnetism it had acquired in its previous position.

Iron vessels furnish an illustration of this kind of magnetism. If an iron vessel's keel be laid down in, or near to the direction of the magnetic meridian, the time she may remain on the stocks, the processes of hammering and clenching of the materials together, will in some measure communicate a magnetism to the vessel of a semi-permanent character. For example, if the north end of an iron vessel, when on the stocks be found to attract the south point of the compass, after the vessel is launched and moored in an east and west direction, it would be proper to moor such a vessel in a direction *opposite to that in which she was built* (and for a long period of time) before the magnetism acquired in building would disappear. Attention is directed to this subject; those who intend to sail iron vessels should see to it.

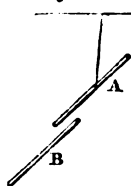
If ships had continued to be built almost entirely of wood, their local attraction would never have been noticed; but the metals now enter largely into the formation of modern ships, and their compasses are proportionally affected. If the compass indicate a wrong course, and we steer by it, we run the ship into danger or actual destruction. It is surely, then, the duty, and the interest of all those who have any thing to do with ships, to acquire some knowledge of practical magnetism, and more especially of seamen to learn the principles of their compass, how they may guard against its errors, and shape a course with more confidence, and less risk, than those can possibly do who may continue to jog on in the old way, preferring to remain ignorant of causes that so materially influence their reckonings or endanger their lives.

We now proceed to give experimental proofs of our fundamental principles of practical magnetism:—

It is necessary to bear in mind that all experiments made with *iron*, in order to exhibit its inductive and changeable magnetic polarity, should be made with iron of uniform quality throughout its mass,—iron that has been re-manufactured is unfit for the purpose, because it may contain pieces of old files, chisels, and fragments of *old steel*, which might retain magnetism in a permanent form. We should therefore select for our experiments, *new iron*, that has been derived from the *Ores*, and manufactured by an uniform process by machinery; that is to say, drawn out, or rolled so as to be of uniform density, and of regular form of bolt, bar, or sphere, &c.

Fig. 1.

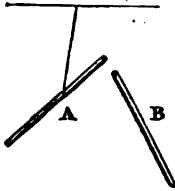
Experiment 1st.



Take a piece of bolt or bar iron, a foot or more in length, and let it be suspended by a small thread, with an inclination nearly equal to the angle of the Magnetic Dip. When the twist of the thread (if it have any) has been got rid of, the bar will come to rest in the direction of the magnetic meridian, with its lower end towards the nearest pole of the earth, and its upper end towards the magnetic equator.

Take now a second piece of iron B (*Fig. 1.*) and hold it nearly parallel to the suspended piece A, with the upper end of B, near to the lower end of A, and it will be seen that an attractive magnetic force will be exerted. But if the upper end of B, be brought near to the upper end of A, (as in *Fig. 2.*) a magnetic repulsion will take place.

Fig. 2.

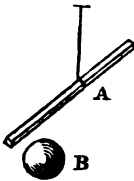


In this experiment it is evident that the magnetic action of the two pieces of iron upon *each other* or upon a compass needle is in every way similar to the action that takes place between two natural or artificial magnets. The magnetism of the iron is due to its *position* with reference to the direction of the magnetic *dip* of the place, and it will be found that by changing the position of the iron, by turning its ends, the polarity of the iron will be changed *in it*.

Experiment 2nd.

Suspend a bar of soft iron with an inclination equal or nearly equal to the angle of the magnetic dip, and allow it to come to rest, (*Fig. 3.*)

Fig. 3.

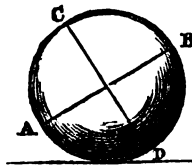


then if a cast iron shot or shell be brought near to either end of the bar, an attraction will be manifest; that is to say, whether we bring the upper hemisphere of the shot near to the lower end of the bar, or the lower hemisphere of the shot near to the upper end of the bar, an attraction will take place between them: because, here we present poles of opposite kinds, but it is not practicable in this experiment, *conveniently* to exhibit a repulsion; a repulsion may however be shewn, by bringing the shot near to the upper half of the iron bar, but this requires some experience in the operator.

Experiment 3rd.

If we take a large shot or shell of new metal, and free from rust, and tie a coloured thread round it so as to represent a great circle, in fact, so as to divide it into two hemispheres as A, B, (*Fig. 4.*) then let another thread C, D, circumscribe the shot in a direction at right angles to A, B, so as again to divide the ball into two hemispheres.

Fig. 4.



Then place the sphere upon the horizontal line S, N, with the plane of the circumscribing thread C, D, vertically and at right angles to the magnetic meridian N, S; let the shot be rolled backward till C, D, becomes parallel to the *dip*, and it will then be found that the circumscribing thread A, B, has divided the cast iron ball into two magnetic hemispheres, where C is a north and D a south pole. If now a small and delicate magnetic needle be applied, it will be found that every part of the ball *below* the thread A, B, will attract the south point of the needle, and repel the north point, and all the upper hemisphere will attract the north point of the needle and repel the south point.

Here we have an exemplification of the local attraction of the iron in a vessel. The magnetism developed by the shot, and which it receives from the earth, is precisely of the same kind as that of a gun, a tank, knee, or pig of ballast. The line C, D, corresponds to the magnetic dip of the place, and indicates the position of the magnetic poles of the iron, the shot; and in fact every other thing has a magnetism in it, and there is no such thing as *magnetism* without magnetic attraction and magnetic repulsion. Magnetism is compounded of attraction and repulsion! The intelligent mariner will now begin to see how it is that in these latitudes the north point of his compass is drawn forward by the iron in his vessel; he will observe that the upper part attracts the north point, and because all the iron is generally before the compass and also below it. The north point of the compass card, which is a south magnetic pole, must necessarily be drawn forward, so long as the nearest parts of the iron in the vessel continue to retain the same kind of magnetism that the northern parts of the globe retain.

Experiment 4th.

The magnetic dip being of much importance, we now proceed to shew how it may be found without that expensive, and not over correct instrument the *Dipping needle*.

Take a small delicate magnetic needle screened from the action of the wind—(a good pocket compass answers very well) and place it on the ground, or on a table where there is no iron to affect it. When the needle has settled in the direction of the magnetic meridian a rod of pure iron, about 3 feet in length $\frac{3}{4}$ an inch in diameter, and perfectly straight may then be laid in a north and south direction, with one end within a couple of inches of the compass, and at the same height as its pivot; the rod will be found to derange the needle. Let C be a small pocket compass placed on the north and south line S, N, and let R be

Fig. 5.



an iron rod provided for the purpose of finding the dip of the needle; the rod R, when laid in the direction of the line S, N, its end at S, will attract the north point of the compass needle, but if the north end of the rod be

raised as in the figure, the compass needle will return to its former position; and if the north end of the rod be raised still higher, the south point of the compass needle will approach it. Let therefore the north end of the rod be raised, so that its south end will neither attract nor repel the compass needle, nor disturb it from pointing in the direction of the magnetic meridian,—the axis of the rod will then be in the plane of the magnetic equator, and consequently the magnetic dip will be at right angles to it; that is to say, the angle N, S, R, is equal to the complement of the dip, and the angle R, N, S, is equal to the dip itself. These angles are easily measured by common apparatus without a spirit level, or, even without the line S, N, being a horizontal level. A sector, or a protractor and plumb line applied to the rod R, will shew at once the angle it makes, with a vertical line;—a gunner's quadrant would at once measure the angle of the dip. The dip then may be found by

the ordinary means possessed by seamen, namely, by a compass, a bar of iron, and a plumb line. The principle is sound, and the application to any extent of accuracy, may be readily contrived by instrument-makers who know their business.

Experiment 5th.

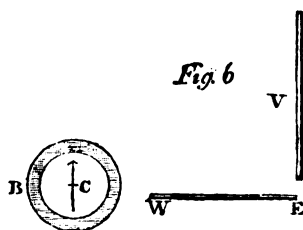
In order to shew how iron may, by its inductive property, either control, or be controlled by a steering-compass, let a steering-compass be placed any where out of the influence of masses of iron. Take any number of pieces of iron of different sizes, from a small nail up to a large spike or bolt. Now, according to Experiments 1, 2, and 3, these nails are each, inductively, magnetic from the earth by position. Take a *small nail*, and hold it vertically near the north point of the compass, the lower end of the nail being at the same height as the compass needle. The nail, instead of repelling, will attract the north point, because the needle converts the nail, for the time being, into an inductive magnet, and controls the earth's inductive magnetism. Change the small nail for a larger, and as you increase the size, you will at last find a certain sized piece of iron that will *control the compass needle*, by the induced magnetism, received from the earth. Hence we infer that, although each and every piece of soft malleable iron is magnetic by induction from the earth, yet the quantity of magnetism which the earth imparts to a *small nail*, may be cancelled and controlled by a magnetic compass needle, although the natural quantity of magnetism which the earth may communicate to a *larger portion of iron*, may control the compass needle, and either attract or repel it according to its position, with reference to the direction of the magnetic dip, and the poles of the needle.

If an iron rod or bar be placed in an east and west direction from the centre of a compass needle, and in an horizontal position, it will not disturb the compass, nor will the needle be affected by it; but a rod or wire so placed will conduct inductive magnetism to the compass.

Experiment 6th.

Let C, (fig. 6,) be a magnetic needle, mounted on a pivot in the box B, and let WE be an iron rod laid in an east and west direction, and close to the box B; the needle C will not be disturbed by the iron rod WE; but if another piece of iron V, be held in the direction of the magnetic dip, and brought into contact with the further end of the horizontal iron WE, its magnetism will be conducted to the compass needle C, even if WE be several feet in length. If the piece V be raised a quarter of an inch from WE, and again be brought in contact, the needle will *oscillate*, thereby proving that the iron rod WE is a better conductor of magnetism than atmospheric air.

This is an important fact, because great magnetic energy may arise, and influence a steering compass, from arrangement of the iron in a vessel. If, for example, a merchant vessel had a cargo of iron in her



hold, or, even iron tanks, steam boilers, or cylinders so stowed in the hold, as to be in *contact* with an iron knee, or, iron truss, bolted to the ship's side, and running upwards to the upper deck beams, such a piece of iron, being in contact with large masses of metal in the hold, would *conduct* or *transfer* the magnetism from below, and would certainly derange the magnetic needle, and cause the compass to indicate a wrong course!

It is on this principle of magnetic conduction that separate pieces of iron, when brought into actual contact, act magnetically as a single mass. The water tanks in a ship-of-war, if stowed in actual *contact*, will act on the compass, as if a single tank of the same size as the aggregate number of small ones in the hold occupied their places. But if the tanks be kept separate by thin slices of board, then each separate tank, &c., will retain its natural quantity of inductive magnetism, and the place of its *poles* will change with the motion of the ship.

(*To be continued.*)

REMARKS ON TIDES, AND THE PREVAILING CURRENTS OF THE OCEAN
AND ATMOSPHERE.—*By W. C. Redfield.*

[Read before the American Philosophical Society at their Centennial Meeting,
May 27th, 1843.]

THE summary remarks and suggestions which follow, relate chiefly to the systematic currents of the ocean and the atmosphere; and were drawn up on short notice in the summer of 1838 at the request of a gentleman attached to the U. S. Exploring Expedition,* and were designed for reference, correction, and verification, by the scientific observers of the Expedition.

The views thus submitted I had derived, in previous years, from somewhat extensive examinations of the observations which had been made by voyagers and travellers in different seas and countries, and they are offered without any array of particular references to the numerous facts and observations from which they have been derived. This course was adopted, on that occasion, as being the least laborious, and because it was the undoubted design of the observers of the expedition to subject all general views and theories to the test of direct observations.

As a substitute, however, for those specific observations from which my results had been drawn, I delineated on maps and charts which were furnished me for the purpose, not only the general outlines or courses of the systems of general winds and currents which I had found to prevail in the Pacific Ocean and other seas, but also, some of the particular observations by which in my view, the existence of these currents had been established. These maps, seven in number, were lost by the unfortunate wreck of the Peacock, near the mouth of the Columbia River.

* James D. Dana, Esq., geologist of the expedition.

It is not my design to bestow further labour upon this extensive subject till the observations and results of the expedition shall have been published. But as observations on meteorology and the cognate branches of terrestrial physics may have been more limited in the expedition than I could have had reason to apprehend, particularly in the Atlantic, I venture now to lay before the Society my unfinished memoir of that period, even without those specific delineations which would have been afforded by the lost maps, which I have not yet attempted to reconstruct.

I proceed now to the remarks which were addressed to the gentlemen of the expedition.

The preparation and departure of the Expedition fitted out by the government of the United States for the scientific examination of distant seas and countries, naturally awakens feelings of interest and expectation in the American public, as well as among the friends of science, in this and other countries. In such feelings the writer of these remarks fully participates, and the opportunities for useful observation which the Expedition is likely to afford, on various natural phenomena which have engaged his attention, may, perhaps, justify the following statements and suggestions, addressed to those who are to conduct the movements, and perform the scientific labors of the expedition.

The instructions which have been drawn up by Sir J. F. W. Herschel, for observations in meteorology, and by M. Arago, for the discovery vessel, the "Bonite," together with the reports which have been made to the U. S. Naval Lyceum by its committee and other distinguished individuals, with direct reference to this expedition, have presented many important topics of investigation.* There are still, however, some points of interest and importance which seem to deserve more particular notice.

Indeed, the subjects of natural science which invite the investigation of the expedition, are too numerous and important to be easily exhausted.

Of Tides.—The valuable labours of Professor Whewell and Mr. Lubbock have greatly enlarged our knowledge of the tides; owing chiefly to the fact that these gentlemen have followed the method of direct induction from actual observations, made at different localities. To the directions given by Professor Whewell for obtaining the correct establishment, or true time of high water at the full and change of the moon, nothing more need be added.

It is a question of some importance, however, if it be not already determined, whether the main tidal wave of the North Atlantic be derived directly from the great Southern Ocean, as Professor Whewell supposes, or, whether it mainly follows a circuit of revolution, north of the equator, around an elongated axis or neutral position, situated in mid ocean, somewhere between 18° and 26° north latitude, as had been suggested at an earlier period.†

A like question arises in regard to the tide-waves of both the North

* See Naval Magazine for January, 1837, vol. ii, p. 61, *et seq.*

† See note in Silliman's Journal for Oct. 1833, vol. xxv, p. 132.

and South Pacific. The inquiry is therefore presented, whether the tidal wave in the North Pacific Ocean does not move in a circuit, around a central position not greatly distant from the Sandwich Islands, the wave moving westerly in mid ocean in the intertropical or equatorial latitudes, and easterly in the higher latitudes; and whether the tide-wave of the South Pacific does not follow a like course, around a central point or position at or near Tahiti or the Society Islands. If this view of the course of the tide-waves should be sustained by observations in the Pacific, the tide-wave on the western coast of North America will be found moving south-eastward, and together with the counter-wave from the South Pacific, might fully account for the extraordinary convergence and height of the tides in the Bay of Panama. Such a system of revolution in the tidal waves of the great oceans may account, also, for the absence of any considerable tides at the Sandwich and Society Islands, and at the Windward Islands of the Antilles.

Such circuits of revolution in the tides, would bear some analogy to those which, as I apprehend, are exhibited in the system of *currents* in the several oceans, as well as in the system of general winds, which likewise prevail. These systems of revolution and compensation, in the currents of the aqueous and aerial oceans, I have ventured to refer directly to the law of gravitation, as connected with unstable equilibrium and with the rotary and orbital movements of the several zones and meridians of the earth's surface.*

As connected with the enquiry on tides, it is important to ascertain the direction of the main stream of flood tide in the *offing*, at the several islands and prominent headlands which are most exempt from the local influences of reefs and shallows.

Currents of the Atlantic.—The great system of aqueous circulation, which appears to be developed under various modifications in the several oceans on both sides of the equator, has been glanced at in the foregoing remarks on tides. One of the most active, if not the best known current of this oceanic system, is the Gulf stream of the North Atlantic. It appears to be established that a main portion of the Gulf stream moves from the American coast towards the Azores and the Canary Islands, and thence along the coast of North Africa, turning westward till it again coincides with the equatorial current in its course towards the Caribbean Sea. This great circuit of the ocean current is found to coincide, mainly, with that which is also performed by the general winds in the basin of the North Atlantic. For the trade winds, on leaving the tropical latitudes, pass eastwardly through the temperate zone, but in a more irregular manner, sweeping around the track of ocean known as the *grassy sea* and the belt of summer calms, which lies a few degrees north of the tropic, known to navigators as the *horse latitudes*. It is in this extratropical region of calms that the major axis of this great elliptical circuit of general winds appears to lie. It is this calm region that separates the general westerly winds of the higher latitudes from the trade winds of which they are the counter-

* The law of equilibrium in our system, I apprehend, is a law of motion, not of rest.

part; and it is chiefly these westerly winds of the higher latitudes which, in the performance of their great circuit of revolution, are again merged in the regular trade winds.* But let us return to the consideration of the more limited currents which prevail in the ocean.

Having noticed that portion of the Gulf stream which, on passing the bank of Newfoundland, moves towards the Azores and the African coast, we will now follow that considerable portion of the stream which is found to pass towards the western coast of the British islands and along the coast of Norway, till it enters the polar basin. From this frozen region it again emerges in the great polar current, covered with floating ice, which, skirting the coasts of Labrador and Newfoundland, falls in with the Gulf stream at the southern extremity of the Grand Bank, and now becomes, mainly, a subaqueous current, the deeper portion of which can be traced only by its propelling effect on the deeply immersed icebergs, which it forces athwart the warm tropical stream, till they become dissolved by the higher temperature of the latter.

Observations of the temperature made in sounding at various depths in the Gulf stream, and particularly in the region where it overruns or crosses the polar current, would be of high interest, and of great value in estimating the dynamics of the ocean currents.

As connected with the foregoing outline of the main system of superficial currents in the North Atlantic, I propose now a particular enquiry, relating to a single branch of this system of ocean streams, which perhaps may serve to show the origin or character of some currents which pursue opposite directions in other oceans. *From what source, then, is that south-westerly current derived which commonly prevails along the coast of the United States, in the direction which is opposite the Gulf stream?*

I am aware that this is usually considered by seamen as an eddy current, derived from the Gulf stream; but from this view I am compelled to dissent. For, in the first place, this current never assumes the gyrating form of an eddy; but continues its course, when unobstructed by gales, in a direction which is generally parallel to the coast. But, secondly, in case this current be derived from the Gulf Stream, it must necessarily partake of the same elevated temperature; whereas,

* I may add, that so far as the writer is concerned, the first exhibition of this view is found in my communication published in Silliman's Journal for April, 1831, vol. xx, p. 50. In this instance, however, I have ascribed the currents of the ocean solely to the force of the winds, in compliance with the common theory; a view which I soon after found reason to abandon. The outlines of the great systems of horizontal revolution in the winds I have also sketched in my summary of "Facts in Meteorology," which appeared in Silliman's Journal for October, 1833, vol. xxv, pp. 122-135. Previous to this period I had examined the journals of whalers who had cruised on the "off-shore ground" of the North Pacific, in that belt of calms and light winds near the latitude of 30°, which is the favorite resort of the sperm whales in that sea, and which corresponds to the so called "horse latitudes" of the Atlantic. From this and other like evidence I had arrived at the conclusions which I now maintain.

Sir John F. W. Herschel maintains the connection or continuity of the trades with the prevailing westerly winds of higher latitudes; and refers to the well reasoned explanations of Capt. Basil Hall, based on the common theory. He also adds an important suggestion on the velocity of winds which subside from a higher position in the atmosphere, and which may serve to explain the steady violence which sometimes pertains to westerly gales in the United States and on the North Atlantic.—*Treatise on Astronomy, section 200 and ante.*

the reduction of temperature which occurs on crossing the north-western limit of the Gulf stream is most remarkable, and is almost without a parallel in the Atlantic, except in the immediate vicinity of ice.

It appears vain to allege the proximity of soundings or shallows as explaining this extraordinary change of temperature, for this cannot avail if the waters of the counter current be derived from the Gulf stream, to say nothing of the erroneous character of the position here noticed.

From the evidence which is afforded by numerous facts and observations, it appears that the current in question is neither more nor less than a more sluggish prolongation of the polar or Labrador current, which sweeps along the north-eastern shores of this continent and the island of Newfoundland. And this current, if I mistake not, may be directly traced in its gradations of temperature, by the thermometer, from off the southern coasts of Newfoundland and Nova Scotia through the entire distance to Cape Hatteras, if not to Florida.

An eddy current offsetting from the Gulf stream, would nowhere be so likely to be met with as at the point of intersection of this stream with the extremity of the Grand Bank of Newfoundland, and sweeping from thence upon the southern shores of the island of that name; and yet, the harbour of St. John's on the southern coast of Newfoundland is known to have been continued ice-bound in 1831 so late as the month of June, although in the latitude of Paris. This fact is a convincing proof of the unimpeded continuation of the polar current to the southward, in this region, notwithstanding the near proximity of the Gulf stream.

That Col. Jonathan Williams and others should have ascribed the reduced temperature of the ocean near our shores simply to the effect of shoals or shallow soundings, need not excite our surprise, as such striking reductions of temperature are found on the Great Bank of Newfoundland, and on that of the Lagulhas, off the Cape of Good Hope, and while so little has been known of the system of ocean currents, and the proximate origin and courses of the colder streams of this system. And it is well known, that the low temperature of the sea on these banks and shallows has been ascribed to the effects of radiation. But, if I mistake not, it has been shewn that a non-luminous body is incapable of radiation through water; and should this be otherwise, any possible effect of this kind is wholly overborne by the cold of the great polar currents, which constantly traverse the banks and shoals referred to.

If I am correct in this view, it is the reduced temperature of the currents from the polar regions, or, from contiguous ocean depths, which has led Williams, Davy, and others to support the erroneous, or at least very questionable generalization, which ascribes a reduced temperature to the sea on all banks and shallows. If the ocean was devoid of currents, I think we might expect an *increase* of temperature on shoals in summer, or in warm latitudes, and a *reduction* of temperature in winter. A friend who made a full set of observations in crossing the Atlantic, informs me that, on arriving at soundings in the English Channel, he found an increase of 2° on the temperature of the waters.*

* George W. Blunt, Esq.

Perhaps I may be allowed to refer, for a moment, to the geological agencies of the polar currents. It is well known that extensive fields and packs of ice, including many icebergs of vast magnitude are constantly carried by the polar currents towards the lower latitudes. On reaching certain regions, such as the banks of Newfoundland and the Lagulhas of Southern Africa, the ice is brought into proximity or contact with the warm counter-currents of the system, which flow from the torrid zone, where the ice is soon dissolved. The numerous masses of earth, rocks, beach boulders, and sedimentary matter, which are borne by the ice in great profusion from the cliffs, the shores and the sea-bottom of the Arctic regions, and probably also from the Antarctic, are thus added continually to the vast submarine deposits which there accumulate. May not the continuance of this transporting process, through a long series of ages, be deemed sufficient to account for the existence and present extent of the great banks referred to; without particular reference to the evidence of successive elevations and subsidences, in extensive areas of the earth's crust?

Currents of the Southern and Pacific Oceans.—That the currents of the Atlantic ocean are connected with, and form an extension of those of the Indian and Southern oceans, has been proved by the researches of Rennel and others. Hence it follows, that the drain of these currents must be compensated by other currents which pass from the Atlantic to those seas, by some unknown or unexplored route, currents which move either at the surface, or at lower depths. If these compensating currents exist at the surface, as is quite probable, on what meridians of the extreme South Atlantic are they to be found!*

In view of an attempt to penetrate the Antarctic regions, it seems important to ascertain those routes by which the warmer currents of the great Southern ocean enter the polar basin, and on what routes or meridians they again emerge as ice-bearing currents, moving towards the lower latitudes. The thermometer will prove an important auxiliary in determining these localities, and the course of the polar currents from the Antarctic basin is now partially known, by the course of the icebergs which descend to the lower latitudes. It is by following the course of the warmer currents which enter the polar basin that the nearest approach will probably be made to the Antarctic pole; and the same system of continuous current might afford the means of final escape, should a ship be compelled to winter in the ice of that perilous region.

As regards the great system of currents in the Pacific, we may infer from the facts already known, that a current from the Antarctic region sets to the northward, several degrees west of Cape Horn, which unites its waters with those of the more temperate latitudes in their flow to the coasts of Chili and Peru, and thence towards the equator. If an ice current does not thus unite with that of the coast, the latter is mainly supported by the great afflux of the extra-tropical currents from the west, which in performing their constant circuit of revolution, next

† The consideration of the connection of the currents of the North Atlantic and the Arctic seas with those of the North Pacific, through Bhering's Strait, has been purposely omitted, as being less important in a general view, and beyond the expected range of observation by the expedition.

sweep from the coast of Peru towards the equatorial latitudes, where they continue their course to the westward, again to leave the inter-tropical latitudes with an elevated temperature, which is in turn conveyed to the higher latitudes.*

The numerous archipelagos of islands, and the extensive groups of coral reefs in the Pacific, serve to intercept the regular westerly progress of its warm intertropical currents, and to determine more than one circuit of compensation and revolution in each hemisphere. This class of obstructions partly supplies the place of a continent, in defining separate basins of revolution for the currents of this vast ocean, and this is particularly the case in the South Pacific, where these obstructions are scattered over wide areas. Hence, strong currents setting to the eastward have been found in various parts of the Pacific, below the latitude of 30° , moving in direct opposition to the influence of the strongest portion of the trade winds.† Thus the system of currents, as we shall find of the winds, becomes more complex and irregular in this vast ocean than in the Atlantic; which, at least so far as relates to winds, is contrary to representations which have been often erroneously made by scientific writers; representations which doubtless were founded in general reasonings on the calorific theory of winds.

Good observations on the direction, strength, and temperature of the currents, in all parts of the Pacific, will prove of great importance, and should be made and registered, most carefully, by the expedition.

The obstacles which thus modify the natural system of currents are least numerous in the North Pacific, where the trending of its continental coast, except in high latitudes, is favorable to a strong development of the regular geographical currents, near to these coasts. Hence, on the coasts of China and Japan we find a current which fully represents the Gulf stream of the Atlantic. This current, I find, was frequently noticed, incidentally, by the officers of Cook's last exploring expedition, and its velocity stated, in some instances, at five miles an hour. Other observations, to which I have had access, have confirmed the existence of this current, and have shown the elevated temperature which this stream carries from the lower latitudes; so that near one thousand miles east of the coast of Japan, in lat. 41° north, the temperature of the surface water has been found at $79\frac{1}{2}^{\circ}$ of Fahrenheit.‡ In the South Pacific, near the coast of New Holland there is found, also, a like warm current, pursuing its southern circuit, through the higher latitudes of that hemisphere.

But owing as I apprehend, to the great width of the Pacific, and to the consequent absence of a defined ocean boundary near its central meridians, there is here less of apparent regularity and system, both in

* From information which I have gathered, I entertain no doubt of the blending of this ice current with the general current towards the equator on the west coast of South America; and the very reduced temperature which this current carries to the equator, at or near the Galapagos Islands, is proof of the fact.

† This counter current, running to the eastward, is sometimes found in the equatorial regions of the Pacific and other seas, and bears some analogy to the westerly monsoons of the Indian and Pacific oceans.

‡ Voyage of Capt. Dupetit Thouars. Other and earlier observations had attracted my attention, particularly in the cruising voyages of our American whalers, but I now refer to this as a more recent and convenient authority.

currents and winds, than, perhaps, in any other ocean; the constant and reciprocal equatorial and polar tendencies of oscillation not permitting a single circuit of revolution to extend from Asia to America without deflection. Hence we find more apparent irregularity and complexity in the currents and winds of mid ocean, in this vast sea, than in those regions which are more nearly adjacent to the continental coasts.

A knowledge of the currents and winds of the Pacific Ocean, I am convinced, will serve to remove all mystery and all doubt from the once vexed question of the first peopling of its islands, from the Asiatic continent; in spite of the long urged objection of the opposition of the trade winds. A case is still recent where the wreck of a Japanese junk was drifted the entire distance to the Sandwich Islands, with its surviving crew; thus completing nearly half of the great circuit of winds and currents in the North Pacific. But we shall find an additional means of transport near the equator, which is afforded in the north-west monsoon of the Indian and Pacific oceans, and which, according to my inquiries, is found to extend, at one portion of the year, as far eastward as the Society Islands; or, more than half the distance from the Indian Ocean to the coast of South America.

(To be Continued.)

PORT ESSINGTON, 18th April, 1843.

SIR.—Having recently observed in the number for February, 1842, of the *Nautical Magazine*, an extract from a letter, written by some person residing at Port Essington, reflecting on the officers of H.M.S. Britomart, who, as stated by the writer, were the authors of certain letters, which appeared in the Swan River and Sydney newspapers, I am induced to offer a few remarks on that production, which you will oblige me, by inserting in your periodical.

I do this, not so much with the view of exculpating the officers of the brig, who have been unfortunate enough to incur the displeasure of the writer, as to remove any misconception in the minds of your readers, regarding this much vaunted colony, as well as to shew you how liable you, and others, are to be imposed on by certain characters, who, with unblushing effrontery, hesitate not to make assertions as unwarrantable, as they are gratuitous. Who the correspondent may be, or what may have been his object, in thus bringing the Britomart's officers into notice, is more than I can positively say, but from part of the contents of his letter, I am led to suppose, he is the individual that was permitted to sojourn at Port Essington, for some months, while employed by some person or persons as a bird stuffer.

This will of course account in some measure, for the numerous *little mistakes* he has made, which to those well acquainted with the subject, will be rather entertaining than otherwise. It would have been as well I think, and peradventure better, had he confined his labours to the

above reputable and profitable occupation, and not have endeavoured to *stuff* animals of a higher order; as I have every reason to believe the attempt will be a failure. Before noticing those passages in his letter, which refer to the officers of the Britomart, I may observe that they never had the honour of the writer's acquaintance, nor, I believe did one of them ever even see him, the brig having left Port Essington, previous to his arrival.

Whether the officers of the Britomart did, or did not write the letters complained of, is a matter of perfect indifference to me, but whoever the author or authors may have been, I perfectly coincide with them in opinion, as I think all sensible and impartial persons will, and instead of considering the account given of the place, a disgraceful one, as the correspondent has styled it, I think it entitled to every praise in having exposed the exaggerations and incorrect statement contained in the description of the settlement, which was published by some one on board the Alligator.

I will now select a few passages from the correspondents letter, which require a little comment. He says,—“I should first tell you that these *persons*” (the officers of the Britomart) “although there 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, attempted to give a description of a country, its advantages and disadvantages, its want of water, description of sail, &c., which they have never taken the trouble to walk out and see.” Now, I think, Mr. Editor, you will agree with me, that any man venturing to canvass the conduct of people whom he never saw, should be particularly cautious in selecting his authorities, for what he states concerning them.

So far from the officers of the Britomart seldom leaving their ship, I can most positively declare, that all but one lived on shore, from the period of the departure of the Alligator, (the 3rd of June,) to the occurrence of the hurricane, (the 20th of November,) more than five months, on which occasion their habitation was blown down, compelling them to return to their ship. The cottage occupied by them was the nightly resort of several of the officers of the settlement, which must be as well known to some individuals there as myself who have spent many a pleasant evening with them. I can, with equal truth, as positively assert, that they were constantly in the habit of walking out, and occasionally riding, and the extent of their excursions, I should fancy at least *equalled* those of any other.

Again, he talks of their being prejudiced, and of their having peculiar motives for speaking ill of the place. How can he possibly form an opinion never having seen them, or what “peculiar motives” should *they* have more than others? I must confess, I never observed it. Talking of the buildidgs, this person remarks, “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 rebuilt, 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 two just commenced, a few buildings of bricks made in the settlement.”

Unfortunately he has not told us, what these buildings are, or where to look for them. I have been there since he left, but I do not recollect seeing any buildings, either of stone, or brick, or, in fact, any others that would bear the slightest comparison with those seen in other towns in Australia.

“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 attempt 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.”

I wonder who it was that shewed him those springs? No one was ever civil enough to point them out to me, and how very odd that I and others, should not have discovered them ourselves, being situated, as we are told in the *immediate vicinity* of the settlement! I suppose they had all dried up before we arrived, for not a spring did I even see or ever hear of, and notwithstanding what the writer may say, I affirm that I recollect the time, when one of the wells was completely dry, and further that every drop of water that was consumed, was obtained from the wells. He says,—

“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 main land 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 settling. Perhaps I shall surprize 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 all these streams being either of a black loam or a reddish brown colour.”

Whether the soil in this part of the world, be good or not, I care not, as I am not at all interested in the place, but this I can safely say, that in the course of my perambulations while there, I never came across any land that could be called even tolerably good, and this I have heard many others say, who were I should think very nearly as competent judges as the writer. As I have never been in the interior as he has, I, of course, cannot tell, what he there saw, but the soil may be good or it may not, but if the only recommendation he can give it, is, that it is better than any *he has seen* in any other part of Australia, it is not saying much for it.

He crossed four small rivers a day, in a march of twelve miles: this being the case, entitles the place to some consideration; but should these rivers turn out to be nothing but gutters after all, over which a

kitten might jump, than which I think nothing more probable, we should be somewhat disappointed. It is rather singular, I heard nothing of all this the last time I was there, but I suppose that like the springs in the *immediate vicinity* of the settlement, they had dried up. He adds,—

“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 luxurious tracts that we started up numbers of wild ponies and buffaloes, all as fat as our cattle at home when driven to the market at Christmas.”

This is certainly giving a glorious description of the country through which he passed. Wild ponies and buffaloes! as fat as our own cattle at home! Does he wish by this, to wheedle people into a belief that these animals are indigenous to the place when he says they started numbers of them? This is rather an indefinite term, but I believe I can tell pretty exactly how many were running wild, though not how many he saw. Six ponies had at different times broken from their tethers, and escaped into the bush, and I think between twenty and thirty buffaloes.

Regarding the grass, whose luxuriance of growth he seems so much delighted with, I can only say that the last time I was there, the buffaloes were feeding on it, and from its being so luxurious they were all dying, the average loss being about two every week, and instead of their looking fat, as our cattle at home, they were about as lean as any poor beast I ever beheld; but who ever heard of a buffalo being fat? as to be compared with cattle at home.

It has been almost a wearisome task to wade through the statements which this individual has been induced by some unaccountable means, to publish, but having undertaken to expose them, and further they having appeared in the *Nautical Magazine*, I considered it necessary to proceed thus far, regretting only they have been allowed to pass so long unnoticed, and I leave it to you and your readers, to form your own opinions of the country in question, as well as of the character of its respectable advocate.

In conclusion I may remark, that should the government be desirous of retaining possession of this place, they cannot do better than make a penal settlement of it, for which, it is in many respects admirably calculated, if, severity of punishment be the object in view.

I am Sir, &c.,

AN OFFICER IN H.M. NAVY.

To the Editor &c.

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, *with an account of the attendant phenomena, abstracted from the Official Journals of the respective Ships, and from other authentic sources of information.*—By *W. S. Harris, F.R.S., &c.*

(Continued from p. 617.)

RACEHORSE, 18.

1831. October 17th, at sea between Port Royal and Santa Martha, 4h. 30m. A.M. squally with lightning, wind E.N.E. The lightning struck the ship and shivered the main-top-gallant, and main-top-masts, and split the after pump; all the bulk heads about the mast were thrown down; the man at the wheel stunned, and the chain pendant of the awning broken in pieces. The main-mast also exhibited traces of the discharge by a black mark along it.

Wind on the previous days easterly, light breezes and fine, on the 17th E.b.N. A.M., after which E.N.E.; 4h. squalls; 7h. 40m. ship taken aback, wind south-west; noon moderate and cloudy. The wind remained to the south-west, moderate with fresh breezes.

RACER, 16.

1834. October 30th, off Carthage; lat. 11° N., long. 73° W., A.M. shortened sail to a squall; 2h. the ship struck twice by lightning, found both topmasts gone by the cap; the fore-top-mast and fore-top-sail-yard much damaged.

The winds had been variable and light, succeeded by a violent thunder squall; the lightning was most intense. About this time the shock of an earthquake was felt at Jamaica. The lower masts were saved by the chain top-sail-sheets acting as conductors, as in the case of Hyacinth.

RACER, 16.

1835. May 26th, lat. 39° N., long. 63° W., 7h. A.M. the fore-top-gallant-mast struck and shivered by lightning.

The wind was moderate and south-easterly.

The vessel on this occasion had a chain conductor on the main-mast, which emitted sparks, and a rustling sound, the lightning was not very intense, nor was the thunder loud.

RHADAMANTHUS.—Steam Frigate.

1837. March 13th, moored in Santander Harbour; A.M. fresh breezes N.N.W., heavy rain, thunder, and lightning; 3h. squally, with hail and rain; daylight found the main-top-mast splintered by the lightning. The wind continued N.N.W. and N., P.M. moderate.

RODNEY, 80.

1838. December 7th, Mediterranean, off Syracuse; Cape Pasaro, eight leagues east; 9h. A.M. a heavy squall with hail, rain, thunder, and lightning. The electrical discharge struck the ship; main-top-gallant-mast shivered in pieces; top-mast cap split open; main-top-mast

damaged, and the gear in the bunt of the yard set on fire. Main-mast severely damaged, thirteen of the iron hoops burst open, casing of Hearle's pump split in pieces, a strong smell of fire with the appearance of smoke in the orlop deck. Two men killed in the top-mast cross-trees, and two hurt. Fire balls are said to have traversed the decks.

The wind at the time was from the south-west; dirty rainy weather, blowing strong, with occasional squalls.

The top-gallant-mast was shivered into such small pieces, that the sea appeared covered with chips of various sizes. The royal pole fell on the cross trees uninjured. On examining the mast at Malta, the spindle through the heart of it was found completely charred. The electrical discharge divided on the hull and passed over the gangway with a terrific explosion in one direction, and in another by the copper pipe of Hearle's pump, and by the metal bolts through the ship. For a few minutes the ship was in a precarious position, but the great firmness of her officers, and the perfect discipline on board, soon enabled the crew to extinguish the fire in the main-top without further damage.

The main-mast so shook and damaged was 2 feet 5 inches diameter, and 87 feet long, the iron work about it weighed above a ton; the top-gallant-mast weighed 8 cwt., yet such was the sudden effect of the lightning, that it was not even seen to go in pieces, it was in a moment reduced to shavings and chips, which were observed floating past the ship, like the refuse of a carpenter's shop.

RACEHORSE, 18.

1840. January 12th, off the Bahia de Sol River, Para, Coast of Brazil; 2h. 40m. lightning struck the ship and shivered the fore-top-gallant-mast; wounded three men, split the fore bits and fore-mast beam, and ripped the tin lining off the galley.

The vessel was running before the wind, fresh breezes W.S.W., studding-sails on both sides. A heavy thunder squall took all aback at 2h. 40m. which carried away all the studding-sail booms. Whilst clearing the ship of sail, a discharge of lightning fell on the foremast. It was conducted from the top-gallant-mast by the chain tye and sheets to the bolts without further damage to the masts. The main-top-gallant-mast was also slightly damaged. The squall was attended by heavy rain; 4h. P.M. moderate, the ship anchored. The wind continued north-east, after which on the 14th land and sea breezes.

This case is not unlike the cases of the Cambrian and Clorinde before mentioned.

SEA HORSE, 36.

1780. July 31st, Straits of Malacca; 5h. 30m. A.M. heavy rain, thunder, and lightning, wind E.N.E. a flash of lightning carried away the main-top-gallant-mast, threw one of the seamen overboard, shivered the cheek and fish of the main-mast, carried away the wouddings, and damaged a great deal of the sails and rigging.

Wind on the 30th east to south-east; 31st A.M. E.N.E. and E.b.N. after which south-west with a shift of wind. August 1st, south-west, north-west, and S.S.W.

The ship appears to have been much damaged in her masts and sails.

The ship's company were employed in making good defects for several days.

SWIFTSURE, 74.

1801. February 10th, moored in Marmorice Bay, Mediterranean; P.M. mizen-top-mast struck by lightning, and shivered in pieces.

Wind on the 9th south-east, light breezes with rain; 10th south-east to north-east with thunder and lightning; 11th light breezes south-east, cloudy. The electrical discharge descended straight down to the lower deck, and passed without further damage out of one of the stern ports.

SUPERB, 74.

1802. September 19th, moored in Gibraltar Bay; A.M. heavy rain, thunder, and lightning; 9h. main-top-gallant-mast struck and damaged. Winds easterly, after which variable. This damage occurred in the same storm in which the Active and Gibraltar suffered so severely.

SHEER HULK.—At Woolwich.

1804. On Sunday evening, June 24th, a discharge of lightning struck the Sheers, set the cap on fire, together with the hood at the head of the mast. The spout was shivered in pieces, and also set on fire, and several of the hoops were burst open:

Much alarm prevailed, and the bell rang for the men to assist in extinguishing the flames. John Flower, a smith, got on board the Hulk, and ascended the Sheers, and by his exertions the fire was in a great measure cleared.

SQUIRREL, 28.

1804. November 18th, St. George's Bay, Bengal; A.M. 9h. 15m. main-top-gallant-mast, main-top-mast, and main-mast struck and shivered by lightning. The fishes of the main-mast were quite shattered, and the other masts rendered quite unfit for further service.

Wind on the 17th S.b.W., light breezes and thick weather. On the 18th, south-east, A.M. light airs; after which at 9 A.M. a heavy tornado with rain, thunder, and lightning; 10h. moderate, wind south-east, moderate and cloudy.

SQUIRREL, 28.

1805. February 23rd, Cape Palmas, N.W. 208 miles, Cape Coast; 7h. 10m. A.M., top-gallant-mast, top-mast, and main-mast were struck by lightning, the latter rendered perfectly useless; the main-mast was damaged in five different places. Two men severely hurt.

The mast was so damaged that no sail could be carried on it with safety. The discharge descended into the hold, and went out at the side; in its way it stove a plank and loosened all the caulking from the fore to the main chains. The ship made 8 inches of water per hour. Captain Shortland who commanded the ship was covered by a blaze of luminous matter.—Further particulars from the *Naval Chronicle*.

The main-mast was removed when the ship arrived at Portsmouth.

The wind on the 21st south-west, fresh breezes and clear weather; p.m. fresh breezes and variable; 8h. taken aback; midnight light winds and cloudy; lightning in south-east; 22nd, A.M. cloudy threatening weather from the eastward with lightning; 6h. squally and unsettled with heavy rain, thunder, and lightning; 7h. 10m. ship struck.

Winds on the 22nd south-west, west, variable; northerly, variable; S.S.E. variable, and south; light airs and cloudy, wind southerly.

SCORPION, 18.

1806. September 20th, at sea, Fayal north-east, 1544 miles; A.M. 10h. 40m. moderate breezes, south-west; thunder, lightning, and rain; main-mast severely splintered. One man killed, and one wounded.

Wind on the 19th south-west, light airs and cloudy; on the 21st west, cloudy with fresh breezes.

The ship had a new main-mast on her arrival at Plymouth.

SURINAM, 18.

1806. December 11th, off Belleisle; 8h. p.m. strong flashes of lightning with thunder and heavy rain; 11h. 30m. a furious squall with thunder and lightning, wind westerly; main-mast struck by the lightning and split in pieces, a large piece of it stove in the deck, and destroyed the cabins beneath, the other parts fell in the waist and on the booms; the discharge split both pumps, killed two men and wounded four. It passed into the gun-room, and struck down in the magazine passage, where it melted some solder of the canisters containing shot.

The wind on the 10th north-west, then variable and foggy, with rain; on the 11th north-west and west; 12th heavy gale with rain, north-west.

The ship on being so damaged made signals of distress; 12th A.M. threw up rockets with blue lights and false fires, signal guns; but the "gale was now so high, with heavy rain and sea, that we could not see whether they were answered. The ship laboured much, employed clearing the wreck, and getting small sails aft to keep the ship's head to the sea and wind to prevent her drifting upon the shore. Hove overboard several casks, sails, &c., from the wreck; at 4h. more moderate; 11h. 45m. anchored."

They rigged a jury main-mast, and went to Plymouth for refit.

SWIFTSURE, 74.

1807. January 22nd, Palermo; 8h. p.m., strong gales with lightning and rain; 8h. 10m. the fore-top-mast was struck by a flash of lightning, which set the mast on fire together with the fore-top-sail, and rent the mast from head to foot.

The mast and sail burned vividly, and with the greatest exertions on the part of the officers and crew, it was not fairly extinguished before nine o'clock.

The wind on the 21st west, light airs and cloudy; on the 22nd W.N.W., strong gales; struck yards and top-masts; 23rd moderate with rain; wind N.N.W.

STAUNCH, 16.

1807. March 10th, Rio de la Plata; 5h. 30m. A.M. wind east, strong breezes, and thick cloudy weather, with heavy squalls of hail, rain, thunder, and lightning; 6h. 40m. the electric fluid fell on the fore-top-gallant-mast, and shivered it in pieces, then set fire to the fore-top-sail; split and shivered the fore-top-mast from the heel to the cap, forced a piece out of the cheek of the fore-mast, and separated the fish from the mast all the way to the deck, and shivered the mast through very much, to within eight feet of the deck. The discharge also shivered the fore-top-gallant-yard as it stood in the rigging, and the swinging boom; and tore the sail in pieces. It drove in the larboard bulwark and broke one of the hammock staunchions, making a hole full four feet square. The copper at the waters' edge below the scupper-hole was melted.

They fished the fore-mast, and went to Monte Video, where the vessel had a new mast and general refit.

SULTAN, 74.

1808. August 12th, moored off Mahon; 12h. 30m. a ball of fire struck the jib-boom, shivered it in pieces, killed seven men and wounded three severely, and struck the bowsprit in several places, but without doing any serious damage.

The ship had loosed sails to dry, and the lightning struck the jib-boom whilst the men were furling the jib.

Wind A.M. S.S.E. light airs, occasionally variable, followed by fresh breezes and rain; noon, dark cloudy weather; variable winds all round the compass, with thunder and lightning and fresh breezes.

The weather had been previously squally on the 10th, with rain, wind variable from W.S.W. to north-east; on the 11th light airs from S.S.E.; after the storm moderate; on the 13th from north-east, and fine; on the 14th light breezes and variable.

SHELDRAKE, 16.

1811. June 23rd, at anchor at the mouth of the Great Belt; 8h. P.M. a heavy squall with thunder and lightning; 8h. 30m. main-top-gallant-mast and main-top-mast struck by the lightning and split in pieces; main-mast much shook.

The masts are said to have been split into ribbons, and the main-mast looked like a bundle of laths; one of the jaws of the boom was split off, and the pilot under the boom was knocked down; a hole about the size of the top of one's finger was found burned through his clothes into his skin, just between the shoulders; he could not straighten himself without pain for some time after.

Wind on the previous day north and N.N.E., and variable; 23rd A.M. east, fresh breezes and cloudy, thunder, and lightning; P.M. moderate and fine, E.b.S., after which south-east with heavy squalls. The wind remained at the south-east on the next day.

SULTAN, 74.

1812. September 19th, off the island of Tavolaro, north coast

Sardinia; P.M. moderate and cloudy; 4h. squally weather; main-mast, main-top-mast, and top-gallant-mast split in pieces by lightning; also the top-gallant yard and sail.

The chafing mats on the yard were set on fire; the top-mast was burst into shreds like laths, and stood open in that way for some minutes; on putting the ship before the wind, it fell with a tremendous crash. Such was the complete destruction of it, that the decks were covered completely with chips. With respect to the main-mast the heart of it was completely knocked out. There were one or two holes sufficiently large for a boy to creep into, and the chips from it fell in great abundance. It was not without great care and difficulty, that fishes and wouldings were applied in time to save it from falling; when hauled on shore at Malta, and the fishes and wouldings removed, the mast came completely in pieces.

The wind had been N.E.b.N. on the 18th, moderate and cloudy; on the 19th W.b.N. A.M., but at 4h. P.M. a thunder storm with heavy rain, wind S.S.W.; at 8h. S.E.b.E.; at 10h. north; on the 20th north, fresh gales; P.M. moderate and hazy, wind south-east; on the 21st, fine weather, E.N.E. to N.N.E.

The ship went to Malta to refit, and did not again sail until the 8th of October following.

SALVADOR DEL MUNDO, 112.

1812. February 25th, Hamoaze, Plymouth; A.M. squally, wind S.S.W. with rain; 11h. a heavy squall with rain in torrents, sharp flashes of lightning, and loud claps of thunder. The lightning struck upon the main-top-mast cross-trees, and knocked off Michael Wright, a seaman, upon the deck, by which he was killed; P.M. S.S.W., squally.

See Helicon and Tonnant, damaged in the same storm.

SWIFTSURE, 74.

1813. September 2nd, off the Rhone at anchor; main-top-mast struck by lightning and shivered in pieces.

The wind had been on the previous day south-east, moderate and hazy; 2nd, S.S.E. strong breezes and cloudy, with thunder, lightning, and hard rain. The wind, on the ship being struck, shifted directly to N.N.E.; but after a short time it came again from the southward.

SAN JOSEF, 112.

1813. September 25th, off the Rhone; A.M. fresh breezes with thunder and lightning; at daylight found the main-top-gallant-mast and main-top-mast badly shivered by the lightning.

The wind on the 24th south and south-west, after which north-east; on the 25th, N.N.E., strong gale; at 3h. 30m. the ship veered a whole cable, and braced the yards to the wind; after the lightning the wind veered to S.S.E., and continued on the next day from south-east to S.b.W.

STANMER.—(Packet.)

1818. September 15th, off Cuba, West Indies; p.m. light airs, dark threatening weather; 5h. violent squalls, thunder, lightning, and rain; 5h. 30m. the lightning struck the ship, shivered main-top-gallant-mast and main-top-mast, and damaged the main-mast.

The discharge passed through the fowl coop, and killed all the fowls except two, which appeared to have been in one corner of it out of the course of the explosion.

The lightning continued until 11h. p.m. with heavy rain. Several waterspouts appeared in various directions about the ship.

SAPPHO, 18.

1820. February 9th, at sea, lat. 4° 38' N., long. 19° W.; p.m. light airs and fine weather, wind E.N.E.; 6th cloudy with thunder and lightning; 8h. squally with rain; 8h. 20m. fore-top-gallant-mast, top-mast, and lower mast struck and shivered by lightning. Four men were struck off the fore-yard and never seen afterwards; two men were killed on deck, and four others died soon after in consequence of the injury which they sustained; several others were knocked down and stunned, and upwards of fourteen were severely hurt.

The wind had been from the east and E.N.E., after which calm with light airs at noon, when the ship was struck it came more to the north, and at night flew in to S.S.E.; on the following day easterly and northerly, cloudy with lightning; after which north-east, variable and calm; midnight of the 10th light breezes and cloudy.

SOUTHAMPTON, 52.

1832. November 5th, at anchor in the Downs; p.m. 12h. 30m. mizen-mast and mizen-top-gallant-mast struck by lightning and considerably damaged. The discharge passed through ten beams on the upper deck, shook four and exploded in the Captain's cabin.

The lightning first took the heel of the mizen-top-gallant-mast, which was housed, and then set fire to the paunch mat on the mizen-top-sail yard. It ran down the mizen-mast to the copper in the wake of the boom, which seemed to disperse it; the quarter-master and the signal-man were seriously injured. It started the oak plans and bolts about the wheel. The discharge got to the main-deck, and divided upon a copper bell wire, by which a portion reached the cabin, and in its general course shook the beams, and tore down all the lining of the sky-lights and other joiners' work, another portion traversed the deck, and shivered a box containing grape shot, to atoms, and then striking a 24lb. shot left on it marks of fusion. The lightning passed into the gun-room by a bolt in the waterway, and shivered several boxes and shelves in pieces.

The wind on the 4th N.N.W., moderate breezes and fine weather; on the 5th south-west; a.m. moderate and fine; noon strong breezes and rain; p.m. north-east, squally with thunder and lightning. The wind remained at north-east; on the 6th, squally; on the 7th E.N.E., strong breezes and cloudy.

During the thunder storm several waterspouts were observed about the ship. The storm was eventually attended by a shift of wind from south-west to north-east.

(To be continued.)

THE MAGNETIC EXPEDITION.

WE take the following with some amendments of our own from the *Literary Gazette*, as a connected account of the proceedings of the magnetic expedition under Captain Ross. The letter of Captain Ross relating to his discovery, with the chart shewing the position, of it our readers will remember in our vol. for 1841 p. 634.]

THE Erebus, Capt. James Ross, and the Terror, Capt. Crozier, left England on 29th Sept., 1839, and made observations at Madeira, Port Praya, St. Paul's Rocks, and Trinidad. On the last day of January, 1840, the expedition reached St. Helena, Capt. Ross having been desirous, in taking this course, to determine the important point of minimum magnetic intensity, and the nature of the curve connecting those points in which that intensity is weakest. This he accurately accomplished; and we may note that the large space of Atlantic Ocean so traversed possesses the least magnetic intensity of any like portion of the surface of the globe. The position of the line, presumed to be proceeding towards the north, being thus ascertained, it will be easy in all future time to mark its progress, and establish a certain law upon the subject. (Vide *Transactions of the Royal Society for 1842.*) The position of the line of no-dip or magnetic equator was also determined, and fixed grounds laid for subsequent observation of the changes to which it may be liable.

The magnetic observatory of St. Helena having been set on foot, and the officers and instruments landed, the expedition sailed again Feb. 8, and March 17th arrived at the Cape of Good Hope, where similar services were performed. A series of daily experiments was made on the temperature and specific gravity of the sea, at the depths of 150, 300, 480, and 600 fathoms, and at length soundings at the bottom of the ocean were struck. (See *Nautical Magazine*, vol. for 1840.) From all which, the physical condition of this element will come to be better understood.

April 3. The Cape was left behind, and the system of magnetic observation sedulously and zealously continued, to connect the voyage with the observatories established in other parts of the world. Kerguelen's Land was reached on 12th May; and on the 29th (the day previously fixed for simultaneous observations), the magnetometric instruments were noted every 2½ minutes, for 24 hours; and, fortunately, one of the magnetic storms which have been noticed in various parts of Europe, occurred, and its affecting the instruments, as at Toronto, afforded complete proof of the vast extent of magnetic influences, pervading the earth's diameter with a velocity equal to light or electricity.

Geological and geographical investigations were carried on here. Large fossil trees were found in the lava, and indicated the igneous origin of these islands. Extensive seams of coal were also imbedded in the volcanic mass, which may, with great benefit, be employed for the purpose of steam navigation in this quarter of the world, and be of immense importance to the commerce of India.

First Year.—From Hobart Town, Van Dieman's Land, the expedition proceeded to Auckland Islands, and completed a perfect series of magnetic observations.
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vations on the important term-day of Nov. 1840. The anticipatory attempts of the American Lieut. Wilkes, and the French Commodore D'Urville, having become known to our countrymen, Capt. Ross wisely used his discretionary power in altering his route from that originally intended. He accordingly directed his course for the utmost south, at about the 170th degree of east long. by which the isodynamic oval and the point exactly between the two foci of greater magnetic intensity might be passed over and determined directly between the tracks of the Russian navigator Bellinghausen and our own illustrious Cook. He then proposed to steer S.W. towards the pole, rather than attempt its approach directly from the north on the unsuccessful footsteps of preceding voyagers.

On the 12th of December he quitted Auckland Islands, touched at Campbell Island, and passing through numerous icebergs to the southward of 63° lat. made the Pack-Edge, and entered the Antarctic Circle on New-Year's day, 1841. This pack was not so formidable as represented by the French and Americans, but a gale and other unfavourable circumstances prevented the vessels from entering it at the time. A gale from the northward blew them off; and it was not till the 5th that they regained it, about 100 miles to the eastward, in lat. $66^{\circ} 45'$ S., and long. $174^{\circ} 16'$ E., when, though the wind was blowing and the sea running high directly upon it, the entrance was achieved without the slightest injury to either ship. After advancing through it a few miles, they were able to make their way to the southward with comparative ease and safety. Thick fogs, however, ensued, and, with light winds, rendered their course more difficult as well as tedious; and constant snow-showers impeded their operations. Whenever a clear glimpse could be obtained, they were nevertheless encouraged by seeing a strong water-sky to the S.E.; and on the morning of the 9th, after sailing above 200 miles through the pack, they gained a perfectly clear sea, and bore away S.W. for the magnetic pole!

Jan. 11, lat. $70^{\circ} 47'$ S., and long. $172^{\circ} 36'$ E., land was discovered at the distance of nearly 100 miles, directly in their course and between them and the pole—the southernmost known land ever discovered, though somewhat nearly approached by the Russians twenty years ago. As those who accomplished this honour for their country approached, it was seen to rise in lofty mountain peaks of from 9000 to 12,000 feet in height, entirely covered with eternal snow, and the glaciers projecting from the vast mountain brows for many miles into the ocean. By and by exposed patches of rock were visible; but the shore was so lined with bergs and pack-ice, with a heavy swell washing over them, that a landing could not be effected. They therefore steered to the S.E., where were several small islands; and on the 12th Capt. Ross landed, accompanied by Capt. Crozier and a number of officers of each ship, and took possession of the country in the name of our gracious Queen Victoria. The island is composed altogether of igneous rocks, and lies in lat. $71^{\circ} 56'$ S., and long. $171^{\circ} 7'$ E.

The east coast of the mainland trended to the southward, and the north took a north-westerly direction; and Capt. Ross resolved on penetrating as far as he could to the south, so that he might, if possible, pass beyond the magnetic pole, which the combined observations had placed in 76° S., nearly, and thence proceed westward till he completed its circumnavigation. They accordingly steered along this magnificent land, and on 23rd January reached $74^{\circ} 15'$ S., the highest southern latitude that had ever been previously attained!

Here strong southerly gales, thick fogs, and perpetual snow-storms impeded them; but they continued to examine the coast to the southward, and on the 27th again landed on another island, in lat. $76^{\circ} 8'$ S., and long. $168^{\circ} 12'$ E.; like the former, all of igneous rocks. On the 28th a mountain, 12,400 feet above the level of the sea, was seen emitting flame and smoke in grand profusion; which splendid volcano received the appropriate name of Mount Erebus. Its position is lat. $77^{\circ} 32'$ S., long. $167^{\circ} 0'$ E.; and an extinct crater to the eastward of it was named—though not quite so fitly Mount Terror.

Continuing to follow the mainland in its southern trending, a barrier of ice, stretching off from a prominent cape, and presenting a perpendicular face of above 150 feet, far above the mast-heads of the vessels, shut up the prospect of further advance in that direction. They could just discern beyond, the tops of a range of very lofty mountains towards the S.S.E., and in lat. 79° S. This barrier they explored to the eastward, till, on the 2nd of Feb., they reached lat. $78^{\circ} 4' S.$, the highest they were at any time able to attain; and on the 9th, having traced its continuance to the long. of $191^{\circ} 23'$, in lat. $78^{\circ} S.$, a distance of more than 300 miles, their farther progress was stopped by a heavy pack pressed closely against it, and the narrow lane through which they had hitherto found their way being now completely covered by rapidly forming ice, nothing but the strong breeze which they fortunately had with them put it into their power to retrace their course. At the distance of less than half a mile they had soundings on a bed of soft blue mud, with 318 fathoms. The temperature was 20° below the freezing point; and nought more here being impracticable, they bore away for the westward, and again reached lat. $76^{\circ} S.$, (that of the magnetic pole) on the 15th of February. They found the heavy ice partially drifted away, but its place supplied by more, recently formed, through which they got a few miles nearer the pole—lat. $76^{\circ} 12' S.$, and long. 164° , the dip $88^{\circ} 40'$, and variation $109^{\circ} 24' E.$ —thus *only 157 miles from the pole*. The nature of the coast rendered it impossible to lay up the ships and endeavour to reach this interesting point by land; but it is satisfactory to know that it was approached some hundreds of miles more nearly than ever it was before, and that from the multitude of observations made, in so many different directions, its position can be determined with almost as much certainty as if the spot had been actually visited.

The advanced period of the season in this high latitude now rendered return advisable; but yet they made another effort to land on the north part of the coast, which was defeated by the heavy pack-ice. They found it terminate abruptly in lat. $70^{\circ} 40' S.$, and long. $165^{\circ} E.$, trending considerably to the southward of west, and presenting an immense space, occupied by a dense pack, so firmly cemented together by the newly formed ice, as to defy every attempt to penetrate it. The whole southern land thus traced extends from nearly the 70^{th} to the 79^{th} degree of latitude, and was distinguished by the name of our beloved Sovereign.

Their way from hence lay near the chain of islands discovered by Balleny, in 1839, and more extensively explored by the American and French expeditions in the following year. On the 4th of March they recrossed the Antarctic Circle, and being necessarily close by the eastern extreme of those *patches of land* which Lieut. Wilkes has called "*the Antarctic Continent*," and having reached their latitude on the 5th, they steered directly for them; and at noon on the 6th, the ships being exactly over the centre of this mountain range, they could obtain no soundings with 600 fathoms of line; and having traversed a space of 80 miles in every direction from this spot, during beautifully clear weather, which extended their vision widely around, were obliged to confess that this position, at least, of the pseudo-antarctic continent, and the nearly 200 miles of barrier represented to extend from it, have no real existence!!

Continuing to bear westward, the expedition approached the place where Professor Gauss supposed the magnetic pole to be, which was proved, by extended investigation, to be erroneous; and they then, April 4th departed for Van Dieman's Land.

No disease or casualty of any kind attended their first labours, and there was not one individual in either ship on the sick list! Sir John Franklin, too, the estimable friend and arctic companion of Ross, was still at the opposite pole, ready to welcome and entertain him. It was doubtless a happy meeting.

Second Year.—The magnetometers, &c., again strictly compared with those

of the fixed observatory, the crews refreshed, the ships refitted, the gallant band again proceeded with their arduous task. The expedition went to Sydney and the Bay of Islands, in order to extend the magnetic observations, and finish meteorological and other philosophical experiments. These at the Antipodes of European observatories, and equally separated from each other, are of much interest to science; and have decided the important question of the exact correspondence of the momentary magnetic perturbations. The perturbations at Van Dieman's Land and New Zealand were found to be in exact accordance.

Nov. 23, 1841. They sailed from the Bay of Islands, and passing by the Chatham Islands, bore away to the eastward, to examine the supposed position of the focus of greater magnetic intensity, and, favoured with fine weather, obtained a series of observations which demonstrated the error of the assigned position. They accordingly proceeded to the south to resume the examination of the Antarctic seas.

Dec. 18. In lat. $62^{\circ} 28' S.$, and long. $146^{\circ} 57' W.$, they made the pack 300 miles farther north than before; which unexpected obstruction showed that they were too early for the season. They entered, however, and pursued their voyage for 300 miles, when it became so close that they could push the ships no more to the southward. With untiring zeal and unflinching fatigue of officers and men, it was again New-Year's day, 1842, before they could cross the Antarctic circle. The intense brightness of the sky foreshadowed them that they would still have to encounter vast bodies of ice in that direction, whilst more encouraging appearances held out inducement to try their fortune to the westward. By Jan. 19, they had succeeded in reaching within a few miles of the open water, when a violent gale sprung up and placed them in a situation of appalling jeopardy. The rudder of the Erebus was shattered, and that of the Terror was soon after utterly destroyed; and violent shocks against the ice for twenty-six hours, as they rolled deeply among its heavy masses, severely tried their strength, and threatened their existence. On the 21st the gale abated; and though driven back far into, and closely beset by the pack, they went to work to repair damages and prepare for new efforts. Their condition was very helpless, and their vexation the greater, as the last days were fast shortening, and the season drawing to a close. They had, however, gone through the pack in a direct line 450 miles, and were more south than Cook or Bellinghausen had been able to reach in more favourable seasons.

At length Feb. 2, they cleared the pack in lat. $67^{\circ} 28' S.$, and long. $159^{\circ} 0' E.$, after an imprisonment of forty-six days in the "thick-ribbed ice." This was only ten days earlier than they had been obliged to abandon their operations the year before; but still they advanced to see what could be done. They pursued their course to the southward along the edge of the pack, but it was found to trend to the westward across their course, which obliged them to stretch farther in that direction than was wished; and a continuance of violent gales added more to their difficulties. They fought against every obstacle, and at midnight, on the 22d, they had the satisfaction to make the great barrier a few miles to the eastward of the spot where their examination of last year had concluded. This enormous mass gradually diminishes, from its commencement at the feet of Mount Erebus, where it is about 200 feet, to 150 feet at the eastern extreme, as far as could be seen. At the point now reached it was farther diminished to 107 feet, and broken into deep bays and low projections not above from 50 to 70 feet high. Soundings in a bed of blue mud were obtained at 290 fathoms; which, together with the strong appearance of land, gently rising in ridges to the height of several hundred feet, at a distance of 50 or 60 miles from the barrier, leaves little doubt of the existence of an extensive country to the southward, but so entirely covered with perpetual ice as to conceal every conceivable feature of marked character to establish its positive existence.

The barrier was, with a strong breeze, traced about 130 miles farther eastward than in the preceding year, but all beyond was fruitless. Captain Ross

therefore retraced his course, and, where he was before prevented by the weather and fogs, obtained two additional lines of magnetic determinations at no great distance from the pole, by which its position can be still more accurately ascertained. The Antarctic circle was again repassed, and another hazardous enterprise undertaken, in these long dark nights, which confirmed the opinion regarding the non-existence of the supposed focus of magnetic force. On 12th March, in a heavy breeze, the ships were driven into violent collision with an extensive chain of icebergs, and the bowsprit, fore-topmast, and some smaller spars of the Erebus, were carried away and lost. The vessels were providentially preserved from being dashed to pieces; and the coolness, promptitude, and activity of their crews were never more energetically displayed. A direct course was held for Cape Horn, as far from the tracks of former navigators as possible; and in a heavy gale, James Angeley, Quartermaster, fell overboard and was drowned—the only casualty during 136 days of arduous duty, and again without one man on the sick-list. Provisions were supplied from Rio de Janeiro, and the ships were put in as complete a condition to renew operations as the day they sailed from England.

Third Year.—On the morning of December 17, 1842, the expedition sailed from the Falkland Islands, and on the 24th saw the first icebergs, when nearly in the latitude of Clarence Island; and next day their progress was arrested, by a rather solid pack. The 26th was spent in endeavouring to find out a penetrable part, and they were led to stand along its edge to the westward. Captain Ross, being persuaded that the great extent of open water found by our late worthy friend, Capt. Weddell, to the 74th degree of latitude, was produced by the prevailing westerly winds driving the ice away from some extensive shore, probably the eastern side of Graham Land, determined, if he could, to get hold of that coast, and penetrate to the southward and eastward, between its shores and the pack, and thus he hoped to arrive at the open part of the open sea found by Weddell; deeming it more desirable to trace the land to the southward than to attempt to follow his track, from which no discovery could be expected. On the 28th they discovered land, extending S. to S.W.b.W.; but its shores lined with so extraordinary an accumulation of grounded icebergs, as to prevent all approach nearer than three or four miles. They had therefore, only to pass along, and examine the coast as they could. The whole land, with the exception of two bold projecting headlands near its north extreme, was found to be entirely covered with snow or ice, which descended from the height of 2000 or 3000 feet into the sea, where, broken by the violence of the waves, it formed perpendicular icy cliffs of from 20 to 30 feet high, from which the bergs already mentioned constantly broke away and grounded in the shallow water. Between them the whirlpools, caused by a strong tide, were very troublesome; and several small islets, quite free from snow, were observed, extending to the south-eastward from the farthest visible point of land. A dense fog arose, and compelled the expedition to haul off to the eastward, where they soon met with the western edge of the packs.

On the evening of the 30th they again closed the land, and steered across a deep gulf for the extreme point; but the pack was close against the shores, and by the 4th in latitude $64\frac{1}{4}^{\circ}$ S., the ships were beset, and drifted rapidly back to the northward. Next day they were extricated, and finally succeeded in landing on an island at the extreme of a deep inlet on the south side of the gulf, of which Captain Ross took possession in her Majesty's name. This island is of volcanic origin, and though not more than two miles in diameter, projects a perfectly formed crater to the height of 3500 feet above the level of the sea. It lies in lat. $64^{\circ} 12' S.$, and long. $56^{\circ} 49' W.$ A magnificent table-topped mountain to the westward rises to the height of 7000 feet, and the whole western shore of this great gulf consists of mountainous ranges covered with everlasting snow. It was named the Gulf of Erebus and Terror; is about 40 miles between the capes, and nearly as many miles deep. Excepting the

south part, it was full of heavy pack-ice, and there were two spaces at its deepest parts where no land could be discovered, and which probably communicate with Bransfield Strait. In the evening the ice being driven off the land, they rounded the south part of the gulf, and coursed the land to the south-westward, between its shore and a chain of grounded bergs two or three miles distant. All this portion was free from snow for 20 miles, when they again came to the perpendicular icy cliffs descending from a snow-covered mountain about 2000 feet high. This was a complete barrier in miniature, and tended to confirm Captain Ross's opinion that an extensive continent exists to the southward of the great barrier discovered in 1841, extending to the east 450 miles from Mount Erebus.

Ice, in various forms, beset them for some time, and observations were taken on that which was fixed. No doubt remained that the strait before spoken of communicated with Bransfield Strait, and probably with the canal d'Orléans; but it was so completely closed that nothing farther could be done to decide this geographical point. The struggles with the ice continued to 1st of Feb. when it became essential to extricate the ships, and endeavour to penetrate to the south. On the 4th they succeeded in gaining the pack-edge, and were once more in clear water, after having been more or less entangled for the space of 40 days. East winds and thick fogs prevailed, and the best of the season was passed. They, however, in lat 65° nearly, crossed Weddell's returning track, and found pack-ice where he had perfectly clear sea. They could not penetrate beyond lat. $65^{\circ} 15' S.$, where their position was 100 miles to the southward of Admiral D'Urville's track, where he unsuccessfully attempted to follow the route so nobly achieved by our countryman Weddell. On the 22nd they crossed the line of the no-variation in lat. 61° , and long. $24' W.$, in a dip of $57^{\circ} 40'$; a fact of much importance to magnetic science, since the observations appear to prove that the supposition of there being two magnetic poles of verticity in the south (as is well known to be the case in the north) is erroneous, and that there is in reality but one magnetic pole in the southern hemisphere.

We may notice that the whole of this year's observations tend in a remarkable manner to confirm the position assigned to this pole by Captain Ross, from his first year's experiments in its close vicinity.

On the 23rd they rounded the last extreme of the pack, and stood to the south-east, and crossed the Antarctic circle on the 1st of March, in long $7\frac{1}{2} W.$ From judicious considerations Capt. Ross now tried to penetrate to the southward in the meridian exactly between Bellinghausen's and Weddell's tracks, and consequently stood to the south-west.

On the 23rd, in lat. $68^{\circ} 34'$, and long. $12^{\circ} 49' W.$, he was becalmed, and seized the opportunity to try for soundings, but 4,000 fathoms of line failed to reach the ground. This great depth is against the probability of meeting with land near. For some time, however, they persevered in an attempt to get farther to the south, but the ice was too strong for them, and considerable danger was encountered in a tempestuous gale, which lasted, without interruption, during three days. The darkness of the nights and the number of icebergs seemed only to increase the confidence and courage of the men; and the management of the ships was, throughout most worthy of admiration. At length, on the 8th, the wind veered to the eastward, and with hearts overflowing with gratitude to God for his merciful protection, when human efforts were all but useless and unavailing, our brave fellows were in safety, and steering for the north. It was not, however, till the 12th, that they were relieved from the apprehension of being driven against the still-threatening pack.

On the 17th they reached the latitude of Bouvet Island ($64^{\circ} 19'$), about 8° to the westward of the assigned position; but they, like Cook, searched for it in vain: and Captain Ross concludes that Bouvet had been deceived by the form of an iceberg. The last berg was seen on the 25th in lat. $47^{\circ} 3' S.$, and long. $10^{\circ} 51' E.$, when bearing away before a fair gale for the Cape of Good Hope, where the expedition prosperously anchored on the 4th of April.

In the third season, it will thus be seen, they did not penetrate so far as Weddell; yet the unusual prevalence of easterly winds preventing the pack from drifting off shore, was the means of enabling them to reach the latitude of $71\frac{1}{2}^{\circ}$ S., on a meridian usually occupied by the pack when driven by the prevailing winds from the east shore of Graham's Land, and extending their researches in that meridian (15° W.) twelve degrees of latitude beyond their predecessors, Cook, Bellinghausen, and Biscoe.

The discovery and examination of a considerable extent of unknown coast, proving the insularity of those portions of land first discovered by Bransfield in 1820, for years afterwards frequented by our sealers in search of their prey, and finally, in 1839, seen by Admiral D'Urville, and called by him "*Louis Philippe's Land*," cannot but be regarded as important additions to our knowledge of those parts, which, though islands of inconsiderable size, might have extended, and were supposed to extend, even to the pole.

At the end of April, the Erebus and Terror left the Cape of Good Hope, and touched at St. Helena and Ascension for the purpose of repeating the magnetic observations they had formerly made, and verifying their instruments. In order to render the whole series complete, it was necessary to repair to Rio de Janeiro, which the expedition reached on the 18th of June. After a few days employed in observing and refitting, they sailed for England, and touched at one of the Western Islands, made the land of Scilly on 27th August. The passage up Channel was rendered tedious by calms and light winds, so that Captain Ross was unable to land until Monday, 4th September, when he disembarked at Folkestone, and arrived in town on the afternoon of the same day. Need we add that his reception at the Admiralty was most cordial and gratifying? Lord Haddington complimented him in the warmest manner in the presence of the other Lords, and all joined in the highest eulogy upon his services. This is only the preface to the same he has, with his brave comrades, Capt. Crozier, Commander Bird, and the rest, so nobly earned; and it will be echoed not only now and by his country, but by the whole civilized world and for ever.

Heartily do we wish him, and all who were with him, the perfect enjoyment of that high health in which they have been restored to us after all their fatigues and perils.

THE DEFENCE'S TOP-MASTS:

Bovisand, September 11th, 1843.

SIR.—As part of a top-mast with its cross and trussel-trees, and some of the top-mast rigging was picked up by H.M.S. Acteon, in latitude 49° N., and longitude 20° W., in the year 1815, and as the broken mast, the trussel-trees, and cross-trees, bore the name "Defence" as well as a broad arrow on them; and the remaining standing rigging of the top-mast had the *rogues' yarn* in it, the officers of the Acteon on observing these marks, were justified in believing that the floating relic had belonged to H.M.S. Defence. But neither the buoyant state of the wood, the place where it was found, the general drift of this part of the Atlantic, nor the direction of the winds that prevail, were at all of such a nature as to induce a belief that the gear picked up by the Acteon in 1815, was lost from the Defence in the year 1793, whilst in chase of a French Fleet.

The Defence's Official log for November 1793, records the carrying away of her top-masts and the rigging of others—not the loss of a top-mast with its cross and trussel-trees, and part of the rigging; the opinion therefore that this mast had remained for $21\frac{1}{2}$ years in the sea, and that too, nearly stationary, cannot be sustained!

We may sometimes entertain erroneous opinions, or form hasty conclusions from superficial observations, and when we give these opinions to the public, we should allow them to be calmly discussed! Here was the *Wreck* of a top-mast picked up by the *Acteon* in lat. 49° N., and long. 20° W., in the year 1815, which it seems, the Defence did not lose in November, 1793. It is recorded in the Naval History of this country that H.M.S. Defence (along with the *St. George* 98,) was totally lost on the Coast of Jutland at the end of the year 1811, and that out of 1300 men who composed the two ships companies, only 18 were saved. The masts went overboard and the ships went to pieces.

Let us now enquire into the *possibility* and *probability* of the wreck of one of the Defence's topmasts being *drifted* from Jutland to where the *Acteon* picked it up.

It is an acknowledged fact that the prevailing westerly winds in the Atlantic, raise the mean level of the channel above the level of the North Sea, and that these westerly winds prolong the periods of flood, and shorten the periods of ebb, in the Straits of Dover. The flood tide is not only prolonged *in time*, but its velocity is greater than that of the ebb, hence it results, that there is more water passing (by the Straits of Dover) into the North Sea, than out of it.

If we examine a Map of Europe, it will at once be seen that the waste water drainage of its northern parts falls by the river, either into the German Ocean, or Baltic Sea. Now the Baltic discharges a vast volume of water into the Sleeve, in a northerly direction, and this stream is joined by the easterly set along the Dutch Coast, and the discharge from the rivers of Germany * the result of these currents is an outset from the North Sea, between Shetland and Norway.

"In Norway the most frequent winds are the South, S.W., and S.E.; the wind at Bergen is seldom directly west, but generally S.W. to S.E.: a N.W. and especially a N.E. wind are but seldom known there."†

The wreck of a top-mast from the Coast of Denmark would be carried by the current into the Northern Ocean, and the prevailing winds would accelerate its progress; reaching a northerly latitude the same prevailing winds and currents, that carried the Norwegian Pirate "*Naddodr*", to *Iceland*, would influence the drift of the spar in question. When the ice breaks up in the Greenland Seas, it drifts to the west and south-west, and when it reaches a temperature above the freezing point it dissolves. The easterly winds that prevail in the higher latitudes would cause the top-mast in question (the heel being above water) to drive to the westward, and in this way it would go "north about," and reach a part of the Atlantic having an easterly set; and had it not been picked up, it might have found its way into the English Channel.

In the winter of 1803, H.M.S. *York*, 64 guns, Captain Henry Mitford, foundered in the North Sea. It was supposed she struck upon the Dogger Banks. This however is certain; one of her *lower yards* was washed on shore near Montrose; that is to say, it drifted to the northward.

The Defence being wrecked in the year 1811, and the top-mast referred to having been picked up in 1815, a period of 3½ years may have elapsed. Now a *greasy* top-mast might resist the ravages of marine boring animals, and preserve its buoyancy, in high latitudes, for 3 or 4 years, and I think it not only possible, but *probable*, that a broken top-mast from the wreck of the Defence, made the circuit of the British and Ferne Isles, and was picked up in lat. 39° N, and long. 20° W., by the *Acteon*.

I am, Sir, &c.,

WILLIAM WALKER.

* See Nautical Magazine Sept. 1835, Article "Currents of the Ocean."

† Eucycl. Britannica, "Article Meteorology."

RODGER'S ANCHOR.—We have always entertained the opinion that, Rodger's anchor is superior to any other yet made, and have not hesitated to express that opinion, confirmed as it has repeatedly been by those of experienced officers and seamen, already before our readers. But that the high encomiums passed on it in the following letters may be properly appreciated, it is right we should inform them that, Capt. Smithett has had thirty years experience in Mail Packets, fifteen of which have been in command; and that, he obtained great credit for the masterly manner in which he conducted Her Majesty's yacht into the harbour of Ostend on her late visit. The acknowledged experience of Capt. Smith, as a seaman in the Yacht Squadron, as well as the Royal Mail Steam Packet Company, with that of Captain Smithett, whose first rate qualities are well known to many of our readers, is another confirmation, gratifying to ourselves, of our own view of this important article of a ship's furniture.

H.M. Packet Ariel, Dover, Mar. 16th, 1843.

DEAR SIR.—After several months repeated trials with the Small-Palmed Anchor you supplied for the use of Her Majesty's Mail Steam Packet Ariel, under my command, I have great pleasure to inform you that I have never known it to start under any circumstance in which I have required it, and I consider it far superior to the common anchor I had in use before.

I assure you I feel the greatest confidence and security when at anchor now, compared to what I ever experienced before I knew of the merits so justly due to your admirable invention, and which I shall at all times feel the greatest pleasure in recommending.

I am, &c.,

(Signed)

LUKE SMITHETT,

Commander.

To Lieut. W. Rodger.

*Royal Mail Steam Packet Medway,
Blackwall, May 3rd, 1843.*

MY DEAR RODGER.—It affords me much pleasure after a trial of nearly five years to give you my opinion of your Patent Small-Palmed Anchor. Whilst in command of the Flower of Yarrow cutter-yacht, of 145 tons, she was anchored off the Morina, in the Bay of Naples, and rode out a very heavy gale with the wind dead on shore.

I have also had the command (since July 1842,) of the R. M. Steam Packet Medway, 1,300 tons, and on all occasions have used your anchor. On the 3rd September, 1842, the Medway was caught within the limits of a hurricane whilst at anchor off the light-house, Nassau, which induced me to lift the anchor, and run into Cochrane's Anchorage, where she rode the gale in four fathoms water with sixty fathoms of chain.

Again on the 12th of January, 1843, the Medway rode out a very heavy norther under the Castle of St. Juan de Ulloa, Vera Cruz, when all the strain was on your Patent Anchor with only sixty fathoms of chain. Such is my opinion of your anchor that, if the Medway had

been caught in a hurricane on the Campechey bank (such as I have seen) I should havemade use of your anchor, and endeavoured to have rode it out.

Wishing it may meet with that success its merits deserve,

Believe me, very truly yours,

(Signed)

H. SMITH,

Commander R.N.

To Lieut. W. Rodger.

FROM NEW ZEALAND, January, 1843.—*Extract of Letter.*

WILLOUGHBY Shortland, Esq., (Lieut. R.N.,) the gallant officer administering the Government, *pro-tem*, since Captain Hobson's demise, seems disposed to act favourably towards this part of the colony (Wellington). He is going to undertake off-hand, the adjustment of the land claims, the settlement of which having been neglected, very much retarded the operations of the agriculturists; and, as several roads are now being formed, which run into the interior from different points, we look for better times. Among other public buildings, the Governor, not forgetting his old profession, is about to erect a light-house here.

Great preparations have been made with respect to Flax, and it is anticipated that, in the course of the present year, 2000 tons of that useful article will be brought into port (Nicholson) for shipment.

I wish that excellent Naval work, the *Nautical Magazine* (which by the by finds its way even to this remote part of the world,) would stir up the question of communication by England with Australasia, *via* Panama. A regular conveyance for letters is most desirable, not alone to satisfy private feelings, but for the benefit of trade, which here will soon grow into importance, and which I need not add is of some importance to Old England.

The ship Clydesdale takes home a piece of furniture, a side-board, a specimen of our ornamental woods, as a present to our beloved Queen Victoria, from the Wellington Merchants. So that though far distant, and busy enough with our own affairs, you will perceive we do not forget our "Lady Sovereign," or allow our loyalty to rust among the forests of New Zealand.

ERRATA AND CORRECTIONS IN THE SECOND EDITION OF THE PRACTICE OF NAVIGATION.—*By Lieut. Raper, R.N.*

(Continued from p. 279.)

- Page 23, line 17, *alter* triangle to angle.
 73, No 226, Ex, *alter* 2.4473 to 2.4476.
 183, No 489, Hour Angle, *alter* 48s to 47s.
 240, Ex. 1, the rem. 62° 26' should be 62° 28', the hour angle is 2h. 27m. 35s. and errors of the watch 52s. and 9m.. 30s.
 244, note † line 3, *alter* alt. to lat.
 note ‡ last line, *alter* at. to lat.
 268, line 8, *alter* P.P. 58' to H.P. 58'
 283, *alter*) app. alt 29° 27' 30" to 29° 47' 30"
 The log sec. of the lat. should stand at the top of the column.

Page 347, line 31, *alter* 87° E. to S. 87° E.

362, Expl. Table 40, in the rule for computing a term *erase* 2d. before Reduction.

460, (2) 2, St. Kilda, *alter* the long. to 8 34.5.

(2) 3, Rockal, *alter* the long. to 13 41.

461, (3) 3, Limerick, *alter* 52 35.0 to 52 40.

(4) 1, Buncrana, *alter* the long. to 7 27.2.

[The last three corrections arise from a recomputation of the position of Buncrana; Balta, and the other places (Practice of Navigation p. 350) remain unchanged.

471, (23) 3, Goonung Apee, the symbol should be placed with the line vertical instead of horizontal.

473, (27) 3, *alter* Hammock to Hummock.

480, Ascension, *erase* C. G. Hope 1 36 49.

481, Buncrana, *erase* Greenwich 0 29 39

Diamond Id. *erase* Madras.

483, *erase* Nicola Mole C.

Port Jackson, *erase* Port Philip; Rewa, *insert* 1 49 21.

709, Col. 2, Bussra, remark, *alter* 350 2nd par. to 349 last par.

719, Tonga, *alter* p. 471 to 475.

727, At Hour angle, *alter* 107, No. 306, to 130 No. 360.

••• A page containing the whole of the Errata of Raper's Navigation, discovered up to the time of the latest correction, may always be obtained on application at the Publisher's, Mr. Bate, 21, Poultry.

FIRST REPORT FROM THE SELECT COMMITTEE ON SHIPWRECKS.

(Ordered by the House of Commons to be printed, 10th Aug., 1843.)

THE Select Committee appointed to enquire into the shipwreck of British Vessels, and the Means of Preserving the Lives and Property of Shipwrecked Persons, and to whom the Reports of 1836 and 1839, and the several Petitions on the subject, were referred, and who were empowered to Report thereupon from time to time to the House;—have considered the Matters referred to them, and have agreed to the following, being their First Report:—

Their enquiry has embraced two points: 1st. The Loss of British vessels, and the means of diminishing that loss in future. 2nd. The means of Preserving the Lives and Property of Shipwrecked Persons.

Having obtained returns of the British ships lost during the years 1841-2-3, as regards the whole of the mercantile marine, from Lloyd's, and also of the loss of timber-laden ships from British America to Europe from September 1839, the date from which the Act took place prohibiting the deck-loading of these ships, they have been enabled to make a comparison; 1st, of the general loss of ships in the years 1841-2, with those lost in 1833-4-5, in proportion to the registered tonnage; and, 2dly, of the loss of timber ships, in the years 1840-41 and 1842, with those lost in 1836-7-8. In both cases they have the satisfaction to find, that the loss has been much less in the later periods than in the earlier, more especially as regards timber-laden ships, and the lives of the crews employed on board of them, where there has been a reduction in loss of ships in each year from 56 to 23; and, as near as can be calculated, a saving of 200 lives of seamen. In no one instance during the last period do they find, in those ships to which the Act of Parliament alone applies, any of those horrible cases stated in the Report of the Committee of 1839, of the crews of several ships in each year having been reduced to the necessity of existing on the remains of their comrades. They feel, however, bound to report one of this description, which appears to have taken place but a short time ago,

reported from New York, 14th December 1842, in regard to the "Naiad," bound from Halifax to Demerara, where one man remaining only out of a crew of 17, was taken from the wreck 50 days after the 22nd of September, when the ship had been upset. (See Evidence, No. 3699.) Your Committee consider that no ship can be sea-worthy, when her upper deck is lumbered with cargo of any kind; and they strongly recommend to the consideration of Her Majesty's Government, a still further extension of the prohibitory clauses of the Act of Parliament against the deck-loading of ships.

Your Committee felt it their duty to enquire into those points which seemed to them more essentially to regard the security of Shipping :

- | | |
|---|------------------------------|
| 1. The character of ships. | 4. Harbours of Refuge. |
| 2. The competency of Masters and Mates. | 5. Lighthouses, Beacons, &c. |
| 3. The facility of obtaining good Pilots. | 6. Charts and Compasses. |

Character of Ships.

The new Association formed for the survey and classification of Merchant Vessels, especially alluded to and described in the Report of the Committee of 1836, under the name of Lloyd's Register Society for British and Foreign Shipping, has made regular progress from that time; and as appears by the evidence of the secretary, (Ev. No. 4015) any objections entertained against it in the first instance are now removed, and Shipowners are generally ready to submit their ships and stores to the fair examination of the Surveyors of the Society, for the purpose of having them classed in the Register-book according to their real quality.

Your Committee beg to call attention to the return laid before the House, dated 24th February, 1843, of the number of ships of war and Government packets which have foundered at sea and have not been heard of from the year 1816 to the present time; 11 of which appear to have been of the class of 10-gun brigs, 6 of those having been employed in the Packet Service.

Your Committee recommend to the consideration of the House the propriety of an enquiry being instituted as to the necessity of introducing an Act of Parliament, placing all Steam-vessels carrying passengers under the superintendence of competent persons, to be appointed by Government.

Competency of Masters and Mates.

Upon this subject evidence of a somewhat contradictory character has been laid before your Committee. Opinions have been advanced, and the example of foreign nations cited, in favour of the establishment of Boards for the examination of Masters and Mates; whilst on the other hand, most of the leading Shipowners appear to be decidedly hostile to the enforcement of examination by Act of Parliament, considering such compulsory examination an unnecessary interference with their interest in the selection of such persons as they may think most likely to serve them best in the various duties they have to perform; all parties at the same time agreeing to the propriety of encouraging the increase of scientific knowledge as much as possible in the Mercantile Marine.

Your Committee, however, after carefully weighing the evidence adduced, consider that under all circumstances it would materially promote science, and prevent the loss of life and property, if a legislative enactment were introduced by the Government, establishing local Boards for the purpose of examining into the ability, conduct, and character of all who wish to qualify as Masters and Mates in the Merchant Service. And your Committee further recommend the establishment of Schools for the purpose of teaching Navigation in the different Sea-ports, to be supported by a small tonnage duty, to be levied on the vessels belonging to such port.

Your Committee have examined many witnesses on the propriety of investigating the conduct of the Masters, Mates, and crews of ships lost, and most

of the witnesses are favourable to such investigation; and the Committee therefore recommend that an enquiry into the causes of the loss of ships should on all occasions take place.

The Facility of obtaining good Pilots.

No point can be of more importance to the security to shipping than this; and, although the Boards established under the Lord Warden of the Cinque Ports, the Trinity-Houses, and other Boards, are as effective as can be expected in their local arrangements, yet, from changes in time and circumstances, and the great increase of shipping, the Committee strongly recommend that a commission of competent persons should, every three years, visit the different pilot stations of the United Kingdom, and report to the Board of Trade any arrangements or alterations that may appear to them calculated to promote the security of shipping and the commercial interests of the country. A change has been stated to the Committee to have taken place in late years, by the diminution of hovelling boats cruising in the British Channel, with boatmen licensed to pilot ships into the Downs, for the purpose of getting employment on board homeward-bound ships, arising from the want of that encouragement which would remunerate them for so doing, partly attributed to the alteration which took place some years ago in the Cinque Ports pilots cruising off Dungeness. The statement appears to be confirmed by the Report of the Commissioners appointed in 1836, who admitted the justice of the boatmen's complaint, and recommended a general regulation, "that if a master chooses to employ a boatman or any other person until a pilot presents himself, the former shall be entitled to part of the whole charge of pilotage, proportioned to the distance which he shall have conducted the vessel, provided he be not superceded by a regular pilot within a reasonable distance after the vessel shall have come within the limits of pilot water." The Lord Warden (Ev. No. 5273,) approves of this proposed regulation, and the Committee strongly recommend its enforcement by Legislative enactment.

The Committee wish to advert to the evidence of Mr. Ingram (Ev. No. 3659,) and to the letter from Mr. Mason, read before the Committee on 18th July, as to the state of the pilotage on the Hoogly, as a fit subject for farther inquiry at Calcutta.

Harbours of Refuge.

Witnesses of the highest authority have given evidence before the Committee proving the want of harbours accessible at all times of tide, and urging the necessity which exists for their erection on those parts of the coast where such harbours do not exist; Your Committee strongly recommend the immediate attention of the Government and the Legislature to this subject.

The witnesses to whose evidence the Committee refer, have pointed out different localities as most eligible; but the Committee abstain from recommending any particular situations for harbours, from a conviction that these points will be best decided on by a body composed of scientific and competent persons, whose attention should be specially and exclusively directed to this subject.

Attaching the greatest importance to this vast project on national grounds, as well as for the protection and security of trade, Your Committee think it most desirable that as large an appropriation of national funds, as can be made, be devoted annually to the construction of Harbours of Refuge in such localities as may be recommended.

To the various plans and models of Floating Breakwaters, the Committee have devoted their best attention; and considering the expense of constructing and maintaining them in repair, compared with the durability of solid breakwaters, (which should be calculated to endure for ages,) Your Committee are of opinion, that whatever may be decided on, as to the formation of Harbours of

Refuge, such national works should possess the most perfect solidity, to resist the force of any sea, afford shelter to the trade, and the great and essential advantage of having powerful batteries erected on them.

Light-houses, Beacons, &c.

The light-houses and beacons around the coast are so immediately under the direction of the Trinity Board, whose attention is constantly directed to these points, that the Committee feel they have to notice what has been brought before them upon the subject, rather than to express their judgment thereon. The numerous wrecks on the north-west coast of Cornwall induces your Committee strongly to recommend that one or more light-houses should be erected on that rugged shore. Towen Head appears to Your Committee to be the most desirable situation, as it is in evidence that there is already a small pier near thereto, which might be extended, so as to render it a fair harbour of refuge. Models of light-houses have been brought before them by Captain Sir Samuel Brown, Mr. Bush, and Mr. Steward; but as neither of these has been tested, they do not offer an opinion upon them. Two light-houses erected by Mr. Mitchel, upon a new and ingenious principle in regard to their foundation, having now stood the test of more than two years, one upon the foot of the Wyre Sand off Fleetwood, and the other on the Maplin, the Committee do not hesitate to recommend to attention. They feel it right also to notice a beacon erected by Captain Bullock of the Royal Navy, upon the southern edge of the Goodwin Sands, which has now stood two winters, and having been erected at a very small expense, (not exceeding 55*l.*) may prove of the greatest service if brought generally into use.

Your Committee recommend that Sound Beacons should invariably be placed near light-houses, as well as on board light-vessels, to warn ships of their danger in foggy weather.

Compasses and Charts.

Your Committee have had represented to them the great and unequal deviation of the Needle in different vessels and situations, from the local attraction on board, from 3° to 18°, according to a Report from the Admiralty, (see Appendix), which may have been the cause of the loss of some vessels, from the masters not being aware of it, and which can alone be guarded against by the closest attention.

The safety of ships, and the lives of all on board so much depending upon the correctness of charts, a general and constant revision of those most in use is well worthy the continued attention of Government, and would be a great boon to the Mercantile Marine. Your Committee are also of opinion that the attention of shipowners should be called to the propriety of masters being supplied with the latest authorized edition of charts.

In regard to the second point of inquiry, the Means of Preserving the Lives and Property of Shipwrecked Persons, Your Committee have received the Evidence of the Deputy-Comptroller and several officers of the Coast Guard, who have of late years been more the means of saving the lives and property of shipwrecked persons upon the British coast, than any others, from their duty having required their continual look-out upon the spot. From this evidence it appears, that their first object, as the most effectual means of rescuing the crew, upon a wreck taking place, and when it has been impossible for their own boats to live through the sea, has been, to endeavour to effect a communication with the vessel, either by life-boat, if they have one, or by a line thrown on board by one of Captain Manby's mortars, or rockets provided by Mr. Dennett of Newport, and Mr. Carte, in the Ordnance service at Hull. Either the mortar or rocket, should the distance of the vessel from the shore not exceed 250 or 300 yards, will, in most cases, prove effectual, and indeed many valu-

able lives have been saved by these means. The comparative value of each of these plans depends upon the greater or less distance they will carry their respective lines against the same force of wind, as it appears by the evidence there is no difference in the correctness of the direction in which they will carry them. They have had given in, a comparative statement of trials, which is annexed in the Appendix. They consider, that both the mortars and rockets should be furnished to the Coast Guard in all stations, where wrecks are likely to take place, as the best mode of effecting a communication with a wreck in extreme cases, when the ship has no means within herself of communicating with the shore, which few, if any have at present. Scarcely any ships or steamers are sufficiently prepared with the means of saving the lives of those on board, in case of accident to the vessel by fire, wreck, or even in the case of an individual falling overboard in severe weather. In regard to steamers, irrespective of their other boats, an invention of Captain George Smith, R.N., (whose Evidence appears, No. 2934,) for fitting the covers of the paddle-boxes, so that they may form perfect boats, and be easily lowered into the water, should be universally adopted. The advantage of this recommendation will be seen by reference to the cases of the *Isis* and *Solway*, (Ev. No. 2558). Every ship should also be required to carry at least one of her boats, fitted upon the principle of a life-boat, kept ready for lowering down, in case of need. The numerous lives lost in the case of individuals who may have fallen overboard, as well as of others in the attempt to pick them up, is alone sufficient to justify such a regulation. The evidence of three Commanders of East Indiamen, (Ev. No. 3211, No. 3637, No. 5472,) who have all carried boats of this description on board their ships; the Deputy-Comptroller, and other officers of the Coast Guard; the Annual Reports of the Royal Society for the Preservation of Life from Shipwrecks; and no less than twenty individuals, by letters addressed to the Chairman of the Committee, have recommended such boats as the best and surest means of saving life.

Your Committee suggest that water-tight divisions in steam-vessels are calculated to prevent total loss of vessel and machinery, and to ensure the preservation of life, by affording time for the preparation of boats for the reception of passengers and crew; Your Committee, however, are not prepared to point out what number of those water-tight divisions should be before and abaft the engine-room and machinery.

The Committee look with admiration to the many instances in which the officers and men upon the Coast-Guard service have, at the greatest personal risk, exerted themselves in saving the lives of others; and in the case of Lieutenant Lingard, with the loss of his own life and that of several of the crew, in Robin Hood's Bay.

Your Committee venture strongly to recommend such devotion to the favorable consideration of Government as an encouragement to others.

With regard to the preservation of shipwrecked property, the Evidence shows that there is on many parts of the coast a want of that moral principle which should inculcate a just regard for the rights of such property. It is rather looked upon as a chance gift, which each has a right to scramble for as he can, notwithstanding the laws which have been passed from the earliest period, to prevent or punish such depredations. (*See Law of Wrecks Considered*, by W. Palmer, Lond. 1843.) The plunder of shipwrecked property on the coast has been carried on to an enormous extent, and this seems to have arisen from there having been no person on the spot, when a wreck had taken place, to look after the property. Since the establishment, however, of the Coast-Guard, by whom, from different stations, every part of the coast is now watched, this plunder has been much reduced; but still it exists to a considerable degree, as in the case of the *Jessie Logan*, and the *Frances* (Ev. Nos. 3831 & 4848,) and other vessels wrecked on the disastrous 13th of January last. By the evidence of Captain Sparshott (Ev. No. 3406-7), and other officers, this system of robbery arises, from the Coast-Guard having no authority to interfere, ex-

cepting where the articles from the wreck are subject to custom's duty. The Lord Warden states (Ev. No. 5245), that notwithstanding the strictest orders given by him within the jurisdiction of the Cinque Ports, plunder still takes place. (See also Evidence, No. 4995.)

Your Committee wishing to ascertain the state of the law in other countries, obtained the Evidence of Mr. Van Houten (Ev. No. 3515, *et seq.*), stating that the Government of Holland takes charge of all abandoned shipwrecked property for the benefit of the parties, to whom it may belong, if claimed within a certain time; if not so claimed, it then becomes the property of the Government. By the Evidence (No. 5002-6) it appears that the French Government take charge of all shipwrecked property for the benefit of the right owners; this will be seen by reference to Ev. No. 5741 to 5745, in the case of the wreck of the *Conqueror*, off Etaples. The Committee strongly recommend that all abandoned property from wrecks on the coast of the United Kingdom should be vested in the Government, in trust for those, to whom it may belong; a regular register and account being kept of all such property.

Your Committee recommend an international arrangement to be made if possible, upon the subject of wrecks, with all other friendly powers, for the return of shipwrecked persons to their own country, and the restoration of preserved property to its right owner.

The Committee consider that some better code of Maritime Law than that which now exists for the regulation of the duties of Master and Seaman on board of Merchant Vessels is much wanted, with a view of increasing the security of shipping, promoting the comfort and health of seamen, and of preventing desertion.

Your Committee have received various suggestions for life-boats, safety-capes and belts; and some drawings and models have been presented for their inspection; but not having sufficient means of testing their respective merits, they can only now recommend them to the consideration of Her Majesty's Government, in the event of any legislative enactment on that subject.

HER MAJESTY'S MARINE EXCURSION.

HER Majesty and Prince Albert left Windsor Castle on Monday the 28th of August, at 25 minutes before 8, in a close carriage-and-four, escorted by a detachment of the 1st Life Guards, for the Farnborough station of the London and South Western Railway.

It was expected that the Queen would reach the station, on her journey across the country from Windsor, about half-past 9; but, with the energy which characterises all Her Majesty's movements, she anticipated these calculations, and within a very few minutes after 9, the carriages conveying Her Majesty and suite, escorted by a Guard of Honour, arrived at the station. The Royal party alighted without delay, and being received by two of the Directors, entered the building, where the Queen seated herself for the brief space which was required for the adjustment of the cushions, &c., in her carriage, and the completion of the preparations for starting. This done, Her Majesty, accompanied by Prince Albert, entered the conveyance. Everything being now in readiness, the word was given to start, and at 20 minutes before 11 the uplifted voices of hundreds of the good "folke" of Southampton announced that England's Queen had reached the terminus.

Here were assembled the Duke of Wellington, Lord-Lieutenant of the county; the Earl of Aberdeen, the Earl of Liverpool, the Mayor, the Civic Authorities, and Directors. Two Royal carriages were in waiting. A detachment of the 7th, or Queen's Own Hussars, were present as a Guard of Honour, and the Marine band from Portsmouth played the national anthem. On alighting from the railway-carriage addresses were presented through the Earl of Aberdeen,

as Secretary of State—the one to Her Majesty, and the other to Prince Albert.

Southampton, which had never been honoured by the presence of a Sovereign of the House of Hanover, seemed determined to welcome with the utmost cordiality Victoria and her Royal consort. From the terminus to the pier the whole was one continued scene of extreme devotion and well-timed display. A royal salute announced the departure of the Royal cortège from the terminus, the bells rang merry peals, and the cheers of the assembled thousands marked the Royal progress. At the pier-head, but moored some five yards off, was the Royal Victoria and Albert yacht, and close by her the Lightning, Lieutenant Winniett, which had conveyed the Lords of the Admiralty, who, with Adm. Sir C. Rowley, were waiting to receive their Sovereign; Cyclops, Capt. Austin, and Prometheus, Capt. Lowe. The Firebrand and Fearless were also near. Round about were the South Western, the Monarch, Ariadne, and other private steamers; and the Great Liverpool Oriental steamer, and many private yachts, with all their colours displayed.

When the Royal cortège arrived at the Royal Pier, an interesting circumstance occurred, which enabled the Queen to have an instance of the ready loyalty of the Southampton Mayor and Corporation. From some cause the Royal Yacht had not been brought close to the pier by the time the Royal party arrived, and it became necessary for Her Majesty to go into the barge to be pulled two or three boats' length to go to the yacht; and the scarlet baize spread over the stage intended to be run on to the yacht when alongside, was taken off to cover the pier steps; that, however, left the stage so wet and dirty, especially as it was raining at the time, that the Earl of Haddington exclaimed "We must get some covering for the stage," which was being used between the Queen's carriage and the steps. Nothing could be obtained, and Her Majesty waiting to alight, the members of the Corporation, like so many Raleighs, stripped off their robes of office in a moment, from which those of the Mayor and Alderman were selected (they being scarlet), and the pathway was covered for the Sovereign's use, so that Queen Victoria, like Queen Elizabeth, walked comfortably and dry-footed to her barge. Her Majesty appeared much gratified by this spontaneous act of attention, and was pleased to step so as to avoid the velvet collars of the robes of office.

The Duke of Wellington was at the head of the pier, and having handed Her Majesty from the carriage into the Admiral's barge, retired to the temporary house on the pier, evidently very wet, and returned to town by the quarter-to-twelve-o'clock train.

The Queen and Prince Albert, with their suite, were rowed by twelve seamen from the pier to the steam-yacht, where they were received by Adm. Sir C. Rowley, Capt. Lord A. Fitzclarence, the Earl of Aberdeen, and the Earl of Liverpool. Her Majesty embarked amidst a royal salute from the town guns, fired from the platform. At twenty minutes past twelve, the steamer left her moorings, saluted again by the town guns and by the guns of the Great Liverpool. She was soon followed by the other Government steamers, as well as by the Ariadne, having on board the Mayor and Corporation; the Monarch, and other private steamers. Captain Hall, the Commander of the Royal yacht, has been left behind sick with the ague and fever, which most Officers having served in China are subject to on their return to England; in consequence of this, Capt. Horatio Austin, of the Cyclops, has been appointed Steam Captain of the Victoria and Albert, and Lieut. Schomberg is doing duty, *pro tem.*, as Captain of the Cyclops. Commander Sheringham, of the Fearless, had the honour of steering Her Majesty from the pier of Southampton to the yacht on her embarkation, the Victoria drawing too much water to allow her to go alongside. The landing of Her Majesty at Ryde presented a very gay and animated scene. The pier, which extends a very considerable distance from the shore, was thronged with ladies and gentlemen, amongst whom were some of the first rank and fashion. The standard of England had been hauled down from the

barge, and replaced by the flag of the gallant Admiral who commands here, and had been hoisted on the pier. A small battery was firing a royal salute, and the assembled throng were welcoming Her Majesty and her Royal consort to the shores of this beautiful island with cheers. At a short distance from the shore the war steamers were lying at single anchor, with their yards manned by the gallant crews, all dressed with a uniformity that had a very pretty effect; while in the distance at Spithead lay the *St. Vincent*. Innumerable yachts of all sizes and descriptions, and of various rigs, some of them rigged as schooners with square sails, others as fore and aft schooners, yawls, cutters, &c., and all beautiful of their kind, were thickly scattered about in all directions as far as the eye could reach. The scene altogether was very splendid and interesting, and one that has seldom if ever been surpassed in these seas.

The Royal party, after landing, walked along the pier to the town, the parties on the pier forming a line on either side to enable Her Majesty to pass. The Royal pair graciously acknowledged the enthusiastic but respectful greetings of the persons assembled on the pier, and by whom they had to pass. Her Majesty and the Prince then proceeded in a carriage to the residence of Lord Harcourt, whom she honoured by visiting. After staying there a short time the Royal party returned on board the yacht, which immediately got under weigh, and returned with the rest of the squadron to Cowes Roads and anchored there. Her Majesty dined and slept on board the yacht, and early next morning, accompanied by the Prince, went on board the Earl of Yarborough's yacht (the *Kestral*). They were received on board by the Noble Earl, and conducted by him over the vessel. The Queen and Prince Albert afterwards landed at West Cowes, where the carriage of the Earl of Delawarr was in waiting to receive Her Majesty, to convey her and the Prince to Norris Castle, where Her Majesty formerly resided when Princess Victoria. Upon landing a salute was fired from Cowes Castle, and another from the Royal Yacht Squadron Club-house, and the yards of the *Modeste* were manned.

As soon as Her Majesty returned on board the Royal yacht from Norris Castle, the vessel got under weigh, and went to the eastward, round *St. Helen's*, and on to the back of the island. She was accompanied by the *Cyclops*, *Prometheus*, *Lightning* and other steamers, and also by Commodore the Earl of Yarborough, in the *Kestral*, and a numerous fleet of yachts. The Royal yacht only went at a quarter speed to enable the sailing vessels to keep up with her, which, however, they could not do, and when off *St. Helen's* they fired a Royal salute, and the *Victoria* and *Albert* proceeded on towards *Ventnor*, the Royal yacht squadron following in the best way they could.

Her Majesty and Prince Albert, after having visited *Ventnor*, *Shanklin Chine*, *Blackgang Chine*, *Freshwater*, and other places at the back of the *Isle of Wight*, proceeded on in the yacht to the westward along the coast. The yacht was attended by the *Cyclops*, *Capt. Austin*, *Prometheus*, *Lieut. Com. Lowe*, and others of Her Majesty's steamers. Of the Royal Yacht squadron which left in the morning with the *Queen*, not one vessel was able to keep up with the yacht, and the headmost of them, when Her Majesty left the *Isle of Wight*, were seen hull down, many miles astern. Between five and six o'clock the Royal yacht let go her anchor in the *Portland Roads* off *Weymouth*.

The Mayor and Corporation proceeded in a boat to the yacht, which had anchored about three miles off, to receive Her Majesty's commands, and to know if it was the Royal pleasure to land. The hopes which had been entertained of the Queen and Prince Albert coming on shore were doomed to be disappointed, for the intelligence brought by the Mayor was, that Her Majesty did not intend to land.

The Veteran Admirals, *Sir William Hotham, G.C.B.*, and *Admiral Hancock*, went off to pay their respects to their gracious Sovereign and Prince Albert, and were presented by *Lord Adolphus Fitzclarence*; *Capt. Dunn, R.N.*, Inspector of Mail Post-office Steamers, and *Capt. Dobson, R.N.*, Commander of the

Coast-Guard Station, also went on board, and were presented by Lord Adolphus; Lieut. Crispin, R.N., of the Vulcan steamer, went on board the Royal yacht, and from his knowledge of the coast, offered to the Admiral his service as channel pilot, which being communicated to Her Majesty, the Lieutenant received orders to pilot the Royal yacht on to Plymouth.

At six o'clock on Wednesday morning, the yacht and the other steamers got under way and proceeded down the Channel.

Plymouth, Wednesday night, Aug. 30.—This evening, soon after five o'clock, Her Majesty and Prince Albert arrived here. At the Heights, the Breakwater Light-house, Tower, and other commanding situations, persons had been stationed to watch Her Majesty's arrival, and soon after five o'clock her approach was first descried by the men at the Breakwater. Within a few minutes afterwards a signal-flag was hoisted at Mountwise, and also on board the Caledonia flag-ship, anchored in the Sound, on which the several men-of-war in the harbour, including the Caledonia, Inconstant, Formidable, and a Neapolitan frigate fired a Royal salute. The yards were then manned, and the ships were decorated with flags of all descriptions. The Royal yacht entered at the eastern channel, and rapidly passed through the Sound to Barnpool, where she was moored. Royal salutes were fired from the men-of-war, the citadel, Mountwise, and Mount Edgecumbe, as Her Majesty approached. The numerous workmen of the Breakwater were drawn up at the eastern end, and gave three times three hearty cheers as her Majesty passed that great national undertaking.

Devonport, Thursday night.—At an early hour this morning Her Majesty landed at Mount Edgecumbe, and walked for some time in the groves and gardens of that beautiful place. Prince Albert, attended by Lord Haddington, Adm. Sir G. Seymour, the Hon. G. L. Corry, Adm. Sir D. Milne, Rear-Adm. Sir S. Pym, and other Naval authorities, proceeded in one of the barges belonging to the Royal yacht to the Dock-yard, and afterwards to the Victualling Establishment, and inspected the various departments of both these establishments. His Royal Highness was saluted by the garrison upon landing, and by the shipping upon re-embarking.

Her Majesty held a Levee on board the Victoria and Albert, which was attended by Lord Haddington, the Hon. S. Herbert, Adm. Sir G. Seymour, the Hon. G. L. Corry, Adm. Sir D. Milne, Lord Aberdeen, the Earl of Liverpool, &c. Among the presentations to Her Majesty were, Sir S. Pym, the Adm.-Superintendent of the Dockyard; Capt. Sir T. Fellowes, Superintendent of the Victualling Yard; Col. Beattie, Commandant of Marines; the Clergy of Plymouth, Stonehouse, and Devonport; the Mayor, Aldermen, and Council of Devonport; the Mayor, Aldermen, and Council of Plymouth; and all the Officers in command of Her Majesty's ships and vessels in the Sound and the Harbour, the Captain of the Neapolitan frigate La Regina, &c.

Addresses from the Mayor and Corporation of Devonport, and from the Mayor and Corporation of Plymouth, were presented at the levee through the Secretary of State. At three o'clock a company of Rl. Marines and the band of that corps marched to the landing place in the Dockyard, to be in readiness to receive Her Majesty upon her landing. At the same time the 76th Reg. marched, with their band playing, to the Dock-gates, and took up a position to line the streets in Devonport, through which Her Majesty would pass—Fore-street and St. Aubyn-street. Another short street was lined by a detachment of the 51st. The troops who did this duty at Plymouth were the Rl. Marines and the Depôt of the 75th.

The Queen and Prince Albert were received upon their landing by the Naval Authorities of the Dockyard, and by General Murray, the Military Commander-in-Chief of the district, who was attended by a very numerous body of Officers, all mounted. Her Majesty and the Prince having taken their seats in one of the royal carriages, immediately left the Dockyard, escorted by the General and his staff. As soon as the Queen and Prince made their appearance outside

the Dockyard gates, they were received with enthusiastic cheering by the assembled multitude. Her Majesty proceeded at a very slow pace along the line of route, and thereby afforded the persons assembled a good opportunity of seeing her and the Prince. Every where as she went along she was greeted with the same enthusiasm.

After leaving Plymouth, the procession returned through Devonport, headed by the Mayor, to the dockyard, where Her Majesty re-embarked and went on board the yacht. Her Majesty remained a short time on board, and the Royal party then went to view that stupendous national work, the Breakwater, upon which they landed and remained some time ere they returned to the yacht. In the evening there were bonfires and fireworks, and all sorts of rejoicing; but by far the most magnificent sight was afforded by the men-of-war in the Sound. At nine o'clock when the gun fired, the whole of them manned their yards, each man having a blue light in his hand.

The Queen and Prince Albert left Plymouth on Friday morning, and went to Falmouth, where they remained but a very short time, and returned up Channel, passing the Eddystone, in the evening. Between 5 and 6 o'clock the St. Vincent hove to in the offing, and telegraphed with the Caledonia, which was then lying in the Sound. After which the Caledonia and Formidable got under way and joined the rest of the Squadron. The Royal yacht got under way from her moorings at Barnpool at 9 o'clock, and proceeded at half-speed through the Sound and Cawsand-bay, and out to sea by the western passage of the Breakwater. While passing through the Sound, Her Majesty was saluted on her departure by all the men-of-war in the port, and by the batteries on shore. The yards of the shipping were manned, and their crews, as the Royal yacht passed by them, gave Her Majesty and Prince Albert three hearty cheers. It was a gratifying and a magnificent scene. Her Majesty was accompanied by a Fleet of men-of-war, consisting of the St. Vincent, 120, Capt. Rowley, with the flag of Admiral Sir C. Rowley; Caledonia, 120, Capt. Milne; Camperdown, 104, Capt. Brace; Formidable, 80, Capt. Sir C. Sullivan; Warspite, 50, Capt. Lord John Hay; Grecian, 16, Com. W. Smyth; Cyclops, steam-frigate, Capt. H. Austin; Tartarus, st., Capt. F. Bullock; and Prometheus, st., Lieut.-Commander Lowe.

On Saturday at four o'clock the Royal yacht came in sight of Treport, when a cannon was discharged as the signal of Her Majesty's approach. At five the Royal cortège of France left the Palace of Eu to proceed to meet our Queen.

At a quarter before six o'clock the Queen of Great Britain and Prince Albert placed their feet on French soil under a salute from the battery and forts erected along the shore, and from all the vessels that rode at anchor at Treport.

On the Queen leaving her yacht the Royal standard of England was immediately lowered, and the standard of England and of France were hoisted on the King's barge. All vessels in the roads then saluted the Royal party, and the salute was returned from the batteries on shore. The firing continued during the whole time the party were on the water. By the time the barge had approached the landing-place, the ladies of the Royal Family of France, and all their Lords and Ladies in Waiting, had placed themselves round the top of the stairs, in a curved line, but in such a manner, however, as not to hide the interesting scene of meeting from the spectators. The Queen of the French stood two paces in advance of the brilliant line. This was, perhaps, the most interesting moment of the day. Each person, no matter of what degree or quality, stood mute, breathless, and sedulously observant—a fitting image of expectation. At length the Royal barge touched the shore, and the King of the French taking Her Majesty of England by the hand, assisted her up the steps with the care and paternal gallantry of a French gentleman of the olden times. The Queen of the French advanced to receive the Queen of England, amidst the most enthusiastic cheering, in which the Military most cordially joined. Louis Philippe, immediately presented Queen Victoria to the Queen of the French,

who took her by both hands, and saluted her several times on both cheeks, with an evident warmth of manner, which shewed that she meant more than mere courtly etiquette. The Queen of the Belgians, and other ladies of the Royal Family, then came forward, and also saluted her with great cordiality and affection. The shouts of "Vive la Reine Victoria," "Vive la Reine d'Angleterre," which from the landing continued almost without interruption, was redoubled upon seeing the kindly feeling exhibited by the royal personages on both sides. This demonstration of sympathy on the part of the people continued till the royal party retired to their tent.

Her Majesty continued her visit till Thursday; two fêtes champêtres, a review, concerts, and other entertainments occupied the time. The kindly, nay, fatherly reception given to Her Majesty by the King of the French, and the distinguished hospitality shown to her by him and his whole family, have been felt by the people of France as if it were their own act. They considered Queen Victoria as the guest of the nation, they felt pride and exultation in having her among them, and in the King they saw but the organ through whom their hospitality was dispensed. None but those who were present at Her Majesty's landing, and at her subsequent appearance in public, can be fully sensible of the extent to which the enthusiasm extended, nor of the warmth and unanimity with which it was expressed.

It is reported that the King of the French has conferred the "grand cordon" of the Legion of Honour upon Prince Albert, that Queen Victoria has also conferred some honours, and that the Prince de Joinville has been made a Knight Grand Cross of the Bath.

Thursday being the day fixed for the departure of Queen Victoria and her illustrious consort from the shores of France, the whole of the populations of Eu and Treport were on foot at an early hour.

The Queen and Prince Albert left the Château at a little after eight, in the large and splendid char-à-banc which conveyed her to the château on her arrival. She was accompanied by all the members of the Royal Family, including the King and Queen of the French, the Queen of the Belgians, the Duchess of Orleans, Madame Adelaide, the Princess Clementine, the Prince and Princess of Joinville, and the Dukes of Aumale and Montpensier. The escort consisted of a troop of the splendid regiment of Carbineers. The 1st regiment of the line was stationed upon the pier at Treport, and the 24th occupied the court of the Château d'Eu. The royal party were received throughout the line with cheering and every demonstration of respect.

On the arrival of the cavalcade at Treport, they were received with loud shouts, the yachts in the harbour manned their yards, and gave three animated cheers, which were enthusiastically responded to by the multitude. The royal party entered the tent prepared for their reception, where they remained for some minutes in friendly discourse. Upon leaving it, the King, taking the hand of Her Majesty, led her on board the barge which was prepared for the occasion. The King, the Duke d'Amaule, and the Duke of Montpensier, together with M. Guizot and some others, accompanied Her Majesty and Prince Albert on board the yacht. On leaving shore, shortly after nine o'clock, a royal salute was fired from the batteries, which was returned by the ships, the people cheering the party loudly until they reached the yacht.

The King of the French and his suite remained on board for a short time, and on leaving was saluted with a royal salute from all the English ships. Immediately afterwards the royal squadron sailed.

Brighton, Thursday, Sept. 7.—This morning opened bright and clear, and at daybreak the St. Vincent, 120 guns, and three other three-deckers, from the former of which the Emerald cutter brought despatches to the Post-office for London last night, were discovered about three or four miles south of Kemp Town. At seven the Mercury steamer left the pier with a large party, in order to meet the royal squadron. By twelve o'clock, the hour at which Her Majesty

was expected to land, thousands of persons were assembled on the cliffs and on the beach.

Soon after one o'clock guns were heard in the distance, which was the signal of the approach for the royal squadron, and shortly afterwards a detachment of the Grenadier Guards marched on the Pier Esplanade to form a guard of honour to Her Majesty on quitting the pier. They were followed by a detachment of the Coast Guard, under the command of Lieut. Pratt, who formed a guard of honour at the outer head of the Pier, and shortly after they were drawn up, a detachment of Hussars arrived.

The Royal yacht outstripped all the vessels which accompanied her; while she went at little more than half-speed the whole squadron managed to keep up with her, until, having receded some considerable distance from the French shores, she then increased her speed, and soon began to drop them astern. At one period of her passage she put on her full power for a short time, but then she distanced the whole of them so rapidly, leaving them hull down in her wake in a very short space of time, that she again moderated her speed, to enable them at least to keep her in sight. The Queen and Prince Albert, and the Prince de Joinville, were on deck nearly the whole of the passage, the weather being remarkably fine, with a light top-gallant breeze from the southward and eastward. The yacht behaved uncommonly well, and was much admired by the French Prince, who is a first-rate sailor himself, and understands what a ship should be. His Royal Highness went over every part of the vessel, and seemed much gratified at what he witnessed. The patent windlass, with its powerful leverage, and the pumps, which can be used as fire-engines as well as for pumping the ship, seemed especially to strike his attention.

At half-past 3 o'clock the Royal yacht let go her anchor about two cable's length from the pier-head, and the barge was immediately lowered and brought alongside, Her Majesty being received by a royal salute from the Pier guns. Her Majesty's barge was lowered, and immediately afterwards it came alongside the pier. Her Majesty was loudly cheered by the assembled thousands on the cliffs and on the beach. At the end of the Pier Esplanade Her Majesty, Prince Albert, and the Prince de Joinville, got into a close carriage, and was surrounded by a guard of honour, composed of the Grenadier Guards, the band of which immediately striking up the national anthem.

Her Majesty and the Royal suite left Brighton for Ostend on Tuesday morning, Sept. 12th, at a quarter to 9 o'clock. After passing the night in the Downs Her Majesty disembarked on Wednesday, at a quarter past two. The authorities were very nearly taken by surprise. The nautical people here fixed the time for Her Majesty's arrival at between half-past three and half-past four o'clock. At half-past one o'clock there stood in front of the Casino, in the great square, a group consisting of some of the most respectable residents of Ostend, when the Secretary of the British Consul arrived breathless to say, that with a powerful telescope a two-masted steamer had been discovered in the direction of the Coast of Kent, "bearing right down upon Ostend." That the vessel so descried was the Royal yacht was deemed improbable, but in the doubt the parties separated to dress, and to assemble at two o'clock, in order to proceed with becoming form to the quay to receive her Majesty at the landing-place prepared by order of the King. The steamer continued her course, and without firing a gun, or (it is said) without hoisting any signal, and thus allowing only barely sufficient time to the civic and other civil authorities to arrive at their appointed stations, came to anchor at the quay precisely at two o'clock, "steering" said an old sailor, "right into the harbour as if she belonged to it"; and, it is everywhere admitted, with a correctness and a rapidity perfectly astonishing. Their Majesties the King and Queen of the Belgians and their suite, with an immense crowd of the inhabitants and all the visitors of Ostend, were on the quay to receive our august Sovereign. The King of the Belgians

embraced Her Majesty with all that warmth of affection which his near relationship to his royal visiter permitted. The moment the royal standard of England was displayed, the band, which occupied the tasteful temporary orchestra erected opposite the landing place, struck up our national anthem, "God save the Queen," which was responded to by the crowd and the troops. Her Majesty had scarcely set foot on the shore when an enthusiastic shout of "God save the Queen," in downright English, burst from one particular portion of the mass, which attracted Her Majesty's attention, and produced not only a gracious acknowledgement, but a smile—for conspicuous by his strength of lungs, woolly crop, and herculean proportions was to be seen among them the "coloured" commissioner of the *Hotel des Bains*, a retired British "man-o-war's-man," of 28 years' service. At a quarter-past two the royal cortège left the quay. Her Majesty and the King of the Belgians occupied the back seat of an open carriage. Opposite them sat the Queen of the Belgians and his Royal Highness Prince Albert. Her Majesty looked in even better health than when she embarked at Treport last Thursday morning. Prince Albert also looked well, and all in excellent spirits. Throughout the whole line of march the Queen was saluted with the most rapturous cheering, and acknowledged it with that grace, kindness, and dignity which it is needless to describe. It is not necessary to name Her Majesty's suite. Among the distinguished persons who were in attendance on their Majesties of Belgium to receive our beloved Sovereign were General Goblet, Minister for Foreign Affairs; Count d'Aerschoot, Grand Marshal of the Palace; M. Conway, Intendant of the Civil List; the Burgomaster, M. Serruys; the Consuls of Great Britain and the United States, the Sheriffs (Eschevins), the Town Council (or Aldermen), several general and other officers of distinction, and a considerable number of elegantly dressed ladies. The entire populace was abroad, and displayed as much enthusiasm as a similar number of the most loyal and affectionate of our Queen's own subjects could have testified.

Antwerp, Wednesday, 20th.—At half-past twelve o'clock her Majesty and Prince Albert embarked on board the royal yacht on their return to England. The King and Queen of the Belgians accompanied Her Majesty on board, and proceeded with her about twelve miles down the Scheldt, as far as the fortress of Lievekens Hoek, opposite Lillo, a small fortified town on the right bank of the river. Here one of His Majesty's royal barges was in waiting to convey their Majesties on shore. At the landing-place at Lievekens Hoek, a very elegant little pavilion was erected for their Majesties' accommodation. The fortress of Lillo, and the gun-boats abreast of it, saluted Her Majesty as she proceeded.

As the royal yacht passed Batch, the first town on the frontier of Holland, the guns of the fort fired a royal salute. The Cyclops, Tartarus, and the other steamers forming the royal squadron, immediately hoisted the Dutch colours along with the English.

When Her Majesty arrived off Flushing, the forts saluted, and a Dutch frigate lying in the roads manned her yards and fired a royal salute. The fort of Bruschoes, on the opposite side of the river, also saluted.

The royal yacht then shaped her course towards Margate Road, where she brought up for a few hours during the night, waiting the flood tide, there not being sufficient water to enable her to pass the flats.

Woolwich, Thursday.—About eight o'clock, A.M., the Blazer steam-vessel, Capt. Washington, arrived opposite the Dockyard, having been dispatched with the intelligence that her Majesty intended to embark at Antwerp, to which place the royal squadron had been ordered to proceed from Ostend, and that Her Majesty might be expected in an hour or two.

At a quarter before eleven o'clock, the royal steam yacht was brought to her moorings, opposite the Dockyard, and Her Majesty appeared on deck, under an awning, in conversation with Prince Albert, Lord Aberdeen, Lord Liver-

pool, Admirals Sir W. Gage and Sir G. Seymour, who had proceeded alongside in the Admiralty barge, immediately went on board. Afterwards Her Majesty descended the companion ladder into the Admiralty barge, followed by Prince Albert, Lady Canning, and Miss Hamilton. Lord Aberdeen, Lord Liverpool, Lord Adolphus Fitzclarence, and Admiral Sir G. Seymour, entered the barge; and the Royal party were steered to the shore by Admiral Sir W. Gage, amidst the enthusiastic cheers of thousands.

Her Majesty was received at the bottom of the steps of the landing-place by Captain Sir F. Collier, and other distinguished Naval and Military Officers.

THE SLAVE TRADE.

THE Portuguese schooner of 44 tons the *Esperanza*, has been condemned by the Mixed Commission Court, and broken up for sale, agreeably to our treaty with Portugal. Her instructions contain a tale of horror, requiring no varnishing to render it a romance. She was commissioned for the Coast of Africa, for the Mozambique, and with a crew of ten men, and provisions for fifteen days (!!!) was to take in 220 slaves, or if small bales, so the slaves are termed, 250! and easily packed, in a space of (what? gracious God!) the hold of a vessel of 44 tons, with a height of *thirty-two inches*,—*ay INCHES!* between the slave, or under, and the upper deck. Manacles and chains were on board to the number of 900 for another cargo. And with provisions for fifteen days was this frightful freight, this cargo of human misery, to cross the wide Atlantic, to traverse at a bird's flight nearly 4000 miles.

Suppose calms, or adverse winds, or storms occurred; suppose the voyage was delayed for twenty days, to no port dare the slave-ship run; from no vessel dare she seek for assistance; 250 human beings, without water or food, crammed into a space not high enough to sleep when lying down in one position for twenty days and nights, in a hold fetid with their own filth, without ventilation, with a putrid and foul atmosphere on a deck thirty-two inches from the ceiling. Can any fiction, any romance portray what might have been the bitter agony—the tortures of these Africans?

A slave can be purchased for ten bars of baft, or ten pieces of blue cloth—say twenty shillings, and will fetch at Brazils 480 dollars, or often 120*l.*; the immense profit renders the slave traders regardless of human life, *one* slave in every ten, if brought to Cuba or Brazils, yields an ample return; and anxious as our cruisers are to check this wretched traffic, the western coast of Africa is too vast and extensive for the fleet employed to watch it.—*Naval & Military Gazette.*

EXTRAORDINARY PHENOMENON.—Extract from the log-book of the brig *Parashoro*, at Belfast, from Barbadoes, 2nd instant:—"In lat. 23° 50' N., long. 32° 40', Cape de Verd Island bearing S.E., distant 590 miles, the appearance of a heavy squall rising in the S.E. direction. Half-past six p.m., lightning, thunder, and the squall approaching nearer. At thirty minutes past-six p.m., the sun, about fifteen degrees above the western horizon, became overcast with peculiar looking clouds, and every appearance of an approaching storm. I consequently shortened sail, although the barometer did not indicate anything serious. At eight p.m., the wind became very variable, from N.E. to S.W. every ten or fifteen minutes alternately, for two hours. There was a fall of rain, when the heaviest of the squall was on the zenith. At midnight it had all passed to the S.W., and the wind resumed its former place again, (east). At daylight

the decks, rigging, spars, and paint-work, were covered with mud; and as the sun dried it, it had the appearance of a very fine red mould, with no sand in it."—*Shipping Gazette*.

NAUTICAL NOTICES.

LADD REEF AND SPRATLY ISLAND.—*China Sea*.

April 1st, 1843. Cyrus, whaler, China Sea.

SIR.—I beg leave to transmit to you for general information the position and description of two dangers in the southern part of the China Sea, with extracts from my journal.

March 22nd passed through the Straits of Ballabac, and steered to the S.W. under easy sail during the night.

March, 23rd, at 4 P.M. made the Swallows Rocks, and passed to the southward of them, distant two miles, steering through the night to the W.S.W. under easy sail.

March 24th, lowered without success after Sperm Whales, in lat. $7^{\circ} 37' N.$, long. $111^{\circ} 40'$ they going fast to the E.N.E. amongst the reefs.

March 28th, standing to the N.N.E. with a light breeze from the eastward. At 6h. 30m. A.M. an extensive reef was seen from the mast-head, bearing N.E. ten miles, only visible with the glasses; at 8h. 30m. the reef bore east, distant three miles, extending in a S.S.E. and N.N.W. direction, about four miles, but the extent to the westward could not be seen. It is level with the water's edge, with large black rocks visible about the middle, and though the water was very smooth, broke heavily from one end to the other of it. At noon it bore S.E.b.S. eight miles, and our observations place it in lat. $8^{\circ} 42' N.$, long. $111^{\circ} 41' E.$, by two good chronometers, from the Swallow rocks, allowing them to be in $113^{\circ} 51' E.$, or S.W.b.W., twenty miles from West London reef.

March 29th, 1843, Standing to the E.b.S. with a steady breeze, and fine weather; at 9h. A.M. a low sandy island was discovered from the mast-head, bearing S.E.b.E. four leagues. On nearing it the beach was visible to the water's edge, the top appearing to be covered with small bushes, and about the height of a Ship's hull, with a black patch dividing the sandy beach in nearly two equal parts to the water's edge. It appears about one mile in extent east and west with breakers on each extremity; and inhabited by thousands of the feathered tribe. Noon observations place this danger in lat. $8^{\circ} 40' N.$, long. $111^{\circ} 56'$ being south a little westerly, sixteen miles from the West London Shoal.

Stood to the N.W. without sighting the West London Reef, and made Tree Island at 5h. 30m. P.M. April 1st, again proving the correctness of our chronometers, and vouching for the position of these dangers.

One I call Ladd's Reef, after Captain Ladd of the Ship Austen, who appears first to have seen it; the other Spratly's Sandy Island.

I remain Sir, &c.,

RICHARD SPRATLY.

APPROACHES TO AUCKLAND, *New Zealand*.—We have received the following from the harbour-master at Auckland. They were previously alluded to in our volume for 1841.

No 1. a rock situated to the eastward of the Island Tiri Tiri Mantangi distant from the island about one mile and a quarter, having about one foot of water on it at low water (springs), and fifteen fathoms water close to it on every side, from which the following bearings were taken.

Southern extremity of the island S.W. $\frac{1}{2}$ W. a remarkable White rocky islet

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at the north western extremity of the island N.W.b.W. $\frac{3}{4}$ W., centre of the Little Barrier Island due north. Peak of Rangitoto S. $\frac{1}{4}$ E.

From the position and shape of the Island Tiri Tiri Mantangi, not being correctly marked in the Admiralty Chart of the Gulf, the bearings of the distant land marks do not agree on the chart with those of the extremities of the Island. (We find them to agree tolerably well.—Ed.)

No. 2. a rock off the northern side of the Island of Waiekekie (marked on the chart position uncertain) from which the following bearings were taken.

North eastern end of Waiekekie due east. Bird Island E.b.N. $\frac{1}{4}$ N.

Northern end of Hura Kia Island S.W. $\frac{3}{4}$ W. This rock is even with the water's edge at high water, and has deep water within a short distance on all sides of it

These bearings were taken by (the only means in my power at the time,) a boats' compass.

No. 3. A small rocky patch, about half a mile from the shore, between the North Head of the harbour, and the first point of land outside, from which the following bearings were taken.

	ANGLES
Peak of Rangitoto N. 35° East	Signal mast extreme of N. Head 37° 5'
Bastion Rock S. 18° East.	Extreme of North Head and Bastion
Beacon on the reef, projecting from the south shore S. 45° East.	Rock 32° 46'
Extreme point of North head S. 11° W.	Bastion Rock and Peak of Rangitoto
Signal mast on Mt. Victoria S. 48° W.	126° 28'

This rock has six feet of water on it at low water (springs), two fathoms (sandy bottom) about it, and four fathoms (mud) inside, and outside of it.

This small patch of volcanic rock had been accidentally overlooked, in the survey made by Captain Stanley, of H.M.S. Britomart; a *Red buoy* has recently been placed near it, as it lies directly in the way of Shipping entering the harbour.

DAVID ROUGH, *Harbour Master.*

DISPATCH ROCK, Cape of Good Hope.—A beacon having been placed, to point out the position of the Dispatch Rock, (commonly called the Roman Rock,) situated in this Bay, the following is a description of the said mark:—

It is a black spar, with a red board across the top, and the words Roman Rock painted on it; and floats about 7 feet above the surface, and nearly upright. As it is moored some distance, say 40 fathoms, inside, or western extremity of the rock, it leaves between the beacon and the shore a safe and commodious passage; but any vessel passing in the outside, or eastward of the beacon, is particularly recommended not to approach nearer the beacon than three-quarters of a mile.

Port Office, Port Elizabeth,
Cape of Good Hope, 22nd April, 1843.

H. G. DUNSTERVILLE,
Harbour Master,

ST. JOHN, Newfoundland, Aug. 25.—A light-house, which has been for some time in the course of erection at Cape Bonavista, on the north-east coast of this island, will be in operation from and after the 10th of September (proximo), from sunset to sunrise. This light will revolve at regulated intervals of two minutes, exhibiting alternately a red and white light, and will burn at an elevation of 150 feet above the level of the sea.

WEST HOYLE SAND, Liverpool.—This Corporation having directed a beacon buoy coloured white with black ball and perch, the words "West Hoyle," painted on the head and sides, to be placed on the north-west edge of the Hoyle Sand

notice thereof is given, and that the said beacon buoy lies in four fathoms at low water spring tides, with the following compass bearings:—

The old light-house at Point of Air,	S. S. E.
Chester bar buoy,	S. W. b. W.
North-west light-vessel	E. $\frac{1}{4}$ S.
Great Orms Head	W. $\frac{1}{4}$ N.

J. HERBERT, *Secretary.*

AGULHAS LIGHT.—In a recent number we made a remark on the “Proposed Agulhas Light.” The following extract from the *Cape Gazette* of the 2nd of June last, will put our readers in possession of some information on that subject.

The Committee having been lately in communication with the Colonial Government on the subject of the Agulhas Light, in consequence of a despatch which His Excellency the Governor had received from the Right Honorable Lord Stanley, Secretary for the Colonies, in which His Lordship desired information as to the amount of subscriptions raised towards the accomplishment of that important work, with a view to the Home Government granting their aid and assistance, and the Committee having every reason to expect that that aid will be granted, it has become necessary that the outstanding subscriptions, which have been held back by subscribers in consequence of the report that the Home Government intended to build the light-house at their sole expense, should be immediately collected, the Honorary Secretary has been requested to make application for the same.

The collections already received are as follow:—Subscriptions received from

<i>Calcutta</i> —Globe Assurance Company	£100 0 0
Alliance Assurance Company, Rupees 1000	96 17 10
	£196 17 10
<i>Bombay</i> —Chamber of Commerce,—Bills on London,	
£563 13s. 6d. sold for	570 0 0
<i>Madras</i> —Per Parry, Dare, & Co., bills sold at par,	148 8 10
<i>Manilla</i> —Per Kerr, Murray, & Co., do.	39 7 6
<i>St. Helena</i> —Per Capt. Carew	5 0 0
<i>London</i> —Per Dickson, Burnie, and Co.	12 0 0
Collections in the Colony	469 9 6
	£1441 3 8
Amount paid for Printing, Stationery, Advertisements,	
and Postages	29 8 10

Balance £1411 14 10

In the Cape of Good Hope Bank,	£881 4 7	} including Interest.
— South African Bank,	590 3 0	
— Hands of the Secretary	7 16 2	

£1479 3 9

Subscriptions not yet collected in the Colony, £253 0 0

By Order of the Committee,

EDWARD NORTON, *Hon. Secretary.*

NEW CHARTS.

(Published by the Admiralty, and Sold by R. B. Bate, 21, Poultry.

[Since our last number the following Charts and Plans have been published by the Admiralty.]

PORT VENDRE, *South Coast of France.* From a French Survey.

- PORT OTRANTO, *Adriatic*.—By Capt. W. H. Smyth.
 PORT PIRANO,—BRINDISI,—Extends from C. Gallo to Point Cavello.
 BOURBON ISLAND,—With the roads of St. Dennis, St. Giles, and Port D'Abord.
 PORT CHAGRES and LIMON BAY, or Puerto de Naos, with an enlarged plan of Lorenzo Castle.—By Commander Barnett.
 PEARL CAY LAGOON, with plans of great and little Corn Islands.—By Commander R. Owen.
 THE NURSE CHANNEL.—By Commander E. Barnett.
 WAX CAY CUT, *Exhuma Sound, Bahamas*.
 APIA BAY, *Navigators Islands, by Mr. G. Johnson, Master R.N.*

ADMIRALTY ORDERS.

Admiralty, Sept. 11th, 1843.
 My Lords Commissioners of the Admiralty are pleased to direct that a statement be added to the usual report of sailing qualities of ships, shewing any particular circumstances which may have occurred likely to affect the copper, such as getting on shore, or whether they have experienced any storms of lightning, and stating also the stations on which the ship has been employed since last coppered.

By Command of their Lordships,
 SIDNEY HERBERT.

Whereas, by an Order in Council of His late Majesty King George the Fourth, dated the 23rd day of March, 1825, certain rates were established at which the Foreign Silver Coins, mentioned in the Table thereto annexed, should pass current in all British Colonies and Foreign Possessions:—

And whereas, it has been found expedient by

the Lords Commissioners of the Treasury, to alter such rates in various of Her Majesty's Colonies and Foreign Possessions, and to add to the Table herein-before referred to certain other Foreign Coins both Gold and Silver:—

And whereas, the alterations and additions before-mentioned have produced a variety of rates instead of the uniform values heretofore assigned to the Foreign Coins in question:—

We do therefore hereby desire and direct, that from and after the date of this Order, or as soon afterwards as it may be received, the Foreign Gold and Silver Coins specified in the annexed Table, shall be accounted for at the rates therein assigned to each.

Given under our hands this 10th day of July, 1843.

W. H. GAGE,
 W. GORDON.

By Command of their Lordships,
 SIDNEY HERBERT.

TABLE shewing the rates in Sterling Money at which the undermentioned Foreign Coins are to be computed (when British Coin cannot be procured) for Necessary Money, and issued in payment of Savings and Monthly Allowance to the Seamen of Her Majesty's Fleet in Foreign parts, and also in every other payment, the amount of which may be stated in Sterling Money.

Foreign Coin.	British America, Bermuda, Newfound, British West India Islands, Brit. Guiana			Brit. Settlements on the W. Ct. of Africa, Island of St. Helena, Cape of Good Hope, New South Wales, Van Dieman's Land			Island of Mauritius and its Dependencies.			Territories of the East India Company and Island of Ceylon.			Gibraltar.			Malta, and Ionian Islands.			All Foreign places not within Her Majesty's Dominions.					
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.			
GOLD,																								
Doublon, Span. & S. Amer.	3	4	0	3	4	0	3	4	0	3	4	0	3	6	8	3	6	8	3	4	0	3	4	0
Half doublon	1	12	0	1	12	0	1	12	0	1	12	0	1	13	4	1	13	4	1	12	0	1	12	0
Quarter doublon	0	16	0	0	16	0	0	16	0	0	16	0	0	16	8	0	16	8	0	16	0	0	16	0
Eighth doublon	0	8	0	0	8	0	0	8	0	0	8	0	0	8	4	0	8	4	0	8	0	0	8	0
Sixteenth doublon	0	4	0	0	4	0	0	4	0	0	4	0	0	4	2	0	4	2	0	4	0	0	4	0
Piece 22 francs, French ...	—	—	—	—	—	—	0	15	10	—	—	—	—	—	—	—	—	—	—	—	—	0	15	0
Mohur, East India Company	—	—	—	—	—	—	1	9	2	1	9	2	—	—	—	—	—	—	—	—	—	1	9	2
SILVER.																								
Dollar, Span. & S. America	0	4	2	0	4	2	0	4	2	0	4	2	0	4	2	0	4	0	0	4	0	0	4	2
Dollar, U. States of America	0	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dollar, Sicilian	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	4	0	—	—	—	—	—	—
Five franc piece, French* ..	—	—	—	—	—	—	0	3	10½	—	—	—	—	—	—	—	—	—	—	—	—	0	3	10¼
Crusado Novo, Portuguese ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	2	3
Rupee, East India Company	—	—	—	—	—	—	0	1	10	1	10	—	—	—	—	—	—	—	—	—	—	0	1	10

* The smaller French Coins are not a legal tender in sums of less than Five Francs.

BIOGRAPHICAL MEMOIR.

CAPTAIN THOMAS WITHERS, R.N., (See obituary for August,) entered the Service in 1793. In that year he had the good fortune to join the immortal Nelson in the *Agamemnon*, 64, forming part of Lord Hood's fleet at the occupation of Toulon, and bore a part in the reduction of Bastia and Calvi, and in the several actions in which the *Agamemnon* was engaged. In a boat affair during this period he was wounded in the foot, and was taken to the Austrian head-quarters at Loano for the extraction of the ball. In another he was taken prisoner by the French, and was fortunate enough, three months after, to be included in the exchange brought about by the generosity of Nelson, in restoring some private property of Napoleon's, taken by the *Agamemnon*. In 1796, he joined the *Captain*, 74, and in the following year, at the battle off Cape St. Vincent, had the distinguished honour of commanding the division which boarded the *San Nicolas*, and from that ship the *San Josef*. He was made Lieutenant the next day, and was soon after appointed to the *Terrible*, 74, under the command of Sir Richard Bickerton, and served during the expedition against the French in Egypt. At this time he rendered an important service, which received a warm public acknowledgement from Sir Alexander Cochrane, and which was peculiarly characteristic of his unwearied zeal.

With his lead, line, and compass, which he always carried with him while detached from his ship on an enemy's coast, he had, while engaged in a blockade of Fort Marabout, occupied himself in a survey, which enabled him, at a critical juncture, to lead the British squadron into port when no one else in the Fleet could have done it, and at a moment when the success of the movements of the Army upon Alexandria, under Sir E. Coote, depended upon its co-operation.

In April, 1803, he was appointed to the command of the *Expedition*, 44, and was chiefly engaged in the Mediterranean till 1804. In 1805, Captain Withers accepted employment under the Transport Board, and in the arduous and harassing service repeatedly received the highest public commendations from Officers in command in the Army and Navy, who had witnessed and been benefitted by his indefatigable exertions. Such was the confidence reposed in him that at one time the tonnage of the transports entrusted to him, amounted to no less than 50,000 tons. In 1809, Post-rank was bestowed on Captain Withers. He was engaged in the defence of Sicily, in 1810, and from 1812 to the termination of hostilities in 1814, was chiefly employed on the east coast of Spain. The whole of Captain Withers' active service embraces a period of 21 years. It was characterised throughout in the various situations of trust which he filled by an earnest devotion to his duties, which uniformly procured him confidence and esteem.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

ADMIRALTY, September 5.—With reference to the note added to the *Gazette* of the 23rd of December last, the under-mentioned promotions have taken place, in consequence of the recent war in China, the Commissions dated December 23, 1842:—

Lieutenants to be Commanders.

H. J. Lacon, J. G. Bynon, V. A. Massingberd, J. C. M. Touzeau, T. Woodgate.

Mates to be Lieutenants.

S. S. Shore, J. Reid, W. F. W. Parkinson, and W. P. Johnson.

PROMOTIONS.

COMMANDERS—G. A. Bedford—B. F. West, W. S. Cooper.

LIEUTENANT—S. S. Shore

SURGEONS—A. C. Air, K. R. Risk.

PURSERS—T. Hocking, late Clerk of the Vanguard, W. Hopkins.

APPOINTMENTS.

COMMODORE—A. R. Sharpe, C.B., to
• *Imaum*,

COMMANDERS—S. Wriford (1815) to the Ordinary at Plymouth—H. C. Binstead (1841) to *Apollo*—F. Scott (1841) to *Hyacinth*—R. J. W. Dunlop (1842) to *Star*.

LIEUTENANTS—E. G. Bremer to *Grecian*—E. J. B. Clarke (1841) to *Camperdown*—G. Wichelo (1825) and Wood to *Poitiers*—T. M. Rodney (1832) to *Modeste*—O. J. Jones (1839) to *Pilot*—T. White (1812) to Ordinary, Sheerness—E. H. B. Proctor (1841) to *Cyclops*—G.

C. Briggs (1841) to *Pilot*—E. F. T. Roberts to *Excellent*—G. Walker (1841) to *Talbot* v. Sir F. Freeling to Haslar sick—J. H. Crang (1840) to *Hydra*—D. Woodruffe (1828) to command *Albert* on the coast of Africa—B. G. Rowles (1843) to *Hyacinth*.

MASTERS—J. Underwood to *Caledonia*—G. J. Gibbon to *Alert*.

MATES—H. Charleton (1835) and E. F. N. K. Wasey (1842) to *Penelope*—P. Barclay (1843) to *Alert*—C. D. B. Kennedy to *St. Vincent*—T. Gresham to *Formidable*—G. W. Towsey to *Penelope*—A. D. Gordon to *Illustrious*—H. Smith to *Modeste*—R. R. Easto to *Talbot*—F. G. Simpkinson to *Excellent*.

SECOND-MASTERS—F. F. F. Taylor to *Madagascar*—A. R. Burstall to *Eurydice*.

SURGEON—W. D. Wilkes to *Alert*.

MASTERS-ASSISTANTS—A. J. Parks to *Alert*—H. J. Johnson to *Hydra*—J. W. Young to *Penelope*.

ASSISTANT-SURGEONS—J. S. Peddie to *William and Mary* yacht, for service in Woolwich dockyard—N. B. Alexander and Willan to *Hydra*—C. T. S. Kevern to *Caledonia*.

MIDSHIPMEN—H. Dawson to *Camperdown*—A. de Horsey and J. J. S. Josling to *St. Vincent*—E. F. King to *Caledonia*—W. P. Chase to *Eurydice*—W. Palliser to *Penelope*—J. E. Montgomerie to *Modeste*.

VOLUNTEER 1st Class—Davy to *Hydra*—J. Jenkins and J. M'Crear to *St. Vincent*—D. E. N. Wynyard to *Conway*.

PURSEERS—W. H. Brown to be secretary's clerk to Admiral Sir C. Rowley—R. Parker to *Alert*.

NAVAL INSTRUCTORS—G. F. Parker to *Talbot*—M. E. Frost to *Excellent*—J. Gowan and F. W. Bonter to *Eurydice*.

CLERKS—F. Rutter and T. H. Powell to *Talbot*—H. B. Retallick to *Penelope*—H. H. Gilbert to *Cornwallis*.

COAST GUARD.

Appointments—Lieut. Joseph Elwin to command the Active—Lieut. G. M. Tomlin to Marchwood—Lieuts. J. O'Reilly and H. Warren to command stations—Lieut. P. Inglis to Romney—Lieut. W. H. Goddard to Clackton Wash—Lieut. J. Drew to Prussia Cove—Lieut. H. F. Sewell to Kilmore.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

AVON, st. v. Lieut.-Com. D. Mapleton, Aug. 25th, arr. at Plymouth from West Indies.

BELLEISLE, 72, Capt. J. Kingcome, Sept. 5th, arr. at Plymouth from Cape of Good Hope.

CYCLOPS, st. v. Capt. H. J. Austen, Aug. 24th at Portsmouth from Woolwich.

DOLPHIN, 3, Com. W. O'Brien Hoare, Sept. 2nd, left Plymouth for Coast of Africa.

EREBUS, Capt. J. C. Ross, 12th Sept. at Woolwich, 23rd paid off

GRECIAN 16, Com. W. Smyth, 23rd Aug. arr. at Portsmouth from Cape Good Hope.

INCONSTANT 36, Capt. C. H. Freemantle, 3rd Sept. left Cork for West Indies.

PILOT, 16, Com. W. Jervis, 18th Aug. left Plymouth for China.

TERROR, Com. F. Crozier, 12th Sept. at Woolwich, 23rd paid off

VRAGO 18, Com. G. Otway, 20th Aug. left Portsmouth for Mediterranean.

WARSPITE 50, Capt. Lord John Hay, 18th Aug. at Portsmouth.

PORTSMOUTH—Ships in Port—Victory, and Excellent.

PLYMOUTH.—In Harbour.—San Josef, Belleisle, Apollo, Star, Express, Confidence, Virago.

In the Sound,—Anson.

ABROAD.

ALBATROSS, 16, Com. R. Yorke, July 12th, at Port Royal.

BEACON, sur. v., Com. T. Graves, 15th Aug. arr. at Syria.

BELVIDERA, 38, Capt. Hon. G. Grey, Aug. 15th at the Piræus of Athens.

DETASTATION, st. v., Com. H. Henry, Aug. 15th, Constantinople.

FIGGARD, 42, Capt. J. Duntze, 26th, arr. at Madeira, 28th sailed for Rio.

FORMIDABLE, 84, Capt. Sir C. Sullivan, bart. Aug. 15th at Lisbon.

GEYSER, st. v., Com. E. Carpenter, Aug. 15th, at Beyrout.

GORGON, st. v., Capt. G. Hotham, 12th June left Rio for Monte Video.

GROWLER, 6, Com. C. H. M. Buckle, July 14th at Pernambuco from a cruise.

HECLA, st. v., Com. J. Duffil, Aug. 15th at Tunis.

ILLUSTRIOUS, 72, Capt. J. Erskine, Aug. 12th, at Quebec.

ISTS, 44, Capt. Sir John Marshall, May 23rd at Cape of Good Hope.

LOCUST, st. v. Lieut.-Com. J. Lunn, Aug. 15th, at Gibraltar.

MAGICIENNE, 24, Capt. R. Warren, Aug. 15th, at Coifu.

MAGPIE, st. v., Com. T. Brock, Aug. 15th at Syria.

MALABAR, 74, Capt. Sir G. Sartorius, Aug. 15th, at Cadiz.

MEDEA, st. v., Com. F. Warden, 15th Aug. at Barcelona.

MONARCH, 84, Capt. S. Chambers, Aug. 15th, at Malta.

PICKLE, 5, Lieut.-Com. J. Bainbridge, July 23rd, at Grenada.

PIQUE, 36, Capt. Hon. M. Stopford, July 23rd, at Grenada.

QUEEN, 110, Capt. G. F. Rich, Aug. 15th, at Malta.

RODNEY, 92, Capt. R. Maunsell, June 12th, left Rio for Cape of Good Hope.

ROSE, 16, Com. H. R. Sturt, Aug. 6th, left Halifax for Bermuda.

SAVAGE, 10 Lieut.-Com. J. H. Bowker, Aug. 15th at Malta.

SCOUT, 18, Com. Hon. J. R. Drummond, Aug. 15th, at Carthage.

SNAKE, 16, Com. Hon. W. B. Deveaux, Aug. 15th, at the Piræus of Athens.

THUNDERBOLT, st. v., Com. G. N. Broke, May 17th at the Cape of Good Hope.

THUNDERER, 84, Capt. D. Pring, 20th May sailed for the Mauritius.

VERNON, 50, Capt. W. Walpole, 15th Aug. at Beirut.

VESUVIUS, st. v., Com. E. Ommaney, Aug. 15th, at the Piræus of Athens.

VOLAGE, 26, Capt. Sir W. Dickson, sailed for the West Indies.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At St. Leonards-on-sea, Aug. 22nd, the lady of Capt. Macwaine, R.N., of a son.

At Reading, Aug. 23rd, the lady of Capt. Murray, R.N., of a daughter.

At St. Day, Cornwall, Aug. 15th, the lady of Lieut. Z. Andrew, R.N., of a daughter.

At Stonehouse, Aug. 16th, the lady of Lieut. Lambert, R.M., of a daughter.

At Harbour Terrace, Falmouth, the lady of Lieut. T. James, R.N., Admiralty Agent, Peninsular Steam Company, of a daughter.

At Capt. Clavell's, Greenwich Hospital, Mrs. Blount, widow of the late Commander W. S. Blount, of a son.

At Gosport, Sept. 1st, the wife of Lieut. W. E. Triscott, R.N., of a son.

Marriages.

At Bathwick, Aug. 22nd, the Rev. J. Walker to Catherine, daughter of Capt. Carroll, C.B., R.N.

On Aug. 31st, at Hackney, Charles, son of the late Lieut. Chapman, R.N., to Louisa, daughter of Lieut. J. Finlayson, R.N.

At St. Ann's, Westminster, Aug. 31, J. P. Reall, Esq., surgeon, to Jane, daughter of the late E. Cubison, Esq., R.N.

At Sunninghill, Sept. 1st, Capt. Sir T. Bourchier, K.C.S., to Jane Barbara, eldest daughter of Admiral Sir Edward Codrington, K.C.B.

At St. James's, Sept. 5th, R. Ward, Esq., to Margaret, daughter of Lieut. Batt, R.N.

On Sept. 6th, Lynal Thomas, Esq., to Blanche Charlotte, daughter of Captain Marryat, C.B., R.N.

In Argyllshire, Lieut. R. Campbell, R.N., to Eliza, daughter of H. A. Mansell, Esq., of Guernsey.

Deaths.

At Bettydown, near Drogheda, Mary Ann wife of Commander J. Adams, R.N.

At Langlee, Roxburghshire, Bertha, the lady of Capt. R. Elliott, R.N.

At Falmouth, the lady of J. James, Esq., R.N.

At Balmeer, May 22nd, F. F. Strachey, son of Capt. Strachey, R.N.

At Stonehouse, Aug. 11th, Mrs. Cowling, aged 90, widow of the late Mr. Cowling, master R.N.

At Berwick-on-Tweed, Sept. 8th, aged 17, Charlotte, the daughter of Lieut. G. Howes, R.N.

At South Lambeth, Sept. 7th, Jane relict of the late Capt. M. Halliday, R.N.

At Topsham, aged 92, the widow of D. Folliott, R.N.

CHINA.—Extract of a letter.—Shippoo is a most extraordinary place, lying S.W. 19 miles from Patchcock, and in lat. 29° 11' N., long. 122° 0' E., a good roadstead for vessels of 15 feet. It communicates with an immense gulf called Sammoon. Taichow or the pleasant city, is situated West of us; the natives say that the river is not navigable for large vessels. There cannot be a better harbour than that of the Taichow Islands. It is situated between the two largest of the islands visited by the Wellesley, with from seven to ten fathoms water muddy bottom; many streams of fresh water, and plenty of vegetables, goat, mutton, and pork in moderate quantity; lat. 28° 27' N., long. 121° 56' E., sheltered from the trade wind. We are all well on board, and everything looking like confirmed peace around us; the Chinese hereabouts, now that they know us, shew every confidence in the English.

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, 1843.

Month Day.	Week Day.	BAROMETER.		FAHRENHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
				9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	Quarter.				Streng.
		A.M.	P.M.							A.M.	P.M.	A.M.	P.M.
21	M.	In. Dec 30.02	In. Dec 30.00	58	66	52	68	N	W	4	3	b	
22	Tu.	29.70	29.60	60	58	50	62	S	S	4	6	o	bc
23	W.	29.65	29.63	57	61	50	66	SW	E	3	2	b	qor (3)
24	Th.	29.64	29.82	55	65	53	66	NW	NW	3	3	or (1)	or 3) (4)
25	F.	29.87	29.87	61	68	50	72	S	SW	2	4	bc	bcip (3)
26	S.	29.97	30.01	64	69	58	70	SW	SW	2	4	bc	b
27	Su.	30.17	30.17	56	66	49	67	S	SW	1	2	bc	o
28	M.	30.04	29.98	63	63	50	66	SW	SW	2	4	o	od 3)
29	Tu.	30.01	30.04	64	68	62	70	SW	SW	3	3	o	bc
30	W.	30.15	30.15	68	68	62	69	SW	SW	1	1	bc	o
31	Th.	30.25	30.24	66	76	59	77	SW	S	1	3	o	b
1	F.	30.33	30.34	67	77	57	79	W	W	1	1	bm	bm
2	S.	30.40	30.48	67	78	57	79	NE	NE	1	1	b	bc
3	Su.	30.33	30.31	65	77	58	78	SW	SW	2	3	bc	bc
4	M.	30.32	30.35	62	69	56	70	N	N	4	4	b	bc
5	Tu.	30.43	30.42	57	68	47	69	NW	N	2	2	b	b
6	W.	30.32	30.30	55	72	49	73	NW	N	2	1	bm	bm
7	Th.	30.31	30.33	62	76	52	78	W	SW	1	1	b	b
8	F.	30.32	30.32	66	74	56	76	E	E	1	2	b	b
9	S.	30.23	30.20	66	75	62	76	E	E	2	2	bc	b
10	Su.	30.06	30.04	62	68	59	71	NW	SE	1	2	of	bcp (3)
11	M.	30.00	30.08	62	67	57	69	SW	SE	1	1	bc	bc
12	Tu.	30.25	30.25	63	73	59	74	N	NE	2	2	of	b
13	W.	30.15	30.12	60	69	51	71	E	E	2	3	b	b
14	Th.	29.88	29.89	60	64	50	68	NE	SE	2	1	o	o
15	F.	29.87	29.93	65	72	61	73	SE	SE	2	4	b	b
16	S.	30.05	30.08	65	76	56	77	NE	SE	1	1	b	b
17	Su.	30.20	30.20	63	77	56	78	NW	S	1	2	b	bc
18	M.	30.17	30.17	66	76	58	77	NW	S	1	1	bcm	b
19	Tu.	30.22	30.22	56	72	60	74	E	E	1	1	bcmp 1)	bc
20	W.	30.16	30.14	60	73	53	75	NE	SE	1	2	b	b

August.—Mean height of the Barometer = 29.990 inches; Mean temperature = 63.2 degrees; depth of rain fallen = 4.10 inches.

Note.—During the evening and night of August 23rd, no less than 2.67 inches of rain fell! Error in page 640 last number, for "August," preceding Mean height, &c. read "July."

TO OUR FRIENDS AND CORRESPONDENTS.

CAPTAIN PETLEY's letter shall appear in our next.

We hope also to resume our "Leeward Island Station," which want of space has prevented appearing in this number, as well as the continuation of the "Sulphur's Voyage," and "Indian Archipelago".

Thanks to a friend for the "Mexican Papers."

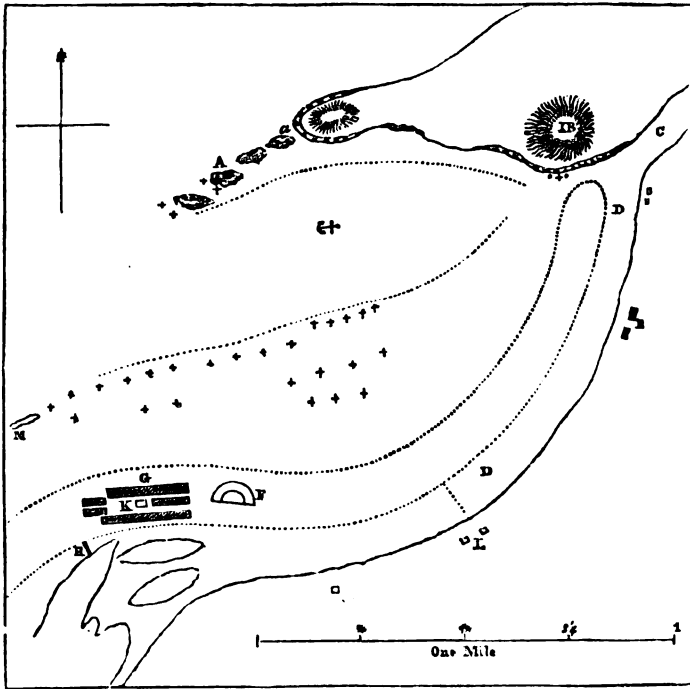
We have been obliged to curtail the account of Her Majesty's Marine Excursion, of many interesting points which may appear hereafter.

CAPTAIN SPATLEY's letter in our next.

Hunt, Printer, Carlisle-street, Maida-hill.

THE PORT OF ARECIBO.

VESSELS bound to Arecibo should make the city of Porto Rico early in the morning. This will allow of their running their distance so as to make the anchorage of Arecibo in good time before night, which is very desirable, as the currents are often strong and uncertain. The longitude of each place is correctly stated in the *Columbian Navigator*, giving the distance between them thirty-two miles. In running down the coast at about three or four miles from it, two towns will be seen; the first Tortugera, about seven leagues from the city, the next Arecibo, which may be known by its having a circular fort on the beach to the



References to the Sketch of the Port of Arecibo.

- | | | | |
|---|---|---|--|
| A | Schooner-channel between reefs, which are nearly covered at high water. | E | Warehouses. |
| a | Boat channel between cliffs and the reef. | F | Fort. |
| B | Lookout-house with flag-staff. | G | Town of Arecibo. |
| C | Branch of river from Manati. | H | Bridge. |
| D | River Arecibo, navigable for launches only. | K | Ruins of a church. |
| | | L | Ferry. |
| | | M | Apparently the remains of a wreck on the edge of the reef. |

The anchorage has 4 fathoms in it, the reefs are steep to, and the depth gradually decreases to the mouth of the river, which is nearly dry. The rise and fall at springs is three feet.

right, and the ruins of a church in the middle of the town, and also by a lookout-house and flag-staff on a steep hill to windward of the port about a mile from the town.

It is the custom on vessels approaching the anchorage for a pilot to come out in a small boat, bearing a white flag, not to board, but to pull in before the vessel by way of leading in; but as the sea breeze is generally strong, it often happens that the vessel overruns the pilot-boat, and the captain has to look out and bring his ship to anchor himself.

The holding ground at Arecibo is very indifferent, and in the season of the northers; viz. from November to February, ships ought to anchor in the offing at least two miles outside the reef, and be ready to slip; but in the months of April, May, June, and July, they may anchor inside, and close to the reef in 4 or 3½ fathoms.

The trade of Arecibo is rapidly increasing. From the 6th to the 21st of July, one ship, two barques, three brigs, and two schooners completed their cargoes at that port.

THE ANN AT SAMBOANGAN.

Cyrus, China Sea, April 1st, 1843.

SIR.—The perusal in the *Nautical Magazine* of the account of the loss of the "Indian Oak," on the island of Loo-choo, and the humane treatment of the officers and crew of that ship, by the chief and natives of that island, has led me to contrast the different conduct met with by Captain McAlpine of the barque Ann of Greenock, at one of the Philippine Islands, after that ship had been on shore in the Straits of Basilan, and assisted into the roads of Samboangan on the north side of those Straits.

The Ann of Greenock, Capt. Duncan M'Alpine, from Canton, with a valuable cargo, consisting of tea, silk, and sundries, struck on a coral bank, of two fathoms water, at 8 P.M. on the 14th of June, 1842, to the south-west of St. Cruz Islands in the Straits of Basilan, and about four or five miles from the Spanish fort and village of Samboangan. This place is a penal settlement, where all convicts are sent to from the different Spanish ports amongst the Philippines, and under the government of Manila; having attached to it a military governor, a naval commandant of gun-boats, an artillery commandant commanding the fort, a collector of customs, and a padre, (the whole of these are Europeans,) with a militia force of about 1000 men.

The Cyrus and Marshall Bennett, whalers, were lying at this place refreshing their crews, and procuring water, when, on the 15th June, at 9 A.M. word was sent off that, an English ship was on shore on the reef outside the islands, but completely hid from view of the ships in the roads. Capt. Hunter and myself immediately manned five boats, with as many of the crews of the two ships as could be spared, (two gun-boats having gone out just previous). After an hour's pull we got on board the Ann at 10 A.M., and tendered our services to Capt. McAlpine, which being accepted, we succeeded in getting the ship afloat a

little before 1 P.M., with loss of some of her false-keel, rudder unshipped, and all the pintles, but the upper one broken, the ship making about twelve inches water per hour. After securing the rudder with chains, we succeeded in getting the ship into an anchorage in twelve fathoms water, near the east point of St. Cruz Islands; and, as his own crew could then keep her free without much difficulty we left, and went on board our own ships. The gun-boat, with the only commissioned officer on board, left before we got on board the Ann; the other we sent away after she was afloat.

June 16th, Capt. McAlpine made his protest before the governor, who acts as notary, and obtained a promise of assistance to repair his ship; the marine commandant, Don Juan Acha, engaging even to heave the ship out, and do all that was requisite to the rudder, supply boats to land the cargo and re-ship it. This seemed all very straight forward; and no idea was entertained but that the Ann could be made sea-worthy here. Upon enquiring we found the collector had ample room for storing the cargo; but said it would be subject to a duty of *one per cent. on the gross value*, which, we expressed our opinion as being enormous. Capt. McAlpine then obtained ten men to assist at the pumps, and proceeded on board: this day being too far spent to get the ship any nearer the anchorage owing to the strong tide, she still remained under St. Cruz Islands.

June 17th and 18th was spent in vain attempts to get any satisfactory answer from the authorities on shore, relative to making the ship seaworthy, they now refusing to enter into the repairs at all, but stating that the cargo must be landed, and the ship sent to Ilo Ilo or Manila to be repaired, for which purpose they would lend men to assist her there; but refusing any assistance to take her to Java, strenuously opposing every suggestion to that effect. At noon the Ann anchored in the roads.

June 19th. Arrived the barque Australasian Packet, Capt. Parker, from Canton, bound to Sydney; cargo—tea and sundries; having had a narrow escape on the same bank. There being another master, (Capt. Metcalf,) a passenger, on board the packet, a second survey was held on the Ann, and the result was, to take the ship to Sourabaya under protest, there being no possibility of repairing her at this place; the carpenters of the whalers being able to hang the rudder, with temporary iron pintles, to carry the ship there, and Capt. Hunter with the barque Marshall Bennett, engaging to accompany her to her destination, and assist with half his crew to pump on the passage down. The authorities on shore would then render no more assistance whatever, and the governor ordered all the labourers on shore. The rudder was taken on board the Marshall Bennett, the pintles made, and the rudder shipped again on the 21st.

June 23rd. The Ann being now quite ready, at 10 A.M. weighed, and sailed in company with Cyrus, Marshall Bennett, and Australasian Packet; but owing to light winds the Cyrus only, was enabled to clear the Straits that evening; and it was not until the 26th, at 6 P.M., the other ships again made their appearance, and got through the Straits. The Cyrus accompanied them on their way as far south as the Island Belwan, the Ann working as well as though no accident had happened

to her, and the leak still continuing the same without any increase, notwithstanding the weather was rugged and very squally.

I parted with the *Ann* on the 28th, she making the best of her way towards Sourabaya, where she arrived safe; was eventually condemned; and the cargo immediately re-shipped for England in another ship, as I was afterwards informed.

I have no doubt this would have been a case of serious loss to the underwriters, and all concerned in the *Ann* and her cargo, had she not been fortunate enough to procure assistance from the before-named English ships, at the time of her disaster; for had the cargo been once landed at Samboangan, I have little doubt in saying, a very large portion of it would never have left that place; for they boasted, if the *Ann* was condemned there, tea would be very cheap in Samboangan.

I leave you, sir, to make what comments you may think proper to this statement, should you deem it worthy of your notice, and beg leave to subscribe myself,

Yours, &c.,

R. SPRATLEY,

Master of the barque Cyrus.

To the Editor, &c.

[The foregoing treatment of the *Ann* at Samboangan, is an important addition to the account of that vessel getting on shore, (owing to an omission in Horsburgh's chart,) which was given by Capt. Hunter of the *Marshall Bennett*, in p. 217 of this volume; because it will serve to place our seamen on their guard, as to what they may expect there in future. Capt. Spratley has, therefore, rendered them an important service in this respect, while Capt. Hunter has done no less so, in pointing out many important particulars in deficiencies of the charts, as well as the resources of Samboangan itself. And we take this opportunity of ascribing to Capt. Hunter, the paper to which we allude, and which, accidentally appeared without his name attached to it. The omission of Horsburgh shews, that seamen should not place an unbounded reliance on their charts; although this was an imperfection in his, rendered less excusable by the appearance of the very danger, on which the *Ann* grounded, in a chart published years ago by Dalrymple. We recommend our Chinese traders to look to Dalrymple's chart of the Sooloo Archipelago, as an important help to them in this dangerous navigation.—Ed.]

NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.
Port Royal and its Associations.

(Continued from p. 530.)

OUR jaunt upon the whole proved a very agreeable one, and full of novelty to us tars; the relief from the confinement of the ship can only be fully appreciated by those who like ourselves had been cooped up in a "floating prison" for a length of time. The shore-man in possession of unrestrained liberty may smile when told that such a trip was almost considered an era in the life of those who enjoyed it; and if the relaxation from professional duties, for the brief period of two or three days, was held in such high estimation by officers, in what light must a four-and-twenty hours' run on shore be considered by the fore-mast man?

Jack, although proverbially a bad horseman, seems never to be more pleased than when trying his equestrian powers. A gentleman told me that he once met a sailor on a pony trotting along the sandy beach of Lucea; in a short time the saddle girths gave way and off came the tar. "Thunder," exclaims Jack—"who can stand against such a head sea?" The sand was in ridges, and the violent motion of the animal had unbuckled the straps. The gentleman was convulsed with laughter, which did not seem to please the tar very well: "Well," quoth he—"and what are you laughing at, did you never see a fellow go overboard before? D—my eyes, if I don't run you a race for a dollar." "Done," said the gentleman, "and as your nag is rather short in the legs, I'll give you a start of a hundred yards." "I'll be d——d if you do: no, no, fair play is a jewel, we'll start together; let's brace her up taut a bit, and I'm blessed if she won't take the shine out of you!" To work the tar set, and having adjusted every thing in order, mounted, as usual, on the wrong side. He was told of this, but he looked at the speaker with an expression of sovereign contempt, as he roared out—"Teach your granny to suck eggs!" The gent. laughed until the tears ran from his eyes. Jack looked as serious as a judge, and merely muttered whilst replenishing his quid—"I'm d——d but you're a rum customer!" "Well are you ready Jack?" "Stop, how's the wind?—by the pipers right ahead—that won't do, I'll try her on the other tack!" Off he got and shifted the saddle end for end, "braced" it tight, and then tried to remount, but fell several times by his foot coming in contact with the pony's neck; at last he managed to seat himself with his face to the pony's tail. The gentleman tried to persuade him that he would not be able to retain his seat for a minute in such a position. "That be d——d, are you going to teach me how to stow ballast? Can't I ease her when she pitches? But, you're a lubber, and know no more how to trim a craft, than the Governor's wife does how to skin an eel." This was accompanied with one of Jack's contemptuous expressions, and set the gent. off in a burst of laughter again.

Having "trimmed his craft" to his liking, the tar called out—"Now I'm all ready, give the word." "Start," cried the gent. and away they went, helter skelter, Jack swinging from side to side, belabouring the stern of the poor pony most unmercifully all the while with a piece of bamboo. The scene was so ludicrous and so out of the common course of even a donkey race at a fair, that the gent. could scarcely retain his seat from laughter, and eventually having distanced his opponent, on turning round to see how he was acquitting himself, his foot slipped out of the stirrup and he was unhorsed. In an instant after, Jack came dashing past like a whirlwind, making the welkin ring again with his uproarious huzzas. On rising up from the sands he beheld the tar and pony floundering in the water; for, having lost his balance from using one hand to wave his hat, and being unwilling to let go his hold of the pummel, both pony and rider slipped off the bank souse into the surf. On arriving up to the foundered tar, the gentleman tendered him a dollar, and was about to depart, when Jack who was busy in extricating his little quadruped from the briny flood, called out—"Avast shipmate! I'll not touch your rhino; but, you'll acknowledge I beat you

hollow, so no coiling the truth 'gainst the lay of the strand—you understand, that's all." The gent. insisted that he should take the money, he had fairly won it, and was entitled to it. "No," said Jack, "it warnt for the money, but for the *honour* I ran the race; you'll mind I beat you out and out, that's all." "Oh! I'll not forget that, but come stow the dollar in your backy box, it must be pretty empty by this time." "Well, I've a thort howsomdever, hand it over, I'll give it to the pony, for by Gor 'twas he as won, a'ler all said and done." "Well, do as you like, but ponies don't eat silver, eh!" "My eyes! what a knowing chap you are; belay all that, do you take me for a Yahoo? Can't the pony eat a dollar's worth of corn, eh! d— my eyes he shall have a blow out for once in his life, or my name's not Dick o'the Dust. But, here, give us your flipper, and mind no coiling your fakes against the sun. I beat you out and out, clean as a whistle, and that's all." Mounting his horse, the gentleman was about to start off, when the tar ran up the bank, and called out:—"I've a notion shipmate d'ye see, that I don't count this here dollar as lawful prize money. Its a reg'lar gambling consarn, and that's 'gainst the Articles o' war, so I gives it in charity to the pony—but you mind I beat you hollow, that's all."

The gentleman, Mr. W. B., assured me that, although he had often been greatly amused at the whims and antics of the Sons of the Ocean, this tar surpassed all he had met with for drollery of expression, both in words and gesture. The whole affair was extremely ludicrous and laughable.

We may now, having disposed of Jack and his pony, return to our account of the jaunt to, and return from, the mountains. The scene as we entered the town was extremely animated. The negroes were moving about in crowds; scores of women, with bundles of the Guinea grass* upon their heads, were walking at a rapid rate, with their petticoats drawn up and tied round the waist with a string. In addition to which burden, some of them carried their piccaninies slung in a sort of hood depending from their shoulders, their little black poles only being visible. There is a feature pertaining to the black ladies, which, although not agreeing with our northern taste of what constitutes beauty in the daughters of Eve, (a strange alteration in colour if they all come from the *prima donna*!) is so singular as to arrest instant attention in the stranger: I allude, with all becoming tenderness for the bashful reader's blushes, to the extraordinary length of those useful appendages to the female "form divine,"—the papillarian ducis. It would scarcely appear an exaggeration to assert, that some may be found sufficiently pendent

* The introduction of this singular species of the order *Graminæ* into the island was unintentionally effected by a mere casual circumstance. The captain of a ship from the coast of Africa, having brought some small birds as a present to a gentleman, the remaining seeds which had been obtained to feed them with, were thrown away upon the ground. In a short time these vegetated, and produced the valuable grass, which being undescribed, received the name of "Guinea grass," from the country whence it was brought, and where it is indigenous. Its superiority over the grasses of the island, soon obtained for it a celebrity which it retains to this day; and it has long since been universally cultivated. It grows to the height of six or seven feet; and at a certain season, the stubble is burnt down; but the roots remaining uninjured, send up shoots again immediately after the first shower of rain falls, and with renewed vigour. Its rise is remarkably rapid, and its progressive growth may almost be seen.

as to be capable of being thrown over the shoulder for the immediate use of the little biped, in his snug bag on the opposite side of their natural position!

Jack is a bit of the physiologist in his way, as well as a wag, and delights in gulling the raw hand. Two of these originals once happened to be standing on a wharf, when a negress with the aforesaid lengthy appendages passed by. One of the tars was an old stager, the other quite a "greenhorn:" the first exclaimed, "My eyes, Tom, only look, there's a pair of *bab's comforters* for'ee; they bangs the bosun's long conch by a fathom!" "Well!" replied the greenhorn, straining his eyes; "I'm blest if I ever saw the like o'that afore—they baint the real nat'ral thing to be sure!" "Lord love'e," says the experienced one, "to be sure they baint—why, you warnt such a fool as to think that ever a real nat'ral woman could carry such heavy rigging o'flesh and blood? They be sham teats made of inge-rubber." "Bother me, Ben, but you're coming the old soger over me—inge-rubber be d——d!" "Why, you grass-comber, d'ye think I'm circumventing a lie? As to the matter o'that, why, I've seen 'em stretch more nor *three fathoms* out o'window, for the 'commidation o'the piccaninies out at play, when the mother were busy inside washing her duds!" "Belay all that, messmate;" says Tom.

At every opening, as we proceeded, we encountered droves of mules similarly freighted, all in the same hasty mode of advance, as if their fate depended upon a speedy arrival at their destined goal. The intelligent reader will not need the enquiry; "To what did all this speed and hurry lead?" In all countries, among all people, where barter for the precious metals have been established, the desire of possession has seized hold of the heart of man; who are exempt? From the sovereign to the peasant *gold* acts as a talisman, and has brought more misery into the world, and been the cause of more crime, than any other production, whether natural or artificial. But, in the present constitution of the civilized world, money has become a necessary evil—it adds to our comforts, feeds, clothes us, and physics us! administers to our latest necessities; and, finally, when the fitful dream of existence shall have passed away, provides us with a last home.

As we proceeded the throngs increased, but these, unlike the others, seemed to have no particular object in view, except amusement. There is something so animating in the gaiety, the light-hearted jollity of a congregation of negroes, when they sally forth in the cool of the evening after the toils of the day, that, one can hardly reconcile the idea to one's self, of their being in a state of slavery. In no part of the world have I ever observed demonstrations of unfeigned happiness more conspicuously displayed, than in this island, by the blacks; or instanced any feelings, approaching near to such happiness, in degree a convincing proof to my mind that, the *chain* which has since been severed, was light in comparison with that which a *free* peasantry will have to drag when left to provide for their own wants. "The die is now cast," and the planters have been looking *blue* enough at the prospect suddenly opened before their eyes, and say, with what truth time only can tell, "That in thirty years, or less, the island will not be worth, to England, the value of one hair of Lord Brougham's legal wig!" A gentleman who has

lived forty years in the island writes thus: "Before the present generation of blacks passes away, regret at the altered condition of things will be at its full with that people.

"Hitherto all matters went on smoothly; the social, as well as the moral condition of the negro was gradually improving; robberies were rare, and crimes of atrocity almost unknown among them, and, the reasons for which are obvious, their wants were all supplied, they had only then to give their labour in return, to dance, sing, and be merry. The greatest restraint put upon their liberty was that of not having the power themselves of changing masters; and, in this perhaps existed the only difference between their condition and that of the freeborn peasant of Europe; but even this was often conceded to them, and their manumission granted whenever they were able to effect it. But how will the matter stand a few years hence?

"If with all the vices and weaknesses of human nature these people possess constitutionally a habit of indolence, which whilst in a state of bondage was the hardest matter the white man had to keep under subjection in his overseership, can it be expected that the anticipations of the philanthropic party who have consummated the desire of the zealous religionists, by adding twenty millions to the burthens of a people eternally growling about oppressive taxation, will be realized?

"Assuredly those who imagine such a result will be disappointed. You may as well try to wash the skin of the negro white, as to expect him when become his own master, to drudge through the labour of crop-time, when waste land being plenty, he may by digging a few holes, plant his yams and his plantain sucker, and so leave kind Nature to fulfil the rest.

"And when want, or a desire to obtain that which he has not the means of purchasing shall invite him, will he be restrained from disgracing his title to the human state by any improvement in his moral feelings arising from his altered condition? Assuredly not, he will rob whenever his wants or his desires press him, and he will do, too, what was rarely done in his state of bondage, he will *murder!* where opportunity places victims in the way of the accomplishment of his wishes and desires."

Sacrifices must be expected in the accomplishment of any great good resulting from great changes. There may be great truth, honestly expressed, in the foregoing extract; and it may be possible, indeed, not at all improbable, that, ultimately, the Blacks will become possessors of the island, to the entire exclusion of the Whites. But, such results as have been contemplated, cannot rob the good natured Mister Bull of the merit of having acted justly in the abstract instance of emancipating the slaves of the British West Indies, &c., however light the sin may lie upon the old fellow's conscience, of binding his soldiers as *voluntary slaves* for the term of their natural lives. However hollow Old John's pretensions to general philanthropy may appear to, and be questioned by his loving offspring "Yankee Tom", it is but Christian charity to give him, as every other being, credit for sincerity. Of the two conditions, the white and the black slave; the black when he was so, assuredly had the best; and I am inclined very much to admire the observation of Admiral Sir Charles Rowley, "That, had he been born to the

station of the daily labourer, he would have given the preference to the life of the negro slave in Jamaica, over that of the European peasant." The gallant seaman was right, for even with the exception stated in the letter above, I think there could be no comparison to discover which of the twain was best off, and most happy.

Indeed, under the circumstances of their altered state, and considering that a warm climate does not entail, even in indigence, that degree of misery which a cold, boisterous, and wet one is sure to compass poverty with, and that they are constitutionally suited to the nature of the country of which they are now the free denizens, we might grant that their condition would be superior to that of the English, the Irish, or Highland peasantry, if they would follow the dictates of reason, and labour with the same industry (the fruits being now their own) which necessity formerly compelled them to exercise.

In a short time we arrived at the tavern, not a little weary from our unaccustomed exercise; and thus ended our jaunt to the mountains. I may here, however, touch on some of the subjects discussed with our kind host whilst at his hospitable mansion, as these may serve to amuse the naval reader.

Speaking of the great proficiency obtained by the ships on the station, in making and shortening of sail; the fine style in which our vessels are brought to anchor, and the perfect state of discipline reigning in them; our host observed:—"That it was a beautiful sight to see several of them come to anchor in a port; the wonderful precision which is observable in all their movements and evolutions, has often been a matter of surprise to me; and I could never clearly make out by what means such extraordinary regularity and perfection have been attained, although I had been given to understand that they mainly depended upon three things,—the lash, periodic timing, and practice. I was not, however, quite satisfied with the explanation, and therefore, determined to test it myself; considering that the *black*, equally with the *white*, man, was capable of exerting his physical and mental powers to the same advantage."

"Well, sir, what was the result?"

"Why, a complete failure! It proved perfectly abortive, and gave rise to such confusion, insubordination, and desertion, (to use your expression,) that I was compelled to relax again into our former state of half measures; still more puzzled to account for, not only the perfection of the system on board ship, but also for the apparent ease with which it is carried on; being farther convinced that there exists something essentially different between the black slave and the white freeman under restraint, which I could not comprehend. Perhaps," added he, addressing himself to one of the officers; "you will be able to give me a solution of this apparent enigma?"

"I think the reasons for your failure sufficiently plain; deep-rooted habits, customs, and opinions cannot be shaken off, or changed precipitately; and, the older the subjects you have to experiment upon the greater the difficulty of succeeding. A very limited experience will serve to convince us that, the impressions produced by habit are not confined alone to man, but partaken of by all animated nature.

"There is nothing, perhaps, essentially different in the intellectual

capacity of the negro from that of the white man, although some physiologists seem to believe that there is: the difference of the form of the skull of Caucasian and the Ethiopic races is, however, very marked; and, indeed, there are other points of difference equally remarkable, which almost staggers belief that they have sprung from the same parents. We must be content, however, from our inability to enter into the merits of that question, to pursue our reasoning alone from known facts.

“With respect to their common morality, we may not be far wrong in considering them upon a par, or, if there should be a difference, perhaps, the balance may preponderate on the side of the negro. I here speak of him, you must recollect, as a civilized being; and it is essential that the peculiar situation under which he is placed, should be borne in mind, as from that, his temptations to err are in a great measure lessened, and the proneness of his nature to evil restrained; so that whatever merit may seem to attach to his character on that account is to be considered as being negatively so.* In some measure, indeed, the same may be said of the man-of-war seaman; but as his range of action is greatly circumscribed over that of the other, he has still less temptation to err; and although the free-will of both is, as it were, kept within certain bounds, the habits induced from such restraints are unquestionably instrumental in giving a wholesome spring to their actions, and, perhaps, purifying their thoughts, whilst the natural desires of the heart remain unchanged but dormant.

“But there is a great difference in the dispositions of the two: in the negro obstinacy is a general trait, and that alone would act as a powerful ‘damper’ to your endeavours to enforce regularity of conduct by a strict discipline. Besides, there are feelings and motives which must influence the actions of the white, which are unknown, or rather unfelt by the black—the love of country, the recollection of the ties which bind him to his native land; that land which he serves. Where can we find a more powerful incentive to action, to praiseworthy conduct in the individual than the *Amor Patriæ*? What are the African’s sentiments towards his country, that country which he is doomed never more to revisit? As the land of his birth it has no claims upon his patriotism; there is in fact no exercise for such a sentiment, it is inapplicable to his situation. He may wander in imagination again and again over the scenes of his childhood; for, however rude these may have been, they cling to the heart upon which their impressions were stamped, whilst yet, like the plaster clay, it was in a state to receive and retain them. He may feel even a melancholy pleasure in treasuring the remembrance of his early days, those days the traces of which are rarely effaced from the memory; the natural attachment of his heart to the being that gave him birth, the Mother; he may feel regret that his eyes can never again behold the playmates of his infancy, the brother, the sister. He may meditate upon the withering of these joys, the only joys destined to his unhappy lot; he may still by blinding the present with forgetfulness, bring balm to his desolate heart by treasuring the

* This exemption from inebriety is a positive merit, however, which Jack cannot claim.

past, but *hope of the future* ; that beacon amidst expectation's wreck, with him is, alas ! a blank !

“ But, these feelings and regrets have no association in the motives which guide his conduct under his present condition. He has not even the incentive of the mercenary who fights the battles of a country that does not recognize his claims to more than he can earn, gain in fact ; he toils for another without a motive ; he is an alien alike by birth and feeling.

“ You will say perhaps, that the same feelings are found in all races, human nature the same everywhere ; true, but that which guides those feelings to a different issue is, the training, the education if you will, not the education of letters, but the tutelage of modes and manners. This will appear obvious if we reflect on the variation observed in the conduct of the being, from the wildest savage up progressively to the civilized peasant. The refinement of sentiment arising from letters we must leave out of the question ; it has but a very trifling connection with either party.

“ But, there is a natural delicacy of feeling, in which benevolence predominates, not altogether inseparable from a rude state ; instances of which are not infrequent. It is the sunshine of the heart peering through, if I may so say, the cuticle of darkness that enshrouds it ; but it is more than an indication, I had almost said vindication, of the majesty of man's nature, struggling to overcome his fallen condition ! But, although it may belong to all, the predominant stamp of evil, like the ash that smoulders the spark, hides its brilliancy without extinguishing it, it must be fanned to produce a perceptible flame.

“ But little can be brought to the argument by these emanations, indeed they hardly bear upon our question. But, they are nevertheless attractive, they claim and will always command respect ; they are the jewels which adorn the robe of Virtue, and are never seen but to be admired.

“ Let us now return to the seaman : There is another spring to his action which is scarcely less powerful than his love of country, the *Esprit de corps*, the love of his profession, a profession which in his estimation has no equal under the sun. What is there in the calling of the poor slave to enamour him of it ? Can he feel that emulation which animates the heart of him who is conscious that he has a name enrolled in the temple of Fame ?

“ The sociable qualities of the negro may be, and from all I have seen are extremely lively ; he may, and does delight in the good fellowship of his associates for the gratification which repays him with usury for the loan of his company, but does he feel alike with the seaman that fraternal regard, warm, strong, and unchangeable for his messmate, and sharer in the “ battle and the breeze”. The slave undergoes the same toils, it is true, with his fellow labourer ; he rises at the same hour, follows the same pursuits, is fed and clothed alike, but he is not cooped up within the narrow bounds of a floating house, shut out from all other human society, and constrained for weeks to view no other features of the creation than the wide ocean and the azure sky. He fights not the battles of the country forced upon him for his adoption ; he has no apprehension of the dangers that environ the seaman, no horrors of shipwreck,

no lurking shoal, no foundering vessel amidst the terrors of the awful hurricane; from these he is exempt, they call forth no sympathy in the suffering of his immediate associates, they bring no pang to his heart as to that of the survivor of the engulfed vessel: here then we can draw no comparison in their condition, nothing to knit him firmly to the sharer of his toils but what springs from the common feelings of his nature. In fact, his condition is not of that isolated character that the other's is; his regards and his affections are less excited, and probably centre in his own family."

"We may next consider the feeling of loyalty in the seaman. There are few indeed, who do not acknowledge its influence, however varied in degree that influence may be. But, blended as it intimately is with the love of country, it supports him under the many trials which he has to contend with, strengthened by the invigorating principle, he becomes patient in the endurance of hardships,—hardships which, to the black slave are unknown; calm under privations,—privations never suffered by the negro; and whilst his heart is thus buoyant, danger he meets with a firm front, throws his whole energies and soul in the contention with an enemy for superiority,* triumphs but to save, rises superior amidst the frowns of adverse circumstances, and wins his renown with a constancy and temper all his own.

"These are the links of that chain which binds him to his noble profession, which, winding around his heart, inspires him with zeal for its interests, and fosters that willing obedience which the rigorous lash has no power to enforce, and which, being unknown, or not understood by the negro, can never elicit from him the desired good.

"But these considerations are not all,—you must recollect that a lad destined to a sea-life, commences his career at that early period of his existence when the parental tutorage has not ceased. From the restraints of his childhood he steps at once into a life of the greatest activity, where he finds himself constrained to exert to the utmost the activity of his bodily powers; and in which every latent spring of his mind is called into immediate play. In this new state of his pilgrimage he soon finds that alacrity, obedience to the commands of his superiors in station, unceasing attention to the routine of duties imposed upon him, are the elements upon which not only his present happiness depends, but also his future prospects of advance in that up-hill laborious ascent inseparable from the condition he has voluntarily embraced.

"It has frequently been observed that a seaman is but a child of larger growth—if this be meant to imply that he is ever under the guardianship of others, and that the powers of his mind are directed by the controlling authority, then indeed there may be some truth in it. Beyond that, beyond the mere abstract idea it becomes a solecism; he is capable of something more than the tiny efforts of the infant mind; he has claims to manhood, both physically and morally, that place him upon a parallel with any of his sex in any condition of life, not excepting the most exalted station.

* "There is something of pride in the perilous hour,
Whate'er be the shape in which death may lower;
For Fame is there to say who bleeds,
And Honor's eye on daring deeds!"—*Byron*.

“As his novitiate is generally passed in the mercantile marine, it has the advantage of gradually bringing him to the endurance of a state of subjection up to the period when he enters upon his career in the public service, wherein he has necessarily to sustain the rigours of a strict discipline.

“In some way or other restrictions environ the life of every member of a civilized community. This comparative bondage every one feels to be necessary for the individual as for the general good; but among no class is the principle carried out to so full an extent, with the conviction of its necessity, as in the profession of the seaman. In the time of active war, when the passions of the mind are wound up to the highest pitch, the habit of command surrounds the heart with an impervious covering of adamant, to penetrate which, benevolence exerts her appeals in vain! But whenever the excitement shall cease, and peace restore men to their sober thoughts, and afford leisure for reflection, we may rest assured that, the better feelings of his nature, which the times and the circumstances restrained from action, will burst through the envelope and vindicate humanity; melioration will be the order of the day, and the fetters of “Poor Jack” will be struck off, and his claims to be accounted a rational creature allowed to the fullest extent compatible with his well-being. All this has happily been verified.

“Now it would seem clear, if there be any truth in the effects that we have supposed to arise from the causes which operate in the life of a British seaman, he will be easily governed; and that, with a very little tact on the part of the ruling power, he may be kept in that efficient state which you so much admire, but are so much puzzled to account for. Whereas the negro without those stimulants to action, unaccustomed to strict habits of regularity, allowed a license of speech and an unrestrained approach to his superiors, can neither feel nor understand the necessity for, or the reason why these should be restrained within narrow bounds as observed on ship-board, and is consequently incapable, under his present circumstances, of conforming to a life of strict discipline, undeviating regularity, and alertness of action: indeed, if the experiment were tried with the *piccaninies* it is questionable whether complete success would be obtained; nor if it could be obtained, does it seem desirable.

“On the score of humanity, which all are ready to admit as the great bond of society, a too rigid exaction of punctual obedience to forms, ceremonies, and modes of conduct in those who are already bound by the heavy yoke of bondage, is to be deprecated, supposing it were possible to command it without violence. And whether the plan and the practice now existing were the result of necessity or compassion, they appear to be the best suited to the character and temperament of the generality of the beings subservient to them.”

(To be continued.)

ON THE LONGITUDES OF THE PRINCIPAL MARITIME POINTS OF THE
GLOBE.—By *Lieut. Raper, R.N.*

(Continued from p. 450.)

218. Colonel Colby has favored me with the result of a re-computation of the position of Buncrana Church, viz. $55^{\circ} 8' 3.4''$ N., and $7^{\circ} 27' 11.3''$ W. This is $1' 17''$ E. of the former ordnance position, ($7^{\circ} 28' 28''$.) and $2' 30''$ W. of the long. adopted from Capt. Vidal's chronometers (*Nautical Magazine*, 1842, p. 19, and *Practice of Navigation*, p. 350.). We have, therefore, to add $2' 30''$ to the longitudes of Rockal and St. Kilda. If this correction should be found to apply in its whole amount to the ordnance long. of Balta $0^{\circ} 46' 59''$ W., it will reduce it to $0^{\circ} 45' 42''$, which is very nearly what we have adopted, or $0^{\circ} 45'.5$. Thus, though the same correction may not exactly apply to Balta, we may infer that our long. of Balta is not much in error, and we, therefore, preserve the positions of Thorshaven, Rona, and Sulisker depending on it unaltered.*

219. *Port Stephens.*

Pt. Step. Flind. $152^{\circ} 10'$. King $152^{\circ} 9' 45''$.

Obs. pt. D. Beth.	D.L. <i>Sydney</i> 4ch. 12d. [1]	$55' 45''$	$152^{\circ} 9' 45''$
Barroinee Pt. Wickh.	D.L. <i>Sydney</i>	$0^{\circ} 50' 0''$	$152^{\circ} 4' 0''$
Do.	D.L. <i>Port Essington</i>	$19' 53' 35''$	$152^{\circ} 4' 20''$

As this last point is not marked on the charts, we have no means of comparing the above authorities, and we cannot, therefore, yet assign the position. We preserve the above, however, because Capt. Wickham's station, wherever it may be, is connected with other places.

[This should have preceded No. 217, p. 450.]

220. *Bay of Islands.* Point Kororáreka.

C. Three Brothers, Dup. $171^{\circ} 43' 18''$, adopting Port Jacks. in $148^{\circ} 50' 9''$, or the D.L. $22^{\circ} 53' 9''$, the Three Brothers being about $3' 36''$ W. of Pt. Koror. gives the D.L. from this pt. $22^{\circ} 56' 45''$. and Pt. Kor. $174^{\circ} 10' 45''$

D' Urville employs the D.L. from Port Jacks. $22^{\circ} 57' 15''$ † $174^{\circ} 11' 15''$
FitzRoy, † Paihea Islet, D.L. *Sydney* 15ch. 19d. 22 $52' 52''$

This islet, (which is not marked on any chart or plan I have seen,) we shall suppose to be that one of the two islets off the village which is

* These positions were stated in my *Navigation*, p. 350, to depend upon Buncrana, because Balta itself was then referred to Buncrana. It would appear, in the present state of the question, that the connection between these places is not satisfactory, and consequently that Rockal is not to be considered as connected with the two places above it; *Navig.* p. 460, col. (2), div. 3.

† M. D'Urville adopts M. Duperrey's long. nearly, except as regards a small subsequent correction of $35''$, which in the present state of the position we need not consider.

‡ Capt. FitzRoy gives also D.L. *Otaheite* 16ch. 28d., $36^{\circ} 24' 0''$, which places Pt. Koror. in $174^{\circ} 7' 0''$. This we omit in the discussion, not only on account of the length of the interval, but in order to avoid introducing in the result the errors in the positions of the two secondary meridians, (Port Jackson and Pt. Venus,) to which, in consequence of the uncertainty of their present determinations, they may be liable.

north of it, and which by M. Duperrey's Atlas, (No. 19,) is 1' 5" W. of Point Koror., this gives the

D.L. for Pt. Koror.	22° 53' 57"	174° 7' 57"
D. Beth. 1838. D.L. <i>Sydney</i> 4ch. 9d. [7s.]	22 54	174 8 0

These measures agree nearly, and afford a *presumed* position of 174° 8' 0"; but as there is an uncertainty in one of the stations, and as one of the intervals is long, the mer. dist. requires confirmation. We shall accordingly, for the present, follow M. D'Urville here and elsewhere, unless we have reason to the contrary, as he has published surveys of considerable extent on these coasts, and shall adopt for Pt. Tapeka, 174° 11' 15", and for Pt. Koror. 25" W. of Pt. Tapeka, 174° 10' 50".

221. *Entry Id.*

M. D'Urville places the middle of the island in 174° 52' 23". He quotes Mr. Grey who arrived from Port Jackson in twelve days, in Jan. 1827, with 1 chron, which gave D.L. 23° 40' 47", but the precise spot of observation is not stated.

Capt. D. Bethune on Oct. 30th 1838, observed on Hummock Id. between Entry Id. and the Main,
D.L. *Port Jackson*, 4ch. 11d. 23° 39' 37" 174° 53' 37"

As the island does not appear to have been closely examined, we cannot compare these authorities; but as M. D'Urville did not approach nearer than 20 miles, we shall adopt Capt. D. Bethune's position, or Hummock I. 174° 53' 37".

222. *Cloudy Bay.* Entrance Pt. of Port Underwood.

M. D'Urville places the N. pt. of Cloudy Bay in 171° 58' 25" (Paris) which is 23° 7' 43" E. of his position of Sydney, and the S. pt. in 171° 56' 28". But he appears to have passed at a considerable distance.

D. Beth. Oct. 23d, D.L. *Port Jacks.* 4ch. 14d. 22° 52' 46"

Entr. Pt. being 26" S. of his station (in 41° 20' 15" S.), and

24" W., the D.L. above becomes 22° 54' 22", and gives 174° 8' 22" Which we adopt.

It may be proper to state here why we have followed Captain D. Bethune in preference to M. D'Urville, contrary to the principle adopted in the Bay of Islands; or why we have not reduced our long. according to the latter. Capt. D. Bethune has furnished no connection between Cloudy Bay and the Bay of Islands. Now we are not to assume, in the absence of such connection that his diff. long. between Sydney and the Bay of Is. would agree or not, with that between Sydney and Cloudy Bay, and then, in virtue of such assumption, undertake to alter mer. dists. which have been measured independently.

223. *Astrolabe Creek*, (Anse de l'Astrolabe).

Bayley, 3d. Voyage of Cook, 41 series of lunars 173° 3' 5"; M. D'Urville 173° 5' 50". As 50 days elapsed between M. D'Urville's visits to this place and the Bay of Is., and 30 days between this place and Port Jackson, we have no satisfactory evidence for estimating the value of the position.

224. *C. Campbell.*

Admiral Krusenstern adopted $174^{\circ} 27' 10''$, M. Bellingshausen $174^{\circ} 24' 45''$, Herd $171^{\circ} 15'$, Grey, according to the positions quoted by M. D'Urville, $174^{\circ} 31' 22''$, and M. D'Urville $174^{\circ} 27' 32''$, which we follow.

225. *Southern Port.* Cable Id. anchorage.

Herd, 1836, by 40 series of lunars 167° 26' 45''

226. *C. South.*

S. $33^{\circ} W.$, 7 miles from anchorage 167° 21' 0''

But Herd adopts, as reduced from Cable I. 167 18 30

Which we follow.

227. *The Snares.* N.E. Island.

Herd D.L. *Cable Id.*, anchorage Id. 1° 6' 36'' 166° 20' 9'

228. *Howes Id.* Island off N. end.

Howes I. Horsb. $159^{\circ} 0' E.$, also adopted by Adm. Krusenstern.

D. Beth. D.L. *Port Jackson* 2ch. 4d. $8^{\circ} 5' 58''$ (sea) 159° 19' 58''

We adopt $159^{\circ} 20'$.

229. *Norfolk Id.* Nepean Id.

Mt. Pitt, $168^{\circ} 2'$, Cook, Krusenstern, D'Urville.

D. Beth. Jan. 30th, D.L. *Sydney*, 10d. $16^{\circ} 33' 42''$ (sea) 167° 47' 42''

We adopt $167^{\circ} 48' C.$

As Capt. D. Bethune passed Norfolk Id. on Jan. 30th, and Howes Id. on Feb. 5th, or only six days afterwards, we may consider these relative positions as pretty good. This long. derives some confirmation from the diff. long. between Vavao town and Nepean Id. $18^{\circ} 19' 53''$, measured by Capt. D. Bethune Jan. 18th to 30th; this applied to Vavao town, which we shall find to be very nearly $173^{\circ} 55'' W.*$, when we come to consider other positions in the Pacific referred to Otaheite, gives $167^{\circ} 45'$.

We shall now proceed to correct the positions on the coast from Panama northwards, by means of Sir Edward Belcher's later observations, to which allusion was made in p. 146.

In adhering strictly to the system we have laid down, we should at once regulate the whole from San Francisco, as the secondary meridian; but as all the chronometric measures are not of equal value in consequence of the inequality of the intervals of time in which they were measured, and as Panama appears to be one of our best established positions, (*Nautical Magazine* for 1839, pp. 757, 758, and for 1841, p. 112,) we shall begin at this point.

230. We had adopted $79^{\circ} 31' 9''$ as the long. of the N.W. bastion, it should have been that of the N.E. bastion, at which Sir E. Belcher

* This position of the town gives Vavao Pt., in the middle of the W. side of the North Id., $174^{\circ} 2' 7'' W.$, which differs about $2'$ from that given in my *Navig. p. 475* (31) 2, which was deduced before Sir. E. Belcher's observations had been received in a complete state.

made his observations. The N.W. bastion is only $\frac{1}{4}$ of a mile, or 1s. further west. The error of the place, however, is of no consequence as we still adhere to the same longitude.

Tabago 4'2s, or 1' 3" W. of Panama, 79° 32' 12".

231. *Bahia Honda*. Id. on S. side of entrance.

Belc. Mar. 1837. D.L. *Panama* 11ch. 5d. [1s.] 1° 59' 52".

Do: Mar. 1839. D.L. *Do.* 12ch. 11d. [9s.] 1 59 54

We shall employ the first, and adopt 81° 31' 1".

232. *Magnetic Id.* (*Naut. Mag.* 1841 p. 379, No. 163.)

Belc. Mar. 1837. D.L. *Bahia Honda* 13ch. 2d. [1s.] 0° 16' 22" 84° 47' 23"

Do. Mar. 1839. D.L. *Do.* 13ch. 1d. [3s.] 0 16 28 81 47 29

Do. D.L. *Taboga* 12ch. 11d. [7s.] 2 14 54 81 47 6

We adopt 81° 47' 29".

233. *Cardon Id.* (No. 157.)

[Belc. Mar. 1837. D.L. *Magnetic I.* 8ch. 13d. [3s.] 5° 21' 27" 87° 8' 56"

The above connection of *Bahia Honda* and *Magnetic Id.* with *Panama*, is satisfactory; but before we adopt a final position of *Cardon* we will consider all the *data* which we have for the mer. dist. between this place and *Panama*.

(1)	Malaspina (quoted No. 157,)				7° 38' 5"
(2)	Belc. Mar. 1837, <i>Panama</i> —B. <i>Honda</i>	11ch. 5d.	[6s.]	1 59 25	
	Mar. 1839, B. <i>Honda</i> —Magn. <i>Id.</i>	13ch. 1d.	[3s.]	0 16 28	
	Apr. 1837, Magn. <i>Id.</i> — <i>Cardon</i>	8ch. 13d.	[3s.]	5 21 27	
	Average	11ch. 19d.		7 37 57	
(3)	Do. Oct.-Nov. 1838, <i>Panama</i> — <i>Cardon</i>	12ch. 17d.	[26s.]	7 37 51	
(4)	Do. Jan. 1839, <i>Cardon</i> — <i>Nicoya</i>	9ch. 6d.		2 17 46	
	Feb. do. <i>Nicoya</i> —Cano Bay	13ch. 1d.	[3s.]	0 13 54	
	Feb. do. Cano b.—Magn. <i>Id.</i>	10ch. 10d.	[6s.]	2 50 50	
	Mar. do. Magn. <i>Id.</i> —B. <i>Honda</i>	13ch. 1d.	[3s.]	0 16 28	
	Mar. 1837, B. <i>Honda</i> — <i>Panama</i>	11ch. 5d.	[1s.]	1 59 52	
	Average	11ch. 23d.		7 38 50	
(5)	Do. Mar. 1839, <i>Panama</i> — <i>Cocos Id.</i>	11ch. 16d.	[9s.]	7 29 21	
	Mar. 1838, <i>Cocos Id.</i> — <i>Cardon</i>	11ch. 16d.		0 9 10	
	Average	11ch. 32d.		7 38 31	

The mean of the last four which differ only 53" from each other, and seem to be nearly equal in point of value, is 7° 38' 17". This, added to 79° 31' 9" gives 87° 9' 26". This exceeds the result by direct measurement from *Magnetic Id.* by 30"; but as only eight chron. were then employed, and as 13 days is a long interval in a single point of evidence, we prefer to charge the discrepancy upon this measure, and shall adopt 87° 9' 26".

(To be Continued.)

ON THE MARINERS' COMPASS.—By Mr. W. Walker, Master R.N.

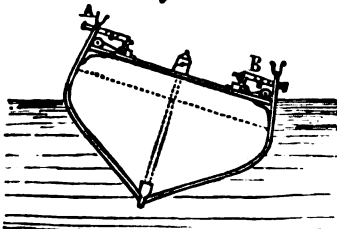
(Continued from p. 655.)

EVERY body who has been much at sea, or, who has been in the habit of watching the motion of the Mariners' Compass, must have observed that the compass card does not remain very steady in its bowl, during bad weather. When the ship *lurches* heavily, or rolls from side to side, the compass card oscillates several points from the actual direction of the ship's keel: when a ship is running before the wind, in a high sea, and rolling, perhaps 15 or 20 degrees, on each side of the perpendicular, her compass card may swim or vibrate a *couple of points* on each side of the course!

To remedy this oscillation of the compass card weight is added in the shape of wax, brass bars, &c., for it has been considered that this vibration arose from mechanical action. There is, however, no "law of mechanics" whereby this action can be satisfactorily explained!

We have already explained how the poles of a piece of iron are to be found by means of the magnetic dip. Now the magnetic dip has reference to the earth, and not to a ship and the iron she may contain. We may for our present purpose, regard the earth as a fixture, but a ship when afloat and at sea, is a moveable body, changing her position and direction; inclining by the force of the wind on her sails, or rolling and pitching about by the action of the waves on her hull! Now the magnetic dip of the needle, and the consequent magnetic polarity of the iron that a vessel may contain, is always referable to a plumb line; (because we measure the dip from a vertical) consequently the ship and her contents are constantly changing their relative positions to the dip, and also to the magnetic attractions and repulsions which every article of iron that the vessel may contain receives by induction from the earth. Whenever a ship changes her position, or her inclination, a new magnetic force is brought to bear upon the compass; and when the ship rolls alternately from side to side, equal and opposite magnetic forces act upon the compass needle, and cause it to oscillate on each side of the true magnetic direction of the ship's keel. I beg to call the mariner's special attention to this part of our subject, and to refer him to Fig. 6, in our last experiment, where it is shewn, that an iron bolt laid in an east and west direction by the side of a compass (as W, E,) will not affect a compass needle, even if it be within an inch or two of the compass.

Fig. 7.



vessel be inclined as in Fig. 7, the magnetic polarity of the two

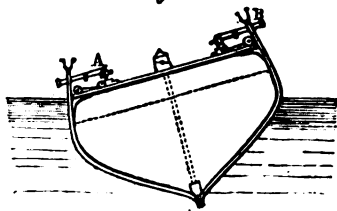
that there is a long iron gun on each side of a ship's quarter-deck, and exactly abreast of the binnacle. When the ship's head is either north or south, the guns will be in an east and west direction, and like W, E, (in Fig. 6,) will not derange the compass needle *so long as the ship remains quite upright*. But let the

guns, and also of every bolt, bar, or nail that may be fastened through the sides of the vessel, will have changed its place in the iron. Let the direction of the ship's head be north, and her inclination be to starboard, then the breech of the lee gun, B, will attract the north point of the needle, and its muzzle will attract, the south point.

On the other side of the ship, the breech of the weather gun, A, will attract the south point of the needle and repel the north point of the compass, so that the north point of the compass card will be drawn to leeward by the gun, B, and driven to leeward by the gun, A, whilst the south point of the needle is drawn to windward by the gun A, and driven to windward by the gun B. If the water be smooth, and the ship's inclination be permanent, this kind of local attraction will permanently derange the ship's course; but if she roll from side to side, the compass card will also vibrate on each side of the course.

If the ship's head be north (as before) but her inclination to port, by a strong easterly wind, the polarity of the guns will be inverted: that

Fig. 8.



is to say, the lee gun A, (Fig 8,) will attract the north point of the compass needle, and draw it towards the lee side of the ship; and the weather gun B, will repel the north point and attract the south end of the compass needle. In this way the compass, instead of indicating a course at north, may shew a N. $\frac{1}{4}$ E. or a N.b.E. course, in smooth water

and in north magnetic dip, but should the vessel be running before the wind, and rolling heavily from side to side, so that at every roll of the vessel, the inductive polarity of the iron within her is actually transferred from one side to the other, the compass card must necessarily go on in an endless oscillation, unless means be devised to prevent it. The ordinary means resorted to by seamen, is to increase the weight of the card, that is to say, to use a more sluggish instrument.

It was owing to the vibratory motion of compass cards mounted in wooden bowls, that brass bowls were substituted for the wooden one. The fact is, that copper, or brass, is capable of receiving an inductive magnetism from a magnetic needle near it; and although a brass bowled compass may not vibrate like a wooden bowled compass, it is beyond a doubt, that a card mounted in a brass bowl, is more sluggish in fine weather. It is even frequently necessary to have small lines attached to what are called heavy compasses, in order that the helmsman or quarter-master may agitate the compass and cause it to traverse in light winds and smooth water. The means, therefore, that have hitherto been adopted by seamen, as well as by the makers of ship's compasses, have not been founded on sound principles. These oscillations were supposed to arise from some principle in mechanics not easily understood. Whereas the vibration of the needle arises from a change of place in the magnetic poles of the iron, and other things that enter into the construction of the vessel and her contents; and it will be shewn hereafter how these vibrations, and in fact the local attraction generally may be rectified and got rid of.

But in order to convince seamen that the oscillation of their compass arises from magnetic action, the following experiments may be made in any vessel. Place a short plank (in equilibrium) upon any thing, so that it may rock, or roll from side to side like the rolling of a ship. Place a compass upon its middle, the plank being in an east and west direction; and it will be found that the compass card *will not vibrate*, although the plank be moved or heeled from side to side. Place now a large bolt or bar of iron on each side of the compass, and it will be seen that the compass card will swing or vibrate, if motion be given to the plank.

The experiments we have been explaining *prove* beyond any doubt, that iron is magnetic, that it has magnetic poles, and that these poles are always referable to the direction of the dip of the magnetic needle, and *do not* remain in a permanent position in the iron. Any attempt that may be made to correct the local attraction of a ship's compass, or the oscillation of the needle in stormy weather must necessarily fail, unless the operator understands clearly the philosophy of his subject. Professor Barlow failed, because he believed, that the central action of all the iron in a ship remained constant, in all parts of the world,* and he did not believe that iron was polarised as we have shewn it to be.

"I am the more anxious to establish this point," says the author, "in consequence of its immediate connection with the method I have proposed for correcting the errors of a ship's compass, which has been objected to, on the ground, that according to the theory we have been controverting, the central action of all the iron on board would not remain constant under all dips, and in all parts of the world, but if the hypothesis I have advanced be correct, then the central action of any irregular mass of iron, will be in the centre of attraction of its surface, whatever may be the magnetic direction, and must necessarily remain the same, while the iron and the point from which its action is estimated, preserve the same relative situation; as in the case with the iron of a vessel and its compass."† Now although the iron in a ship and her steering compass do actually preserve their relative position within a ship, yet the magnetic energy of the iron and its inductive polarity, do not preserve their relative position in the ship, nor to the binnacle; for we have proved that the magnetic poles of a piece of iron in a ship is referable to the earth and not to the ship.

The Astronomer-Royal published in the *United Service Journal* for June, 1840, practical rules or directions, "for correcting the compasses of iron-built vessels." Now vessels built entirely of malleable iron, will *hold* inductive magnetism, and many of its pillars will, in this country, exhibit a permanent magnetism. For independent of that magnetism which an iron vessel may receive, in the progress of building (and which we have already noticed) the upright bars may conduct upwards (See Fig. 6.) a magnetism from below or from the boilers, &c.

The practical directions published by Mr. Airy, although they may be of great practical utility in any iron built vessel that may navigate the English Channel, or in fact, around the British Isles; yet the plan he has proposed and the directions he has given are not applicable for

* Barlow on Magnetic Attraction, 2nd Edition, 1842, p. 307. † Ibid. p. 182.

listant regions. His plan is to find the local magnetism of the vessel upon its compass, by swinging the ship in the usual way, and then to correct the local attraction of the ship and her contents by means of permanent magnets, placed at a convenient distance from the compass. His method therefore is, to correct the inductive magnetism of the malleable or cast iron fabric of the vessel, by means of permanently magnetic steel bars: that is, to correct, or cancel in one hemisphere, *by a constant quantity* a magnetic agency that may vanish, or from being positive will become negative in the other hemisphere.

In iron-built vessels the compass must always be liable to great derangement and irregularity and less dependence should be put upon their dead reckoning. In ships built generally of timber, the local attraction upon the compass presents nearly a uniform character although the amount of deviation may vary in different ships and with different cargoes. The rudder is fixed at the stern, the steering wheel is near the rudder, and upon the upper deck, consequently, the compass must be placed near the helmsman, that is upon the upper deck and near the after end of the vessel. The principal quantity of iron in a ship will therefore, be before and below the compass and the nearest inductive magnetic poles in the iron will act more powerfully on the compass than the more distant and opposite poles. The result is that in our hemisphere the north point is drawn forward, and in south magnetic latitude it is the south point of the compass that is drawn forward by the ship's local attraction, and the greatest effect takes place when the ship's head is nearly east or west.

The amount of attraction or repulsion of iron upon a ship's compass, will depend upon the quantity, mass, or magnitude of the metal, and its distance from the compass needle. The disturbing magnetic action of the iron increases as its distance from the compass diminishes, in the inverse duplicate ratio of the distance; that is to say, if we place an iron bar at four feet from the compass needle, its magnetic action will only amount to one-fourth of what it would be at two feet, and one-sixteenth of what its force would be at one foot distant, and so on, the force increasing in the inverse duplicate proportion of the distance. We see then, that a very small quantity of iron, as an iron bolt in the corner of a hatchway, or skylight, if near the binnacle, may act upon the compass as powerfully as a gun would act when secured in a port at the side of the ship.

The derangement of a compass by the magnetic action of masses of iron, may be ascertained at sea, by its oscillation, and by its indicating different bearings of a distant object, when the ship's head is in different directions, at the same anchorage. Another sign of the existence of local attraction in a ship at sea is noticed when beating to windward, say with a northerly wind, when the ship appears, by the compass, to lie within four or five points of the wind. Whereas, when beating to the southward she may appear to be no closer to the wind than six or seven points. These anomalous appearances in the direction of the ship's head, arise from the north point of the compass card being drawn forward on both tacks by the local magnetism of the vessel. Whenever these symptoms appear a compass should be placed on the forecabin of the ship, and the magnetic direction of the ship's head on both com-

passes noted. The one in the binnacle will have its north point drawn forward, and the compass forward will have its north point drawn aft. Hence the correct magnetic bearing, or direction of the ship's head will be intermediate. When doubts exist in a merchant ship about the correctness of the course, the above plan of carrying a compass forward and comparing it with the one abaft affords an excellent check against any local attraction that may arise from receiving a new cargo, or from making changes in the stowage in a vessel.

The magnetism which the iron within a ship receives from the earth in all latitudes, will act upon the steering compass in the following manner:—

1st. In north magnetic dip, the higher or upper parts of the iron being north poles, the north point of the compass card (which is a south magnetic pole,) will be drawn forward in the vessel, and the south point will be repelled towards the stern, and hence the compass will indicate a course farther to the northward than the ship steers; consequently, the ship will be to the southward of her reckoning.

2nd. In south magnetic dip, the highest or upper parts of the iron will possess south magnetic poles, and the south point of the compass needle, (which is a north magnetic pole,) will be drawn towards the ship's head, and the north point repelled towards the stern, and hence the compass will indicate a course farther to the southward than the ship steers, and she will be found to the northward of her reckoning.

3rd. In north magnetic dip, and by reason of the changeable polarity of the iron in a vessel (Fig. 7,) as for example in a man-of-war, the north point of the compass card is drawn towards the lee side, and the south point is attracted towards the weather side, whenever the ship is inclined by the force of the wind on her sails; or, in fact by any other means, as by shifting her cargo.

4th. In south magnetic dip, and when a ship is inclined from an upright position, the south point of the compass is drawn to leeward, and the north point is drawn to windward by the induced magnetic poles of iron being transferred from end to end of a gun or bolt in a ship's side, &c. But when a ship rolls from side to side, in regular succession, the compass card obeys the magnetic impulses of the changeable polarity in surrounding objects, and goes on in regular oscillations.

These are generally the conditions of the local magnetism of *all* sailing vessels, and of almost all *wooden-built* steam vessels, whose compasses have not been corrected by artificial means, or removed beyond the sphere of the ship's local magnetism. If the local attraction of a ship has been correctly ascertained by swinging her round, and the amount of local magnetism noted upon each of the two-and-thirty points of the compass, then these corrections may be safely applied to the courses, so long as the ship continues to be navigated in the same amount of magnetic dip; but, if the ship's local attraction has not been correctly found, we may deduce the following practical results from the principles we have been propounding.

1st. Almost all ships will be found nearer to the magnetic equator than the dead reckoning will place them: thus, in England, or in north magnetic latitude, ships get to the southward of their reckoning; but

at the Cape of Good Hope, or Coast of Brazil, they generally get to the northward of the reckoning.

2nd. With regard to the change which takes place in the polarity of the iron in a vessel as she changes her position, and which involve important considerations to the navigator, we may deduce the following general rules.

3rd. In north magnetic latitude, and when a ship is on a wind, and steering a northerly course, she is liable to be to leeward of her reckoning; but when steering to the southward, she is liable to be to windward of her computed position.

4th. In south magnetic latitude, and when a ship is on a wind, and consequently inclined, she is liable to be to leeward of her reckoning when standing to the southward; but liable to be to windward when standing to the northward.

So that in any magnetic latitude, whether north or south, a man-of-war, when on the wind, and steering towards a magnetic pole, is liable to be to leeward of the reckoning; but when standing towards the magnetic equator, and inclined by the force of the wind on her sails, will get to windward of her place by dead reckoning, when all other things are equal. (See Figures 7 and 8.)

We must go a little farther into our subject and remind our readers that, the general mass of the metals, being in every ship *below* and *before* its steering compass, the magnetic needle is acted on most powerfully by the *nearest* magnetic pole of the iron before it, and that the greatest effect is produced when the compass needle is nearly parallel to the ship's beam, or at right angles to the keel. If the ship be perfectly upright, and both sides perfectly alike with regard to the iron entering into her fabric, then, when her head, or, rather her keel is in the direction of the magnetic meridian, the local attraction on the compass is = 0; but when the ship's head is either magnetically east or west, the local attraction is a maximum; the vessel being supposed *perfectly upright*. But if the ship be inclined from an upright position, the induced polarity of the iron in the vessel is transferable from side to side; and the local effect upon the compasses, under these conditions, is greatest, when the ship's head is on the magnetic meridian, and least when either east or west. Now, when the ship's course is either N.E., S.W., N.W., or S.E., it is evident the local magnetism of the general mass of the vessel and her contents, as ascertained when perfectly upright, may either go to cancel, or combine with the magnetism arising from a change in the ship's inclination from starboard to port; *although the direction of the ship's keel may not change!* Our investigations are assuming rather a complicated appearance, but we shall endeavour to make ourselves understood.

Ex. gra. Let a ship be steering a north-east compass course from the Longships to Milford, then, it is possible that the north part of her compass may be drawn forward half a point by the local magnetism of her contents, when the ship is quite upright; consequently, although the compass might indicate a north-east course, the ship would actually be steering a N.E. $\frac{1}{2}$ E. course. Let it now be granted that the wind may change to north-west, and that by the ship's inclination, the north point of the compass card may be drawn half a point towards the lee

side (Fig. 7.) of the ship, if continuing to be guided in her course by the compass, would now be steering at N.E.b.E. instead of N.E. If the wind be south-east, and the ship inclined to port, and the north point of her compass be drawn half a point to leeward, this quantity arising from the change in the magnetic polarity of the guns, knees, or bolts, in the vessel would cancel the other kind of local attraction, and under our conditions, the compass course would be correct on the starboard tack; but *one* point in error on the larboard tack, and in this way the quantity that the north point of the compass card might be drawn forward by the general magnetism, might be either cancelled or doubled, by the quantity that the north point might be drawn or driven to leeward by the ship's inclination. A commander of a vessel unacquainted with these magnetic anomalies might, in making a passage, pronounce his compass free from error, and on another occasion might find his vessel one mile to leeward of the reckoning, for every five of her distance run. What would he do? Why, place his errors to the account of a strange and unaccountable current!

On the 30th of July, 1843, H.M.S. Vanguard, Captain Sir David Dunn, being some 80 or 100 miles south-west from the Lizard, and being sure of their position shaped a course for the Lizard, with a moral conviction of correctly making the lights ahead! The weather was perfectly clear, with a fresh breeze from the north-west; but the ship got a long way to leeward of her intended course. On her arrival at Plymouth, the circumstance was mentioned to the writer, who gave Sir David Dunn and the officers a *practical demonstration* of the way whereby the north point of the Vanguard's compasses was drawn forward as well as to leeward, on a north-east coast with a north-west wind.

Those who have clear conceptions of magnetism, and who know something of the composition and resolution of forces, will have no difficulty in comprehending how these results must influence a ship's reckoning; but those who have not paid attention to the subject, would, in order to follow our reasoning, require practical illustrations by means of a model. It is one thing to announce a principle, and another to make the reader comprehend it.

I might easily quote recorded instances or errors arising to the reckoning of ships under my immediate charge, in order to bear out the conclusions to which we have arrived; but I deem it more fitting to refer to cases of disaster at sea, with which the public may be informed:—cases where ships have run ashore with fair winds, steering compass courses, intended to lead them clear of all danger, but which really led them to destruction. If it can be shewn, as I have shewn, that when the local magnetism of ships is generally of such a character as to cause the vessel to deviate from her intended course in *one particular direction*, the mariner is forewarned of his danger, he knows on what side of the course the ship is likely to diverge, and takes his precautions accordingly, even if he should be in a ship, where no pains have been taken about the steering apparatus, and where nothing whatever has ever been done to determine the deviation of the needle on the different courses the ship is liable to steer.

It is well known (and the public have paid pretty handsomely for their knowledge of the fact,) that our ships when running up Channel with a fair wind, run ashore more frequently on the Coast of France, than on the English Coast; that is, they get to the southward of their reckoning. The coasting steam-vessels that regularly ply between London, Plymouth, and Dublin, know from experience, without knowing why! that they must steer from the Start to St. Catharines E. $\frac{1}{2}$ S. by compass, and from St. Catharines to the Start, W.b.N. $\frac{1}{2}$ N. This they regularly do, traversing the same line in perfect safety, by steering courses not given in their sailing directions, nor diametrically opposite to each other. It will be in the recollection of our readers that the West India Mail Packet *Solway*, left the harbour of Coruna on a fine evening, and about two hours after rounding the light-house ran upon the rocks and went down along with the greater part of her passengers and ship's company. The steamer shaped a compass course to clear the island of Sisarga, but her compass was affected by the local magnetism of the vessel, and in the same way that the Irish packets' compasses are affected. The north point was probably drawn *a point forward* on a W.N.W. course; and consequently, the vessel, instead of going W.N.W., was making a W.b.N. compass course; that is, she got to the southward of her intended route, ran upon sunken rocks, and in a few minutes went to the bottom.

In the month of November, 1842, several vessels were either lost, or in great jeopardy, near Boulogne. A ship called the *Reliance*, of 1550 tons from India, having about 120 persons on board, and laden with a valuable cargo, ran on shore on the coast of Merlimont, when it was believed the vessel was on the English coast; this fine ship was destroyed, and about 115 persons drowned. The *Reliance*, like many others, was a long way to the *southward* of her reckoning, by steering a compass course that should have led her along the English shore. A good deal has been written about the loss of this fine ship; but no sufficient cause has been assigned. We are, however enabled to shew *how* this fine Indiaman, laden with teas and other Indian productions, should be misled by her compass, and run upon the coast of France even with a south-west wind. The following extract is from a newspaper, dated 1st April, 1843:—"During the last ten days, Mr. Kent and his associates, who purchased the wreck of the *Reliance*, near Boulogne, have been busily employed in their endeavours to bring the wreck to land; they have found a chronometer, several silver and plated dishes, and a large iron tank, 46 feet long by 8 feet deep, and 6 feet wide."

Having made enquiries about this huge tank, I was informed by a gentleman who knew the ship, and had seen the tank, that it was placed abaft the mainmast, and before the binnacle, and probably 18 feet below the compass; now here was a tank of malleable iron that would exert a magnetic action upon the compass, as powerful as that of a solid mass of iron of the same linear dimensions, that is equal to 2208 cubic feet of iron, which would weigh 468 tons. When the *Reliance* was running up Channel, she was probably steering a *compass course* of E.b.S. and the wind being on the starboard quarter the weather binnacle would be used. Now the ship would have an inclination to port, and all that part of the huge iron tank that lay on the larboard side of the

ship would attract the *south* point of the compass, and the weather end would draw the north point forward, because, if a line had been drawn transversely through the body of the tank instead of being in the plane of its magnetic equator, its starboard or southernmost end would have been elevated 25 or 30 degrees above it, (See Fig. 5,) and therefore the ship was steering a compass course under such circumstances, as to be under the maximum magnetic influence of this immense tank. The tea and other things stowed above it would not cut off, or in any way impede its action on the steering compass, whose north point must have been drawn forward very considerably, for at the time the ship struck they supposed the vessel off Dungeness; that is to say, eight or nine leagues farther to the northward. If this huge iron tank had never been placed in the after hold of the *Reliance*, it is probable she would have arrived safely; its presence must necessarily have produced a deviation in her compasses and in the direction we have indicated; for a cargo of empty iron tanks when stowed in the hold of one of Her Majesty's Naval transports has drawn the north point of the compass 18 degrees forward on a W.N.W. course. In the year 1810, H.M. Ships *Nymphe*, *Pallas*, and *L'Aimable* ran ashore on the south side of the Frith of Forth when steering a course intended to lead them up to Inch Keith. How many of our men of war have been lost off the Coast of Holland at a time when the pilots believed the ships farther to the northward. There is no current setting upon the Dutch coast; on the contrary there is actually an off-set by reason of the discharge from the river of Germany. That ships navigating high northern latitudes do get to the southward of their calculations, is beyond any doubt, and that these errors in the reckoning arise from local magnetism is equally certain.

Three of the West India Mail Steam-packets have been wrecked, and three others of the same Company have run on shore but were floated again. Now if these six vessels, being under the full power of their engines, and steering a course by order of their Commanders, which courses ran the ships ashore instead of clearing adjacent dangers, it is evident, that the courses *ordered* to be steered were either wrong courses, or else the vessels' compasses were under the influence of local attraction; and as the *whole* of these vessels were to the *southward* of their computed positions in north magnetic latitudes, it is fair to infer that their compasses were deranged by the local magnetism of the steamers, that is, the north points of their compasses were drawn forward, and the south points repelled aft. It is not in the latitude alone that these errors arise, the longitude is equally affected, for let a ship be steering a south-west course by her compass, and a distance of, say 100 miles; then, if the compass be so acted on, by the ship's magnetic attraction, that its north point be drawn forward half a point, the difference of latitude made will be *greater*, and the departure *less* than if the compass indicated a correct course.

(To be continued.)

THE COLLISION OF STEAMERS.

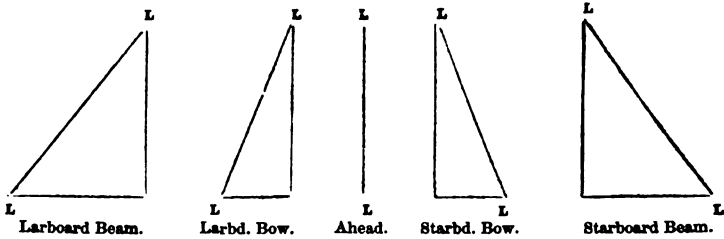
SIR.—I noticed in a late paper a proposal from some ingenious projector, for preventing collision betwixt steamers at night. A system of lighting is intended to be employed, by which it may be known the way the approaching vessel has her helm, &c. This would seem to imply complication, and if so, I may venture to predict its failure, for any proposal for compassing so desirable an end must be both simple and practical; by it must be indicated *on the instant* how the stranger's head is, without regard to his *helm*, otherwise it would be necessary to refer in memory to a complicated scheme of movements, and as a consequence, the vessels would be aboard of each other, and the damage done, before the plan of action was determined upon.

At the same time I would not be understood as decrying the scheme I have referred to: far from it; publicity may prove it to possess universal merit; and, besides, proposals of the sort should at all times be most favorably entertained in virtue of the interests involved. But discussion on such a subject is comparatively harmless, and is sometimes beneficial by supplying practical hints, and helping projectors to the employment of simple means to insure success to their schemes.

No one who has been in the practice of navigating our eastern coasts at night but must allow it to be a service of great danger. It is difficult enough from want of a well understood system of lighting to keep clear of sailing vessels, and this difficulty again is increased fifty-fold in the case of steamers. The rapidity of their approach is such, that a few spokes of the wheel wrongly applied, or an order misunderstood, is sufficient to insure the dreaded collision. No doubt a portion of the accidents of this description which occur may be laid to the score of a "bad lookout," ignorance of the parties in charge of the deck, &c.; but were the truth fully elicited, I think I may venture to affirm, that the principal cause would be found to be the one I have adverted to, "a defective system of lighting." At present companies are guided in this matter, solely by their own fancies. Some steamers exhibit coloured lights, some have lights in each paddle-box, others a light at the mast-head in addition; and, others again have simply one at the bows, or at the fore-mast head.

I know not whether the proposition I am about to make on the subject can claim the merit of novelty. Perhaps not; but if it acts as a pioneer to a practical hint from some other competent quarter, it will serve a useful purpose.

I would suggest then the expediency of passing an act of parliament, rendering it imperative under a heavy penalty, for steamers navigating at night to carry two lights, one at the bows, and the other at the hounds of the fore-mast. By this arrangement, directly the approaching vessel's lights became visible, the course she was steering would be instantly known: and excepting in cases of the most palpable neglect, she might be approached closely, and passed safely, but the exact position with respect to the advancing vessel, with the lights thus arranged will be better shewn by the following diagrams, where L represents the place of the light:—



In the event of a steamer closing a vessel at anchor, the latter should show one light; vessels underway two lights at the bow horizontal.

The foregoing arrangement will at once recommend itself from its simplicity. The practical man will perceive, that it leaves not the smallest opening for mistake.

While apologizing for trespassing so long on your time, I may briefly remark, that this important subject claims the most serious attention of the legislature, for, from the want of some settled system of the sort, life and property are placed in constant jeopardy. Foreign powers should be invited to join us in its adoption; we should then have a distinct and universally understood system of lighting; and navigating even the most crowded thoroughfares at night, would thus be rendered a comparatively easy matter.

Your obedient servant,
E. K. CALVER.

SIR.—The constant recurrence of these accidents requires that close investigation into their cause should be made, and that some general means should be adopted for their prevention.

It is highly probable that if the circumstances attending the collisions were minutely inquired into, the carelessness of the lookout-men would be found, in the majority of the cases, to be the cause.

In the instance of the "Veloce," and the "Lizard," there appears to have been negligence on the part of the French vessel, as the lights of the English steamer were at her mastheads, and therefore could be seen at a greater distance than if placed on her paddle-boxes; and, as to the night having been dark, that was rather a favorable circumstance than otherwise, as everybody knows that a light will shine more conspicuously the darker the medium is through which it is seen; we are, therefore, justified in believing that a careful lookout was not kept on board the *Veloce*. Had a gun, however, been in readiness in the *Lizard*, and fired at the moment the lights of the approaching vessel were seen, it might have prevented the collision, unless, indeed, the Frenchmen were dozing, in which case it would probably, by the sudden surprise, have added to the confusion. As it was, the event appears to have been completed by the Frenchman putting his helm the wrong way, which shows, either his confusion or his ignorance of the general rule promulgated for the guidance of steamers approaching each other.

It is desirable that a plain set of rules should be drawn up, and adopted generally by the steamers of all nations; and I would suggest

the propriety of a gun being kept in readiness to be fired at a moment's warning, at all times, or a blue-light when there is no fog.

It appears injudicious to place the lights so low as the paddleboxes, as the densest portion of a fog generally, in the open ocean, rests on the surface of the water; at least I have frequently found it so, for in approaching vessels, I have seen the tops of the masts before the hulls came in view. This is particularly observable on approaching the fishing craft on the banks of Newfoundland. But it sometimes happens otherwise, especially on the coasts, when the vapour begins to rise or to disperse. It appears that the "Acadia," steam packet, lately arrived from America, ran down a bark on the Banks. What better warning could be given of the approach of one of these vessels, in a fog, or at night, than the *whistle* as used by the loco-motive engines on railroads? It could not be mistaken. The "blow" of a whale is a whisper to it!

The announcement of another fine steamer, the *Queen*, lost on an islet near Milford haven, has just been made! The intervention of a dense fog is stated as the cause.

I would merely observe here, without meaning to apply the remark to this particular case, that an overweening confidence in intricate navigation, often proves as detrimental to safety as carelessness, want of judgment, or ignorance. It may be stated here that the captain of this unfortunate vessel is one of the very best seamen of Bristol, and an experienced navigator, having commanded a ship to Australia and the East Indies, and moreover is a worthy man.

S.

REMARKS ON TIDES, AND THE PREVAILING CURRENTS OF THE OCEAN AND ATMOSPHERE.—By *W. C. Redfield*.

(Continued from p. 662.)

Of General Winds, or Prevailing Currents of the Atmosphere.—One of the most remarkable characteristics of the atmosphere is its constantly progressive action; exhibited in movements which are more or less rapid, and mainly horizontal.

To whatever general cause these movements may be ascribed, they are found in most countries to predominate in particular directions in the surface winds, but more uniformly at higher elevations. The greatest uniformity of the surface winds has been noticed chiefly in certain zones or regions which, for the most part, lie between the parallels of 30° latitude, north and south; limits which comprise half of the earth's surface. These more regular winds have hitherto been known best on the great routes of commerce, on the Atlantic and certain portions of the Indian oceans, and hence have been called the trade winds.

In order to account for the supposed uniform character of the trade winds, a general theory of winds has been adopted, of much plausibility, found on the alleged effects of calorific rarefaction in the equatorial

region. Aided by successive emendations, this theory continues to receive the general sanction of the scientific world.

It is not my design, in this communication, to discuss theories. But the facts and results which I have delineated on the accompanying maps,* indicate courses of circulation in the atmosphere which are nearly and mainly horizontal; while the common theory alleges a course or circuit of circulation, in each hemisphere, which is essentially vertical, the warm air being supposed to ascend near the equator to great elevations and there flow outwards, to supply the inward currents from the higher latitudes; the obliquity from a north and south direction being a course due to the earth's rotation. I propose, therefore, to state in a summary way, some of the facts and considerations which, in my own view, serve to invalidate this calorific theory.

1. The specific difference of mean temperature in the inter-tropical winds as compared with equal zones of extra-tropical winds, is inadequate and wholly disproportioned to the dynamical effects which are exhibited in these winds. I am not aware that any successful attempt has been made to prove the converse of this objection.

2. The rising of the whole body of the trade winds in the equatorial latitudes, in the manner alleged, has never been confirmed by observation; and, as I apprehend, may safely be denied. Nor has any proof of the effect been offered, other than inferences drawn from common but very limited phenomena, which I think may be explained in a more satisfactory manner.

3. The perpetual snow line of the Andes has been found near one thousand feet higher in 16° to 18° south latitude than at the equator, or on the parallel of the equatorial calms of the Atlantic. This fact, in a region so favourable to an equable development of natural influences, I deem to be wholly conclusive against the theory.†

4. The semi-annual change, to the north and south, of the locality of the trade winds and the belt of equatorial calms, which results from the change of seasons, bears no adequate proportion to the alternate geographical declination of the sun, nor to the actual geographical change in the zone of greatest temperature, which follows the sun's declination.‡

The semi-annual change of the locality in the trade winds is believed to be greatest in the Atlantic, where it does not appear to average more than 7° or 8° of latitude; while the annual range of the sun's declination exceeds 46° , and the actual transfer of the zone of heat, which follows the declination, appears to be nearly 40° of latitude. These facts, also, I deem to be conclusive against the theory.

5. Even within the ordinary geographical limits of the trade winds, there are extensive portions of the system of winds which, in their course and direction, do not accord with the received theory, but appear wholly irreconcilable with its requirements.

* Those lost in the Peacock.

† See the observations of M. Pentland in the *Journal of the London Geographical Society*. Also, *Cyclopedia*, Vol. VII, Art. CLIMATE.

‡ In other words, an essential geographical change in the locality of heat, of some months' duration, does not change, materially, the locality of the trade winds. Hence, these winds are not, mainly, the result of heat.

To illustrate this objection, I refer, first, to a circuit of inter-tropical winds in the equatorial basin of the North Atlantic, which appears to extend from the delta of the Quorra, the ancient Niger, for more than two-thirds the distance to the coast of South America; in which circuit the winds revolve to the right, with more or less of regularity, around a central and probably elongated axis. And second, to the existence and great extension into open sea of those portions of the monsoon winds which blow obliquely *from* the equator, in directions where there can be none of the continental rarefaction which has been alleged as explaining these alternating winds. For if the winds of the equatorial latitudes rise to the higher regions, the monsoon winds of the Indian Ocean, on departing from the south side of the equator, could never be made to sweep eastwardly upon the earth's surface for even six thousand miles, as they now do annually, instead of ascending four or six miles in latitude, to flow off from the equator as superior winds.*

6. The sixth objection which I offer to the common theory of the trade winds, consists in the frequent occurrence, in our American climate, of the highest summer heats for several days in succession, sometimes irrespective of the immediate heat of the sun, which heated air, as appears from comparative observations, is mainly brought to us by geographical transfer along the earth's surface, and which appears to depart in the same manner. This could never happen if the most heated portions of the atmosphere necessarily ascend from the surface. A like objection is derived from the frequent interstratification and horizontal transfer of currents of unequal temperatures and hygrometrical conditions, which appear to move over great distances without any obvious change in their relative altitudes.

Having already noticed, in the course of these remarks, the system of horizontal circuits of revolution pursued by the winds on each side of the equator, it is now only necessary that I refer the observers of the expedition to the particular delineations of these circuits, and of the alternating system of monsoon winds, on the maps which are furnished herewith.†

* M. Bougainville says, "from the 23d of February to the 3d of March, we had westerly winds, constantly varying between S.W. and N.W., with calms and rains; every day either at a little before noon or soon after, we had sudden gusts of rain accompanied with thunder. It was strange to us to meet with this extraordinary wind under the tropic, and in that ocean so much renowned above all other seas for the uniformity and freshness of the E. and S.E. trade winds; which are said to reign in it all the year round. We shall find more than one opportunity to make the same observation."

This relates to the southern Pacific in long. 110° and 115° west from Greenwich, and serves to show an extension of the westerly monsoon winds at that season, even to the meridian of California. Numerous observations have tended to confirm the vast extension of these winds in the intertropical latitudes of the Pacific, opposite to the alleged course of the trade winds. Over the whole western coasts of inter-tropical America, the course of the winds is also at variance with the calorific theory.

† In the absence of the maps referred to, some general notion of the system of monsoon winds thereon delineated, may, perhaps, be obtained by referring to the summary description of these winds found in this Journal for October, 1833, Vol. xxv, p. 124—125.

It must not be supposed, however, that these circuits of revolution in the great winds, are generally uniform or strictly defined in their location or development, even on the open ocean. On the contrary, the winds which proceed outward from the trades, often overlie those which at the same time are returning into the trades. This often occurs extensively, on different meridians along the same parallel; besides the incidental fluctuations and disturbances to which the winds are always liable, and the shifting of their field of revolution to the north or south, by the change of seasons. But the general result, is a continued and successive series of laminated or stratified currents, overlapping and moving upon each other in like series of subordinate circuits, the major axes of which, in the northern summer, are principally found in the calms of the horse latitudes.

The calms and light winds which are peculiar to this last mentioned region in summer, result not so much from any general suspension of the aerial movements, as from the absence of that brisk relative motion which commonly prevails in other latitudes. For, the predominating movements of the atmosphere being either from the east or west, in conformity with the law of the earth's rotation, and there being little movement of the surface winds in these directions along the parallels in which lie the axes of atmospheric revolution, it follows, that only the more sluggish northerly and southerly winds chiefly prevail on these parallels, in mid ocean, at this season. And I may here suggest, that a like explanation is mainly applicable to the claims of the equatorial region, both between the regular trades, and the Indian monsoon.

Towards the eastern borders of a basin of revolution, such as the North Atlantic, there appears to be less of sluggishness in the aerial currents; which move to or from the lower latitudes; which here appear more clearly defined and more strongly developed, and hence are more readily traced in their course; as is seen in the northerly winds which gradually merge in the N. E. trades, in the region between Madeira and the Canaries, and thence to the tropic. While, near the western borders of the Atlantic and over the adjacent coasts of America, the opposite southerly and south-westerly winds of the circuit are often well developed at the earth's surface, at least in the warm season. Like characteristics pertain to the system of winds in like latitudes, in other circuits of atmospheric revolution, in different oceans.

That the N.E. trade winds have not sooner been traced in their horizontal curves into the south-west winds, may be owing in part to the frequent overlying of the south-westerly upon the easterly winds, which occurs mostly towards the exterior portion of the trades; and partly, to a neglect to inquire into the actual and successively varying directions of the trade winds, in the central and western parts of the ocean basins, in the inter-tropical latitudes. In these latitudes, in the regions here mentioned, the N.E. trade winds are more often found nearly at east, and veering to E.S.E. or S.E., than has been generally imagined.

But the courses traversed by storms, in the trade-wind latitudes of the western Atlantic, and in corresponding latitudes in the western portions of other seas, as shown by my own inquiries and those of Col.

Reid, I conceive to have proved this horizontal course of atmospheric circulation, in the clearest manner; and it was this kind of evidence which first brought conviction to my own mind.* In pursuing this branch of the evidence we are thus able fully to establish the western half of the north Atlantic circuit of revolution in the general winds; while, the better defined courses of the regular winds from the latitude of Madeira to the trades, in the eastern Atlantic, is such as to remove all reasonable doubt of a nearly continuous circuit of revolution, from left to right, around the region of extra-tropical calms, called the horse latitudes.

I may add, on this occasion, that if further proofs were wanting of this horizontal circuit of revolution in these general winds, it is found in the *rotation* of the great storms, from right to left in the northern hemisphere, around their several moving axes, while pursuing their natural course of progression in this great aerial circuit. The question has often been asked, why should all these storms revolve in this direction, rather than in the opposite? And why the contrary rotation which is noticed in the southern hemisphere? Now I have been convinced for several years, that this law results from the conditions which necessarily attend the earth's rotation. For, in the westwardly movements of the atmosphere upon the earth's surface, obliquely from the equator towards the poles, the narrowing of the meridional spaces and the reduced velocities of rotation in the earth's crust on the parallels newly arrived at by the surface wind, with the constant retardations of eastern movement in the front of the mass which results therefrom, conjoin to induce a rotatory tendency in the incumbent winds, in the very direction in which the storms are found to revolve.†

This dynamical tendency to gyration in the atmospheric currents or winds which are in contact with the earth's surface, is constantly productive of sensible effects, particularly as we proceed from the inter-tropical to the higher latitudes. This, I apprehend, is the chief cause of the changes and variability of the winds in these latitudes, and also of the remarkable increases of the barometrical oscillations, the great storms being only the more strongly marked cases of gyrotory action; while the numerous weaker or abortive cases which go to fill up the intervals of space, and partly overlies each other, and which are also modified by the ordinary disturbances of temperature and locality, have excited little notice or inquiry. It is this law of terrestrial rotation which, as I apprehend, is maintained by Prof. Dove of Prussia,

* See my published maps of 1830 and 1835 containing the tracks of storms; also, my communications in Silliman's Journal and the Nautical and Naval Magazines, since April, 1831; likewise, the charts, &c., of Col. Reid, R.E., published in the Professional Papers of the Royal Engineers, and his elaborate work on the Law of Storms, issued at the time these remarks were in preparation; a copy of which work was received and forwarded to the expedition. More recently the labours of Mr. Piddington of Calcutta have offered much additional evidence, as relates to the Indian and China seas.

† It will be noticed that the rotation of the great storms, as well as more ordinary atmospheric gyrations, is opposite to that of the great natural circuit of winds in which they are carried forward. Thus, if a general current of revolution swept around such a lake as Ontario from left to right, the eddies and local gyrations near its borders and in the body of the stream would exhibit a contrary rotation, from right to left.

in his attempts to show the elements of gyration in the general wind; a writer with whose labours I have been but lately and partially acquainted.

The general correctness of the foregoing view of the prime cause of local gyrations in the atmosphere, as well as the rotation in the great storms, may be shown by an experiment made on the surface of a common globe; which I have occasionally pointed out to friends interested in these inquiries. Let a concave surface of wood or other substance, of a circular form and a diameter equal to five or ten degrees of the globe, be prepared and perforated with a small hole in the centre, through which a pin may be loosely placed, to serve as an axis. Then let the concavity be lined with flannel or other yielding material, and placed upon the top of the globe near the equator. Then cause the globe to revolve from west to east in the direction of the earth's rotation, while the concave body is guided, carefully, by the pin at the axes, in the direction of the storms tracks which are found on my chart of 1835,* and so as to impinge with equal weight and surface on all sides of the pin or axes, and the incumbent body will be found to revolve from right to left, in the manner of the storms in the northern hemisphere.

This experiment requires delicate management, and is more difficult because of the necessary rigidity of the incumbent surface, causing one part partially to counteract another; but in the case of a fluid, where all the particles move freely upon each other, no such impediment exists.

As it is chiefly the lower stratum of wind which is thrown into gyration from this cause, it must be evident, as above suggested, that within the geographical limits of the trade winds the great circuit of aerial revolution must be a nearly horizontal one, and that the storm tracks mark distinctly the usual course of this revolution. Consequently, the main outflowing course of the trade wind from the equatorial latitudes is not in the upper regions of the atmosphere.

It was my design to have followed these general remarks with a detailed explanation of the delineations of the several systems of prevailing winds, which I have placed on the maps before referred to. This was particularly my intention as relates to the extensive developments of the monsoons, and the several belts of light winds and calms, which may be viewed as the anticlinal and synclinal axes, so to speak, of the several systems of general winds. But the lateness of the call and my necessary avocations have prevented me from fulfilling this labour, in time for the expedition.

This imperfect summary of the results of inquiries which I have pursued with no little interest, is now commended to the gentlemen of the expedition, for their impartial examination; and with the expectation, and desire, that truth only, as apart from any favored theories, will be the object of their researches in natural science.

* This chart may be found in this Journal, Vol. xxxi, for October, 1836; also in the London Nautical Magazine, April, 1836, and Col. Reid's work on the Law of Storms.

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**WRECK OF THE PEGASUS.**—The following letter appeared in the *Norwich Mercury*:—

“ *Waborne, Oct. 11th, 1843.*

“ SIR.—A few days since one of my men found on this beach, a bottle with the enclosed paper, apparently just washed on shore. As Elton was a public man I thought it probable you or some of your friends would know his handwriting. You can publish it or not, as you think proper; then I should wish you to forward it to the *Shipping Gazette*.—I remain, &c., J. BOLDING.”

“ ‘ Pegasus—God help us! she ’s sinking;  
the bottle ’s empty, ’twill swim,  
& we also into eternity—Farewell.  
ELTON.’ ”

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, with an account of the attendant phenomena, abstracted from the Official Journals of the respective Ships, and from other authentic sources of information.—By W. S. Harris, F.R.S., &c.

(Continued from p. 673.)

#### SCORPION, 10.

1838. February 27th, off the south end of the Island of Sardinia; 8h. 5m. A.M. squally with hail, thunder, and lightning; main-top-mast and main cap split open, main-mast splintered and otherwise damaged; part of the after main beam carried away and the beam sprung, casing of the pumps stripped off. The pipe of Hearle’s wash-deck pump split open, and other damage done in the dispensary and armoury.

Wind on the 25th south-west and west, strong gales and squally; 26th north-west and west; 27th W.N.W., heavy squalls; 28th moderate and fine, W.N.W.; 29th fresh breezes and moderate, west and south-west as at first on the 25th.

The brig had been sent with dispatches, and was endeavouring to get to the westward when she was struck by lightning, and obliged to return to Malta. The master and two of the men were stunned and burnt by the discharge.

#### SNAKE, 16.

1838. June 25th, West Indies, between Nassau and Halifax, lat. 29° 45’ N., long. 74° 25’ W.; A.M. 9h. 20m. main-top-gallant and royal mast shivered by lightning; main-mast severely damaged.

The ship had been running with an E.S.E. trade wind for some days, moderate and fine weather; on the 25th at 8h. 40m. A.M. dark and threatening appearance S.S.W. with heavy rain, thunder, and lightning. A dense arch of clouds rose in the south-west and passed up toward the ship with a shift of wind to S.W.b.S.; when the clouds were nearly vertical over the masts, an electrical discharge of a vivid purple colour, burst on the ship with an instantaneous explosion. The discharge left the heel of the top-gallant-mast, and passed down the chain top-sail-tye without damage to the top-mast, to within eight feet of the deck, where the chain terminated, here it fell on the main-mast, and divided under the saddle of the main-boom; one portion passed out at the quarter-deck port, the other descended to the lower deck, and passed through the ship at the heel of the main-mast.

The mast was taken out at Halifax, and found to be sprung at the



partners, two inches deep and fifteen inches in circumference. The mast sounded hollow, and was found much shaken. The grain of the wood at the step was quite open following the course of the circular grain of the wood.

Captain Milne who commanded the ship has given an interesting account of this case in the *Nautical Magazine*, vol. for 1839; he states that several of the officers were turned sick by the effects of the shock, and that a similar effect was produced on two officers on the coast of Cuba, by discharges of lightning between the clouds. "They were," he says, "lying in their hammocks, and were perfectly stupified, and seized with sickness and weakness of the limbs so that they were unable to stand; they did not recover until the lightning, which was very near the ship had passed off."

#### TERRIBLE, 74.

1779. April 23rd, moored at Spithead; wind W.S.W., strong gales; 5h. 30m. A.M. heavy squall with thunder and lightning; the fore-top-mast and fore-masts struck and shivered by lightning.

Wind on the 22nd west; 23rd W.S.W., 24th W.N.W.

The explosion made its way into the store-room directly over the fore magazine and shivered two carlines in pieces, a sheet of lead under the galley was melted. The officer of the watch said that the lightning ran in a circular stream down the fore-mast. Two men on the lower deck had their shirts singed on their backs without further damage.

#### THURSE, 32.

1786. January 4th, St. Mary's Scilly, S. 17° E., distant 43 miles; 4h. P.M. hard gales, thunder, and lightning; the electrical discharge struck the ship and disabled several of the people; a second flash set the mainsail, main-top, and mizen-stay-sails on fire; obliged to cut away main-mast in consequence of the flames. Fore-mast and fore-top-mast also shivered by the lightning.

The wind had been S.b.E., after which W.S.W., and subsequently N.W., fresh gales and clear. The ship had been hove to under storm stay-sails at 2h. P.M., blowing very hard from S.b.E., with showers of hail and rain. The main-mast carried away with it mizen-top-mast and fore-top-sail-yard, and stove the cutter, which was afterwards destroyed. The fore-top-mast also went overboard at 9h. P.M., and thus the ship was reduced to a mere wreck.

She rigged jury-masts on the 5th, and went to Portsmouth for refit.

#### THUNDERER, 74.

1797. August 12th, Cape Corrientes E.b.N. eight leagues; P.M. wind E.S.E., squally with thunder and lightning; 8h. 15m. a flash of lightning struck the mizen-mast, and blew up 28 powder horns hanging round the mast on the lower deck, and set fire to a main-top-sail under repair there; seven men and a boy were wounded by the explosion of the powder.

Wind on the 11th E.N.E., 12th variable and E.S.E., 13th E.N.E. and variable.

## TRUSTY, 50.

1801. October 16th, Malta; P.M. fresh breezes and variable winds; 4h. 30m. a heavy squall with thunder and lightning; 4h. 40m. mizen-top-mast and top-gallant-mast shivered in pieces, and the mizen-mast much damaged.

The winds had been easterly and variable all round the compass for several days, on the 17th moderate, 18th wind easterly.

## TRINCOMALEE, 20.

1802. June 23rd, at Trincomalee; P.M. squally, W.S.W. with rain, thunder, and lightning; 4h. 30m. fore-mast, top-mast, and top-gallant-mast struck, and shivered by lightning.

Wind on the 22nd N.N.E. and variable; 23rd N.N.E. with a shift of wind to W.S.W.; 24th moderate, W.S.W.

The ship had a new foremast in consequence.

## TOPAZE, 36.

1802. July 23rd, West Indies; at sea off the west end of St. Domingo, about three leagues from the land; light airs and variable, N.E. to S.E., with thunder, lightning, and rain; A.M. 2h. 30m. the lightning shivered the mizen-top-gallant-mast, mizen-top-mast, and mizen-mast; killed one seaman and wounded several others, one of whom died soon after.

The wind on the 22nd from S.E. to N.N.E.; on the 23rd N.b.E., north-east, south-east; 24th W.S.W.; after which it went back again to the east.

The ship was becalmed near St. Domingo, when in the middle watch a light air came off the land, and they got the ship's head seaward, with her stern to the shore. A dark isolated cloud moved toward the ship, which emitted intensely vivid flashes of lightning, attended by loud claps of thunder, when it came within a short distance of the masts; a heavy discharge fell on the ship. The lightning, after shivering the mizen-mast, penetrated the captain's cabin, and exploded two powder horns hung to the beams. The lightning passed into the cabin, it is supposed, by a small bell wire which passed between the horns, of which there were several hung to the beam; after this the discharge escaped by the stern windows. The Rev. Dr Scott, now Rector of Catterick in Yorkshire, was severely wounded by the explosion whilst asleep in his cabin. The men who were killed were lying close to the mizen-mast.

The ship shifted her mizen-mast at Port Royal, and had a complete refit.

## THESEUS, 74.

1803. October 19th, off Cape Francois, St. Domingo; 8h. 30m. A.M. ship struck by lightning; fore-top-gallant-mast shivered, top-mast and fore-mast shook and splintered in pieces. One man killed on the lower deck.

Wind on the 18th E.N.E. to S.E.b.S.; 19th N.N.E., after which a change to the south-west toward the evening, with thunder and light-

ning, and heavy rain; on the 20th variable, after which the wind returned again to the east and E.N.E.

The electrical discharge penetrated the fore-castle deck, and went through the galley; the man who was killed was in the act of fixing his table to the fore-mast, the people had just been piped down to breakfast; he was standing on the magazine scuttle; this scuttle was covered with a stuff called "fearnought," it was burned to a cinder. The greatest panic prevailed. Every one endeavoured to rush up the hatchways, under an impression the ship was on fire in the fore magazine. The seamen were with difficulty prevented from jumping overboard, or taking to the boats. The panic for above two minutes was most fearful; the quarter-deck, gangways, and fore-castle were covered with chips of the damaged spars.

The ship was obliged to leave her station and proceed to Port Royal, where she got a new mast and a refit.

Ships log and further particulars by Lieutenant E. W. Pitt, R.N., then a midshipman in the ship.

#### TRIDENT, 64.

1803. October 27th, Coast of Malabar, lat. 13° N.; 1h. 45m. A.M. the lightning shivered the main-top-gallant-mast, and main-top-mast, and severely damaged the main-mast. The main-top-sail, top-gallant-sail, and main-sail together with the mizen-stay-sail rent also by the discharge.

Wind on the 26th, N.N.E., to N.N.W., 27th, A.M. N.N.W. moderate and cloudy; 1h. 30m. squally with heavy dark clouds with lightning, after which the wind veered to the east and south-east; 28th, N.N.E. S.S.E., and north:

The weather on the 27th, was very sultry and oppressive, and the clouds seemed to be pressed down under the mast-heads. They had just furled top-gallant sails in a moderate squall, without much appearance of lightning, when in an instant the electrical discharge burst forth from a dense black cloud right over the ship with a most awful crash, as if the main deck guns had gone off. The mast was a country mast made of teak, large pieces were torn out of it, and the iron hoops burst asunder. The top-gallant-mast and top-mast were shivered and knocked overboard. The ship was filled with smoke, accompanied by a suffocating smell of sulphur; four men were much injured in the main-top, and all their hair burned off. When the discharge reached the main-deck it divided, one portion reached the lower deck injured several men and tore away some tables and shelves from the ship's side, the other passed through the ward-room and out of the stern windows. The place seemed in a blaze, five or six pieces of glass were completely melted, so that the glass hung in apparent icicles from the frame work.

The ship was taken in tow for two days by the Tremendous, she was one of Admiral Rainer's squadron at Trincomalee. They were trying to get to the southward before the monsoon set in. Further particulars by Captain Carter, R.N.

#### TRIUMPH, 74.

1803. December 6th, off the Isle of Sardinia, Mediterranean; 8h.

P.M. the ship was struck by lightning, by which two men were killed, and several wounded.

Wind on the previous day variable from south to west; on the 6th variable from west to N.N.E.; it afterwards on the 7th set in from N.N.E. to west.

The log gives but a very imperfect notice of this case; it appears by other accounts that some damage was done to the spars, and the mat on the main-yard set on fire.

#### TIGRE, 80.

1809. November 9th, off Toulon; lat. 41° N., long. 2° 20' E.; P.M. 4h. 20m. the lightning struck the main-mast.

Winds on the 8th E. to N.N.E.; on the 9th E.N.E. until toward the afternoon, when it shifted to S.S.W., with thunder, lightning, and heavy rain; squally; after which calm, with light airs, at midnight; the wind remained at S.S.W. and south, until the next evening, when it again shifted back to the east.

The log of this ship also gives but an imperfect notice of the accident. The main-mast, however, was rendered unserviceable; and was shifted at Gibraltar on the 26th. The discharge entered the mast one foot under the catharpins, came down its centre, and passed out about ten feet above the deck. Immediately after the accident, the log states, that they were obliged to get the main-top-gallant-mast on deck, the main runners up, and lower the main yard.

#### TONNANT, 80.

1812. February 25th, Cawsand Bay, near Plymouth; 11h. 50m. A.M. the fore and main masts shivered by lightning, also the main-top-mast and fore-royal-mast.

This ship was damaged in the same storm with the Helicon and St. Salvador (See Helicon.) Wind south-west to W.N.W., squally with heavy rain. The ship had just anchored in Cawsand Bay, she was subsequently obliged to go into Hamaoge and have both her masts shifted, consequently her services in the channel fleet were lost for the time of the refit.

#### TAMAR, 26.

1822. July 11th, off Jamaica, 5h. 15m. A.M., the main-top-mast carried away by lightning, and main-mast severely wounded; main-top-sail burned, two top-gallant-studding-sails lost overboard; top-gallant and royal sails torn in pieces, part of the top-gallant rigging lost overboard.

The wind on the 10th, easterly and variable with heavy rain; 11th, east and north-east; on the 12th easterly and variable.

The ship had just sailed out of Port Royal with a large convoy; she was completely crippled by this accident.

#### THETIS, 46.

1828. April 8th, Rio de Janeiro; P.M. cloudy weather with variable winds; 6h. vivid lightning and thunder, and heavy rain. The

electrical discharge struck the ship and shivered the fore-top-mast and fore-mast; the larboard cheek of fore-mast fell on the deck, and part of fore-top-mast went overboard.

They were obliged to get the fore-mast out, and obtain spars from the Brazilian dock-yard. The ship was detained for some time, not being enabled to get a new mast, and then only at a great cost.

The weather was extremely sultry; the winds westerly and variable, with fresh breezes and squally.

Of the Brazilian squadron, for the protection of our trade, the Thetis and Heron were disabled, so that convoys could not be granted.—See case of Heron.

#### TAMAR, 26.

1835. June 1st, River Hooghly, East Indies; A.M. struck by lightning, which shivered the main-mast in pieces. The weather on the previous days had been moderate and fine; wind S.S.W.; on the 31st May, squally at night; June 1st S.S.W., fresh breezes and heavy rain. The wind continued S.S.W.

The royal, top-gallant, and top-masts were split in pieces and rendered useless; the sheaves in the truck were melted, also some of the belaying pins round the main-mast, slightly. Many of the ship's company were severely shook by the discharge. The lightning played round the chain cable for some time.

#### TUNE, 28.

1839. January 17th, at anchor off Troy, Dardanelles; 9h. 20m. A.M. main-mast struck and damaged by lightning, top-gallant-mast shivered, and the main-top-mast shook about six feet below the cross trees.

Wind on the 15th, S.S.W., and south-west; squally dark strong breezes, it continued to back to the west on the 16th, and went from west to north-west and north, then N.N.E., with heavy squalls, so that the ship pointed the yards to the wind. At night N.N.E., moderate. On the 17th, the wind continued to back toward the east and became E.N.E., E. and S. to N.E., then E.b.S., S.E., and variable, strong breezes with heavy squalls from east to north-east in the morning when the ship was struck; vivid lightning again at night. The wind on the 18th went back to north-east, where it remained.

(To be continued.)

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#### OUTLINE OF THE SULPHUR'S VOYAGE.\*—By Mr. C. George, R.N.

(Continued from p. 601.)

On the morning of Neptune's visit all hands were anxious to see what preparations had been made during the night, but the arrangements had been carried on, with such system and order, that as day dawned,

\* In p. 559, 13th line from bottom for long. 6° 21' N., read lat. 60° 21' N.

all was completed, and nothing particular was to be seen as had been anticipated; the only thing unusual was a large lower studding sail, triced up by the four corners, on the main-deck under the skid gratings, and filled with water, having several ropes passed under it to support its weight. This, it was said, was intended for the use of Father Neptune, who according to the best received religious ceremonies, after catechising his children, baptizes them, previous to taking them under his particular care.

At about 10 A.M., it was announced that Neptune was coming on board. Every one hastened to the upper deck to receive him, but here it was soon to be perceived that Neptune, in order to make his *entré*, distinct and different from all other visitors, does not enter, as is usual, by the gangway, but comes in over the bows. To accommodate him and his attendants, to form the line of procession, a screen was stretched athwart the forepart of the upper deck, and no intruders were allowed to approach beyond a certain distance. When Neptune had completed all his arrangements the mizen topsail was backed, a great splashing over the bows was heard, the screen was suddenly dropt, and to the surprise of all that were to be introduced, there appeared a very gay procession, which now moved on towards the quarter-deck.

First came Neptune and Amphitrite, seated on a car, covered with flags, drawn by several Nereids, while others around, helped the car along. As this group comprised the principal figures in the procession I shall proceed to describe them, as it shews out, one of those striking features in a seaman's character, that of adapting himself, with ingenuity and address, to every circumstance and position in which he may be placed. Both Neptune and Amphitrite were so well and appropriately disguised that it required a second, and even a third look to discover which of our crew they were. Neptune was chosen from one of the seamen whose peculiar cast of feature gave him the appearance of a person twice the age he really was; his natural voice and manner of speaking, quite adapted him for the character, and he played his part well. Amphitrite was selected from one of the youngest and best looking of the crew, a florid, beardless youth, just stepping from boy to manhood; his natural bashfulness and effeminate appearance was in good keeping with the part he was to act; they presented an exceeding good representation of shrivelled old age and youthful bloom.

Their dress was very well adapted to convey the idea of what has been the received notion of the appearance of these "watery deities." Neptune's hair was left flowing over his shoulders, which was augmented by a white wig of oakum; his head was adorned with a crown, tastefully coloured; in his right hand he held his trident, formed of a boarding pike, the additional prongs were supplied by the carpenter; his face was painted with a due mixture of black, white, and red, with the addition of an immense flowing beard; his dress was made skin tight, and dyed with a flesh coloured tint, over his left shoulder was thrown a mantle of blue cloth, in which attire he presented a pleasing and strange appearance. Amphitrite was dressed in robes of flowing white, covered with spangles, which, by-the-by, I strongly suspect had been procured from some of the ladies of the Portsmouth theatre, and kept for this express occasion; her head was adorned with a small coronet, beneath

which flowed her *flaxen* ringlets; her face was not painted, the natural florid hue of her complexion rendered this superfluous; the selection of this person, for this particular character shewed a discrimination on the part of Jack, that can scarcely be conceived.

In the formation of the car, the bow-chaser (a long nine-pounder,) had been unshipped, and the carriage at once formed the body of the car. The back of it was composed of a circular-framed work, which being covered with flags, gave it a suitable superb appearance; following the car were numerous attendants dressed as Nereids and other sea-nymphs.

Next came the two "razor-bearers," each having a huge razor of peculiar form and size. They were made of iron hoop at least three feet long, cased in wood; one was jagged like a saw, and the other was smooth, each being suited for a particular service: then followed Neptune's shaving-pot, borne by two attendants. It would be impossible to describe the component parts of this mixture, it certainly had not the odorous perfume of Rowland's celebrated Kalydor. Next came the bearers of the shaving-brushes, one about the size of a large paint-brush, and the other with a handle about two feet long, (on other occasions a tar-brush,) then numerous figures grotesquely dressed and painted; lastly, Neptune's constables, who kept order and, attended to the arrangement of the procession.

When the whole of the groupe had reached the quarter-deck, Neptune and his consort rose to address the captain and officers; he expressed the pleasure he felt in thus being again welcomed, on the arrival of the vessel into his territories, and was glad to see so many of his old friends near him; he also remarked he could see several strange faces whom he hoped the captain would more particularly introduce to him. Upon being answered in the affirmative, the procession slowly marched round the upper deck, and at last rested at the starboard gangway.

All authority of the ship seemed now given up to Neptune, who immediately issued orders to shew all those who never had the honor of being introduced to him, down below, that they might be handed up one by one, so that none might be overlooked. The constables immediately selected all those who had never "crossed the line," and placing them on the lower deck, put the hatches on, and stationed sentries over them.

On the upper deck, the skid-gratings were taken off, a capstan-bar placed across the after part of the skids for the accommodation of those who were introduced. Four of the stoutest of the Nereids go into the sail, (as bears,) and the rest provide buckets and fill them with water; the hoses are screwed on to the force pumps, the barbers having duly arranged their razors and shaving-pot, Neptune desires that the introductions may commence.

The head constable having provided himself with a list of the names, calls for one to be handed up; he is conducted by two constables from the lower to the main deck, where he is completely blindfolded, and thus led to the upper deck, where all is profound silence. The constables now leave him, and Neptune addresses him. On turning his head in the direction from whence the sound proceeds, he is saluted by a dash from the fire engines in full force, the nozzles having been kept stopped a few seconds, nearly to bursting. He receives the whole in his

face, which nearly suffocates him, and makes him stagger for breath. As soon as he recovers a little from this first salute, the Nereids having surrounded him, keep up a continual drenching with their water buckets, and thus terrify him into the idea that he is actually over-board, and he may be seen striking out in the act of swimming: the buckets of water being exhausted, he is conducted up to Neptune, and seated on the capstan-bar placed there for his particular use, and then all is again silent.

Neptune then remarks that, although his eyes are dimmed with age, he can see his young friend wants shaving, as well as washing. This hint is sufficient for the barbers, who immediately begin lathering. The size of the brushes, (for they are both used,) and the rapidity of their movements renders this operation quicker than sight; mouth, nose, ears, and the whole head is covered with lather, and in an instant the contour of the visage is changed, (the eyes are protected by the bandage.) This is ten times worse than the watery ordeal he has just passed through, all attempts at breathing being checked by the constant working of the brushes about the mouth and nose.

A moment of breathing time is now given the aspiring hero of the deep, and Neptune endeavours to draw him into conversation, in order to let him recover himself. The barbers, however, do not seem to appreciate the kind intentions of Father Neptune, they are now seen waiting with their brushes all ready to lather the inside of his mouth, for it would seem they had some idea of shaving the inside of his head, as well as the outside. Every means are employed in this part of the operation to make him open his mouth, for, if they do not succeed during the conversation with Neptune, they try themselves by asking questions; whether he would prefer being shaved with a sharp razor or a blunt one? If this will not do he is made to feel the edge of the razors. His hand being passed down the edge of the jagged one, he is told, that is the blunt one, and that the notches are made on purpose to accommodate any moles, &c., on his chin, and that would give him a twopenny shave; on feeling the other he is told, that is the sharp one, and gives a sixpenny shave. By thus worrying they at last succeed in lathering the inside of his mouth. He is then shaved with the razor they think will best suit his face, and when finished he is turned round to Neptune, who pronounces whether he is cleanly shaved or not, and according to his standing on Neptune's books, it has some influence whether the operation of shaving is repeated or not.

About this time he begins to find his seat uneasy and he is suddenly lost sight of, being made to perform a feat even greater than a double somerset; he is turned backwards head-over-heels into the font below, placed on purpose to receive him. Here he finds again his ablutions are not at an end. "The bears" seize hold of him and seem endeavouring to make him an amphibious animal, by keeping him under the water; he ultimately makes his escape out of the fore end of the sail, where there is an aperture left for that purpose; he may then, if his good nature will permit him, go on the upper deck again, and placing himself under the order of his adopted father, assist in passing others through the same trial.

The introductions last until late in the afternoon, and thus ends this



old antiquated custom, when Neptune feeling satisfied that all have been introduced, resigns his authority, takes his farewell of the Captain and Officers and then his departure. Before "quarters" the decks are dried up, and everything in its place again, and thus with good humoured jokes, merriment, and fun, is concluded the evening of this eventful day.

We thus crossed the equator on the 30th of January, and two days afterwards when in lat.  $1^{\circ} 0' S.$ , found we were approaching the limits of the south-east trades, which at this season appeared to blow home, nearly to the equator, commencing at south and gradually veering to S.E.b.E., the average strength of the wind was 4.5.

Our course was directed towards the Abrolhos, and on approaching these dangers, a very complete series of soundings from deep sea to a few fathoms on them, which doubtless afforded much interest to Geologists, &c.

We arrived at Rio Janeiro about two months after leaving Spithead, here we remained four days, and then sailed for St. Catherines, where the surveying duties commenced.

*(To be continued.)*

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#### CHINESE INTELLIGENCE.

THE following account of the winding up of the Chinese treaty has been handed to us. Extract—"At 5 P.M. the captains, in full dress, (therm.  $100^{\circ}$ .) met at the government-house, all the troops, officials, and public being present to witness the ratification of the Treaty of Peace, which was done in great form under salutes from the forts and ships. The Chinese did not seem to care about it; but it was some comfort to us to find they felt the heat as much as we did.

"But, when dinner came the scene was different. We sat down in white jackets, about fifty. The commissioners appeared quite at their ease; they drank an enormous quantity of wine, chatted, laughed, and finished every glass, turning it over to show that it was empty, and helping themselves from the decanters. Old Keying (the chief commissioner,) must have taken fifty large glasses of wine at least. When dinner was removed the Queen and the Emperor of China were drunk in one toast, with three times three. We then drank to Keying's health, who would not be done out of his glass, but drank too. He then gave us a Chinese song—such noises! (what do you think of the Emperor's uncle singing a song?) After this he called upon the governor, Sir H. Pottinger, who gave us an English song, when Whang, (the second commissioner,) gave us a Chinese one, and called on another Englishman; and then the old Tartar general, whose performance surpasses all description; such a collection of noises I never heard before. We then called on Lord Saltoun, who gave us a jolly song; when old Keying commenced again, and so passed the evening till near 11 o'clock, the old fellows taking wine enough for six at least, and walking off pretty steady."

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#### TREATY WITH CHINA.

A COPY of some of the most important parts of the Chinese Treaty, the ratification of which has been brought to Malta by Colonel Malcolm, in the Oriental, we hasten to lay before our readers.

This important document is thus announced by our Plenipotentiary in a proclamation, from which the following is an extract :—

PROCLAMATION.

“ Sir Henry Pottinger, Bart., G.C.S., her British Majesty's Plenipotentiary, &c., in China, has the gratification to announce for the general information and guidance of all subjects of her said Majesty, that he has concluded and sealed with the High Commissioners appointed by his Imperial Majesty the Emperor of China to treat with him, a commercial treaty, stipulated for in the definitive treaty of peace signed at Nankin on the 29th of August, 1842, and the ratifications of which definitive Treaties of Peace have been lately exchanged under the sign manual and seals of her Britannic Majesty the Queen of Great Britain and Ireland, and his Majesty the Emperor of China.

“ Her Britannic Majesty's Plenipotentiary, &c., now publishes the export and import tariff, and the regulations of the trade which have been, after the most searching scrutiny and examinations, fixed and finally agreed upon, and which tariff and regulations of trade are to be promulgated in Chinese simultaneously with this proclamation, accompanied by a proclamation on the part of the imperial commissioners, &c.”

Of the ports to which the foregoing Proclamation refers the following information has been published :—

**AMOI**.—Plan of port published by the Admiralty, from the survey of Captain Collinson ; Sailing Directions for the port by Captain Collinson in *Nautical Magazine*, 1842, p. 217 ; also those of Captain Blake in *Nautical Magazine*, 1841, p. 248.

**FUCHOW**.—Plan of Entrance of the River Min, published by the Admiralty.

**NING-PO**.—Course of River in sheet, China coast, published by the Admiralty ; Directions for, by Captain Collinson, in *Nautical Magazine*, 1843, p. 641, number for October.

**CANTON**.—Plans of the River in three sheets, published by the Admiralty ; also that of Macao and Hong-Kong. For Directions for the former see Horsburgh.

*General Regulations under which the British trade is to be conducted at the five ports of Canton, Amoy, Fuchow, Ningpo, and Shanghai.*

1. *Pilots*.—Whenever a British merchantman shall arrive off any of the five ports opened to trade—viz., Canton, Amoy, Fuchow, Ningpo, and Shanghai, pilots shall be allowed to take her immediately into port ; and in like manner when such British ships shall have settled all legal rates and charges, and are about to return home, pilots shall be immediately granted to take her to sea without any stoppages or delay ; regarding the remuneration to be given those pilots, that will be equitably settled by the British consul appointed to each particular port, who will determine it with due reference to the distance gone over, the risks run, &c.

2. *Custom-house Guards*.—The Chinese superintendent of customs, at each port will adopt the means that he may judge most proper to prevent the revenue suffering by fraud or smuggling. Whenever the pilots shall have brought any British merchantman into port, the superintendent of customs will depute one or two trusty custom-house officers, whose duty it will be to watch against frauds on the revenue ; those will either live in a boat or stay on board the English ship, as may best suit their convenience. Their food and expenses will be supplied them from day to day from the Custom-house, and they may not have any fee of their own whatever given to them by the commanders or consignees ; should they break this regulation they shall be punished proportionately to the amount exacted.

3. *Masters of Ships Reporting themselves on Arrival.*—Whenever a British vessel shall have cast anchor at any one of the above mentioned ports, the captain will, within 24 hours after arrival, proceed to the British consulate and leave his ship's papers, bills of lading, manifests, &c., in the hands of the consul; failing to do which he would subject himself to a penalty of 200 dollars.

For presenting a false manifest the penalty will be 500 dollars.

For breaking bulk and commencing to discharge before due permission shall be obtained, the penalty will be 500 dollars, and confiscation of the goods so discharged.

The Consul having taken possession of the ship's papers, will immediately send a written communication to the superintendents of customs, specifying the register tonnage of the ship, and the particulars of the cargo she has on board, all of which being done in due form, permission will then be given to discharge, the duties levied as provided for in the tariff.

4. *Commercial dealings between English and Chinese Merchants.*—It having been stipulated that English merchants may trade with whatever native merchants they please, should any Chinese merchants fraudulently abscond, or incur debts which they are unable to discharge, the Chinese authorities, on complaint being made thereof, will of course do their utmost to bring the offenders to justice; it must, however, be distinctly understood that, if the defaulter really cannot be found, or be dead, or bankrupt, and there be not wherewith to pay, the English merchant may not appeal to the former custom of the Hong merchants, paying for one another, and can no longer expect their losses made good to them.

5. *Tonnage Dues.*—Every English merchantman on entering any one of the abovementioned five ports shall pay tonnage dues at the rate of five mace per register ton in full of all charges. The fees formerly levied on entry and departure of every description are henceforth abolished.

6. *Import and Export Duties.*—Goods, whether imported to or exported from any one of the abovementioned five ports, are henceforward to be taxed according to the tariffs as now fixed and agreed upon, and no further sums are to be levied beyond those which are specified in the tariff. All duties incurred by an English merchant vessel, whether on goods imported or exported, or in the shape of tonnage dues, must first be paid up in full, which done the superintendent of customs will grant a port clearance, and this being shown to the British consul, he will thereupon return the ship's papers, and permit the vessel to depart.

7. *Examination of Goods at the Custom-House.*—Every English merchant having cargo to load or discharge, must give due intimation thereof, and hand particulars of the same to the consul, who will immediately dispatch a recognised linguist of his own establishment to communicate the particulars to the superintendent of customs, that the goods may be examined, and neither party subjected to loss. The English merchants must have a properly qualified person on the spot, to attend to his interest when his goods are being examined for duty: otherwise, should there be complaints, these cannot be attended to. Regarding such goods as are subject by the tariff to an *ad valorem* duty, if the English merchant cannot agree with the Chinese officer, in fixing a value, then each party shall call two or three merchants to look at the goods, and the highest prices, at which any of these merchants would be willing to purchase, shall be assumed as the value of the goods. To fix the tare on any article, such as tea; if the English merchant cannot agree with the custom-house officer, then each party shall choose so many chests, out of every 100, which being first weighed in gross shall afterwards be tared, and the average tare upon these shall be assumed as the tare upon the whole, and upon this principal shall the tariff be fixed upon all other goods in packages. If there should be any disputed points which cannot be settled, the English merchant may appeal to the consul, who will communicate the particulars of the case to the superinten-

dent of customs, that it may be equitably arranged. But the appeal must be made on the same day, or it will not be regarded. While such points are still open the superintendent of customs will delay to insert the same in the books, thus affording an opportunity that the merits of the case may be tried and sifted.

8. *Manner of paying the Duties.*—It is hereinbefore provided, that every English vessel that enters any one of the five ports, shall pay all duties and tonnage dues before she be permitted to depart. The superintendent of customs will select certain schroffs, or banking establishments, of known stability, to whom he will give licenses authorising them to receive duties from the English merchants on behalf of government, and the receipts of these schroffs for any money paid them shall be considered as a government voucher. In the paying of these duties different kinds of foreign money may be made use of, but as foreign money is not of equal purity with Sycee silver, the English consuls appointed to the different ports will, according to time, place, and circumstances, arrange with the superintendent of customs at each port, what coins may be taken in payment, and what per centage may be necessary to make them equal to standard or pure silver.

9. *Weights and Measures.*—Sets of balance-yards for the weighing of goods, of money weights, and of measures, prepared in exact conformity to those hitherto in use at the Custom-house of Canton, and duly stamped and sealed in proof thereof, will be kept in possession of the superintendent of customs, and also of the British consulate, at each of the five ports, and these shall be the standard by which all duties shall be charged, and all sums paid to government. In case of any dispute arising between British merchants and the Chinese officers of customs regarding the weights or measures of goods, references shall be made to these standards, and disputes decided accordingly.

10. *Lighters or Cargo boats.*—Whenever an English merchant shall have to load or discharge cargo, he may hire whatever kind of lighter or cargo boat he pleases, and the sum to be paid for such boat can be settled between the parties themselves without the interference of government. The number of these boats shall not be limited, nor shall a monopoly of them be granted to any parties. If any smuggling take place in them the offenders will of course be punished according to law. Should any of these boat people, while engaged in conveying goods for English merchants, fraudulently abscond with the property, the Chinese authorities will do their best to apprehend them; but, at the same time, the English merchants must take every due precaution for the safety of their goods.

11. *Transhipment of Goods.*—No English merchant ships may tranship goods without special permission; should any urgent case happen where transhipment is necessary, the circumstances must first be submitted to the consul, who will give a certificate to that effect, and the superintendent of customs will then send a special officer to be present at the transhipment. If any one presumes to tranship without such permission being asked for and obtained, the whole of the goods so illicitly transhipped will be confiscated.

12. *Subordinate Consular Officers.*—At any place selected for the anchorage of the English merchant ships, there may be appointed a subordinate consular officer of approved good conduct to exercise due control over the seamen and others. He must exert himself to prevent quarrels between the English seamen and natives, this being of the utmost importance. Should anything of the kind unfortunately take place, he will in like manner do his best to arrange it amicably. When sailors go on shore to walk, officers shall be required to accompany them; and should disturbances take place, such officers will be held responsible. The Chinese officers may not impede natives from coming alongside the ships to sell clothes or other necessities to the sailors living on board.

13. *Disputes between British subjects and Chinese.*—Whenever a British subject has reason to complain of a Chinese, he must first proceed to the consulate and

state his grievance. The consul will thereupon inquire into the merits of the case, and do his utmost to arrange it amicably. In like manner, if a Chinese have reason to complain of a British subject, he shall no less listen to his complaint, and endeavour to settle it in a friendly manner. If an English merchant have occasion to address the Chinese authorities, he shall send such address through the consul, who will see that the language is becoming, and if otherwise will direct it to be changed, or will refuse to convey the address. If unfortunately any disputes take place of such a nature that the consul cannot arrange them amicably, then he shall request the assistance of a Chinese officer, that they may together examine into the merits of the case, and decide it equitably. Regarding the punishment of English criminals, the English government will enact the laws necessary to attain that end, and the consul will be empowered to put them in force; and regarding the punishment of Chinese criminals, these will be tried and punished by their own laws, in the way provided for by the correspondence which took place at Nankin after the concluding of the peace.

14. *British Government Cruisers anchoring within the Ports.*—An English government cruiser will anchor within each of the five ports, that the consul may have the means of better restraining sailors and others, and preventing disturbances. But these government cruisers are not to be put upon the same footing as merchant vessels, for as they bring no merchandise and do not come to trade, they will of course pay neither dues nor charges. The resident consul will keep the superintendent of customs duly informed of the arrival and departure of such government cruisers, that he may take his measures accordingly.

15. *On the security to be given for British Merchant Vessels.*—It has hitherto been the custom, when an English vessel entered the port of Canton, that a Chinese Hong merchant stood security for her, and all duties and charges were paid through such security merchant. But these security merchants being now done away with it is understood that the British consul will henceforth be security for all British merchant ships entering any of the aforesaid Chinese ports.

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#### GOVERNMENT NOTIFICATION.

It is hereby notified, that the new system of trade will commence at Canton on the 1st day of the 7th month of the Chinese year (the 27th of July, 1843), and that from that day the Hong merchants' monopoly and consoo charges will cease.

The other four ports of Amoy, Fuchow-foo, Ningpo, and Shanghai, which agreeably to the treaty of Nankin, are to be resorted to by British merchant-vessels, cannot be declared to be opened for the purpose until an imperial edict to that effect shall be received from the cabinet of Peking. The edict is expected to reach Canton early in the month of September, and immediately public notice will be given of its arrival. In the interim measures will be taken for the appointment of consulated officers, and their establishment to the ports in question, in order that no unnecessary delay may take place in the commencement of trade at them; and merchants may make their arrangements accordingly.

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#### CURRENTS OFF THE CAPE.

*Stockholm, 26th Aug., 1843.*

SIR.—In reference to your note at the bottom of p. 532, in your number for August last, in which you attempt to shew that, “the idea of a current almost

*always* setting to the westward round Cape Lagulhas is erroneous, and has occasioned the loss of ships;" by quoting the case of the Northumberland, and others of recent date. I need only observe that, they should have known by their chronometers and soundings that they were sufficiently to the westward before hauling to the northward, and the current whether easterly or westerly, had nothing to do with the loss of these ships.

With reference to the log of the Unicorn, I have to observe that, on her passage out she ran to the eastward between the parallels of  $39^{\circ}$  and  $40^{\circ}$ , where the current is almost always running to the eastward, while on the bank off Lagulhas, between the Cape and the parallel of  $37^{\circ}$ , where the Unicorn found the westerly current on her passage home, the current is "*almost always*," that is, five out of six days running to the westward, at the same time that the easterly current prevails in the parallels of  $39^{\circ}$  and  $40^{\circ}$ , being the reason why outward bound ships give the Cape a wide berth, as also why they cross the bank of Lagulhas on the homeward passage, and for which reason a light-house ought certainly to be erected on the Cape; and I consider the log of the Unicorn to be only one of the many proofs I have had of the facts I have stated, namely, that the current, while running to the eastward between the parallels of  $39^{\circ}$  and  $40^{\circ}$ , is running "*almost always*" to the westward between Cape Lagulhas and the parallel of  $37^{\circ}$ , and no ship should haul to the northward until it is known by chronometer or soundings, that she is sufficiently to the westward. A light on Cape Lagulhas would be very useful to homeward bound ships, but would seldom be seen by those outward bound, which had no occasion to call at the Cape.

I am, &c.,

JOHN ROSS, Captain R.N.

To the Editor, &c.

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#### THE INDIAN ARCHIPELAGO.

(Continued from p. 622.)

CELEBES.—This island does not exactly come within the limits I have prescribed for myself in this memoir, but it is deserving of mention, owing to the prominent position it takes from its inhabitants being almost entire engrossers of the trade in all the islands eastward of Java, in which there are not European establishments. The peculiar form of this island renders it highly favorable for the residence of a maritime people, since, although containing only 50,000 square miles, it possesses a sea coast of 2,500 miles in extent, there being no part of the country distant more than thirteen leagues from the sea. The Dutch have two settlements on the island, Macassar on the south-west, and Menado on the north-east extreme; but the territories appertaining to these are not very extensive, the natives having successfully resisted the attempts of the Dutch to extend their authority over the entire island. The Bughis (as the inhabitants of the southern arms of Celebes are called,) are more addicted to maritime enterprise than those to the northward, from the southern portion of the island being better situated for intercourse with Singapore, and with the islands to the southward and eastward, than the northern. All the produce collected by them during their voyages among the eastern island is carried to our settlement at Singapore, where it is exchanged for calicoes, iron, muskets, gunpowder, and many other articles of British and Indian manufacture, these being the principal goods with which they purchase the produce of the more eastern islands. Nearly the entire male population of the Bughis countries are employed in trade, agriculture being so little attended to, that their supplies of rice and tobacco, and of the cotton employed in their manufacture, is derived from Bali and Lombok. While the men are away on their voyages, the women employ

themselves in the manufacture of cloths, and variegated mats, which are highly prized throughout the Archipelago, these being almost the sole exports from the Bughis countries. Their prahus rarely exceed in size 100 tons, as a great draught of water would prevent them from entering the small rivers on which their towns are situated.

The Bughis are much addicted to colonization; they have occupied the mouths of all the large rivers on the east coast of Borneo, and several of those on the south coast; they have also colonies on Sombewa and Flores or Mangera, while there is scarcely a port in the Archipelago in which anything approaching to freedom of trade is permitted, where there are not many Bughis established; individuals among them often possessing considerable wealth. Their settlements are formed upon the principles of the ancient Greek colonies. A chief, generally the brother or younger son of a Rajah, anxious to become an independent prince, fixes upon some spot adapted to the purpose, and removes thither with his dependents and their families, and with as many adventurers as he can induce to accompany him. The spot selected is generally the mouth of some river, by means of which the interior can be penetrated, and a commerce opened with the aborigines. The new colony does not acknowledge the authority of the mother country, but friendly relations are generally maintained between them.

The Dutch settlement at Macassar is small and of little importance, except that it acts as a check on the commercial enterprise of the Macassars, who are even more skilful navigators than the Bughis. The trade of the eastern islands was once chiefly in their hands, but the prohibition on the importation of British calicoes at Macassar, together with the great discouragement given by the authorities to intercourse with Singapore, has enabled the Bughis successfully to rival them in all branches of the eastern trade, excepting that with the north coast of Australia, which being a fishery, and not requiring articles of European manufacture, the Macassars still retain. Several prahus from Macassar visit Singapore annually, but these dare not enter their own port on their return, and pass on to the eastward, visiting Macassar only when loaded with the produce of the eastern islands. The duties are high at Macassar, the most insignificant articles, even the salt fish brought from Port Essington, being taxed. Many Chinese reside at Macassar, all of whom occupy themselves as traders.

I need say nothing respecting the general character of the Macassars, as you have had many opportunities of witnessing their industry and good conduct during their annual visits to this settlement.

The Dutch settlement at Menado, on the north-east extreme of Celebes, although more recently formed, is of more importance than Macassar, the north coast being less favourably situated for commerce than the southern parts; more attention is paid by the natives to agriculture, and a large quantity of coffee is produced by them; this was formerly collected by small Dutch vessels from the Moluccas, and carried to Batavia, to which port only the large Dutch ships from Europe resorted. But within the last few years the Java government has altered its policy, the European ships being allowed to collect their own cargoes among the adjacent islands. Two or three ships of about 800 tons now annually collect cargoes on the north coast of Celebes, and proceed with it direct to Holland. The Dutch have succeeded in appropriating to themselves nearly the entire trade in coffee on this coast, only a small portion finding its way to Singapore.

The Badju Laut, a people living entirely on the water in prahus, congregate in great numbers on the coast of Celebes. With the westerly monsoon these spread themselves over the eastern seas in search of trepang and tortoise-shell, extending their voyages to the north-west coast of Australia, about Cape Londonderry, and Admiralty Gulf; they occasionally visit the north coast also, but I have seen only one Badju prahu in Port Essington. They carry several small light boats, from which they spear the turtle, which they also catch by means of nets. They appear to be an enterprising people, and are remarkably quiet in their manners.

**BALI.**—The island of Bali lies immediately to the eastward of Java, from which it is separated by a strait only three miles wide at its northern entrance. Bali is about 200 miles in circumference; a chain of mountains extends along the north coast, from five to twenty miles inland, terminating in the Peak of Bali; and another runs in the same direction (east and west), about twenty-five miles to the southward of the former; on these mountains are several extensive lakes, the waters of which are used for irrigation, rendering this one of the most fertile islands in the Indian Archipelago; the population is about 700,000. The Balinese have hitherto maintained their independence.

Bali is divided into eight states—of these, Badong on the southern extreme of the island, although one of the smallest, enjoys the most extensive commerce; this state consists of a peninsula, containing about 50 square miles, joined to the main by a low neck two miles wide, with about the same extent of territory on the main land. During the south-east monsoon ships anchor on the west side of this isthmus they lie here perfectly sheltered from the prevailing winds; but a long swell coming from the Indian Ocean often interrupts communication with the shore. During the westerly monsoon, ships lie on the other side of this isthmus, where they can haul into a very snug anchorage between two reefs. An European mercantile house, the head of which is an Englishman, is established here, and the trade is chiefly in its hands, although an agent of the Dutch Commercial Society also resides in the place. The chief portion of the produce of Badong, consisting of rice, coffee, and tobacco, is exported to Singapore, the return cargo being composed of European manufactures, opium and Chinese coin; an intercourse is also maintained with our Australian colonies and the Mauritius, by means of British vessels which export rice, coffee, Indian corn, cattle, and pigs; about 4,000 tons of rice are annually exported from Badong, a considerable portion of which is collected in small vessels from the other states; Badong is the only port in Bali frequented by European ships.

The ports next in importance to Badong are Bliling on the north, and Karang Assam on the east coast; these, together with many smaller ports on the north coast, are visited by many vessels belonging to Chinese of Java, for the purpose of obtaining rice, cotton, and tobacco; but the trade is principally in the hands of the Bughis, whose prahus swarm upon the coast, bringing goods direct from Singapore. A considerable quantity of coffee is carried to Singapore from the north coast of Bali, the greater portion of which is smuggled from the eastern districts of Java, where coffee is a government monopoly; the revenues of the native ports are generally farmed by Chinese, there being many traders of that nation on the island.

Although Banyu Wangi, the easternmost settlement of the Dutch on Java is only three or four miles distant from Bali, very little commercial intercourse exists between them. The cultivation of coffee in the eastern districts of Java has lately been greatly increased, the whole of the produce being claimed by the government at a fixed price. When I was at Banyu Wangi, in the early part of this year, three Dutch ships from Europe of 800 to 1,000 tons burthen, were lying there, taking in cargoes of coffee.

(To be Continued.)

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#### THE NORTH-WEST PASSAGE.

*Manse of New Luce, by Glenluce, Nov. 23rd, 1840.*

**SIR.**—Having seen lately an extract from the *Quarterly Review*, concerning the practicability of the North-west Passage; and knowing that you have long taken a warm interest in that subject; I beg leave to inform you that, I was surgeon in a whale-fishing ship, the *Lion* of Liverpool, in the North Seas, between



Greenland and Spitzbergen, during the summers of 1799 and 1800; that in 1800 we found our ship in  $81^{\circ} 41'$  of N. latitude, and in  $11^{\circ}$  E. longitude of London.

In this high latitude, we saw very little ice, after we passed the island of Spitzbergen; and indeed, no ice of consequence to interrupt our sailing north, as far as we could discern from the masthead; but seeing only few whales there, we turned back toward the south in search of them.

Our officers thought they could have easily carried the ship to the North Pole; and they were fully persuaded that a communication exists between the North Sea and the Pacific Ocean, (at Bherings Straits, or somewhere else,) from a steady current, which runs nearly from north-east to south-west; by which current the pieces of ice are closely packed together upon the coast of Greenland, which makes it dangerous for ships to approach the said coast; and the same current opens up the ice, on the western coast of Spitzbergen.

Should any further steps be taken in this matter, it would surely be desirable, both in a scientific and national view, to go to the North Pole itself; and withal, to sail along the west coast of Spitzbergen, which is in general safe, would be the nearest way of reaching the Pacific ocean, by Bherings Straits.

I have been clergyman in this parish of New Luce for upwards of thirty years; and, nothing could have induced me to trouble you on this subject, but a desire to promote the public good, and I hope you will excuse me.

You will be pleased to observe that, although we found the sea almost clear of ice where we made the observation, in the summer of 1800; it by no means follows that it should be always so, for the ice is shifted by winds, tides, and currents; and I may add, that the positions of pieces of ice are also affected by the power of attraction; and the reason that ice is in general formed first near the land is, that the water is there smoother.

I have the honor, &c.

To Sir John Barrow.

WM. McKERGO.

[\* Sir Edward Parry reached  $82^{\circ} 35'$ .]

H.M.S. SAMARANG.—By accounts just received from Sir Edward Belcher we are happy to find that, the recent reports, respecting the loss of this ship, have been greatly exaggerated. It appears that the Samarang had arrived in the river Sarawak from Singapore, after considerable difficulty from the perfect inutility of the charts; and Sir Edward having visited the Dyaks, antimony mines, gold washing, &c., was moving on to Borneo Proper, in company with Mr. Brooke, when in going down the river, unhappily the Samarang touched on the edge of a bank, fell over and filled. There was no doubt of the ship being recovered unhurt when the accounts left, but the inconvenience arising from the accident will be great, and losses heavy. It is, however, gratifying to find that the chronometers and most of the instruments, which we perceive have been valued in the public prints at £35,000, were landed without injury. It was expected when the accounts left that the ship would be afloat in three days.

#### BOTTLE PAPERS.

(Continued from p. 627.)

London Docks, Oct. 12th, 1843.

SIR.—The enclosed was picked up by me in latitude  $10^{\circ} 25'$  N., and longitude  $14^{\circ} 45'$  W., near the river Broat, on the west coast of Africa, on the 28th of July, 1843.

I am, &c.,

To the Editor, &c.

THOS. FLIGHT,  
Commander of the brig *Nunex*.

" Kinnear, from Sydney, New South Wales to London, 1843,  
latitude north 6° 6', longitude west 24° 29'.

" This bottle is thrown overboard to ascertain the course of the current by

" HENRY KELSALL, M.D., Surgeon R.N.,

" Passenger in the *Kinnear*.

" Have the kindness to forward this paper to the Editor of the *Nautical Magazine*, London, informing him where and when the bottle was found."

[We have inserted above the contents of the paper sent to us by the Commander of the *Nunetz*. Mr. Kelsall, will, perhaps, be so good as to send us the date when the bottle was thrown overboard, which, unfortunately has been lost.]

*The following are notices of the William Torr's Casks in our Bottle Chart.*

*Hull*, August 27th.—The Antilles arrived here to-day from Venice and Trieste • • • On the 17th ult. lat. 46° 11' N., long. 17° 30' W., picked up a large oil cask branded "William Torr," supposed to belong to the missing whaler.

*Quebec*, October 12th.—The *Vigilance*, Spence, from Riga to this place, picked up a cask of oil marked "William Torr," in lat. 52° 40' N., long. 36° 27' West.

*Yarmouth*. November 8th.—The *Wisbeach* arrived here, picked up a large blubber cask, with several pieces of blubber in it, marked "William Torr," in lat. 48° 45' N., long. 38° 34' West.

*Greenock*.—The Francis arrived here from Mobile, on the 2nd instant, lat. 55° 5' N., long. 19° W., picked up a cask about two-thirds full of blubber, branded on each end "William Torr,"—scratched mark 205 gallons. The cask is pretty much scratched, apparently by ice, and two of the iron hoops are gone. As there were few barnacles sticking on the cask, it is supposed not to have been long in the sea. The Francis passed next day what appeared to be the one-half of a large vessel, and fragments of boats, &c., but as it was blowing hard at the time, could not ascertain any thing about them.—*Shipping Gazette*, February 21st, 1837.

*Greenock*.—Arrived here this day (March 21st,) the *Tropic*, (Jackson,) from Mobile. On the 16th picked up in lat. 55° 15' N., and long. 10° 20' W., a cask of blubber branded on both ends "William Torr," scratched on the bilge 145, was covered all over with barnacles, had lost two hoops, and is about two-thirds full.—*Constitutional*, March 25th, 1837.

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#### NAUTICAL NOTICES.

**RAWSON SHOAL, China Sea.**—The Christopher Rawson of London, was lost on the 2nd May, on a bank in the China Sea, bearing E.S.E. from Pulo Sapata about twenty miles. It has about 14 feet water over it. The vessel after striking got off again, but went down in about two hours.

A shoal is laid down in the chart of the China Sea, a few miles to the westward, with the position marked doubtful, and which is no doubt the Rawson's Shoal.

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**COAST OF MOROCCO.**—In consequence of several boats' crews having landed lately, from shipping of various nations, on the open coast of Morocco or West Barbary, in search, it is supposed, of water, or other provisions; the Moorish authorities are desirous that all persons be cautioned that it is not only against the law of this land, and against the sanitary regulations to embark on any part of the coast, in places where there is not a port open for their reception, but that, in consequence of strict injunctions given to the people of this country

by their government to prevent any persons whatever setting foot on land, or approaching near to it on the open coast, the lives of those who infringe the laws in such respect are exposed to danger.

The undersigned feels it, therefore, his duty to give all the publicity he can to this notice, for warning all commanders and masters of vessels, and especially those navigating under the flags either of the United Kingdom of Great Britain and Ireland, or of the kingdom of Hanover, or of the Hanseatic Republics of Lubbeck, Bremen, and Hamburg, not to venture, upon any account, to land, or allow any person under their care or orders to land, or approach within musket shot of the coast of Morocco or West Barbary, excepting within the harbours of any of the well-known ports of this country.

E. W. A. DRUMMOND HAY,

Tangiers, Sept. 15, 1843.

*Her Britannic Majesty's Consul-General, &c.*

**LIGHT OF TERIKUGEN.**—The newly-erected Strand Light on the Western harbour dyke of Terikugen, is placed S.b.E.  $\frac{1}{2}$  E. of the steeple of Middleburg, and W.b.S. of the Osseniss, by uncorrected compass, and will, for the first time be lighted on the 15th instant, and be kept burning the whole of the night, showing a fixed clear light.—*Shipping Gazette.*

*Trinity-house, London, Oct. 17, 1843.*

**GALLOPER LIGHT-VESSEL.**—Notice is hereby given, that the Galloper Light Vessel (which is at present under repair) will, on resuming her station in place of the temporary light-vessel now moored thereat, exhibit Two Red Balls, one at each masthead. The appearance of the lights from this vessel during the night will remain as heretofore.

**SWIN MIDDLE LIGHT-VESSEL.**—Masters of vessels, pilots, and others, are requested to observe that the vessel now at this station has One Mast only, but that the light exhibited therefrom revolves as heretofore.

J. HERBERT, *Secretary.*

**SHOAL BETWEEN GOTHLAND AND OLAND.**—The Board of Admiralty hereby make known that, in consequence of it having been communicated to them that a shoal had been discovered between Gothland and Oland, in lat.  $57^{\circ} 33'$  N.; and long.  $35^{\circ} 48'$  E. of Ferro, with four fathoms water on the shoalest place, they have had the said shoal explored, and find it to be situated in lat.  $57^{\circ} 33' 30''$  N., and longitude  $35^{\circ} 32'$  E. of Ferro, or  $8\frac{1}{2}$  English miles more westward than the first mentioned, and with  $6\frac{1}{2}$  fathoms on the shallowest place. This shoal, with a gradually increasing depth to 8 fathoms, is in length from north to south  $4\frac{1}{2}$  cables length, or 1400 Swedish ells, and in breadth from east to west of  $2\frac{1}{2}$  cables length, or 700 Swedish ells; and on the north and south has a long rocky shoal to 12 fathoms depth, especially in the south, and it is more suddenly deeper on the west side of the main shoal. The place where the first mentioned shoal was said to be was also surveyed, and on it a depth of 54 to 69 fathoms was found; but from communications received it is probable that a shallower part may be somewhere in the neighbourhood, although, notwithstanding much pains has been taken, it has not yet been discovered. In the mean time the Admiralty has thought it right to make known the discovery of the said shoal, also the communications; and that, it is probable from a further survey, a shallower part may be found.—*Translation from the Swedish Gazette, Stockholm, 25th August, 1843.*

[N.B.—The fathoms are Swedish.]

**WRECK AGROUND IN BANCA STRAIT.**—*Extract*:—On the 17th of August at noon, I sent a boat to examine a wreck, which turned out to be an English

barque, with lower mast heads above the water, in 7 fathoms, in latitude by observation  $3^{\circ} 27' S.$ , longitude nearly  $106^{\circ} 14' E.$ , Lucepara Island bearing N.b.W. 13 or 14 miles. As this vessel lies in the direct course of ships entering or leaving Banca Strait to the southward the earliest notice of her position to navigators is desirable.

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*Hydrographic Office, Oct. 12th, 1843.*

**LIGHT ON CAPE CARVOEIRO.**—The Portuguese Government has given notice that a revolving light has been established on Cape Carvoeiro in lieu of the former fixed light on that Cape.

The period of revolution is two minutes. The height of the light is 182 feet above the level of the sea; it stands in lat.  $39^{\circ} 21' 8'' N.$ , and long.  $9^{\circ} 24' 16'' W.$ , and is visible at the distance of 5 to 6 leagues.

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*Hydrographic Office, Oct. 12th, 1843.*

**CRONBURGH LIGHT.**—The Danish Government has given notice that the improvements in the light of Cronburgh Castle, alluded to in the notice from this office, dated Sept. 7th, 1842, have been completed; by which the light is rendered visible at the distance of 3 to 4 leagues.

**FALSTERBO LIGHT.**—The Swedish Government has given notice that a fixed light from lamps has been substituted for the coal fire light previously in use in this light-house, in pursuance of arrangements alluded to in notices from this office, dated 5th July, 1842, and the 2nd of January last.

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PIRATES ON THE COAST OF BORNEO.

From the Singapore Free Press.

On the 15th ult. we mentioned that the boats of Her Majesty's ship *Dido*, Captain the Hon. H. Keppel, had several times encountered pirates on the coast of Borneo, and that on some of these occasions considerable execution had been done. The *Dido* has since returned from Borneo, and we learn that her operations were more extensive and systematic than what we then imagined them to have been. We are enabled to give a detailed account of the proceedings adopted by Captain Keppel, which we have no doubt will prove highly interesting. Were as vigorous measures adopted towards the pirates in our immediate neighbourhood, the same good results would flow from them as we have no doubt have been produced in Borneo.

On the arrival of the *Dido* off the coast of Borneo in the beginning of May last, the ship's boats were despatched under Lieutenant Horton, with orders to visit the islands of Marundum and South Natunas, and join the *Dido* at Sarawak. The party was accompanied by Mr. Brooke, who, from his thorough knowledge of the Malay language, as well as his acquaintance with the appearance of the piratical boats, was a valuable addition to the party.

This party on arriving off Marundum, suddenly came on five large prahus with several smaller boats, each prahu rowed with about 40 paddles, with from 60 to 70 men, and they were well armed with guns, and other firearms. The pirates did not allow the *Dido*'s boats to close, but cutting their boats adrift they made off, firing at the same time, and being followed by the men-of-war's boats, who returned their fire, but through their extraordinary swiftness in rowing they made their escape in the direction of the Natunas. On the following night the *Dido*'s boats arrived off the south coast of Pulo Serhassen, where they anchored, and next day six prahus came towards the boats, beating tom-toms, and making every demonstration for fighting. The British boats (three) formed abreast and advanced, the prahu still coming on cheering and beating

their tom-toms, and at the same time the pirates detached three of their smallest boats in shore to take the English boats in flank, and cut off their retreat. Mr. Brooke observing that they were not the regular piratical craft, and supposing that they might be the inhabitants of the island, held up a white flag of truce on his spy-glass, but they disregarded this, and when they had come within a distance of about 150 yards, a smart fire was opened from all the six prahus as well as the shore, which was then returned by a destructive fire of grape and canister and small arms.

The pirates on this ceased to advance, but continued firing for some 'minutes afterwards, when one of the prahus gave in and asked quarter, and the other five, chased by the two cutters, made for the shore, keeping up a fire to the last. The pinnacle took possession of the prahu that struck, and the others were likewise taken possession of, which latter all proved to belong to the island, mounting three brass guns each, with a crew of 30 men, well armed with muskets, spears, and cresses. The prahu that first struck was the same size as the others, and was ascertained to belong to a rajah at Rio, by whom it had been sent to collect tribute. The pirates declared that their attacking the English boats was an accident, as nothing would have induced them to fire on the British flag had they made it out, but that the rising sun was in their eyes, and they did not discover their mistake till after they had commenced the action, which they continued in despair of receiving quarter. Ten dead men were found in their boats, four mortally and eleven severely wounded, and several others were carried on shore by their friends before the boats were taken possession of. As their story was plausible, and they had suffered so severely, Lieutenant Horton thought it right to release them with a caution.

Their plan of attack had the appearance of having been arranged by some one experienced in such warfare, and they afterwards admitted that they had 200 men concealed in the jungle ready to attack the British had they attempted to land.

In rounding Tanjong Datu on the 9th of May, the Dido came upon three suspicious-looking prahus, whom she chased into a small rocky bay, but, owing to a strong current keeping the ship in such a position that she could not get her guns to bear, the pirates succeeded in escaping, the Dido's boats being absent on the service above-mentioned. From the description, they appeared to belong to the same fleet as the five prahus encountered by the boats off Marundum.

On the 17th of May, Mr. Brooke having lent a boat, Lieutenant Hunt with twelve seamen and four marines was dispatched in it to cruise off Cape Datu and protect any vessel that might arrive. About 3 o'clock on the morning of the 21st, while they were at anchor off the Cape, it being very dark, they did not perceive two prahus, who rounded the point within 30 yards of them, and immediately assailed them with shot, and musketry, and a shower of stones, and even after a 10-pounder which was in the boat had been brought to bear, they persisted in the attack until a round of grape swept off the men from the paddles on one side of the nearest prahu, when one of them thought fit to sheer off, and the crew of the other jumped overboard, and were nearly all shot in the water. The other boat succeeded in escaping, having been taken in tow by a third large prahu. The slaughter amongst the pirates in this case must have been very considerable, but neither in this nor any of the previous fights were any of the Dido's men hurt.

Being aware of the dangerous extent to which piracy was carried on with impunity on the coast of Borneo, and also considering the number of British vessels that must annually pass the island on their way to China, as well as the extensive trade carried on between Borneo and Singapore, Captain Keppel made enquiries with the view of making such an example of some of the worst of the pirates as would have the effect of making them respect the British flag at least. He ascertained that the most formidable came from the Seribas River, situated about 50 miles to the north-east of Sarawak, who were repre-

sented as at once the scourge and dread of the coast, acknowledging no superior power, although their settlement formed part of the Sultan of Borneo's territory. They were in three divisions, living up three different branches of the same river, and were composed of a mixture of Malays and Dyaks, and united could send to sea a force of 120 war prahus, carrying from 40 to 100 men each. They lived high up the river in strongly fortified positions, and although they had been besieged several times by the united forces of the surrounding rajahs, they had never been conquered. Their piracy was represented as being of a much worse and more cruel nature than that of the Saloo or Lanoon pirates, as the latter preserved the lives of their captives and sold them as slaves, whilst the Seribas pirates never gave quarter, looking only for heads and plunder, the Dyaks' share being the heads, and the Malays getting the plunder.

On receiving this information Captain Keppel resolved at once to attack these pirates in their strong holds, and by burning and destroying their forts, war boats, and houses, and laying waste their country, teach them what they might expect should they again attempt to molest a vessel under the British flag. Lieutenant Horton was accordingly directed to fit out the Dido's boats, as well as that borrowed from Mr. Brooke, and a tope was procured to carry a month's provisions for the expedition. All the adjoining chiefs applied to be permitted to send boats to join the force, and as Captain Keppel thought they would be useful in destroying fruit trees and molesting the pirates in the jungle, their request was acceded to,

On the morning of the 6th of June, Lieutenant Horton entered the Seribas River, with a force of 95 officers and men from the Dido, followed by about 300 natives, with orders to carry into execution the plan Captain Keppel had proposed. The three settlements of the pirates were at Paddie, Pakoo, and Rembas. Of these Paddie was the principal and furthest off, being situate upwards of 100 miles from the mouth of the river; the other two were nearly the same distance up different branches of the Seribas; the first branch, leading to Rembas, turned off to the left about 40 miles from the entrance, and the second, to Pakoo, about 20 miles further up on the same side. One difficulty which the boats had to guard against, after passing Boling was a bore, which was said to roll in with a terrific rush with the first of the flood tide, and to avoid which it was necessary to anchor the boats at particular spots, and await its arrival, so that it was the afternoon of the 11th before they appeared before the forts at Paddie, which they found situate on an elevated tongue of land formed by the river branching off to the right and left.

Just within point blank range of the first fort (which commenced firing on our boats the moment they hove in sight) was a strong barrier of large trees drawn across the river, which detained them for a little under the fire of the enemy, during which time we had three men wounded without being able to bring the gun to bear. The barrier was, however, cut through, and a party landing from the lighter boats, the three forts were quickly carried; and our native followers arriving soon after, the village was pillaged; and by eight o'clock the whole country for a mile round was one continued blaze. No prisoners were taken, and the killed and wounded were immediately carried off by their friends. The news of the approach of the British force having reached them several days before, they were enabled to remove all their valuables, together with their women and children. The next morning was employed in cutting down all the cocoa-nut and fruit trees, and burning and destroying war-boats, grain, &c.

In the afternoon Lieutenant Horton, leaving a strong guard, proceeded 12 miles up the left hand branch of the river towards the Dyak village of Lyai, the Malay part of the population living at Paddie. After dark the Dyaks came down in great force, assailing the expedition on all sides from the banks with spears, stones, and occasional musketry, and delaying their progress by cutting down large trees across the river, which here grew very narrow and shallow. The night being both dark and rainy, they anchored about midnight opposite

a clear spot at the bend of the river close to the outskirts of the village; and, having landed the marines as a rear guard, the party took up a defensive position until morning. During the night they were repeatedly attacked by the Dyaks, who came down in large force under shelter of the jungle, when they would have burst suddenly out, uttering their war yells, within pistol shot of the boats, and assail them with stones and spears; but they fortunately did little or no harm to the invading force, while they must have lost numbers from the deadly fire of musketry, as well as grape shot, that was poured upon them. One marine only of the Dido's party was badly wounded by a musket shot; but it was their last hope, our boats then being close to the village containing their goods, wives, and children.

At daylight they came down with a flag of truce, offering to come to any terms, which was accepted, the severe lesson they had received being taken into consideration. The chiefs then came down and agreed to abstain for ever from piracy; but, although they were the principals of the Seribas pirates, still they were forced to admit that they had not sufficient control over the other tribes to become responsible for their good behaviour, so that Lieutenant Horton visited both the settlements of Pekoo and Rembas, inflicting on them the severe lesson which he had bestowed on the pirates at Paddie. Although both these places were larger and equally as well fortified as Paddie, they were so panic struck by the news that had reached them that they made no attempt at defence, but suffered considerably more from the English followers, who had been greatly reinforced by 900 Dyaks from the River Singar, and the consequence was, that many more lives were lost on the part of the natives.

Never had any race of people less excuse for piracy, as it is impossible to imagine a richer or more beautiful country, or one more gifted by nature. The houses were full of grain, the whole country studded with cottages and fruit trees, all of which were destroyed, and their poultry, goats, and bullocks carried off, and upwards of 40 war boats burnt. One new boat measured 92 feet in length. Many iron guns were taken and a few brass *lelas*, but there must have been many hid, which our people were unable to find. Four prisoners were taken at Rembas, who are to be held as hostages until the chiefs have fulfilled their promise of meeting the Sultan of Borneo at Sarawak, and there entering into solemn compact, after their own fashion, to abstain from piracy, a business, the superintendence of which Mr. Brooke has kindly undertaken.

It appears from the evidence adduced by Captain Keppel before the Court of Judicature on the Admiralty side since he arrived here, with the view of enabling the officers and men belonging to the Dido, who were engaged with the pirates, to claim head money under the act 6 George IV., c. 49, and that on the 22nd of May twenty-three pirates were killed, and the aggregate number of the crews of the two vessels which attacked the Dido's boats on that occasion could not have been less than sixty-seven, and for these the Dido's officers and men are entitled to receive 20*l.* for each head of the killed, and 5*l.* for each of the others, so that they will receive altogether 795*l.*

ON THE LOSS OF STEAMERS.

Sept. 8th, 1843.

MR. EDITOR.—In your number of last month, I see the affecting narrative of the wreck of the Pegasus steam vessel, accompanied by a letter making some *general* and suitable observations, with suggestions of plans, good as far as they go, for adoption, in order to lessen the disasters, which, on several occasions have befallen steam vessels. But what to some nautical men seems the main, if not the sole cause of the loss of life, in this and the similar case of the Solway, is, not at all

adverted to; viz.: that steam vessels striking on rocks, when at full speed, in the very nature of things, must, almost inevitably be supposed to sustain such an extent of injury as to make it the imperative duty of every wise and prudent commander, with such examples before him, previously to reversing the engines, to examine the damage inflicted on the bottom of the vessel, as the neglect of this salutary precaution, nine times out of ten, under similar circumstances, it is feared may probably lead to the same awful and sudden disasters by the vessel immediately sinking, on being got afloat.

It has been remarked, by a naval officer, writing on the same subject, in the *Times* newspaper, of the 1st of August, that "the effort to back off the Columbia at once, providentially failed, and thereby, her passengers and crew, were afforded the means of saving their lives."

Now, Mr. Editor, as far as I am aware, and I have taken in the *Nautical* from its commencement, no observations of similar tendency to those above having ever appeared in your useful and widely circulated pages, I am induced to trouble you with them, humbly hoping they may prove useful suggestions, to surviving commanders of steam vessels, who in future, may have committed to their charge, respectable, but helpless and confiding passengers, good officers and crews, and valuable property; but who, possibly are of the same, as some humbly conceive, erroneous judgment, as the one alluded to, and who appear to have been, the undesigned cause of so much disaster, and painful distress.

STERATUS.

LOCAL ATTRACTION.—We give the following as we received it, that it may serve as the warning to others, which the writer wished it to convey. The effects might have been anticipated.—"I sailed from Hull to St. Petersburg, loaded with goods and machinery, lead, and 12 tons of best steel. In going across the North Sea towards the Scaw, I found the ship 20 miles to the eastward in one day's run, with a S.S.W. wind; ship going $6\frac{1}{2}$ knots at the time, and steering very well, I could not account for the reckoning being so far out of the way. When I got in the Cattegat, I was obliged to come to an anchor, being calm and a strong current from the south. The sun set clear I took an amplitude and found the compass to be correct or nearly so; when I got in the Baltic I found the course steered would not take me from one head land to the other. I thought there must be something the matter with the compass, otherwise the binnacle; I got up another compass but found it the same. I then took it on the main deck and found two points difference from the one in the binnacle. I took it on the fore-castle, and found one point difference from the one in the binnacle. I took it on the taffrail and found it to be the course I wanted; the ship going at the time along the land about east the direct course, when E.b.S. $\frac{1}{2}$ S. A thought came into my head I had 12 tons of steel, and the most part of it stowed in the after hold. I make this observation, merely to warn my brother seamen when it falls in their way to have a cargo like the one I had on board.

June 6th, 1843.

ROBERT HAIGH, brig *Aire of Gooles*.

THE CYGNET, has been (per lunar months) $3\frac{1}{2}$ years in commission; and during her three years on the coast has been actively cruising or blockading the whole of that time, with the exception of a few days at St. Helena and Ascension, during which period she must, having been constantly at sea, have traversed at least 70,000 miles. She has captured some of the fastest slavers on the coast, and chased many others off her station, compelling them, in some instances, to throw everything overboard, even to starting their water to effect their escape. The Cygnet has been remarkably healthy, and not a single death

has occurred from the fever of the country, although exposed to six rainy seasons, in the Bight of Benin, the most unhealthy part of the coast. This may in a great degree be attributed to her roomy and well ventilated lower deck, being, on most occasions, enabled to keep the scuttles out both day and night; whilst the Rolla, Buzzard, Lynx, Forester, and Saracen, suffered dreadfully from want of proper ventilation. Most of these vessels had one or two Commanders, and almost a complete change of their officers and crew during the three years.

The Cygnet has returned to England in consequence of her lower masts and bowsprit (which are too slight, and were originally indifferent spars) being sprung, and lower rigging rotten from constant wet. The topmasts are reefed, supported by a shore under the heel and chain slings through the fid-hole, so that she is enabled to carry all her sails, with the exception of the reefs in the topsails, whilst the sprung masts are of course greatly relieved. The squadron are in general healthy, though some deaths had recently occurred. Since the new Portuguese Treaties have been in force the slave trade is quite at a standstill. We have been cruising for six months at a time, without even seeing a sail, and some of the cruisers have not made a single capture since they have been on the station. On this peculiar service, unless Jack has plenty of chasing to keep the devil out of his mind the Admiralty will do well in ordering cruisers to England every year to refit; the monotony at present is scarcely bearable.

PROCLAMATION ISSUED BY THE IMPERIAL COMMISSIONER, &c.

In a manifesto, couched in the high-flown phraseology of their country, the imperial Commissioner Keying, the Governor-General Kekung, and the Governor Ching-yuet-sai, expatiate on the condensing benignity of their "august Sovereign," in deigning to "cherish tenderly men from afar." They also promise that the treaty shall be observed with fidelity, and protected from evasion by the Majesty of the Emperor.

"Henceforth," says the Chinese proclamation, "the weapons of war shall for ever be laid aside, and joy and profit shall be the perpetual lot of all; neither slight nor few will be the advantages reaped by the merchants, alike of China and of foreign countries. From this time forward, all must free themselves from prejudice and suspicions, pursuing each his proper avocation, and careful always to retain no inimical feelings from the recollection of the hostilities that have before taken place; for such feelings and recollections can have no other effect than to hinder the growth of a great understanding between the two people."

With respect to such of the Chinese as had assisted the English, the following passage of the proclamation shows an extraordinary change from the cruel proceedings to which they were formerly subjected. This is another proof of the *persuasive* power of Sir Henry Pottinger.

"As to those natives of China who, in past days, may have served the English soldiery or others with supplies, and may have been apprehended in consequence, the High Commissioner has obtained from the good favour of his august Sovereign, vast and boundless as that of the Heaven itself, the remission of their punishment for all past deeds, and any such who may not yet have been brought to trial are, therefore, no longer to be sought after; while all who may have been seized and brought before Government are granted a free pardon."

The proclamation quaintly concludes:—

"From henceforward amity and goodwill shall ever continue, and those from afar and those who are near shall perpetually rejoice together. Such is the fervent hope of the High Commissioner and his colleagues; and in this hope they command implicit obedience to what is now thus specially promulgated."

By the proclamation of the Imperial Commissioner we observe that the trade is to be opened to *all nations*, but whether other nations are to be permitted to have Consuls at the five ports is not stated.

PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

The following Officers have been promoted in consequence of the Queen's Maritime Excursions.

ROYAL YACHT VICTORIA AND ALBERT.

Lieut. G. Snell, to be Commander.
Mates R. Coode and F. P. Warren to be Lieutenants.
Sec.-Master E. W. Cox to be Master.
Asst.-Surgeon H. A. Banks to be Surgeon.

ATTENDANT SQUADRON.

Com. W. J. T. Hood to be Captain.
Lieuts. H. Jauncey and J. H. Weller to be Commanders.
Mates H. T. Veitch, H. Charlton, and S. Pritchard to be Lieutenants.

PROMOTIONS.

CAPTAIN—E. J. Bird.
COMMANDERS—G. Winsor—J. F. L. Wood, A. M'Murdo, J. Sibbald.
LIEUTENANTS—H. Oakley, J. Dayman, P. Scott, T. E. L. Moore, E. Nicholls, T. P. Coode.
PURSERS—E. S. F. Cheesman, E. A. Smith.

APPOINTMENTS.

CAPTAINS—A. R. Sharpe, c.B., (1813) to go out in *Medway* steamer to hoist a broad pendant in *Imaum* at Jamaica—P. W. P. Wallis (1819) to *Warspite*—G. R. Munday (1837) to *Iris*—Sir H. M. Blackwood, Bart., (1837) to *Fox*—Lord Ingestrie (1827) to *Meander*—G. G. Burton (1814) to *Poictiers*.

COMMANDER—W. Maclean (1841) to *Apollo*.

LIEUTENANTS—W. Mould (1842) to *Excellent*—G. H. Clarke (1843), E. H. B. Proctor (1841), K. E. K. George (1843) to *Stromboli*—A. C. May (1838), and C. B. Warren (1839) to *Star*—R. A. Stewart (1839), E. Holmes (1841), and W. C. Chamberlain (1840) to *Hyacinth*—T. S. Hill (1833) to *Inconstant*—G. Sprigg to *Curlew*—C. Hadaway (1828) to *Penelope*—A. La Touche (1840) and F. G. Leigh (1843) to *Illustrious*—R. D. White (1840) W. L. Lambert (1842), and W. F. Parkinson (1842) to *Cornwallis*—H. Bullock (1843) to *Madagascar*—A. Little (1837), J. G. Bickford (1841), L. Heath (1840), and E. M. Mathews (1840) to *Iris*—C. J. Postle (1836) to *Flamer*—J. S. Rundle (1836), T. Tickle (1842), F. A. B. Crawford (1843), and F. P. Warren (1843) to *Fox*—W. Tringham, 1826) to be first of *Victoria and Albert*, and to command *Nautilus*—D. Woodruffe (1828) to command *Albert*—S. Morrish (1841) to *Imaum*.

MASTERS—W. Parsons to *Iris*—G. Grant to *Fox*—W. P. Birdwood to *Star*.

MATES—M. F. O. Reilly to *Excellent*—J. Corbet and A. Doyle to *Star*—J. R. M. Byng to *Locust*—R. B. Beale and J. Cartwright to *Caledonia*—J. A. Bridges and J. F. Tottenham to *Hyacinth*—I. Davis to *Flamer*.

SECOND-MASTERS—J. T. Sullivan to *Iris*—G. Williams to *Fox*—W. Wilkinson to *Formidable*—G. S. Hall to *Flamer*
SURGEONS—J. C. Folds to *Star*—E. Jeffrey to *Fox*—H. Graham, m.d., to *Stromboli*—A. Henderson m.d., *San Josef*—A. M'Kechine, m.d., to *Poictiers*.

MASTERS-ASSISTANTS—T. Yeatman to *Hyacinth*—W. G. Aldrick to *Warspite*—W. May to *Star*.

ASSISTANT-SURGEONS—J. M'Gregor to *Stromboli*—A. Graham, m.d., to *Fox*—W. M'Crear and H. M'Farlane to *Hyacinth*—G. A. Nicholls, m.d. to *Victory*—H. W. Horsell to *Talbot*.

MIDSHIPMEN—C. Shipley to *Excellent*—W. Peel to *Cumperdown*—D. C. O. Slaughter to *Caledonia*—W. Howard to *Hyacinth*—G. C. Lloyd to *Eurydice*.

VOLUNTEERS 1st Class—J. C. Riley, C. D. Robinson, H. Kelham, and H. W. Fenwick to *St. Vincent*—J. Hobbs to *Ceylon*—W. Irwin to *Hyacinth*.

PURSERS—G. Simmonds to *Iris*—H. Price to *Fox*—G. S. Bunn to *Penelope*—F. Siddall to *Stromboli*.

NAVAL INSTRUCTORS—G. F. Parker to *Tyne*—A. Gerand to *Monarch*—W. Johnson to *Indus*—J. L. Hodgson, B.A., to *St. Vincent*.

CLERKS—Warwick to *Rose*—Bowman to *Tweed*—Biddlecombe to *Fair Rosamond*—G. S. Singer to *Flamer*—J. Walker to *Hyacinth*.

SECRETARIES—H. Hunt, to Commodore A. R. Sharpe, c.B., at Jamaica—F. J. Fergen to Rear Adml. Bowles.

COAST GUARD.

Appointments—Lient. C. G. Clarke to command *Stag*—J. S. Godden to station

at Shanklin—Lieut. J. O'Reilly (a) to Hamborough Head—Lieut. E. Stade to Pennant.

Removals—Inspecting-Com. J. An-

draws to Dundalk—Com. A. Kellett to Waterford—Com. J. Nugent to Westport—Lieut. W. Sterne to Wexford—Lieut. C. Bagshot to Youghal.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ACORN, 16, Com. J. Adams, Sept. 28th, arr. at Plymouth, from Coast of Africa, Oct. 5th paid off.

BELLEISLE, 12, Capt. J. Kingcome, Sept. 28th paid off at Plymouth.

CYCLOPS, st. v. Capt. H. T. Austen, Sept. 28th paid off at Woolwich.

DEE, st. v. Sept. 25th at Portsmouth.

EREBUS, Capt. J. Ross, Sept. 23rd paid off at Chatham.

EURYDICE, 26, Capt. Elliott, Oct. 7th, left Plymouth for Cork, America, and West Indies.

FANTOME, 16, Com. G. P. Haymes, Oct. 8th arr. at Portsmouth from South America, 10th sailed for Chatnam to be paid off.

GRECIAN, 16, Com. W. Smyth, Sept. 25th arr. at Plymouth to be paid off.

HYACINTH, 18, commissioned at Sheerness, by Com. F. Scott.

MONARCH, 84, Capt. S. Chambers, Oct. 6th, arr. at Plymouth from Mediterranean, 11th sailed for Sheerness to be paid off.

PENELOPE, st. frigate Sept. 22nd, arr. at Spithead, 25th sailed for Plymouth.

RODNEY, 92, Capt. R. Mansell, Oct. 2nd, from Cape of Good Hope, 3rd, sailed for Portsmouth to be paid off.

TALBOT, 26, Capt. Sir T. Thompson, Sept. 20th left Portsmouth, 24th left Plymouth for Rio Janeiro.

TERROR, Com. F. Crozier, Sept. 23rd, paid off at Chatham.

THUNDERER, 84, Capt. Pring, Sept. 25th, arr. at Plymouth from Mauritius.

TWEED, 20, Com. H. D. Douglas, Oct. 13th, arr. at Plymouth from W. Indies.

VIRAGO, st. v. Com. G. Otway, Sept. 22nd, left Plymouth for Mediterranean.

PORTSMOUTH.—*In Port*—St. Vincent, Warspite, Tortoise. *In Harbour*—Victory, Excellent, Fox, Fearless, Emerald.

PLYMOUTH.—*In Harbour*—San Josef, Endymion, Apollo, Tweed, Star, Linnet, Peterel, Flamer, Echo, Confidence.—*In the Sound*—Caledonia, Camperdown.

ABROAD.

AGINCOURT, 72, Capt. H. W. Bruce, May 28th, arr. at Macao from Manila.

AIGLE, 24, Capt. Lord E. Paget, Oct. 5th at Corfu.

BEACON, sur. v. Com. T. Graves, Oct. 5th, Smyrna.

Beagle, sur. v. Com. J. Stokes, July 29th arr. at St. Helena, 31st sailed for England.

BELVIDERA, 38, Capt. Hon. G. Grey, Oct. 5th, Malta.

CASTOR, 36, Capt. C. Graham, Aug. 16th, arr. at Madeira.

CLEOPATRA, 26, Capt. Wyvill, August 1st, at Algora Bay.

COCKATRICE, July 3rd, at Monte Video, 5th sailed for Buenos Ayres.

CURACOA, 24, Capt. Sir T. Paisly, 16th June at Tenerife.

CURLEW, 10, Lieut.-Com. G. Ross, Aug. 24th at Bahai.

DEVASTATION, st. v. Com. Henry, 5th Oct. at Constantinople.

DIDO, 18, Capt. Hon. H. Keppel, 28th June left Singapore for China.

DUBLIN, 60, Capt. J. Tucker, June 5th at Valparaiso.

ESPOIR, 10, Com. A. Morrell, Sept. 5th, arr. at Seirra Leone, from Plymouth.

HARLEQUIN, 16, Com. Hon. G. Hastings, July 9th, left Singapore on a cruise.

HECLA, st. v. Com. J. Duffil, Oct. 5th at Malta.

HERMES, st. v. Lieut. W. Carr, Sept. 12th, at Bermuda.

HEROINE, 16, Lieut. Stewart, July 20th cruising off Kabendah.

INDUS, 84, Capt. Sir J. Stirling, Oct. 5th at Athens.

LILY, 16, Com. G. Barker, July 9th, at the Mauritius.

JUPITER, tr. ship, Master Com. R. Fulton, July 27th, at Singapore.

LOCUST, st. v. Lieut.-Com. J. Lunn, Oct. 5th Constantinople.

MAGICIENNE, 24, Capt. Warren, Oct. 5th, at Malta.

MAGPIE, st. v. Lieut.-Com. T. Brock, Oct. 5th, Athens.

MALABAR, 74, Capt. Sir G. Sartorius, Oct. 5th, Gibraltar.

MEDEA, st. v. Com. F. Warden, Oct. 5th, Malta.

MINDEN, Hospital ship, July 24th, arr. at Hong-Kong, from Chusan.

MODESTE, 18, Com. Baillie, Sept. 12th, at Madeira on way to Rio.

QUEEN, 110, Capt. G. F. Rich, Oct. 5th, at Malta.

RACER, 16, Com. A. Reed, Aug. 12th, arr. at Madeira from England.

RAPID, 10, Lieut. Earle, July 20th, cruising off Kabendah.

SAPPHIRE, troop-ship, Mr. G. H. Cole. May 23rd, arr. at Macao from Amoy.

SAVAGE, 10, Lieut. J. Bowker, Oct. 5th, Barcelona.

SCOUT, Com. J. Larcom, Oct. 5th, Barcelona.

SIREN, 16, Com. W. Smith, July 24th, arr. at Madras, from Trincomalee, 25th, sailed for Mauritius.

SNAKE, 16, Com. Hon. W. Devereux, Oct. 5th at Athens.

SPIKEFUL, st. v. Com. W. Maitland, Aug. 11th at Singapore.

THALIA, 36, Capt. C. Hope, Aug. 4th, left Singapore, for Calcutta.

THUNDERBOLT, st. v. G. N. Broke, 2nd June arr. in Table Bay from Simon's Bay.

VERNON, 50, Capt. W. Walpole. Oct. 5th at Malta.

VESUVIUS, Lieut.-Com. Ommaney, 5th Oct. at Athens.

VIPER, 6, Lieut. J. Curtis, July 1st, arr. at Monte Video, from Buenos Ayres 5th, sailed for Rio.

VIXEN, st. v. Com. W. Boyes, July 23rd, sailed from China.

WANDERER, Com. Troubridge, June 24th, at Singapore, July 9th, sailed on a cruise.

WASP, 19, Com. A. Drew, Aug. 4th, at Trinidad, sickly.

WINCHESTER, 50, Capt. Eden, May 15th, left Simon's Bay for the Mauritius, July 3rd, sailed for Bourbon.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Ostend, Sept. 23rd, the lady of W. H. Banks, Esq. Surgeon R.N., of a son.

At Southsea, the lady of J. Colwell, Esq., R.N. of a son.

Sept. 16th, at Alloa, Mrs. Duncan, widow of the late unfortunate commander of the Royal Mail Steamer Solway of a daughter.

Sept. 23rd, at Ostend, the lady of W. H. Banks, Esq. Surgeon R.N., of a son.

Oct. 7th, at Southsea, the lady of Capt. N. F. Edwards, R.N., of a son.

At Jersey, the lady of Lieut. Hogge, R.N., of a daughter.

In Stonehouse, the lady of Lieutenant Walsh, R.N., of a daughter.

Marriages.

At Walton-on-the-Naze, Sept. 7th, Mr. John Hodges, of University College, Oxford. late R.N., to Eliza, youngest daughter of Mr. A. Lewin, of Wormingford, Essex.

At Wadworth, Oct. 18, Capt. J. C. Ross, R.N., to Ann, eldest daughter of T. Coulman, Esq., of Whitgift-hall, Yorkshire.

At Langley, Norfolk, J. J. Foulkes, Esq., to Mary, daughter of Rear-Adml. Sir W. B. Proctor.

At Gosforth, Cumberland, Oct. 5th, Capt. J. C. Pitman, R.N., to Elizabeth, daughter of Sir H. L. F. Senhouse, R.N.

At Frewick, N.B., Oct. 9, J. Jeffery, Esq., R.N., to Mary, daughter of Lieut. Madley, R.N.

At Wisbeach, Sept. 28th, W. Whitting, Esq., of Thorney, in the Isle of Eley, to Sophia, eldest daughter of Captain Swaine, R.N.

Lieutenant H. Warren, R.N. to Sarah, daughter of the late Capt. H. Biggs.

At Titchfield, Hants, Oct. 5th, B. Wickham, Esq., R.N., to Margaret Ann, eldest daughter of the late Capt. R. H. Barclay, R.N.

At Luton, Sept. 28th, Capt. Hathorn, R.N., to Mary, daughter of the Rev. W. M'Douell.

Deaths.

At Bath, Oct. 4th, Capt. W. G. Roberts, R.N.

At Beacon Grange, Sept. 27th, Chas. Jones, Esq., solicitor to the Admiralty, aged, 77 years.

Lately at Milford, Lieut. Mott, R.N.

April 29th, at sea, Com. R. F. Cleaveland, R.N.

Oct. 11th, Capt. W. Shallard, R.N., Inspecting-Com. Coast Guard, Clifden.

TIME BALL AT VALPARAISO—We perceive by a *Valparaiso Mercury*, which has been forwarded to us, that Mr. Mouat has established a Time Ball at his Observatory in the north-east angle of the Castle of St. Joseph, at Valparaiso, for the purpose of enabling vessels in the Bay to rate their chronometers. The time of its falling is not stated.

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, 1843.

Month Day.	Week Day.	BAROMETER.				FAHRENHEIT THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 AM.		3 P.M.		9 AM.	3 P.M.	Min.	Max.	Quarter.		Streng.		A.M.	P.M.
		In. Dec.	In. Dec.	A.M.	P.M.					A.M.	P.M.				
21	Th.	30.19	30.22	58	71	52	72	NW	NW	1	1	bcmf	bcm		
22	F.	30.42	30.48	58	69	52	70	NE	NE	1	1	b	b		
23	S.	30.54	30.55	58	67	51	68	N	NE	2	2	o	bc		
24	Su.	30.52	30.45	58	61	53	63	N	N	1	1	o	bc		
25	M.	30.30	30.22	54	60	48	62	NW	N	2	3	o	op (3)		
26	Tu.	30.15	30.09	51	56	45	58	N	NW	4	5	bc	qbc		
27	W.	29.80	29.74	48	52	40	53	NW	NW	4	4	o	bc		
28	Th.	29.72	29.78	44	54	39	55	NW	N	4	6	b	qbc		
29	F.	29.95	29.99	44	56	38	57	NW	NW	4	4	bm	bc		
30	S.	29.82	29.84	55	63	48	64	SW	NW	2	4	or 1)	bc		
1	Su.	30.04	30.06	64	69	60	70	W	W	5	5	qbc	b		
2	M.	30.04	30.09	62	62	56	64	SW	NW	6	4	or 2)	bc		
3	Tu.	30.16	30.14	55	63	50	64	SW	SW	2	4	bc	bc		
4	W.	30.16	30.16	60	64	55	67	W	W	2	2	bc	o		
5	Th.	30.12	30.09	57	66	54	68	S	S	1	1	b	bc		
6	F.	29.80	29.73	61	63	52	64	SW	SW	4	5	o	b		
7	S.	29.63	29.64	59	63	54	65	SW	W	6	4	qbc (1)	qbc		
8	Su.	29.40	29.65	60	61	58	63	SW	W	7	7	qor (1)	bc		
9	M.	29.35	29.54	49	51	47	53	N	NW	7	4	qor (1) (2)	or 4)		
10	Tu.	29.99	28.84	44	54	39	55	SW	SW	2	2	bcm	bc		
11	W.	29.25	29.19	59	58	47	61	SW	SW	4	6	or (1) (2)	or (3)		
12	Th.	29.12	29.40	46	45	42	46	W	NW	7	4	qor 1) 2)	bc		
13	F.	29.64	29.79	39	47	36	48	NW	W	3	5	bcm	bc		
14	S.	29.74	29.81	38	49	36	50	NW	N	2	2	bm	bc		
15	Su.	29.70	29.96	37	46	31	47	NW	NE	1	1	bm	bc		
16	M.	29.65	89.65	34	43	28	44	NW	N	4	4	b	b		
17	Tu.	29.27	29.26	42	45	33	46	SW	NW	4	2	qbc (1)	bc		
18	W.	29.82	30.00	38	46	37	47	NW	NW	7	5	qbc (1)	b		
19	Th.	30.30	30.34	32	47	28	48	NW	N	1	3	bm	bcm		
20	F.	30.30	30.25	34	50	28	52	SW	SW	1	2	b	bc		

SEPTEMBER.—Mean height of the Barometer = 30.181 inches; Mean temperature = 61.5 degrees; depth of rain fallen = 0.44 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

MR. MOUAT at Valparaiso, will oblige us by marking in the plan of that harbour in our volume for last year, (p. 817,) the position of the Lighthouse.

Thanks to the COMMANDER OF THE NUNEZ for his attention.

HYDROGRAPHICAL NOTES ON THE SOUTH-EAST COAST OF SPAIN.

By *Lieut. (now Commander) G. H. P. White, R.N.*

[We take this concise and useful information from the remarks of the *Jaseur*, while under the command of Lieutenant White, during the years 1831-5-6-7, and it is not without regret that we are prevented by the great expense attending it, from giving our readers the benefit of the no less useful than well executed views by which it is accompanied.]

Beating through the Straits with the wind at west.—This can be accomplished by any kind of vessel, line of battle ship included; the latter, however, should never attempt it except with a strong steady breeze, and at spring tides.

As it is high water both at Gibraltar, and also in the Straits,* at 2 P.M., at full and change, a vessel wishing to beat through, should contrive, if possible, to be off Cabrita Point by the last quarter ebb, and should she be a small vessel she should go inside the Pearl Rock, to enable her to be abreast of Pigeon Island, immediately the flood commences. Should the wind be strong and steady, and the flood tide good she ought to get up to Tarifa in one tide, and there remain until the next to cross over to Tangier Bay, unless she goes a good slant from the northward. If she remain at Tarifa she must get under way at the last quarter ebb, and stretch over to Tangier, where she will meet the tide on the African shore, which will enable her to work round Cape Spartel, the tide being the same on the African as on the Spanish shore, and the former perfectly free from danger when to the westward of Tangier.

Should a ship not get up to Tarifa the first flood tide, she can always anchor on the Spanish coast; one of the best spots is off the tower of Gualmesí, about $4\frac{1}{2}$ miles from Tarifa where the ground is good; the

* Charts and Directions give an hour or two between the time of high-water at the rock and in the Straits, but after three years' experience we found them invariably to agree, at the same time remembering that the winds have considerable influence in retarding or accelerating the time of high-water.

The Directory speaking of beating through the Straits with an easterly wind has the following remark:—"It follows that a vessel with an easterly wind may beat through the Straits into the Mediterranean, by keeping and tacking between the two boundaries of the central or eastern current." This is perfectly erroneous, for a vessel may tack in the central current with the wind blowing hard from the east for a month without getting an inch ahead. But, even under treble-reefed top-sails by keeping close under the Spanish shore, and working with the ebb tide, she will as I have before remarked, most probably get into Gibraltar, if required, in a few tacks.

It is also asserted in the same book that, there is always less wind on the Barbary than on the Spanish shore. This is quite at variance with all experience. For there is an old adage used by the seamen in those parts, which saith, "That when there is half a gale of wind on the Spanish shore, there is a whole one on the Barbary side." This we have experienced. The central current setting into the Mediterranean, sometimes after a long continuance of easterly winds sets to the westward; but this is a phenomenon which rarely occurs. Extraordinary changes also take place at times in the time of high water; I have known the flood tide run until five o'clock P.M. on the day of full moon, when it ought to have been high water at 2 P.M. These variations depend, there is little doubt, on the wind; but so irregular is their results that it is almost impossible to form any correct theory concerning these anomalies.

land hereabout is high and precipitous with the tower above-mentioned on its summit. On its eastern side is a small cove, with a deep valley covered with orchards and gardens.

The anchorage in Tangier Bay, although very much exposed to east and north-east winds, with a heavy sea at times, is, however, perfectly safe, particularly when a vessel anchors well to the eastward, so as to be sheltered by Point Malabat. The best anchorage is Cape Malabat, E.b.N. $\frac{1}{2}$ N.; custom-house west. Ships should always moor in this bay during the winter months.

Beating from Tangier to Gibraltar, wind blowing hard from the eastward.—To perform this a ship should get under way at the last quarter flood, and stand across to Tarifa, or as far to the northward as the wind will allow; by the time she has arrived off Tarifa, she will get the ebb tide, which, if strong, will more than likely, carry her into Gibraltar in three or four tacks. Remember when working, particularly to the westward, make very short tacks, keeping very close to the land on the inshore one.

When intending to anchor off the New Mole, with the wind at east, a ship should keep Europa Point, close on board, and be put under snug but commanding sail, as it will be necessary to have every thing to brace round at a moment's notice, taking especial care to keep as close to the rock as possible. If this be not attended to, it will be more than probable that she will be some hours beating about to gain the anchorage. Top-sails, jib, and spanker are the most convenient sails to be under, but it will greatly depend on the tide, for the flood sets from Europa to Cabrita, in fact sweeping the shores of the bay; therefore, if with a flood tide, it be possible to keep her head towards the Mole with fore and aft sails, particularly in a large ship, it would be advisable, as she would then drift into her anchorage without the disagreeable necessity of bracing round every minute to the flaws and puffs which are extremely violent with a strong Levanter. Should it be ebb tide on approaching Europa Point, and the wind at all to the northward of east, carry all convenient sail, working over on the western or Algerias side of the bay, where the merchant vessels usually anchor, you may then shorten sail and run down under top-sails to the New Mole.

Bay of Tetuan.—A ship should never anchor here except with the wind at west, and directly it is inclined to come round to the eastward start immediately, for should it blow from that quarter a very heavy sea is thrown into the bay, and the wind from east seldom blows home; it therefore becomes often difficult to work off the shore. The ground is very bad, principally sand, which shifts bodily, with a hard Levanter. This is an excellent place to obtain provisions cheap; good water can also be procured here if required.

From Gibraltar to Malaga with the wind at west.—Start if possible at half flood, which will give you the whole of the ebb, which sets to the eastward, at the rate of two or three miles an hour. Steer direct for Frangerola Point,* not paying any attention to the course you may con-

* With westerly winds, you will always find it calm or nearly so off Frangerola castle, never mind this, but keep close in. When nearly off Molinos Point, put the ship under easy sail, as you are certain when there to find the wind come off strong from the north-west.

ceive right by the chart, as the current invariably on the south-east Coast of Spain sets more or less off shore. With a westerly wind, you cannot round Frangerola and Molinos Points too closely. You may round Molinos within a mile and a half with perfect safety, when you will see Malaga light-house distinctly. From that point keep the lead going, as in winter months the sands at the mouth of the river Godo increase and extend considerably to the eastward. If it is intended to anchor outside the Mole come to well to the eastward of the light-house, if by night, this will always put you in a safe berth. By day anchor with the light-house and cathedral in one, for should you anchor to the westward of the light-house, the ground is not only bad but there is scarcely room to get under way. Should the wind come on to blow from the eastward this ought if possible to be done, although a vessel of war in all ordinary cases of wind may ride perfectly safe to the eastward of the light-house as here directed, as the ground is good, being stiff mud mixed with sand. If you know the port, particularly if there be a moon, run in to the Mole crossing the bar in $3\frac{1}{2}$ or 4 fathoms, taking good care to keep the Mole head well on board as the water suddenly runs shoal on the city side of the harbour.

The best way to moor within the Mole is either to let go small or best bower, according to the wind, run out nearly a whole cable, then let go the other bower and take it in as a stern cable, taking care while you are running in to let go the anchors as parallel to the Mole as possible, as vessels are obliged to moor in tiers. You will thus have a bower ahead and another astern, which will be sufficient security for the summer months; but in the winter take especial care whatever may then be the state of the weather, to send the sheet cable on shore and shackle it to one of the large rings on the Mole; likewise lay out the stream anchor on the starboard quarter to protect you from the westerly winds. The easterly winds blow here with the greatest violence, and you cannot be too careful in securing your ship against them.

The port of Malaga is formed by an artificial mole of about half a mile in length, nearly at the extremity of which is a good lighthouse with a revolving light, and also a battery mounting eight pieces of brass ordnance. This Mole is still carrying further out.

All small vessels stationed on the south-east Coast of Spain, should have strong chocks fitted in their stern ports for the convenience of taking in cables or hawsers.

Good water can be had conveniently at Malaga by application to the Captain of the port.

Never attempt to land in a Spanish port without being first visited by the Pratique boat.

From Malaga to Gibraltar with a westerly wind.—To perform this as expeditiously as possible, get under way a little before sunset when the land wind begins to draw off, and under easy sail as the wind generally blows hard off Molinos Point from north-west. The land wind will more than probable carry you round Frangerola,* when past that point, take good care to keep close in shore towards Marbella, as the

* In Frangerola Bay is good anchorage with westerly winds. Frangerola Point W.S.W., and a little to the northward of the castle.

wind during the night and generally early in the morning draws off the land; by so doing you will also get within the influence of the tides. Should it be ebb when you get up to Europa Point, it would be hopeless except with a very steady wind to attempt to beat round, which is very seldom the case when the wind blows strong from the west, for then the eastern side of the rock, like the western during easterly winds, is subject to violent squalls and puffs of wind, which completely frustrate any attempt to get round. Put the ship therefore under easy sail and lay to off and on until the flood tide makes, when you will get round with perfect ease, and soon gain the New Mole.

Whenever a large ship, particularly a line of battle ship anchors off the New Mole, she should take especial care to anchor as much abreast of the Dock-yard as possible, that is, to the north-east of the New Mole. A ship lying here ought always to be moored, and her best bower should be let go well to the northward; for if the wind suddenly shifts round to east, in a sudden squall as it generally commences, she is very apt to drive, before a second anchor can be let go.

One or two line of battle ships, and other vessels have been nearly lost by not attending to this precaution. Remark (particularly in winter) when you are close in under the land waiting for the breeze coming off shore, which you are generally sure of getting, do not be tempted to make much sail, particularly studding-sails, as at times the wind comes off so strong, and so sudden, that it oftentimes becomes requisite to close reef the top-sails; if this be not attended to, a ship will be very likely to lose her top-masts at the least.

The land and sea breezes on this coast are pretty regular during the summer months, but in winter the land breeze is seldom strong except after a fine day.

From Malaga to Almeria.—If you start with a fair and steady breeze, run down parallel to the shore keeping about five or six miles off the land or less during the day, as the coast is quite clear and bold until you arrive off Los Llaños or plains of Almeria, which in thick weather are dangerous being extremely low. On its south-west extremity is the Morro Point, where stands the Castle de Las Guardas Viejas or the Old Guard. From this Point the plains may be said to commence. Point Elena the eastern extremity is low and dangerous, and has a reef of rocks running out from it to the eastward. It ought not to be rounded nearer than a mile and a half, always taking care to keep the lead going, as the whole coast from it to Almeria is shoal.

The bay of Almeria is well protected from westerly winds by the high bluff points of Torrejon, on which is a small fort and a flagstaff. The best anchorage is in nine or ten fathoms close in under Torrejon, where you will lie as quiet as possible. The east wind throws in a heavy swell, but there is no fear of a vessel, she having good anchors and cables. Water can be obtained here, but with considerable difficulty, as there is generally a surf on the beach. Almeria was once a celebrated sea-port, but nothing but its dilapidated castle remains to attest its former glories under the Moorish rule.*

* We have here a vice-consul. The best time for getting into Almeria is from 10 3 in the afternoon, as during the heat of the day, the wind generally draws from the southward.

From Almeria to Carthagena with an easterly wind always work up close in under the Cape, as the only danger is a sunken rock about a mile distant, and bearing south from that headland.*

Carthagena.—This port is so well known by its excellent Spanish surveys that I need say little about it, one or two remarks will suffice. As the wind at night or until eight and nine in the morning at this place comes always off the land blowing direct out of the harbour, a large ship should never attempt to run in until nearly mid-day when the sea breeze sets in. Small vessels may go in at any time, as they can beat up to the anchorage; they may also when coming from the eastward and with the sea breeze run through the eastern passage between the Island of Escombrera and the main land. Water can be procured for ships of war, by application to the Dockyard, but of bad quality, being slightly brackish.

The roadstead of Valencia is represented as extremely dangerous by the Mediterranean Directory. It is there stated "that the ground is rocky and bad, and that it is highly dangerous to lay there during an easterly wind." Now, on the contrary, the greater part of the anchorage is clear and excellent holding ground, being a stiff clay, so much so that it required some trouble to purchase our anchor, after lying there only two or three days; there may be some rocky spots, but not sufficient to prevent a ship getting a good berth. There certainly cannot be any doubt that during the winter months, Valencia must be any thing but a pleasant road to anchor in, as it is perfectly exposed to the north-east winds, but I should think except in a hard *Levanter*, a ship of war may lie there in perfect safety.

The Bay of Alicante, which is of considerable extent, is formed by Cape Santa Pola and Cape La Nuerta. The former is distinguished by the tower of Alcora; from it extends a reef to the eastward, about half a mile, the latter at the water's edge is flat and low for a short distance, when the ground suddenly rises into a whitish rock or stone, on which is a tower. The anchorage although considerably exposed to the east and south-east winds, is nevertheless very safe for ships of all classes, even in winter, provided their ground tackle is good. The bottom is seaweed and sand. Large ships should moor north-east and south-west with the small bower to the south-west, about a mile from the land, in from 12 to 6 fathoms water. The Mole is very small, and only fit for *faluchos* and other coasting craft; it is, however, extending gradually, and if persevered in will be eventually a splendid work.

One of the best marks for knowing the Bay of Alicante at a long distance off, is the remarkable mountain, called the *Archillada de Roldan*, which rises up to the north-eastward of Alicante. This mountain is easily known by its towering height, and an extraordinary gap on its summit, which at a distance has the appearance of an embrasure. Water is scarce at Alicante. Our vessels of war generally procure that article at the small river *Altea*, near the town of the same name, which is about thirty miles to the northward and eastward of the Bay of Alicante.

* By doing this you will generally get favoured during the night by the land breeze.

During the summer, and even in the winter season, if the weather be fine, the wind generally draws off the land after sunset, and about 9 or 10 A.M. the sea breeze commonly sets in.*

In shaping a course from Cape Palos to Alicante, always keep well up to the northward, as the current sets here generally very strong to the eastward, so much so, that if you shape your course just to give the Isla Plana a good berth, you would find yourself a long way to leeward of the port by daylight, and have the pleasure of a good beat up.

Cape St. Antonio, coast of Valencia. Off this Cape vessels are often taken aback with the wind at north or north-east, when running with the wind at west or south-west. The northerly wind here frequently comes off very strong, therefore vessels should prepare and shorten sail in time, or they may endanger the masts.

Barcelona.—It is only lately that vessels drawing more than 12 to 15 feet water have been able to anchor inside the Mole, a deeper passage having been recently effected by the removal of vast quantities of mud; two vessels are still employed for the purpose, so that in the course of a few years, it is most probable that ships of any draft of water may be able to get in. The passage is, however, still so narrow, that it ought not to be attempted without a pilot.

ON TRIGONOMETRICAL SURVEYING, and its Application to correct the Maps and Charts of the Hebrides.—By William Galbraith, M.A., F.R.A.S.

I HAVE occasionally drawn up a short paper on surveying connected with Scotland, suggested to me by the very glaring errors which I had discovered to prevail even in our best maps and charts †

From this and other causes hundreds of human lives and thousands of valuable property are annually lost, as the calendar of our shipwrecks daily testify. Though something continues to be done to improve the geography of our country, yet it appears to be very slowly felt. Indeed the extent of our foreign possessions makes a large demand upon the resources of the nation, which cannot with propriety be withheld; but it appears somewhat strange, that so little attention is paid to the survey of our own shores. I have looked into the latest catalogue of charts published at the Hydrographic Office, and while I observe new surveys of almost every coast on the face of the earth have been executed, either wholly or in part, but by British naval and military officers, yet strange to say, since, comparatively speaking, the imperfect surveys of Mackenzie, nothing has been done for the Hebrides. I have searched catalogues in vain for anything recently published.

The shipping trade of the Clyde is certainly one of the most extensive

* The best anchorage at this port is a little to the westward of the Mole Head in about 8 or 10 fathoms water.

† The new map of Scotland, by Mr. A. K. Johnston, for his splendid Atlas, just published, has been greatly improved in many points.

in Scotland, and not the least in Britain, and *I shall shortly prove*, that, *trusting* to the charts and maps, now in existence, the master of a vessel, making for the Clyde, while passing from choice or necessity, near the shores of Islay, &c., in thick blowing weather, during the day, or not in view of a light-house at night, *must almost with certainty be wrecked, if his reckoning be right.* Is this a state of matters which ought longer to be tolerated?

2. The mode in which maps may be engraved admits of considerable latitude. They may be, in a great degree, plain with a little hill shading to mark mountain ranges more distinctly. They may also, however, be enriched with much more important information than they commonly possess, by adopting peculiar modes of engraving. That mode of finishing maps by *normal contours* indicating the same level at different elevations, either by wave lines, or different bands of parallel lines, seems to be an excellent one for conveying correct information relative to different levels, each line or band designating a rise of a given number of feet. This method has been adopted by the French Engineers in their new surveys so long ago as 1818.* For the levelling of the sites of cities, such as Paris, each parallel marks a rise of *two French metres*, or a little more than $6\frac{1}{2}$ English feet.

For the level country *ten metres*, or 33 English feet, is chosen for the vertical distance or rise between the parallels. For our survey 10 feet would perhaps be a good vertical rise for cities, 30 to 50 feet for our coarse and other superior lands, such as those of Gowrie, Stirling, many parts of the Lothians, &c., to be continued to a height of 300 or 500 feet. The pasture grounds above them might be taken at about 100 feet, between each band as far as 1000 feet, and those of the mountain ranges, above this, at 500 feet as far as the summit of our highest mountains. In this way the corresponding parallels throughout the whole country would all become known in a manner somewhat exemplified by the celebrated natural parallel roads of Glenroy in Lochaber.

A part of the Irish survey, since 1838, has been executed in this way, but from some remarks lately made at the meeting of the British Association this year at Cork, it appears now to be stopped. I shall endeavour to fortify the opinions I here advocate and which I have long entertained, by some important remarks by Captain Larcom on contoured maps, such as those I have attempted to describe.

3. It is important that maps constructed by the government should exhibit the levels of the country in the most intelligible manner; shewing heights, not merely on the tops of hills, but round their sides, and through the vallies, which traverse them. Such a system is offered by these contours. They are a series of horizontal lines, at a certain vertical distance asunder, and at a certain height above a fixed *datum*. The datum most commonly used is the level of the sea, doubtless from the shore line, being the limit of the land, and the point at which roads must cease, as well as from an idea that it is itself a level line, and therefore as a first contour, the most appropriate and natural *zero* from which to reckon the others.

The section of the Association on mathematical and physical science

* It was previously adopted in the survey of the coast of Karamania, by Capt. Beaufort, in 1812.

was aware that it has been a point much discussed whether the high water, the low water, or the mean state of the tide offers the most level line. This is a point it would be out of place to discuss here, but it may be stated, that in order to determine it as far as Ireland is concerned, a series of lines has been very accurately levelled across the island in various directions, and permanent marks left in all the towns, and on numerous public buildings; and at the end of these lines on the coast, tidal observations have been made every five minutes during two complete lunations. These observations and the connecting lines of level are now in process of reduction. The degree of accuracy attained is such that a discrepancy of 0·2 (1) of an inch is immediately apparent, and from them we may expect many points of interest. The steeper the natural slope of the ground is, the closer together, of course, the contours will be, and the more oblique the road; where on the contrary, the ground slopes very gently, the contours are farther asunder and the road may be proportionally direct. By examining the maps of the Irish survey, on which contours have been drawn, it will be seen that they tell *sad tales* of the existing roads, every inch of which ascends and descends frequently instead of keeping on a gradual slope for its whole length.

In order to exhibit these lines, it is proposed, instead of adding them to the original copper-plate, which has a peculiar value as an official record of boundaries, to make a copy of the plate, by the electrotype, for the purpose of receiving these lines. Contour maps were thought of early in the progress of the survey, but means were wanting for their execution. At present however, the outline survey being complete, and the general map, or map of the surface being in progress, affords a convenient opportunity, which it is hoped will not be lost. Dr. Robinson of Armagh, an excellent mathematician and astronomer, enquired of Captain Larcom, whether the process of contouring the maps was proceeding, and how soon he supposed it would be completed for Ireland? Captain Larcom replied, "that for the present it had been suspended." Dr. Robinson observed that, "whether he considered the value of this process in relation to the general interests of science, or the most important practical economics of the country at large, he could not but deeply deplore the suspension, temporary though he hoped it would be, of this great national undertaking, and he trusted, that, before the British Association closed its present sitting, *the most energetic steps would be taken to make such an application to government as would induce them to resume this most valuable work.* He begged to enquire from Captain Larcom what the expense would probably be?" Captain Larcom replied that "he should estimate it certainly *at less than a farthing an acre.*" Dr. Robinson,—"*And the original price was probably sixpence or eightpence.*" Captain Larcom said—"Perhaps sevenpence to ninepence." Dr. Robinson—"Then at a cost of about one thirty-second part of the original expense this invaluable addition to that splendid work the trigonometrical survey of Ireland could be accomplished. If it was determined finally to suspend this work, he should say that it was very like what the homely adage characterised *as penny wise and pound foolish.*"

4. Such being the opinion of this learned astronomer in reference to

Ireland, it might seem unnecessary to urge the same demand for Scotland, yet, strange to say, I am not aware that any Scotchman, or Society connected with Scotland has had the patriotic boldness to claim for their country that invaluable appendage to our maps. Indeed, from what I can learn, they seem rather to discountenance the idea of making any similar claim. *Seven hundred and fifty thousand pounds* have already been spent on the survey of Ireland, and *three hundred and fifty thousand pounds* on that of the whole of Britain. Is this justice to Ireland? It is more. Even of this three hundred and fifty thousand, how much has fallen to Scotland? In giving these statements, it is clear I make no charge against the excellent conductor of our survey, or any of the officers under him. They are, I know, ready to meet the orders of government, whatever these may be. I make no charge against the accuracy of their proceedings, except so far as the published volumes of the survey afford the means of testing them by a scientific examination of their results and methods of obtaining them, which, if conducted in a fair and candid manner, can give offence to no one. Indeed from officers connected with the Ordnance Map Office, I have received various *data*, of which I have freely availed myself, in the present paper, and through Colonel Colby, by order of the Master-General and the Honorable Board of Ordnance, I received about a year ago that valuable continuation of the survey, the Reduction of Zenith Sector Observations made at different stations in Britain, in which the computations are all made in the most approved manner. It would be ungrateful in me not to return my warmest thanks for these distinguished favors. It is not to cavil, therefore, I make the preceding statements, but to benefit the public at large, in which all will participate.

5. Again various colours might be fixed upon to designate different soils. A deep tint for dark loams, a shade lighter for clays, another for gravels, a fourth for sands, a fifth for pastures, and a sixth for our heaths. By placing this, which might be called an Agricultural Map side by side with a Geological Map, there would be obtained every kind of knowledge required, both with regard to soils and minerals. It is impossible, however, in the present state of our knowledge of the geography of Scotland to form any such maps, and till a great advance in, or the conclusion of the ordnance survey, it must in a great degree remain very imperfect; the few corrections made by private individuals being comparatively insignificant. I have occasionally remarked, that it would be of great consequence, if the results annually obtained by the Ordnance Surveyors were regularly published, so that private individuals might take advantage of them on the formation of plans of extensive landed proprietors, which as topographical information, might be embodied in county, or general maps of the country. The responsible officers would, perhaps, be unwilling to communicate their approximate results, yet requiring correction from combined operations; but still they might be given with that reservation, though the small errors or minute inconsistencies remained to be eliminated. These at least are my views on this important subject, in which I have had some little experience. When I began my enquiries I had no idea that the geo-

graphy of Scotland was so imperfect, and that the errors in the geographical position of many important points, were so great in amount. In the course of my summer excursions, I have made a considerable number of observations, astronomical, and geodetical by which were corrected some very considerable errors in our best maps. The present little paper is a continuation, in which I have combined all my observations made at Broddick in Arran, astronomical, chronometrical, and geodetical,* to fix the geographical position and height of Goatfell, as a standard point, whence I might be enabled to extend them to others definitely marked, in favorable weather, which for some weeks during several years, I watched with great care in order to seize the favourable opportunity. I have been indebted to my friend Mr. Alexander Bryson, chronometer maker, No. 66, Princes Street, Edinburgh, for excellent chronometers on all these occasions, regulated with great care, which generally performed in a very satisfactory manner, and it is well known that a good chronometer is an indispensable requisite to every astronomical observer.

6. The instrument which I generally use for astronomical and geodetical purposes is a six-inch altitude and azimuth circle, made by Robinson of London. It is provided with three verniers for both the horizontal and vertical circles, reading each to 10" with a level, each division of its scale showing 2", the most convenient division of any. The instrument was regularly reversed each observation, and for horizontal angles the zero was occasionally changed to correct for eccentricity and errors of division as far as possible. The circles are cast solid and not made up of a circular ring connected with numerous pieces fastened by screws. This, I believe gives greater permanency and stability, and its powers are greater than its size would apparently warrant, when provided with a telescope magnifying only about twenty times; half the power of Roy's great theodolite as formerly used.†

To show its accuracy thirty series of observations of about twelve readings each in different years, reduced to 1840, give the mean obliquity of the ecliptic at 23° 27' 37.00"
 M. Bessel in the Tabulæ Regiomontanæ 23 27 36.52

Difference greater than M. Bessel

0.48

This seems to prove that compact steady instruments of very moderate dimensions, are comparatively better than large instruments of inferior construction. Without farther remarks I shall state the observations made in different years, to determine the latitude of my station at Broddick, and allow the different series to speak for themselves.

Final determination of the latitude of Broddick village in the island of Arran, at the gate opposite the baker's, on the south end of the row of houses fronting the road from Hamilton's inn to Strabane cottage gate.

* Most of these have been communicated to my friend, Mr. A. K. Johnston, for the purpose of improving his map of Scotland.

† Mr. Simms, of London, has lately invented a self-acting dividing engine, to divide instruments on their own axes previously fixed permanently, instead of dividing and afterwards fixing, the method usually employed. This is a great improvement, and will tend much to destroy eccentricity.

Year.	Month. | Day.	Series.	Latitude observed.	Seconds × No. of Series.
1836	Aug.	10	55° 35' 18''·0	180''·00
1841	Aug. 24.	10	19·0	190·00
	27.	4	25·0	100·00
	28.	16	21·6	345·60
1843	Aug. 9.	10	19·1	191·00
	12.	12	22·35	268·20
	14.	14	17·3	242·20
	16.	6	18·6	111·60
	16.	6	12·3	73·80
	23.	20	19·8	396·00
	Sum	108		2098·40

General mean of all the observations 55° 35' 19·43' N., giving due weight to the number of observations in each series. In like manner the longitude by chronometer in the same year is 0h. 20m. 37·13s. W., which in space becomes 5° 9' 16·95" W.

These are the ultimate results on which all the other determinations depend. As there may be still some small errors in these, of course, the effect must be communicated to the other deductions. From these with the bearing and distance I determined the latitude of Goatfell to be 55° 37' 35·48" N., longitude 5° 11' 18·15" W.; and the height of the axis of circle 2861·5 feet above the mean tide. The latitude of Broddick castle, the seat of the Duke of Hamilton in Arran, 55° 35' 41·50" N., longitude 5° 8' 50·84" W.

7. As I had some difficulty to connect Ailsa Craig with Goatfell by the usual trigonometrical methods, I was obliged to have recourse to the method by depression, which I first gave with the requisite precision in my book on Trigonometrical Surveying, published by Messrs. Blackwoods, pages 58 and more especially 140. The height of Goatfell being considerable enabled me to obtain the distance more accurately than I could almost have expected. Though I have had no means of comparison to check it, yet I am inclined to consider it an approximation sufficiently near the truth as no other deductions depend upon it.

By one series the zenith distance of the bottom at the surface of the sea, corrected for level, &c., was	.	.	.	.	91° 21' 8·5"
By another it was	.	.	.	.	91 21 7·4
Mean of these	(1)	.	.	.	91 21 8·0
By one series the height subtende an angle of	.	.	.	.	0 27 34·7
By a second	.	.	.	.	0 27 25·7
Mean of both	(2)	.	.	.	0 27 30·2

From the first result by the formula just referred to, by three repetitions, the distance was found to be 137224 feet, from which and the second, the height will be 1097·9 feet.

From a considerable number of observations the bearing of Ailsa Craig from Goatfell was found to be S. 6° 23' 14" E.

From the bearing and distance here given, the latitude of Ailsa Craig is $55^{\circ} 15' 11\text{--}12''$ N., and longitude $5^{\circ} 6' 54\text{--}69''$ W.

From somewhat similar operations by angular measures taken on the top of Goatfell during several days in different years, repeating all my measures carefully, and, when possible taking advantage of a few lines and angles communicated through the Ordnance Map Office, I finally deduced the following results, depending upon the positions and height of Goatfell, previously obtained.

The bearings and distances of the different points are those referred to Goatfell pile, and its meridian, reckoning the azimuth from the north, easterly round the horizon.

No	Name.	Bearing N.E.	Distance in feet	Latitude N.	Longitude W.
1	Benlomond	$28^{\circ} 51' 15''$	235929.7	$56^{\circ} 11' 27''.71$	$4^{\circ} 37' 45''.56$
2	Bencarnpsie	$56^{\circ} 20' 15''$	258722.7	$56^{\circ} 0' 52''.91$	$4^{\circ} 8' 9''.01$
3	Tento	$91^{\circ} 37' 3''$	316276.3	$55^{\circ} 35' 33''.24$	$3^{\circ} 39' 34''.64$
4	Cairnsmuir, D.	$123^{\circ} 12' 19''$	243998.5	$55^{\circ} 15' 24''.22$	$4^{\circ} 12' 34''.47$
5	Ailsa Craig	$173^{\circ} 36' 46''$	137224.4	$55^{\circ} 15' 11''.12$	$5^{\circ} 6' 54''.69$
6	Knocklaid	$232^{\circ} 52' 56''$	277762.0	$55^{\circ} 9' 46''.67$	$6^{\circ} 14' 51''.95$
7	Bein Oë Islay	$270^{\circ} 59' 0''$	227672.7	$55^{\circ} 37' 56''.22$	$6^{\circ} 17' 24''.65$
8	Bein Tarteuil	$278^{\circ} 34' 5''$	261031.8	$55^{\circ} 43' 35''.88$	$6^{\circ} 26' 26''.57$
9	Jura Pile	$301^{\circ} 28' 38''$	195427.8	$55^{\circ} 54' 11''.71$	$6^{\circ} 0' 2''.51$
10	Bein More, Mull	$330^{\circ} 23' 48''$	336845.4	$56^{\circ} 25' 32''.41$	$6^{\circ} 0' 37''.62$
11	All depending on Goatfell previously determined to be in			$55^{\circ} 37' 35''.48$	$5^{\circ} 11' 18''.15$
	To these I may add from other sources.				
12	Oronsay Cairn			$56^{\circ} 1' 24''.30$	$6^{\circ} 14' 58''.10$
13	Colonsay Cairn			$56^{\circ} 6' 34''.00$	$6^{\circ} 9' 55''.20$

The height of these objects would now form an interesting addition, but I shall at present only subjoin one.

By one series the zenith distance of Benlomond from the summit of Goatfell was	$90^{\circ} 12' 0''.16''$
By another	$90^{\circ} 12' 9''.20$
Mean of these two	$90^{\circ} 12' 4''.68$

Combining this with the bearing, distance and mean latitude as shewn in my book on Trigonometrical Surveying, formerly referred to, page 64, the barometer standing at 27.222 inches, and Fahrenheit's thermometer at 52.6, we find that the

Summit of Benlomond above that of Goatfell is	298.97 feet
Height of Goatfell as before	2861.50 "
Height of Benlomond	3160.47 "

Mr. John Adie, optician, and I measured the height of Benlomond simultaneously, by which I found the summit of Benlomond to be 3142.2 feet above the surface of Lochlomond. Now if I could have ascertained the correct height of the surface of the lake above the mean level of the sea at Dumbarton, a good comparison might have been made. That

height does not certainly exceed 20 or 30 feet. Taking it at 25 feet the barometric height would be 3167·2 feet, agreeing very well with my present trigonometrical one, since a small error may be accounted for either from uncertainties in observations or atmospheric irregularities.

8. What amount of error there may really be in any of, or all these conclusions I am unable with certainty to say; but I think it cannot exceed about 5" in latitude, and 10" or 15" in longitude, and if the principal points of any map of Scotland were all as well determined it would be very superior to any which we now possess. Indeed if the usual methods of determining the probable error were applied to each, it would turn out to be still less than what I have stated, but I have some doubts of the formula's efficiency to detect that error, on the grounds now to be stated. From numerous observations by the same circle, I found the mean obliquity of the ecliptic on January 1st, 1840, to be 23° 27' 37·00"; M. Bessel of Königsberg, 23° 27' 36·52"; Mr. Henderson at Edinburgh observatory 23° 27' 36·07". Here each value diminishes by about half a second, in succession, while the doctrine of probabilities, as usually applied, would give about the same as a probable error in mine, and a small fraction of a second likely in each of the others, *less than their difference*.

Again my observations were made for latitude upon the sun and Aquilæ to the south of the zenith, and on Polaris to the north, to avoid as far as possible any small bias of my circle as is frequently the case, especially in the repeating circle of Borda, where it is often considerable in amount, and the error in my latitude must also be affected by any small error in the position of the observed objects as given in the *Nautical Almanac*. The error in the sun's declination is now certainly small; that of the fixed stars is generally considered to be much less, though greater than is commonly believed.

The mean declination of Polaris in 1840 is by

Nautical Almanac . . .	88	27	21·94" N.
Edinburgh Observations . . .	88	27	22·17
Tabulæ Regiomontanæ . . .	88	27	21·99
Connaissance des Temps . . .	88	27	22·00

These all agree sufficiently well and no remarks are required.

The declination of Aquilæ in 1840 is by

Nautical Almanac . . .	8	27	0·22" N.
Connaissance des Temps . . .	8	27	2·80
Tabulæ Regiomontanæ . . .	8	27	1·49
Edinburgh Observations . . .	8	27	1·90

Here the difference between the *Nautical Almanac*, the book I used, and the others in succession are, 2·6", 1·3", and 1·7". Would such discordances have been believed at such favourable altitudes for refraction, in the present state of practical astronomy? Would the doctrine of probabilities show a small fraction of a second in all these, yet manifesting such remarkable differences? What becomes of the annual parallax of the fixed stars amounting to a half or a third of these quantities, determined too by the same or similar instruments?

These are trifling discordances however, compared with those by the

repeating circle of Borda, especially in the observations of Colonel Corabœuf made to determine the latitude of the observatory of St, Martin d'Angers. They are fully detailed in the *Nouvelle Description Geometrique de la France Deuxieme Partie*, from page 464 to 499 inclusive. The circle by Gambey of Paris, was 0.325 of a French metre, or $12\frac{3}{4}$ English inches in diameter. The observations taken on each side of the zenith were very consistent and therefore the probable error,* as it is generally called in these *on each side of the zenith taken separately* would be remarkably small.

The latitude by Polaris on the north of the zenith was (1) 47° 28' 15.21" N.
 " Serpentina on the south . . . (2) 47 27 59.41 "

Mean, accounted the latitude 47 28 7.31 "
 But the difference of these is no less than 15.80

The first of these was determined from 640 repetitions,
 And the second from 332

In all 972

What would now be thought of the small probable error of a *fraction* of a second in each of the above determinations that smallness arising from the consistency of the series made on each side of the zenith separately, when their difference is no less than 15".8 from such numerous repetitions? Something similar may be said of the examination of the divisions of a circle at *one temperature* to be used at *another*. From these instances it is manifest that it is extremely difficult to fix the position of points in a survey astronomically with great precision, and therefore I demand no more for mine than what, by competent judges, they justly deserve.

9. Again it is as difficult to introduce into the lineal and trigonometrical operations extreme precision as into the astronomical. Mr. N. Galloway in a paper read before the Royal Astronomical Society of London, vol. v., p. 263, of monthly notices, has applied the method of the *least squares* to a part of the trigonometrical survey, commencing with the *base on Hounslow heath*, and including ten stations. "The final results (says he) differ extremely little from those given in the *survey*, the greatest difference in the length of any side amounting only to about half a foot, and this in a distance of nearly eighteen miles."

But what we enquire is the real length of Hounslow heath in a known measure. There is some doubt that this can now be determined in a satisfactory manner.

In the Encyclopædia Britannica, vol. xxi., p. 361, the value of this base, by glass rods, in imperial measure, on the heath

is stated at 27403.38 feet
 By the steel chain at 27403.28 "

Mean of these on the heath 27402.88 "

In which that by the steel chain is less than that by the glass rods,

* I think this name may tend to mislead unless properly restricted. It is more analogous to the deviation from consistency, since a change, say of 10' in all, on the same side, would not alter its value. In fact all constant errors of the instrument, &c., must be excluded.

whereas in so far as is generally known it ought to be greater, since the corrections here applied to reduce them to the imperial standard have been erroneously computed.

The true results, according to the best information, I believe, now known, are as follows:—

Roy's base on Hounslow heath, in terms of his own scale by glass rods, 100 feet, above the mean level of the sea, at the temperature of 62° Fahrenheit's scale is	27404·0843 feet
Reduction of this to imperial standard	+ 0·6699 "
<hr/>	
Roy's base on the heath	27404·7542 "
In like manner, Mudge's base by steel chains, in terms of Ramsden's scale is	27404·3155 feet
Reduction to imperial standard	+ 1·8936 "
<hr/>	
Mudge's base on the heath is	27406·2091 "
The difference of these two is	1·4549 "
As the bases of Roy and Mudge seem to be of about equal authority, their mean may be taken, which is	27405·4816
Reduction of this to the level of the sea	— 0·1312
<hr/>	
Mean at the sea level	27405·3504
That of the Encyclopædia	27402·75
Less than the preceding by	2·6 feet

The true length therefore exceeds that given in the Encyclopædia Britanica by 2·6 feet. Hence an error of $2\frac{1}{2}$ feet nearly has been committed in the necessary reductions of the original base, a far greater quantity than can be attributed to the effect of the small correction from the employment of the method of the *least squares*.†

Whence it is of far greater importance to perform all the necessary operations, astronomical and geodetical correctly, than to employ complex methods of calculation, with the idea of obtaining *perfect results from imperfect data*. The correction of *half a foot* on a distant side, is of little consequence, if the original base itself from which all the others must be derived, be erroneous to the amount of *two feet and a half or five times that quantity*.

By these remarks I by no means must be understood to put a slight value on correct methods of computation. All I mean, is, that refinements in calculation are useless, if the *data* on which they are founded will not warrant them.

10. I have in several previous papers pointed out the errors frequently amounting to five or six miles in various maps and charts, such as Arrowsmith's map of Scotland, coloured, by order of the Lords of the Treasury in 1840, according to Dr. MacCulloch's Geological Survey at various points in the Firth of Clyde, as well as in those of our Marine Charts.

I have also occasionally pointed out personally to some of the constructors of our charts, as my friend Mr. Norie, &c., the grave errors of those reckoned our best charts, but the reply was that we cannot help ourselves since almost nothing has been done for the Hebrides,

* In many instances the third angle was not measured, and therefore the method of the *least squares*, cannot in that case be justly applied.

from the time of Mackenzie about a century ago. Because government does nothing, should we as *private* individuals expend large sums of money on surveys for the *public* service? a reply sufficiently conclusive. I shall now direct attention, as I mentioned at the outset to the charts of the Hebrides, especially about the islands of Islay, Colonsay, &c. Starting from, and beginning with Goatfell, I lay down on Norie's chart*, from the graduation on its borders, the true position of Goatfell as determined by observation in the preceding tables, and I find it falls in *Kilbannan Sound* about a mile westward of Penrioch on the western shores of Arran. Again I lay down Ailsa Craig, and I find it falls about *eight miles* in the Firth of Clyde, south-west of the position on the chart. In like manner the Mull of Cantyre lighthouse falls about midway in the channel to Ireland. Bein Oë (or Kinhoes it is called on the chart) in Islay falls in the middle of Lochendall. Bein Tartevil on the Western Peninsula of Islay, about two miles west in the Atlantic. *Oronsay Cairn* about five miles west of the central shores of *Colonsay*, and *Colonsay Cairn* itself about *four miles and a half*, north-west of the most northerly point in Colonsay, called in the chart *Ru Yea*, or as it is called on other maps *Point Prua*, or about *one-third way* across the sea towards the Ross of Mull!!!

By these instances of which their accuracy cannot, in any appreciable degree be invalidated, I hold that I have proved the proposition enunciated in page 1st, namely that *the masters of vessels trusting to such charts must almost with certainty be wrecked, if their reckonings be right*. These must also infallibly, at the same time ruin our Marine Insurance Companies.

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ON THE MARINERS' COMPASS.—By Mr. W. Walker, Master R.N.

(Continued from p. 730.)

THE quality and amount of the inductive magnetism which the iron in a ship receives from the earth, is always of the same kind and intensity as that of the magnetic hemisphere, where the vessel may happen to be. When the needle dips towards the south magnetic pole, the higher parts of the iron on board will have a south magnetic polarity, and will draw the south point of a compass card forward in a vessel when steering an easterly or westerly course; in a word, the magnetic phenomena which we have described at some length, will, in south magnetic latitude, be found of an opposite kind to that in corresponding dips in north magnetic latitudes; here, ships will generally get to the northward of their dead reckoning.

The southern seas, however, are not covered with vessels as are the waters north of the equator. The relative proportions of land and water in the two hemispheres of the earth are very unequal, for it may be seen by a map of the world, that the equator marks to the southward about nine-tenths of South America, one-third of Africa, Madagascar,

\* Others that I have seen, are as bad, and some worse, as Blatchfords, &c.

Australia, New Zealand, and the Polynesian Islands. If we analyze the naval statistics, and add together the whole shipping interest of these southern countries, it is presumed that England alone, will be found to possess a *greater number of vessels in its coasting trade!*

We frequently hear of vessels, when in south latitude, getting to the northward of their dead reckoning on the coast of Australia, near the Cape of Good Hope, or in South America. Several valuable ships have got on shore in Africa through errors in the reckoning; that is, by being farther to the northward than was expected.\*

H.M.S. Thetis sailed from Rio de Janeiro, on the 4th Dec., 1830, having on board 800,000 dollars for England. On the evening of the 5th Dec., she *ran upon Cape Frio*, and was wrecked. The weather after the Thetis left Rio, was rather tempestuous; it blew strong from the south-east; a course was shaped N.E.b.E. by compass, and the ship ran against the cliffs of Cape Frio, her studding-sail-boom irons striking fire from the rocky cliffs, at a time when her dead reckoning placed the vessel thirty miles from the land.

Whenever enquiries are made about the loss of ships that have run ashore, we invariably find the *currents of the ocean*, are assigned as the cause. It is even probable that a current may have set the Thetis to the westward, but we are certain that the local magnetism of the ship would have the effect upon her steering compasses of indicating a course more easterly, and less northerly than the ship was steering. We have already demonstrated that vessels steering a north-easterly course in the English Channel invariably get to the south-eastward of their reckoning. Now, the Thetis being in *south magnetic latitude*, would diverge to the *north-westward* of her reckoning, and it is not necessary to have recourse to an imaginary current to account for her loss.

The captains of ships who have made many voyages from England to India, and who have had to cross the trade winds, will, on reference to their logs, find that on one side of the equator, errors in the longitude, by dead reckoning, have accumulated, and on the other side these errors have disappeared;—the ship's longitude by dead reckoning in the end, agreeing with that by chronometer. The ordinary track that ships pursue in their outward voyages from England to India, is to the south-west, and so long as they continue to steer towards the magnetic equator, they are, for reasons already given, liable to be to windward of their reckoning, that is, to the eastward: but when they have passed the magnetic equator, and advance towards the south magnetic pole, where the needle dips to the southward, and being on the larboard tack, they are liable to be to leeward, or to the westward of the reckoning by reason of the ship's local magnetism having changed its character on crossing the magnetic equator.

H.M.S. Malabar 74 guns, Captain Sir George Sartorius, left Plymouth in June 1842, for Rio Janeiro. On the outward passage her longitude by dead reckoning was carried on in her log, and the errors went on increasing in north magnetic latitude, but diminished as she approached Rio. This ship returned to Plymouth in May 1843, her

\* The author speaks from personal experience, having passed round the Cape of Good Hope sixteen times.

longitude by dead reckoning from Rio Janeiro to the Lizard being carried on in the log, and the error amounted to  $9^{\circ} 36'$ , *i.e.* the ship was nine degrees and thirty-six miles to the westward of her reckoning. The Malabar is a small 74-gun ship built of teak wood, and armed with heavy guns; she is moreover not a stiff ship, but inclines with a fresh breeze, some ten or fifteen degrees; she had to cross the south-east as well as north-east trade winds and consequently had to sail near 4,000 miles on the starboard tack. On her way from Rio to the magnetic equator the Malabar (like the Thetis) would get to the northward and westward of her reckoning, and when she entered into the north magnetic hemisphere, her inclination to port would cause all her lee guns to attract the north point of the compass, and the weather guns to attract the south point: in this way, and during the transit of the north-east trade wind, and probably for a distance of 2,500 miles, the ship's compass might indicate a course nearly one point more weatherly than the vessel made through the water.

Mr. Barlow, the master of the Malabar, and others, informed the writer, that whilst the ship was standing to the northward on the starboard tack, they found a difference of  $5^{\circ}$  between observations made for the variation upon the weather side of the poop deck, and those observations made upon the lee side of the same deck at the same time; hence it resulted that observations made for the sun's azimuth, and variation of the compass were not to be depended on. We are sometimes told that a binnacle compass will not be influenced by a ship's local attraction, if the direction of her keel coincide with the direction of the magnetic meridian. But this opinion is incorrect and founded on the supposition that the local magnetism of a ship may be referred to a *central point* near the middle of the vessel, and that it remains constant,\* an opinion at variance with the doctrine we have detailed and the demonstrations we have given. The errors that creep into a ship's reckoning no doubt frequently arise from currents. Navigators may likewise get out in their reckoning by making allowances for currents that do not exist; but the great source of errors in navigation consists in bad steering, and ignorance or inattention to the magnetic attractions and repulsions of the iron in a vessel which derange the compass courses.

The general use of chronometers, the correctness of our logarithmic tables for practical astronomical purposes, the accuracy of our astronomical and mathematical instruments used for naval purposes, have left us little to desire for all the purposes of practical navigation, so long as *the state of the weather* will allow us to make astronomical observations. But these have made navigation so easy and accurate in *clear weather*, that the necessary care and attention under ordinary circumstances to the *helm, log, lead, and look-out*, have been sadly neglected by the majority of seamen. The result has been that worse dead reckonings are now kept than ever were kept before. The general adoption of iron in the construction and equipment of ships, deranges the compass courses and a record is made on the log board, of courses that the ship never steered, that is, the log board only shews a compass course,

\* Barlow on Magnetic Attraction, Edition 1824, p. 307.

instead of the magnetic course, uninfluenced by the local magnetism of the ship or her cargo.

When an observation for the latitude is obtained at noon, this latitude enables the navigator to correct his longitude by dead reckoning, and also to work out his sights for the chronometer; but when a ship has been a day or two without obtaining an observation to determine her latitude, there may be a considerable error in the latitude by account. Now if sights be obtained for determining the longitude by chronometer, and the mean time for these sights be obtained by applying to the calculation a latitude which is not the latitude of the place where the observations were made, it is evident that the longitude obtained by such a calculation must be wrong.

H.M. Ship Challenger was wrecked on the coast of South America in consequence of placing too much confidence in calculations of the above description: she had not obtained an observation for her latitude for two days, her latitude by account was *erroneous* to the amount of thirty-four miles, and this latitude being used for working sights obtained for her chronometers, the computation gave a longitude *one degree* to the westward of the ship's place. (Vide sentence of Court Martial appointed to enquire into the causes of the loss of the Challenger.)

The makers as well as the managers of mariners' compasses should thoroughly understand the elementary principles of magnetism. The compass like chronometers, and other useful machines, should be submitted to some test of its efficiency, after it is made, and before it is offered for sale, or brought into use at sea. The compass although less costly than even a common watch, is infinitely more useful than the best chronometer. A compass is not subjected to any trial or test of its accuracy of manufacture, its magnetic intensity, or the amount of its friction on the pivot upon which the card traverses, and the amount of its directive power, compared with the weight of the needle and its card. Generally, we may remark, that neither the vendor nor purchaser of a compass knows much about these matters; the former being satisfied if he realise a good profit; and the latter being pleased if he purchase a handsome article.

The essential qualities of an efficient compass, are, great directive power combined with little weight or friction on the pivot, the compass bowl being freely slung in jimbals attached to the box, so as to preserve an horizontal position under all cases of the ship's rolling or pitching. The steel of the needle should be of pure metal of uniform hardness throughout, and magnetised to saturation, and the magnetic intensity of a compass needle should be preserved by all possible care. We have said that a compass card should be submitted to some test. Now a very fair and efficient test of the magnetic energy of a compass needle is to try if two similar cards will by their mutual magnetism support each other's weight; that is to say, if the north point of the needle of one card, be applied to the south point of a similar one, and their mutual attraction be such as to support the weight of the card, the magnetic intensity of such needle may be regarded as sufficiently strong if they mutually support each other's weight, along with the cards they respectively carry. Now the magnetic intensity, or power of every compass-needle, should remain permanently a constant quantity, and this can



only be accomplished by each ship being supplied with a pair of artificial magnets of sufficient power to renovate the magnetism of the compass-needles whenever the *test* might indicate that they required re-touching. The magnetism of a single needle is probably best preserved by allowing it to traverse freely on its pivot, or else to be stowed in a direction parallel to that of the magnetic dip, for if it be placed, say, with its south pole (or north point) towards the south pole of the world, or *vice versa* its magnetic intensity will decrease; or, if a compass be placed near to a large mass of iron, in such a manner that the magnetic polarity of the iron may act so as to control the magnetism of the compass, to a certain extent, by acting in a contrary way to that of terrestrial magnetism, then will the magnetism of the compass-needle deteriorate. If, for example, the south point of a compass-needle were placed near to the upper end of a vertical iron pillar, the needle would be deprived of a portion of its magnetism; but if the north point of the card be placed near, or in contact with the upper end of the pillar (in north dip) the magnetic energy of the compass-needle would be augmented.

We have mentioned that the magnetic poles of the same name, or kind, in any two similar and equal artificial magnets, repel each other. There is a constant effort exerted between them to obtain the mastery, and so mutually destroy their magnetism; and if two such magnets be so situated for a considerable time, their magnetism will be nearly destroyed.

There is at present a common steering compass, made by "John Syeds," in June 1810, in the binnacle of the Plymouth Breakwater light-vessel; it is the only compass in the vessel, and has been twenty-eight years in her. No care has been taken of this card, which has remained in its box for so many years, and yet it retains a considerable amount of magnetism! If this card, instead of having one needle only, had been fitted with two or more, equal and similar parallel needles, we venture to assert from the principles we have explained, that the magnetic force of these needles would, in a comparatively short period of time have been reduced to the natural standard of the earth's magnetism. The spare compass cards, carried to sea in ships, should be stowed in boxes, and their opposite poles connected by pieces of soft iron, in the judicious manner recommended by Professor Barlow, and practised in the Royal Navy.

We have already shewn by experiment, how the changeable polarity of the inductive magnetism, in the metals within a ship, either draws the compass-needle quietly aside from its true magnetic bearing, in smooth water, or else causes the compass card to maintain a constant oscillation of a point or two, on each side of the course, when a ship rolls heavily from side to side in stormy weather. These troublesome oscillations give rise to the most serious obstacles to good steerage! There are but very few helmsmen to be found who can steer a ship in stormy weather, where the compass card is swinging about with every roll or lurch of the ship! And when

" High o'er the poop the audacious seas aspire,  
Uproll'd in hills of fluctuating fire ;

With labouring throes she rolls on either side,  
 And dips her gunnels in the yawning tide ;  
 Her joints unhinged in palsied langour's play,  
 As ice-flakes part beneath the noontide ray :  
 The gale howls doleful through the blocks and shrouds,  
 And big rain pours a deluge from the clouds ;  
 From wintry magazines that sweep the sky  
 Descending globes of hail impetuous fly,  
 High on the masts with pale and livid rays  
 Amid the gloom portentous meteors blaze."—*Falconer's Shipwreck.*

It is under such circumstances as are described by Falconer, that we are taught to appreciate the worth of a good helmsman, and the value of an efficient compass ! One card is exchanged for another, and weak needles are loaded with heavy weights in order to lessen the oscillations, but neither brass bars, nor brass rings, wax, paper, nor talc can cure the evil ; for as we increase the weight and friction of the card, we only make it the more sluggish and unfit for the helmsman's use, who instead of being guided by the compass in the binnacle, must ever and anon, keep looking *ahead* at the clouds, the waves, or the stars, for he finds that a sluggish compass does *not* indicate a change in the direction of the ship's course, until some time after that change has taken place.

The brass box compass having been found to be more steady than wooden boxed compasses, the latter have been almost entirely laid aside without sufficient reason ; for it is admitted that a compass-needle mounted in a wooden box, is more sensitive than one in a brass box, when all other things are equal. Let us enquire how this happens.\* The comparative magnetic inductive susceptibility of the metals is very considerable, that of copper to *mahogany* as 29 : 0,37, or as 78 : 1 nearly : now all magnets have a power of communicating a certain portion of magnetism to substances brought within their spheres of action ; thus, a magnetic needle, enclosed in a mahogany box, would communicate a magnetism to the box ; the north pole of the needle imparting a south polarity to the wood near it, and the south pole giving out a north polarity to that part of the wooden box opposite to the south pole of the magnetic needle. There would therefore result a certain amount of *attraction* between the ends of the magnetic needle, and those parts of the wooden bowl nearest to the needle ; and as magnetism is taken up in *less time* than it is *parted with*, the induced magnetism of the box would tend to retard any oscillation of the needle. The magnetism of mahogany is very small indeed, and can only be detected by such delicate and elegant instruments as were used by Mr. Snow Harris, but the magnetic inductive susceptibility of copper or brass being about 80 times greater than that of wood, its effects become sensible and apparent. We see then that a copper or brass mounted compass, is more steady in a gale of wind, because its box is inductively magnetised from its enclosed magnetic needle, and therefore although it be really more steady in its vibrations, it is also more sluggish in its motion than it would be if mounted in wood instead of metal.

Compasses mounted in metal may also be more steady in stormy weather, by the screening influence of the metals surrounding the card ; take for example a gun, on each side of the binnacle, where the polarity

\* The Chinese avoid the use of Metal in the mounting of their compasses

changes at every roll of the ship; then the changeable magnetism given out by the guns may be in some measure screened by the surrounding box and rings of the compass. It is therefore prudent and proper that ships should be supplied with brass or copper boxed compasses for use in bad weather, but they should have at least *one compass* mounted in wood for use in light winds and smooth water, especially when the effect of local magnetism has not been corrected, or magnetic oscillations cut off by artificial means.

Her Majesty's government has determined on obtaining a set of superior steering compasses for the Royal Navy, to supercede the imperfect instruments formerly supplied by contract, and still in use in some ships. The "Compass Department" is placed under the superintendence of an intelligent and efficient naval officer, whose duty it will be to determine the local magnetism of ships on the Home Station; to supervise magnetic experiments, and recommend every known means for the improvement or preservation of the compass. Every ship will have a Standard Compass of a superior description, fixed in some convenient part of the ship, and raised above the ordinary level of the binnacle, in order that bearings, amplitudes, or azimuths may be the more conveniently taken by it. The compass courses of the binnacle will be referable to the Standard Compass, and corrected accordingly, the local attraction of the ship upon each point being previously found on the Standard Compass, as the ship swings round the horizon.

These arrangements will prove highly advantageous and economical to the naval department, by lessening the number of casualties; for the money value of even a single steam vessel, or large frigate, would defray the expense of keeping up a set of compasses for the Royal navy for ever. The steering apparatus instead of being, as heretofore, consigned to the care of the boatswain, and stowed away in his store-room, with iron hooks and thimbles, chain cable gear, &c., and adjacent to the carpenter's and gunner's store rooms, crammed with all kinds of metals, will in future be placed in the master's charge, who being entrusted with the navigation of the ship, is of course the proper officer to have the care of the Mariners' Compass, the most important of all machines.

When compasses were served in by contract, the contractor's aim was the *making of money*! he made his needles, not of pure hard steel, but of soft iron pointed with steel! such needles were easiest made and easiest magnetised, and they required more frequent repair and cleaning. Being stowed away without care or attention, these needles soon lost their magnetic energy, and were returned from ships to the dock-yards rusty and unserviceable, they were sent back to the maker for repair, for which there was a *price*, and also a *price for re-touching weak needles*, the consequence of all this was, that the expense of the compass department (imperfect as it was) was greater than it will be in future.

The generality of sea-faring men are not so well informed about magnetism as they should be: how can they? since philosophers differ in opinion about their respective theories! We have touched but lightly on these theories, as our object has been rather to teach the navigator a few of the fundamental principles of terrestrial and inductive magnetism, upon which the practical utility of the mariners' compass

depends. These principles should form a part of the navigator's education; they are essential to the practice of his art.

(To be continued.)

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ON MARINE SURVEYING.—By *Lieut. Ryder, R.N.*

A LATE perusal of a very interesting work, "William's Geodesey," has induced me to send you the solution of two problems in Practical Marine Surveying, which, I think, may prove useful to those of your readers, who take an interest in that branch of a naval officer's profession, so essential to the safety of our fleets. Both problems are, I believe, in print; but I never saw any solutions that did not involve long mathematical calculations, which, although "rigidly correct, are unavailable in an open boat, with nothing at command but compass and ruler.

If, by any unfortunate accident (such as the fall of a beacon, &c.) part of a principal trigonometrical connection depended on the accurate position being known of spots of observation, circumstanced as in the following cases, true bearings and calculations would, of course, be imperatively necessary.

But the following solutions (by geometrical construction) are supposed to be useful, merely for fixing little coast features, &c., of no very essential importance.

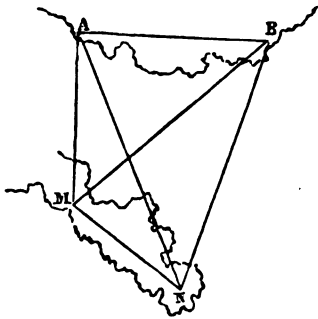
Besides, the fact that the practical men to whom I have shewn them have agreed with me, as to their probable utility, I have yet another reason for presuming to occupy in your pages a space, that might have been filled with more valuable matter. Many of my professional acquaintance have in their possession valuable "wrinkles," connected either with surveying, astronomy, seamanship, or gunnery, &c., which, unless their possessors can be induced, by force of example or otherwise, to "haul out," for the benefit of the rising generation, will perish with the books that contain them, instead of proving useful to those who are interested in the subjects they refer to.

If, Mr. Editor, you approve of my motives for writing, assist them I pray you, with remarks, advice, &c., calculated, I have no doubt, to have more effect in opening the pages of those hitherto almost useless receptacles of hints, remarks, &c., y'clept "wrinkle books," than any thing likely to have that proceeds from my pen.

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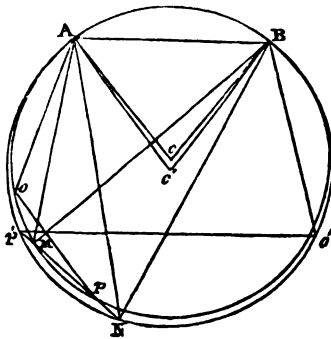
PROBLEM I.

There being only two known points in sight, all others having been unavoidably lost sight of, to find your position. If on shore one observer will be sufficient; if at sea two are necessary, and therefore two boats, unless floating beacons are available. (A boat-hook and the anchor will do.)



One observer at  $m$  observes the  $\angle s$   $AMB$ ;  $BMN$ ,  $N$  being some conspicuous point. He then proceeds to  $n$ , and observes the  $\angle s$   $ANB$ ,  $AMN$ ; or, if  $m$  and  $n$  are two boats sounding, the same angles are observed simultaneously.

|                  |                  |         |                  |
|------------------|------------------|---------|------------------|
| Let $\angle AMB$ | $37^{\circ} 30'$ | $ANM$   | $39^{\circ} 20'$ |
| $BMN$            | $86 \ 30$        | $ANB$   | $36 \ 0$         |
| Therefore $AMN$  | $123 \ 30$       | & $BNM$ | $75 \ 20$        |



Let,  $A B$ , be the two known points. Project the circles  $A B o p$  and  $A B o' p'$ , so that in the first,  $A B$  shall subtend at every point the  $\angle 37^{\circ} 30'$ , and in the second the angle  $36^{\circ} 0'$ . Assume any points  $o o'$ , on their respective circles.

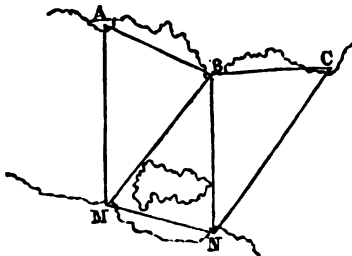
At  $o$  project the angle  $A o p$ , =  $123^{\circ} 30'$ .

At  $o'$  project the angle  $B o' p'$ , =  $75^{\circ} 20'$ .

Join  $p p'$ , and  $m$  and  $n$ , shall be the positions required. The truth of this result will be seen to depend upon the fact that  $\angle s$  in a circle standing on the same base are equal.

PROBLEM II.

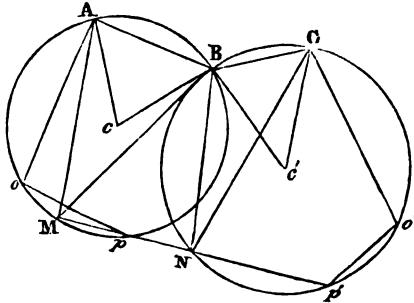
Of three known objects, two only at one place are visible. After proceeding some distance on the beach, or in a boat, the third object becomes visible; but in the mean time the first object has been lost sight of.



Let an observer at  $n$ , from which the points  $B$  and  $c$ , are visible, observe the  $\angle CNB$ , and the angle  $BNM$  to  $m$ , some conspicuous point.

Proceed to  $m$  (at which point  $A$  is visible, but  $c$  is no longer in sight) observe the  $\angle s$   $AMB$ ;  $BMN$ .

|                  |                  |       |                  |
|------------------|------------------|-------|------------------|
| Let $\angle AMB$ | $35^{\circ} 45'$ | $CNB$ | $22^{\circ} 40'$ |
| $BMN$            | $60 \ 30$        | $BNM$ | $82 \ 45$        |
| $AMN$            | $96 \ 15$        | $CNM$ | $105 \ 25$       |



By the method commonly used in surveying project the circles  $A B M$ , and  $B C N$ , so that at any point in the first,  $A B$  shall subtend an  $\angle 35^\circ 45'$ , and in the second,  $B C$  an  $\angle 22^\circ 40'$

Assume any points  $o o'$ . At  $o$  project the  $\angle A o p$ ,  $96^\circ 15'$  at  $o'$  . . .  $c o' p'$   $105^\circ 25'$

Join  $p p'$ , and  $M$  and  $N$  will be the positions required. The truth of this will be easily seen to depend on those two problems in Euclid, the one that  $\angle s$  in a

circle, standing on the same case are equal, and the other that the sum of the opposite  $\angle s$  of a quadrantal inscribed in a circle is equal to two right angles.

Then in the first problem are the following angles.

|                          |                         |
|--------------------------|-------------------------|
| $B o' p' = 75^\circ 20'$ | $A o p = 123^\circ 30'$ |
| at $M$                   | at $N$                  |
| $A M B = 37^\circ 30'$   | $B N A = 36^\circ 0'$   |
| $B M N = 86^\circ 0'$    | $A N M = 39^\circ 20'$  |

And in the second.

|                           |                        |
|---------------------------|------------------------|
| $C o' p' = 105^\circ 25'$ | $A o p = 96^\circ 15'$ |
| at $M$                    | at $N$                 |
| $A M B = 35^\circ 45'$    | $C N B = 22^\circ 40'$ |
| $B M N = 60^\circ 30'$    | $B N M = 82^\circ 45'$ |

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THE DISTRICT OF LOANGO.

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[The small tract of land comprised between the northern extreme of the kingdom of Loango in lat.  $3^\circ$  S., and long.  $11^\circ$  E., and the river Congo in lat.  $6^\circ$  S., long.  $13^\circ$  E., being the principal field for slave trade operations on that part of the West Coast of Africa, I have drawn up the following remarks from my Journal written whilst in command of H.M.S. Iris; and as during the whole of the year, two or more of Her Majesty's cruisers are constantly employed between those latitudes, for the suppression of the abominable traffic in negroes, I hope the information afforded in them may not be altogether useless.]

THE Bay of Loango itself is correctly described in the General Directory for the Southern Atlantic, and is formed by the projecting promontory called Indian Point. The factories (English and American storehouses) which are situated about a mile from the beach on the high ground, are not perceptible till you are near the shore, where the national flags are usually hoisted, and by communicating with them you may obtain intelligence. The natives are cunning and skilful traders, and opportunity offering not averse to thieving. They are otherwise inoffensive. The baskets of this district are very curious and

are remarkable for their solidity, and they may be had in exchange for empty bottles or old clothes.

The towns or villages being some distance inland, provisions cannot be obtained in any quantity unless the vessel remains twenty-four hours, after which the people come down with fowls, pigs, goats, and vegetables, plaintains, and pumpkins; all of which are reasonable, and obtained by barter or money. Dollars are the coins most known.

Water may be had from the mouth of a river close at hand, but to procure this necessary article vessels should proceed to Black Point Bay, a few miles to the southward of Indian Point a secure and better anchorage than Loango, though comparatively unknown. The country here is very beautiful, and as you stand in towards the land between Indian and Black Point, will remind you of many parts of England, being moderately high, apparently fertile and well cultivated, with hill and dale, and a succession of downs on which at intervals are dotted a variety of picturesque woods. The character of the whole scenery is so much that of ornamental ground, kept constantly in order by the hand of civilized man, that you can hardly believe in the reality of its being the resting place of a race of negroes, from time immemorial, in a state of barbarism, and whose communication with white men has been limited and uncertain.

On approaching the land from the seaward you will observe, apart from the other trees which crown the heights, a clump of thick brush wood called Looboo wood. When this bears E.N.E. (compass) you may steer direct in, and will be clear of the north-west end of the shoal, which extends between two and three miles off Black Point, and the water will shoal gradually from 17 to 9 fathoms.



Black Point in lat.  $4^{\circ} 49' S.$ , long.  $11^{\circ} 46' E.$ , is long and low, with a dense mass of trees standing out abruptly into the sea, and terminating in a sandy spit. To the southward a few miles is False Black Point, very similar in appearance, and this makes it necessary to *get hold of Looboo Wood*, in order to know the ship's position.

Having stood in E.N.E., till False Black Point is shut out, you may haul to the southward for the anchorage, going by the lead. You will find the soundings regular, and may anchor in 7 or 6 fathoms.

The best anchorage is Black Point S.W.  $\frac{1}{2}$  S., Indian Point N.  $\frac{1}{2}$  W., Iris Beacon, S.E.  $\frac{1}{2}$  S., good bottom, being one mile off shore, generally a ground swell. The landing at the creek is good and smooth, and water may be obtained close at hand from a spring, but only in small quantities, as the boats cannot approach owing to the shallowness of the creek, and it must be carried in breakers and started. By this means I procured about a ton an hour.

In the course of the day the Mafooka of the district, Domingo M'Coy, informed Mr. Wood (the master) of the existence of a large basin of

spring water, about two miles from the creek and near the beach. On examination I found the water excellent, only forty yards from the beach, and by cutting a road through the brushwood it was easy of access; indeed this large reservoir may be considered as the best station on the whole line of coast for vessels to water from. The boats can approach within a few fathoms of the shore, which, abreast of this spring is steep, and in ordinary times when the swell is not great they ride easy at the grapnel, whilst the Kroumen carry the breakers in, and so start them into the puncheons.

In two days the frigate by this means completed to her stowage of eighty tons, and the position being hitherto unknown, I erected a beacon with the name of the ship and date of discovery, and received a promise from the Mafooka that it should be protected.

The basin bore S.E.  $\frac{1}{2}$  S., from the anchorage of the Iris, distant one mile and a half. The water was purer than that of the Congo, and I should recommend vessels to go there in preference to the river. We rode out a violent tornado from the eastward which lasted three hours.

Stock here was cheap, one good sized fowl for an empty bottle; feathers and beads good also for traffic; useful mats may be procured here. The village on Black Point is neat, and the whole country round fertile; women may be seen working in the fields. The bay was formerly much frequented by the slave vessels, but during this year very few had appeared on the coast, and Domingo (the Mafooka) an active agent of the King of Loango for the disposal of his subjects, complained bitterly of the stagnation in the trade.

I understood that copper ore had been discovered in the mountains, and that the people were beginning to pay some attention to the cultivation of the soil. It certainly appeared to me that the whole of this district was more adapted than any part of West Africa that I had yet visited, for the European colonist, and I should strongly recommend the Philanthropist and the Anti-slave Societies to turn their attention to this spot. The natives are harmless but crafty, and their only idea of religion is in the worship of their wooden fetiches or carved images of the human figure.

The country between Black Point and Chilongo Bay, the northern extreme of which may be known by a reddish ledge of rocks, is quite different in character to the Loango territory, being lower and less woody, and the land being undulatory and gradually rising into the interior the prospect is more extensive. The land is said to be fertile, and water may be had from Chilongo river. From Chilongo to Kabenda steep and red cliffs are remarked close upon the beach, the country around and towards the interior being covered with verdure, and quite parkish in appearance.

The small and secure bay of Malemba is formed by a tongue of land of even surface, covered with grass extending into the sea in a north-westerly direction from high and perpendicular cliffs. The bay is snug for boats. The natives are addicted to thieving, and on one occasion attacked the boat of one of the brigs of war for the sake of plunder. From this to Kabenda the country continues high and fertile, and you may stand alongshore a few miles distant without fear, till you approach the anchorage of Kabenda, then attention must be paid to the



directions laid down in the General Remark book of the Southern Atlantic, and as the observations contained therein relative to this roadstead are sufficiently concise, I do not think it necessary to enlarge upon them.

RODNEY MUNDY,  
Captain *H.M.S. Iris*.

ON DEEP SEA SOUNDING AND TEMPERATURE.

By Capt. Sir E. Belcher. R.N.

*H.M.S. Samarang.*

SIR.—On the 20th of March being in latitude  $0^{\circ} 24' N.$ , longitude  $10^{\circ} 37' W.$ , an attempt was made to obtain soundings. The following were the rates at which the line passed off the reel. It broke, or ceased to descend (suddenly) at 3065 fathoms.

| Fathoms | h. | m.   | s.            | Fathoms | h. | m.  | s.            |
|---------|----|------|---------------|---------|----|-----|---------------|
| 0       | 2  | 57   | 38            | 600     | 3  | 53  | 35.2          |
| 100     |    | 59   | 8             | 700     |    | 59  | 12            |
| 200     | 3  | 0    | 56            | 800     | 4  | 3   | 54            |
| 300     |    | 3    | 2             | 900     |    | 8   | 24            |
| 400     |    | 5    | 18            | 2000*   | 14 | 7.2 | —2000 51 34.0 |
| 500     |    | 7    | 23.2          | 100     |    | 18  | 11.2          |
| 600     |    | 10   | 16.8          | 200     |    | 22  | 15.2          |
| 700     |    | 12   | 51.2          | 300     |    | 29  | 30            |
| 800     |    | 15   | 51.2          | 400     |    | 39  | 18            |
| 900     |    | 19   | 15.2          | 500     |    | 44  | 33.2          |
| 1000    | 22 | 33.2 | —1000 24 55.2 | 600     |    | 49  | 57.2          |
| 100     |    | 26   | 24            | 700     |    | 54  | 39.2          |
| 200     |    | 32   | 10            | 800     | 5  | 0   | 28.0          |
| 300     |    | 36   | 57.2          | 900     |    | 6   | 24            |
| 400     |    | 42   | 24            | 3000    | 11 | 0   | —3000 56 52.8 |
| 500     |    | 48   | 27.2          | 3065    |    |     |               |

\* Another lead sent down by messenger.

The first weight was one hand-lead of 12 lbs. The second one of similar weight, which does not appear to have materially accelerated the last thousand feet.

On the 25th of March, 1843, in latitude  $4^{\circ} 14' 35'' S.$ , longitude  $9^{\circ} 37' 39'' W.$ , a weight of 14 lbs. was attached, and struck soundings at 1620 fathoms; but 5 fathoms were hauled in to bring it nearly vertical. No perceptible current, but ship drifted about one mile to the south-west during the operation, which I attributed to the breeze and being hove to.

| Fathoms | h. | m. | s.   | Fathoms | h. | m. | s.                |
|---------|----|----|------|---------|----|----|-------------------|
| 0       | 11 | 45 | 5.2  | 900     |    | 4  | 40                |
| 100     |    | 46 | 25.2 | 1000    |    | 7  | 34 — 1000 22 28.8 |
| 200     |    | 48 | 4    | 100     |    | 10 | 28                |
| 300     |    | 49 | 52   | 200     |    | 13 | 52                |
| 400     |    | 51 | 58   | 300     |    | 17 | 4                 |
| 500     |    | 54 | 18   | 400     |    | 20 | 40                |
| 600     |    | 56 | 50   | 500     |    | 23 | 50                |
| 700     |    | 59 | 16   | 600     |    | 27 | 34                |
| 800     | 12 | 2  | 6    | 1615    |    |    |                   |

In this case the weight had an air bag attached, and was not allowed to sink rapidly for the first 50 fathoms. Still it appears to have reached the 1000 fathoms in less time than in the preceding experiment, and at 1600 much earlier.

|                |              |         |              |         |
|----------------|--------------|---------|--------------|---------|
| Thus in No. 1. | 1000 fathoms | 24 55·2 | 1600 fathoms | 55 57·2 |
|                | 2.           | "       | "            | 42 28·8 |
|                | Difference   | 2 26·4  |              | 13 28·4 |

In case 1 the weight was lead 12 lbs.

2 " iron 14 lbs. enclosed in canvas.

On the 23rd the water bottle was sent down in latitude 2° 33' S., longitude 8° 15'.

The temperatures as given by the undermentioned thermometers, (with the exception of 357 and 358,) cannot be corrected until I have further opportunities of determining their values.

|                    |                    |            |       |            |
|--------------------|--------------------|------------|-------|------------|
|                    | At 300 fathoms No. | 331        | 46°   | corrected. |
|                    | 400                | " 336      | 38    | (?)        |
|                    | 500                | " 322      | 46    |            |
|                    | 600                | " 315      | 45·5  |            |
| Sea at surface 79° | 700                | " 314      | 47    |            |
|                    | 800                | " 312      | 45    | (?)        |
|                    | 900                | " 357·42   | 40·25 |            |
|                    | 1000               | " 358·39 5 | 42·75 |            |

\* These belong to water bottles.

The line was brought perpendicular by the jolly boat before hauling the line in.

On the 13th of April, being becalmed in latitude 35° 50' S., longitude 1° 54' E., another attempt was made at deep-sea soundings, but the line parted without any surface strain at 1270 fathoms. I shall not lose more line by any repetition until I have laid them up three strands. I then obtained temperatures at the under-mentioned depths.

|                    |             |       |        |                      |
|--------------------|-------------|-------|--------|----------------------|
|                    | 300 fathoms | 336   | 47·25° | corrected.           |
|                    | 400         | " 315 | 44·50  |                      |
|                    | 500         | " 331 | 41·50  |                      |
| Surface            | 600         | " 312 | 51·25  | (?) Current          |
| by Standard 64° 5' | 700         | " 314 | 39·00  | S.W.b.S.             |
|                    | 800         | " 322 | 42·50  | 0,732 miles per hour |
|                    | 900         | " 357 | 41·25  |                      |
|                    | 1000        | " 358 | 39·75  |                      |

EDWARD BELCHER,  
Captain H.M.S. Samarang.

LIGHTNING CONDUCTORS.

*Protection of H.M. sloop Scylla from Lightning.*—By the official journal of this ship, signed by Commander Sharpe, and transmitted lately to the Admiralty, it appears that a powerful discharge of lightning fell on the vessel on the 6th of August last, in lat. 24° 3' N., long. 96° 13' W. They had shortened sail to a heavy squall from south-west at 6h. 30m. A.M., which at 7h. 50m. veered to north-west with hard rain. At this instant the ship was struck by lightning; the dis-

charge descended upon the main-top-gallant-mast, and passed down the conductors on the masts, and through the lower deck by the conductors in the hull with perfect safety into the sea. The force of the lightning was so great, that some of the butts and fixing of the copper-plates are said to have been started, especially where the lightning first struck; whilst the highly charged state of the air caused various parts of the ship to exhibit electrical signs. No inconvenience appears to have been felt on the occasion, the squall having passed, they again made sail within half an hour from the time the lightning struck the ship, and the usual duties went on as if nothing of the kind had occurred.

When we contrast this happy result with the destructive effects of the electrical discharge, as shewn by the logs of H.M. ships in this and former numbers, it must be surely admitted to be a highly satisfactory demonstration, by experiment, on the great scale of Nature, of the truth of the principles on which lightning conductors are applied, as well as of their great practical value.

At least eight ships of H.M. Navy have been successfully defended in this way from the terrible effects of lightning. In no instance have the conductors failed to transmit the electrical agency safely to the water, without those heating effects, and other ill consequences in the form of lateral explosions which some persons have asserted would necessarily be attendant on them. These objections, therefore, so often discussed in the pages of this work may be considered as being so far satisfactorily disposed of. To rescue the British navy from the terrible and often fatal consequences of lightning, so fully apparent in the official log books of H.M. ships above alluded to, cannot but be considered as a matter of great national importance.

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NAUTICAL RAMBLES.—THE LEEWARD STATION DURING THE WAR.  
*Port Royal and its Associations.*

(Continued from p. 717.)

OUR worthy host listened to this long yarn with the greatest attention, and replied "I am much gratified, and in truth feel highly indebted for the explanation which you have been so good as to afford me; and I readily acknowledge to have hitherto looked at the matter only in the abstract, a circumstance I apprehend which is but too common among the mass of mankind. You have given a spur to my enquiry, and although convinced that your reasoning is just, may I enquire, without doubting, whether the isolated state of seamen, as a body, may not be taken into the account."

"Most certainly, as well also the opposite position of the slave, who has an opportunity at any time, of evasion, by absenting himself. I made a slight allusion to this, I believe, in the course of the argument."

"It must be admitted that your train of reason seems conclusive with respect to the slave; but how, may I ask (said our host) does it happen that the black individuals, (who have not the same stimulants to action

as British seamen,) composing the West India regiments attain—if not to an equal degree of perfection, at least to a high state of subordination and discipline.”

“Your question is one which I am hardly prepared to answer; indeed, knowing nothing of soldiering, and very little with respect to the individuals to whom you allude, I cannot pretend to reason on the case; which upon the presumption that the disposition of the negro is pretty much the same everywhere, and under any circumstances, would appear almost a phenomenon! Yet, as it is probable that most, if not all, the persons enlisted into the West India regiments are young in years on their entry, much may be said on the score of early training, and the force of habit resulting from the constancy of a regular routine of duties. I believe, too, that the efforts of the officers were greatly assisted by a plan of education adopted for the improvement of the minds of the non-commissioned officers, who were blacks, and who thereby imparted to their comrades a large share of the *esprit de corps*, which acts with such beneficial effect in the services. Nevertheless, instances of mutiny or resistance to authority have not infrequently happened in the corps. But my object in the discussion is rather to endeavour to prove from direct facts that the negro slave is incapable of being brought to the same degree of regularity and obedience as the British seaman is; that is the gist of my argument, ‘*le but où j’aspire*,’ (the point which I aim at,) as the Frenchman would say.”

The question was thus disposed of, and our host seemed to feel that he had gained a “wrinkle”. I afterwards heard that a gentleman of fortune who had served in the army, and was rather fond of *eau de vie de sucre*, was in the habit of inspecting his slaves after the fashion of the soldiers: they were made to bathe themselves in a river which ran through the estate, and were afterwards mustered in their clean attire before the dwelling. I believe the system did not last very long. The person alluded to, if my memory serves me, was Mr. T——, son of one of the most extensive proprietors of the island, of whom I have heard the following marvellous story. “When he was born, a pigeon laid an egg upon which was legibly traced this line: “Joy unto thee J. T.” The former took it into his head to attend the expedition which captured the City of St. Domingo, during Admiral B. S. Rowley’s command, and it was said, afforded a great deal of amusement to the tars.

Whilst in the mountains I had an opportunity of seeing the musical instrument called a bonja. The lines written by the late R. C. Dallas, Esq., on the pastime of the negroes, alludes to this instrument.

“What are the joys of white man here?  
 What are his pleasures? say;  
 Me want no joys, no ills me fear,  
 But on my bonja play.”

The bonja is a singularly simple instrument, a sort of Paganinian of one string, which is stretched between the extremes of a bow, and is rested against the teeth or jaw, and played with the fingers. There was an old blind negro at Montego Bay, who was celebrated for his performance on this simple instrument; and I recollect to have seen in

the year 1814, at the Court House of that town, a very beautiful water-colour drawing of the bay and shipping from the heights above the town, wherein this old African musician was introduced with very happy effect sitting under a magnificent Sabia tree. The picture was the performance of a young English artist named Eves, whose skill and colouring I thought second only to the masterly delineations of his townsmen, (of Bristol,) Danby and Jackson. The unfortunate draughtsman, I was told, subsequently fell a victim to the climate.

I also had an opportunity of seeing the contoo, another simple instrument, if the unconnected pieces which are used to produce the sounds, can be so termed. It consists of two longitudinal pieces of wood in the rough state, with ten or twelve other pieces of different sizes, but proportionate in decrease from the first to the last, laid transversely upon the former; these are struck quickly with another rough stick, not successively, but with apparent irregularity, each piece producing a sound according to its size.

It will appear obvious that to produce harmonious sounds from so rude an instrument, it is necessary that the player should possess an ear for music; and that the sound issued by each piece of wood, must be retained in memory, just in the same way as that given out by each key of a piano requires to be known, in order to effect the composition of a regular and pleasing tune. There is no gamut to aid the mind of the black musician; but the tone of each key, if we may apply the term here, being once clearly understood by the ear, the selection of the others in succession for the production of a harmonious tune, will be dependent on the musical skill of the performer. The tones given out were soft and plaintive, similar to those produced by the musical glasses, or, by tumblers filled with water; and as the strokes were rapidly made, the sounds falling, as it were, into each other, altogether afforded an agreeable tune; superior indeed to what I should have expected from the sight of such a primitive instrument. A peculiar kind of hard wood is, I believe, necessary to be selected; and the proportionate lengths and diameter of each and all must be nicely adjusted. It is probable, too, that the size of the pores of the wood assists in modulating the sounds.

The performer was an aged African negro, the watchman of a plain-tain-walk. He sat alone in the midst of the romantic scene, consoling his withering heart with the thoughts of his early days; thoughts lit up, no doubt, by the sounds of his native instrument, which were familiar to the ears of his boyhood, and now carried his imagination back to those moments, to him, perhaps, as to many of a different caste, the only ones which, through a chequered life, were productive of unsearing happiness! That this view of the state of his feelings was correct, I was assured; for the poor old fellow after exerting his skill with animation for some time, became too excited to proceed, and at length threw down the stick he had been using—and wept! It was an eloquent picture, and those tears which the source of remembrance had poured down his aged and furrowed cheeks, told more forcibly than language could have done, that, black though the negro is, his feelings are strung upon the same vibratory thread as those of his more fortunate white brother.

I had, at this time, an opportunity of witnessing the festival of the "John Canoe". Whether this pastime is of African origin or not I did not ascertain, but except in the grotesque figure of the principal actor, there appeared nothing to entitle it to the attention of the curious spectator. It was difficult to make out what meaning was attached to the ceremony by the negroes; to me it seemed to be intended merely to create harmless diversion and mirth, which it failed not to do among the multitude that assembled to witness it; the black children especially were uproarious in the expressions of their delight; and no doubt were as happy as the white little ones 'at home' are in viewing Punch and Judy. The man who performed the chief character was fantastically dressed with a loose flowing robe over his shoulders reaching down to his heels, and the representation of a castle, or spired building on his head. In fact it appeared to be a sort of Carnival, and possessed as little pretensions as that ridiculous pastime of the more serious Catholics, to rationality.

Jamaica is not exempt from the presence of that singular people distinguished by the name of Jews; indeed, the island appears to possess rather more than its share of such keen sons of Mammon. Some have attained to great wealth, and receive that attention and deference from the rest of the community which a long purse will always command. I have met, too, with a few who are not usurers, or engaged in trade, but have swerved from the beaten track of their progenitors, and live in the country upon their own estates. It is a subject for remark that in these individuals I found the lineaments of the face far less marked and peculiar, than in those who follow the ordinary occupation of the sect. Some of the members to which I particularly allude have married Christian females, a step which would seem to imply that their sentiments with respect to their religious creed was undergoing a change; or, what, perhaps, amounts to the same thing, they had become indifferent to the claims of exclusive observance exacted by the tenets of their religion, or the practice enjoined by the laws which govern their conduct. In two or three generations it is probable that, little trace of the Jewish features, or origin will remain, and that the successors will fall imperceptibly into the pale of the reformed Church; a mode of amalgamation, if the term may be permitted, that seems more natural than a sudden change of belief, which always must be attended with violence to the feelings; and may give cause for others to suspect that the party which leaps at a bound, from one creed to another, that are diametrically opposed, has little claim to be considered as being in possession of any religion whatever.

Nevertheless, conviction of a truth, or of some point which may be strikingly confirmatory of what is considered by a people, a sect, or party, to be a truth, may flash suddenly across the mind of an individual, and bias it at once and for ever in favour of that truth. The history of the Jews themselves is confirmatory of the truth of the New Testament. Those who may entertain any scepticism of the genuine contents of the Bible, one would think, upon due reflection on all which is therein recorded of that singular people, and the verification of the general denunciation, ought to be convinced of the erroneousness of their opinion. There is, indeed scarcely a subject connected with the

history of mankind, which offers more serious matter for reflection than that of the peculiar situation of this once powerful nation, the chosen people of the God of the universe, their dispersion over the globe, their adherence to their ancient religion, modes, and customs, their marked features, so distinct from those of others, as to be recognised in any country, their predilection for traffic, especially in the precious metals, and jewellery, as money lenders, brokers, and rag-men, their ardour and indefatigable zeal in the pursuit of gain, which no insult, injustice, or persecution can diminish, the remarkable success which attends their universal practise of usury, as the "Golden Calf," the "Great Levite" of the money Exchange exemplifies.

But, be their demerits what they may, is it for their fellow-men of a different creed, to condemn them for the past, in persecutions and opprobrium in the present? The same Almighty power which "sets his seal" upon the "stiff-necked generation" is not unrelenting; the attribute of mercy which displays itself in every moment of our lives, without distinction, has been vouchsafed to this "fallen people," and in the due opening of time the remnants which now lie scattered over the face of the world, will be gathered as one flock, under one shepherd. Happily, the mere prejudices of religion are giving way to more enlightened and more humane feelings; and, if any thing unconnected with faith, can reconcile this sect to the tenets of the Christian, surely a more benevolent conduct towards all those who are attached to that sect, is more likely to be efficacious than persecutions and execrations!

I do not know whether the remark has ever been made, or, that it is strictly correct, but, I never heard of a black Jew, although, I believe some coloured persons will be found among them as "half-breeds." Neither have I ever heard of their making converts. Christians, we know, have pretended (in all probability) to join the Moslem ranks, but (there is scarcely a doubt) their conversion to Mahomedanism was from policy and not conviction. But, who ever heard of a Christian, or a follower of the "Prophet of Mecca becoming a Jew? To be "as avaricious as a Jew," has been a proverb in everybody's mouth, as if, forsooth all other persons were exempt from such a feeling! Jews are as capable of generous actions as well as other people; it would be strange indeed if they were not so; but, the Christian, whose religious principles split into fragments, assumes great superiority of pureness over other sects; and in his study of human nature, although habitually given to the observance of other's faults, forgets to feel his own! The current story of the Jewess-mother, whose child fell from the gallery into the pit, having demanded back the money because "little Moses broke his neck and did not see the play;" may pass as a capital joke among the Cockneys; but, it would seem that the universal system of frauds practised by those of a purer faith has no point, no meaning, as if they were privileged amidst the display of ostentatious self-conceit, to deride that sin in others, which they are deeply imbued with themselves!

We may now turn our view to other matters. On the Jamaica station the enemy's ships of war seldom appeared; but the privateers were extremely numerous, and although a great many were captured, like

cockroaches their number seemed not to diminish. This may, perhaps, be accounted for from the fact that privateering was carried on here more in the spirit of buccaneers than according to the rules of European warfare, and proved a very profitable speculation; the loss of a vessel being immediately supplied by the fitting out of another, and a man of enterprise never wanting to fill the command.

If the French naval officers, during the late war, had been possessed of the experience, the enterprise, and the skill of the commanders of the privateers which roamed within the limits of the Caribbean Sea, and confined their attention solely to the capture of our merchant-men, they might have annoyed our commerce much more than they did. Of course, as the state of affairs was at that time, few would ultimately have escaped from us; but if instead of sending out, occasionally, single ships, and squadrons of the line, Napoleon had ordered three, four, or five fast-sailing frigates, sloops and schooners, under clever officers, from the several naval ports, with roving commissions, to proceed successively to sea, and confine their depredations entirely on our trading vessels, there is little doubt we should have suffered considerably more than we did.

There will appear no reason to doubt this inference, when we recollect what mischief the Americans created during the short period of a two-years' contest, by dispatching two, and three national vessels together, to roam over the seas, and burn, sink and otherwise distress our commercial shipping, and which, in some cases, was performed with perfect impunity, notwithstanding the immense number of our men of war studding the ocean, from continent to continent, and from zone to zone. It was impossible, however, for the unprecedentedly large force of Britain, to guard all the avenues into the ocean, or to effectually blockade the North American ports, although most of these lie up estuaries,—fog, and off-shore gales, and dark nights to such skilful and daring seamen as our brother Yankees are, were just the sort of incidental incentives to *their* restless and bold spirits, to lead them into the resolution of making a *dash* at all hazards, and in a variety of cases with complete success, as the runs through "Hell's gates" sufficiently attest.

In any future war, from the introduction of steam-power in navigation, no doubt the mode of carrying on hostilities at sea, will be much altered or modified; but, I am not one of those who imagine that ships of the line will be dispensed with, and that the warfare will more resemble that of the Gallies in less modern times, than the formal fashion of the late wars. If, however, steamers are destined to play a principal part in any future naval actions, it seems obvious, from their present construction that, they must be kept out of range of the broadside shots of the engaged ships, and their commanders be content in the use principally of shells.

That they may become useful in towing the disabled ships out of the line, and in raking the enemy's rear, may be possible; but, if the latter are equally strong in that class of vessel, we may readily believe they would not be mere lookers-on, but rush in to prevent the aid of the others from being effectual; in which case, the success of the battle may not be much aided by them, as they would have enough to do to



take care of themselves; for, as an unlucky shot, or shell, may place any one of them *hors de combat*, or, at all events, render her less efficient than a sailing vessel, their presence would afford but a doubtful hope of the issue of the fight as far as they are concerned.

Some plan, therefore, which would render the steam machinery secure from the effect of shot and shell is a desideratum; but if this be impossible, then, an action at sea will not materially be dependent on the aid which such vessels are capable, in their present mode of fitment, of affording. We are not justified in believing, however much the national vanity may be flattered, from the good service which the steamers rendered on the coast of Syria, and at Canton and other places in China, that they will be able to be equally effective in action with a fleet of any European power, or with that of the Americans; one shot, well directed, from the heavy gun now introduced into the navies of the different nations, would paralyze the efforts of any steamer, and may render her useless. And if steam fleets or squadrons alone are to meet and contend in general actions, the victory will not, it may be presumed, depend so much on seamanship, and bravery, or endurance of "pummelling", as upon skill in gunnery, and good fortune. The party which is less cut up, and whose machinery has been the least injured, will win the "chance", but whether he may be enabled to take advantage of it, is another thing—hypothetically, there would be little hopes, for the party which had lost the "chance" whilst the other had the power of choosing his position and distance. Let us take another view, which in fleets is unlikely, but may happen with small squads\*: suppose both parties fight until each becomes disabled, and for a time unable to move; a few ships, or steamers, belonging to either side accidentally falling in with the combatants, would soon finish the affair; under these circumstances the constant stream of success which followed our maritime enterprises and sea-fights hitherto, may not be near so uniformly successful; but I do not think that the prestige of our naval glory, even in steam warfare, will ever be tarnished, or lost, or materially lessened, though it is possible, indeed probable that, we shall not so effectually, in any future war, sweep the seas of the enemy's vessels as we did during that of the revolution.

It is remarkable that during the war British privateers were few in number! but those which appeared were generally of a larger size and carried more guns than most of the enemy's private armed vessels. The reason probably was that the returns would not justify the outlay, as the King's ships being so numerous, and the merchant vessels of the enemy so few that but poor gleanings could be expected by speculators.

Kingston in Jamaica, and Nassau in New Providence employed a few schooners; and as two or three re-captures would prove as profitable to the proprietors of these vessels as one prize, a tolerable harvest was reaped by them; especially by "Old Johnson" of Bahama celebrity, who was eminently successful in relieving the Dons of their doubloons and dollars, and in finding gay Lotharians to woo his pretty daughters.

The desire of realizing a rapid fortune in this way appears to have

\* Of Steamers.

seized upon the imagination of a Captain of marines by the name of Watt,—I believe of the *Arethusa* frigate. He was a man of great energy and determination of purpose, and particularly suited to dashing enterprise; and for a short time kept the Spaniards of the south side of Cuba in a state of terror, by his bold attempts to share in their profits, principally in the Bight of Batabanoo. I believe, however, that his expectations were not realized. I took a passage in his schooner from Lucca to Port Royal; she was a beautiful craft, well manned, and in prime order. I do not recollect what became of him, or in what manner he settled his dispute with the naval authorities about the right he claimed of quitting the public service. Had he remained, he probably would have obtained the brevet rank of Major for the actions of the frigate subsequently, and by this time would have been a Colonel, if not a Major General—the prospective peep he took, by reflection, into futurity it appears was deceptive, and his lesson may be profitably studied by others, the old adage “a rolling stone gathers no moss,” being verified in his case.

The sport, if I may use the term, which the clever commanders among the privateers'-men of the enemy afforded to our ships of war, was equal in excitement to that which a keen and ardent sportsman enjoys in his more wanton pastime of hunting the stag, the fox, or the hare; and the animated pleasure was often increased to such a degree, as to border on delight, by the display of professional skill of the master-spirits which guided and executed the manœuvres necessary to ensure escape; or, when that became doubtful, in deceiving by stratagem, or, outwitting by cunning; they being privileged as the weaker party, in resorting to the employment of any, or every conceivable *ruse* for the purpose of getting clear of the clutches of the formidable pursuer.

It was often a beautiful and extremely interesting sight to witness a chase of this sort on a lovely day, with the glorious sun shining brightly, and the vessels speeding gallantly under a press of sail, with a fine royal breeze blowing over “*El golfo de las Damas*,” (the ladies' sea,) when the chances of success, or, of escape, of the pursuing, and the pursued, were so nicely balanced, as to rise expectation to the highest pitch, and leave the stake to the issue of a false manœuvre on the one side, or, to the superior taste and sagacious pre-conception of what would follow on the other!

By St. George! she distances us amain;  
 Blow good breeze—a fresh gale blow!  
 Up Firemen—wet the sails—they have no strain;  
 Pipe the hammocks down below.  
 Let the men turn in—sling the chests—be smart;  
 Trimmers run the bow guns aft;  
 The upper tier of water quickly start;  
 We must counteract his craft,  
 And try with skill to win, if doomed to part.

Such are the plans, the hopes, and fears, briefly expressed, that occupy the mind during a chase; and there are few indeed, it may readily be believed, who do not enter upon the cheering pursuit with all the energies of body and soul; and feel those undefinable emotions, whilst it lasts, that the mind is susceptible of, from external causes acting upon it, through the medium of the sense of sight.

(*To be continued.*)

ON THE DAMAGE WHICH HAS OCCURRED IN THE BRITISH NAVY BY LIGHTNING, with an account of the attendant phenomena, abstracted from the Official Journals of the respective Ships, and from other authentic sources of information.—By W. S. Harris, F.R.S., &c.

(Continued from p. 744.)

#### UNITE, 36.

1811. June 25th, off Elba, Mediterranean; Capraira, south four leagues; A.M. 6h. 25m., a very heavy squall E.N.E., accompanied by lightning, thunder, and rain; main-top-mast shivered all to pieces; also fore-top-gallant-mast; fore-top-mast sprung in several places, and the fore-mast much damaged; main-mast also split open and sprung; fore-top-sail set on fire, and main-top-sail split open and lost overboard. Several men badly hurt.

On clearing up, observed Ajax and Resistance to have suffered much by lightning.

The main-top-mast, it appears by another account, went over the side, and one man was lost in consequence. The lightning knocked down all hands on the lower deck, and is said to have escaped out of the hawse holes.

Wind on the 24th, W.N.W., light breezes and cloudy; 25th A.M. calm, then E.N.E., after which heavy squalls; 8 P.M. squally with thunder and lightning; 26th fresh breezes and cloudy; wind shifted to W.b.S.

The ship was obliged to go to Malta and shift her masts. She was one of the Mediterranean fleet, and was disabled by lightning, together with Ajax, 74, and Resistance, 44, in the same thunderstorm. This case shews the liability of lightning to strike in several places at once, and to fall on two masts of a ship.

#### UNION, 98.

1813. September 2nd, off Toulon, at anchor in the Bay of Foz; A.M. found main-top-mast shattered by lightning.

Wind on the 1st south-east, cloudy and fresh; on the 2nd north-east to north-west; 3rd S.S.E. strong breezes and squally.

This ship was one of Sir E. Pellew's squadron. (See Swiftsure of the same date, and Ocean.) The fleet under Lord Exmouth, on the blockade of Toulon suffered so much, and so frequently in thunderstorms, that his lordship issued an order to prevent the men from going aloft during the prevalence of lightning, except in cases of great emergency. Out of thirteen sail of the line nearly one half were on one occasion more or less disabled.

#### LA VIRGINIE, 38.

1799. September 28th, Madras Roads; 10h. 45m. P.M. lightning struck the ship and shattered to pieces main-top-gallant and main-top-mast, also sprung the main-mast and destroyed the main-top-sail-yard. Capt. Rogers, R.N., who was in the ship states that, several men were knocked down on the deck by taking hold of the staunchions round the

skylight. The thunder and lightning continued above an hour, and produced a rapid succession of discharges. The rigging of the ship appeared as if scorched by fire, and the lightning is said to have discharged from gun to gun on the main deck.

The wind was from the east with a shift to S.S.E. and W.S.W.

#### VICTOR, 28.

1803. May 28th, East Indies; Cochin, east twelve leagues; 10 A.M. heavy squalls with rain, wind easterly; 10h. 30m. main-top-gallant-mast, top-mast, and main-mast struck and shivered by lightning, lower rigging on the starboard side much cut.

Wind on the 27th S.b.E. variable and squally; 28th south-east; 29th light airs A.M. and variable, at noon south-west, squally.

The ship had a refit in consequence at Trincomalee, and her main-mast was taken out.

#### VALIANT, 74.

1813. April 5th, off Boston; Gay Head N. 44° E., 71 miles.

Wind east, fresh breezes and thick weather; 8h. 20m. P.M. heavy rain, with lightning, and thunder; a flash struck the main-top-gallant-mast and carried it away, together with the main-top-mast and mizen-royal-mast; main-top-sail split and also main-top-sail yard.

#### WINDSOR CASTLE.

1794. September 28th, moored in Leghorn Roads; 8h. 30m. A.M. the fore-mast and fore-yard struck by lightning. Wind on the 27th west with a shift to north-east in the afternoon; 28th A.M. southerly, after which south-east; on the 29th again north-east.

The log says but little of this accident. It appears by other accounts that when the fore-yard was struck, the paunch between the mast and yard was set on fire, and it burned so furiously as to threaten destruction to the ship. Fortunately a heavy fall of rain came on, and the fire was at length extinguished, one or two men were much hurt, and all the pigs killed in the sty.

The *Senata*, a Neapolitan 74, in company, on the larboard beam was struck at the same time, her main-mast shivered; eight men killed and many wounded. Further accounts from the late Capt. Bevan, and Lieut. Jeans, R.N.

#### WASP, 18.

1814. January 10th, cruising in the Gulf of Florida; A.M. strong gales and squally N.N.E., 4h. 45m. ship struck by lightning, main-top-gallant-mast and main-mast much injured. Two men killed.

The winds were variable all round the compass, with occasionally heavy squalls from north-west and calms with thunder and lightning; at "11h. 30m. main-top-mast shivered to pieces"; 12h. very heavy squalls. Lost overboard by the main-top-mast going main-royal braces and bowlines and swinging boom, also main-top-sail lifts and braces. P.M. cleared the wreck, found main-mast so much injured as not to be enabled to bear a main-top-mast.

The lightning was very vivid and forked; the ship had a prize in company, which appeared to be surrounded with serpentine flashes of fire. The main-mast on being taken out at Bermuda was found shattered to the heart. The crash of the thunder is said to have been awful, every one on deck was knocked down. The body of one of the men struck and killed by the lightning is said to have remained warm for two days; the smell of sulphur was so strong on the lower deck that the men were in danger of suffocation. Further particulars by Capt. Price, R.N., then in the ship.

YORK, 74.

1800. September 25th, Port Royal, moored in the harbour; A.M. fresh breezes with rain, thunder, and lightning, wind easterly; 1 P.M. main-top-mast and top-gallant-mast shivered by the lightning, and the main-mast much damaged; two men killed and five wounded.

Wind on the 24th, east and moderate; 25th east; 26th, south-east, moderate and fair weather.

Much more is said of this case than appears in the log, it created a great sensation in the West Indies at the time from the many men killed and wounded. It is stated that the men were furling the main-top-sail at the time, and that they were all killed or hurt; and that several were killed and wounded on the lower deck. The flesh of those killed came away like a bruised or rotten apple on being touched. The hoops of the main-mast were burst open, and four butts of water were stove in the hold.

ZEALOUS, 74.

1796. December 26th, mouth of the Tagus; P.M. squally with rain, thunder, and lightning, by which a man was killed whilst at work on the bunt of the main yard.

The wind had been from the west, after which variable and north-west; 27th W.S.W. squally, with rain and lightning.

The log does not record any further damage.

ZEBRA, 18.

1838. March 27th, standing along shore, Straits of Malacca; P.M. light breezes S.S.W., and fine; 8h. squally with heavy rain, thunder, and lightning; 9h. squalls with very vivid lightning; 9h. 20m. the electric fluid shivered the main-top-gallant mast and top-mast. The main cap much injured. Came to with the chain cable in twenty-four fathoms.

The electrical discharge passed by the chain top-sail sheets to the bolts, without damage to main-mast, and seemed from thence to explode like a shell in the body of the vessel, destroying the top-sail sheet bolt. The sails on the main-mast were quite scorched, and also the jib, which was rendered quite useless in consequence. The head of the top-mast, and part of the top-gallant-mast were found lying across the top-sail yard; the body of the top-mast came down on deck, being the greased or hoisting part of the mast.

The wind on the 26th W.N.W., W., N N.W., and calm; 12 P.M.

N.N.E., light breezes and cloudy; 27th north, light airs at 1 A.M.; 12 P.M. the wind shifted to the south. The weather all the day fine, but at 8 P.M. a succession of squalls from all points of the compass, just before the ship was struck it was quite calm. On the 28th variable winds and fine; light airs from E. to N.

Further particulars from Capt. McCrea, R.N., then commanding the ship.

(To be Continued.)

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### MARINE INSURANCE.

"THE system of doing insurance which has been brought about by mushroom companies, projected by scheming secretaries, in order to obtain salaries for themselves and others, has completely set aside the old practice, and has materially altered the risks. Competition has rendered it easy to effect an insurance on any dilapidated "tub" to the full amount of her value, whereas it was formerly the custom to engage for no larger sum than would cover two-thirds of the worth of a vessel which rule (as Mr. Gladstone, of Liverpool, lately averred) made the owners of many vessels cautious and careful in their outfit and repair."

Little did we think, when the paragraph just quoted was written, that any witness would be bold enough and candid enough to tender such full and unbiassed testimony upon the subject, as was requisite to explain to the Committee on Shipwrecks all the evil consequences that arise by abuse of the protective benefits of insurance. A witness of this fearless and candid disposition, however, did present himself. John Powell, Esq., a member of Lloyd's, has laid bare all the faulty workings of our system of insurance, which conspire to lessen those precautions which should be observed in the outfit and management of merchant vessels. He has proved that vessels are sometimes wilfully wrecked, for the object of gain, by recovery upon a multiplicity of policies; he has disclosed the fact, that remuneration for total losses has been claimed from the insurers upon vessels *which very shortly afterwards made their appearance*. That losses are, in certain cases, more profitable to the insured than safe arrivals—that it is on these occasions that the mariner, after his hazard and labour, is deprived of his wages to add to the gain of the shipowner; that the barratry of the master, and the consequence of his wrong doing in regard to another vessel not under his charge, are all covered by the responsibility of the underwriter; who, moreover, makes good the smuggler's loss.

All these results are attributed to the eagerness of competition; but at the same time it should be recollected, that competition has reduced the cost of marine insurance twenty-five per cent. This last effect might be considered an advantage, if it were not counterbalanced by the destruction of vessels which might and would have been preserved if so great facilities did not exist for effecting insurances upon vessels not faithfully repaired or liberally fitted. It will perplex no one, after what Mr. Powell has related, to account for the failure of the St. Patrick Insurance Company, which, after a career of eighteen months or two years, wound up its accounts with a loss of £250,000. The money might have been laid out better, and no doubt the shareholders think so.

Sir Charles Napier, who seemed astonished at parts of Mr. Powell's evidence, demanded—"Are ships ever lost on purpose?"—Yes! said the witness! and sometimes from the neglect of captains and officers; yet, in either case, the insurers pay—"good easy men," they pay, "full snrely"—and generally as a matter of course. Admitting this statement to be true, can there be a

doubt about the correctness of Mr. Powell's opinion, when he says—it would be of advantage, not only to underwriters, but to the whole country, and cause a still further reduction of premiums, were enquiry to follow the loss of a ship?

The underwriters would certainly be benefitted by any measure which would induce increased caution in the navigation of merchant vessels; and it is equally evident that the country would gain, since every loss of property is a national loss, as well as a loss to the individuals upon whom it immediately falls. The claims for total losses and for averages are greater than they were, making due allowance for the increased tonnage. Here is an effect—what is the cause of it? That many ships have been designedly wrecked we do not believe; let the mischief be attributed to carelessness or anything less blameable; still some endeavour should be made to lessen its amount. The propriety of making such an attempt seems to be acknowledged at Lloyd's, for Mr. Powell expressed his approbation of the proposal of Captain Fitzroy, albeit the late Trinity-house colleagues of that gallant officer are opposed to it.

Next in importance to guarding as much as possible against shipwreck, is the business of defending shipwrecked property from plunder, when thrown ashore. Several naval officers have given evidence that robbery of this character is committed on many parts of our coast, and that the offenders, some of them decent-looking farmers, really believe that they are doing no wrong in appropriating to themselves, anything worth carrying, that the storm brings within their reach. They say it's a "Godsend," and calculate upon the probabilities of the happy event occurring to enable them to give their wives new gowns. It is common with them to stop the clamours of a noisy creditor with "I'll pay you next wreck"; and the promise passes as one of fair hope of a satisfactory settlement. Thus the underwriters, like the young progeny of the turtle, are preyed upon in the flood and on the sands; but it is not always and in all places that the wreckers go to their work and do it in real or pretended ignorance of its atrocity. This is shown by a well-authenticated instance narrated by Mr. Powell, of the cunning and caution of wreck robbers at Whitstable.

[The foregoing, which we quote from that valuable paper, the *Shipping Gazette*, is a pretty dish to set before our readers; and yet it is in a few words what has been in these pages long ago. We trust that our seamen will consider it well, for let them remember, the "tubs" which some of them sail in, may be insured, but that their lives are at stake in them: with regard to the ruin of an Insurance Company when competition in this art goes so far as to leave the seaworthiness of the ship to be insured out of the question, all we can say is, they richly deserve it.

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#### THE CHINESE TARIFF.—*Tonnage Duties, &c.*

As all mercantile transactions are carried on in China, and will be, in dollars, of which the Spanish pillar dollar will be the standard, until other dollars obtain the same credit; as, moreover, the duties by the new tariff are to be paid in bullion, that is, in silver valued at per rule of Spanish dollar; and as, moreover, no coin or metallic value is so well and universally understood in the British dominions as the Spanish dollar, it would seem to be a great convenience to state the new Chinese tariff in the identical terms of dollar values in which calculated and understood there. The statement of the new tariff rates in these values will moreover afford a more convenient occasion for a comparison with the former tariff, which comparison is after all possible to a certain extent only, as a complete and attested copy of that tariff never could be procured by the resident merchants (perhaps not over anxious in the matter), and therefore the duties were surcharged, abused, mitigated, compromised.

according to the astute manœuvres of the merchant and the necessities of the pauper mandarins. It will readily be understood that the consigners of Leeds or Manchester wares were seldom admitted to a participation in the mysteries of the tariff rates really arranged, as perhaps their account sales would tell.

Taking the dollar at 4s. 2d., and there being 100 cents to the dollar, the cent corresponding to one halfpenny, the Chinese tariff will readily be construed as follows:—the Chinese weights and measures as rendered in English being given subsequently. And the tariff rates are likely to be more correct as here given, because thus rendered into dollar values on the spot, that is in Hong Kong by intelligent resident merchants. Such of the rates of duty payable under the old or former tariff as can be verified are added by way of comparison with the new tariff.

*Schedule Tariff of Duties of the Foreign Trade with China.*

|                                                 |      | EXPORTS. |                                                                                                |      |    |
|-------------------------------------------------|------|----------|------------------------------------------------------------------------------------------------|------|----|
|                                                 | dol. | c.       |                                                                                                | dol. | c. |
| Alum,*per 100 catties                           | 0    | 14       | Mother-of-pearl ware, do.                                                                      | 1    | 40 |
| Aniseed (star), do.                             | 0    | 70       | Musk, per catty                                                                                | 0    | 70 |
| Ditto oil, do.                                  | 6    | 94       | Nankeens and cotton cloth of all kinds, per 100 catties                                        | 1    | 40 |
| Arsenic, do.                                    | 1    | 04       | Pictures, viz: large paintings, ea.                                                            | 0    | 14 |
| Bangles (or glass armlets) do.                  | 0    | 70       | Do. rice paper 100 pictures,                                                                   | 0    | 14 |
| Bamboo screens and bamboo ware of all kind, do. | 0    | 28       | Paper fans, per 100 catties                                                                    | 0    | 70 |
| Brass leaf, do.                                 | 2    | 10       | Paper of all kinds, do.                                                                        | 0    | 70 |
| Building materials, Duty free                   |      |          | Pearls ( <i>i.e.</i> false pearls) do.                                                         | 0    | 70 |
| Bone and hornware, do.                          | 1    | 40       | Preserves and sweetmeats of all kinds, do.                                                     | 0    | 70 |
| Camphor, do.                                    | 2    | 10       | Rattan work of all kinds, do.                                                                  | 0    | 28 |
| Canes of all kinds, per 1,000                   | 0    | 70       | Rhubarb, do.                                                                                   | 1    | 40 |
| Capoor cutchery, per 100 catties                | 0    | 42       | Silk (raw) whether Chekeang, Canton, or elsewhere, all kinds per 100 catties                   | 13   | 89 |
| Cassia, do.                                     | 1    | 04       | Coarse or refuse of silk, do.                                                                  | 3    | 47 |
| Ditto buds do.                                  | 1    | 40       | Organzine, all kinds, do.                                                                      | 13   | 89 |
| Ditto oil, do.                                  | 6    | 94       | Ribands, threads, &c., do.                                                                     | 13   | 89 |
| China root, do.                                 | 0    | 28       | Silk piece goods of all kinds, as silks, satins, pongees, crapes, velvets, lustrings, &c., do. | 16   | 67 |
| Chinaware, all kinds, do.                       | 0    | 70       | (N.B. The additional duty of so much per piece, hitherto levied to be henceforth abolished).   |      |    |
| Clothes (ready made) do.                        | 0    | 70       | Silk and cotton mixtures, silk and woollen mixtures, and goods of such class, do.              | 4    | 17 |
| Copper, pewter ware, &c. do.                    | 0    | 70       | Shoes and boots, leather, satin, or otherwise, do.                                             | 0    | 28 |
| Corals (or false coral), do.                    | 0    | 70       | Sandalwood ware, do.                                                                           | 1    | 40 |
| Crackers and fireworks of all kinds, do.        | 1    | 04       | Soy, do.                                                                                       | 0    | 56 |
| Cubebs, do.                                     | 2    | 10       | Silver and gold ware, do.                                                                      | 13   | 89 |
| Fans (as feather fans, &c.,) do.                | 1    | 40       | Sugar, white and brown, do.                                                                    | 0    | 35 |
| Furniture of all kinds, do.                     | 0    | 28       | Sugar candy of all kinds, do.                                                                  | 0    | 49 |
| Galingal, do.                                   | 0    | 14       | Tinfoil, do.                                                                                   | 0    | 70 |
| Gambooge, do.                                   | 2    | 78       | Tea, do.                                                                                       | 3    | 47 |
| Glass and glassware all kinds do.               | 0    | 70       | Tobacco of all kinds, do.                                                                      | 0    | 28 |
| Glass beads, do.                                | 0    | 70       | Turmeric, do.                                                                                  | 0    | 28 |
| Glue (as fish glue, &c.,) do.                   | 0    | 70       | Tortoise-shell ware, do.                                                                       | 13   | 89 |
| Grass cloth (all kind) do.                      | 1    | 40       |                                                                                                |      |    |
| Hartall, do.                                    | 0    | 70       |                                                                                                |      |    |
| Ivory ware all kinds, do.                       | 6    | 94       |                                                                                                |      |    |
| Kittysols or paper umbrellas, do.               | 0    | 70       |                                                                                                |      |    |
| Lackered ware all kinds, do.                    | 1    | 40       |                                                                                                |      |    |
| Lead (white lead) do.                           | 0    | 35       |                                                                                                |      |    |
| Lead (red lead) do.                             | 0    | 70       |                                                                                                |      |    |
| Marble slabs, do.                               | 0    | 28       |                                                                                                |      |    |
| Mats; straw, rattan, bamboo, &c.,               | 0    | 28       |                                                                                                |      |    |



|                                             |         |      |                                                                              |         |
|---------------------------------------------|---------|------|------------------------------------------------------------------------------|---------|
| Trunks (of leather,) do.                    | dol. c. | 0 28 | Articles unenumerated in this tariff<br>to pay 5 per cent. <i>ad valorem</i> | dol. c. |
| Treasure ( <i>i. e.</i> coins of all kinds) | Free    |      |                                                                              |         |
| Vermillion, per 100 cattiees                |         | 4 17 |                                                                              |         |

## IMPORTS.

|                                                                                                                                                                                                                     | dol. c. |                                                                                                                    | dol. c. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------|---------|
| Assafoetida, per 100 cattiees                                                                                                                                                                                       | 1 40    | Cotton yarn and cotton thread,                                                                                     |         |
| Bees'wax, do.                                                                                                                                                                                                       | 1 40    | 100 cattiees                                                                                                       | 1 40    |
| Betel nut                                                                                                                                                                                                           | 0 21    | Cow bezoar, per catty                                                                                              | 1 40    |
| Biche de Mar, 1st quality, or<br>black, do.                                                                                                                                                                         | 1 12    | Cutch, per 100 cattiees                                                                                            | 0 42    |
| Ditto, 2d quality, or white, do.                                                                                                                                                                                    | 0 28    | Elephants' teeth, 1st quality, whole                                                                               |         |
| Birds' nests, 1st quality, or clean<br>do.                                                                                                                                                                          | 6 94    | per 100 cattiees                                                                                                   | 5 55    |
| Ditto, 2d quality, or good mid-<br>dling, do.                                                                                                                                                                       | 3 47    | Ditto, 2d quality, broken, do.                                                                                     | 2 78    |
| Ditto, 3d quality, or uncleaned do                                                                                                                                                                                  | 0 70    | Fish maws, do.                                                                                                     | 2 10    |
| Camphor (Malay) 1st quality, or<br>clean, per catty                                                                                                                                                                 | 1 40    | Flinta, do.                                                                                                        | 0 7     |
| Ditto, 2d quality, or refuse, do.                                                                                                                                                                                   | 0 70    | Glass, glass ware, and chrystal<br>ware, of all kinds, 5 per cent.<br><i>ad valorem.</i>                           |         |
| Cloves, 1st quality, or picked per<br>100 cattiees                                                                                                                                                                  | 2 10    | Gambier, do.                                                                                                       | 0 21    |
| Ditto, 2d quality, or mother, do.                                                                                                                                                                                   | 0 70    | Ginseng, 1st quality, do.                                                                                          | 52 77   |
| Clocks, watches, spy-glasses, all<br>kinds of writing-desks, dressing<br>boxes, cutlery, perfumery, &c.,<br>5 per cent., <i>ad valorem.</i>                                                                         |         | Ditto, 2d quality, or refuse, do.                                                                                  | 4 86    |
| Canvas, 30 to 40 yards long, 24<br>to 31 inches wide, per piece                                                                                                                                                     | 0 70    | Gold and silver thread, 1st quality<br>or real, per catty                                                          | 0 18    |
| Cochineal, per 100 cattiees                                                                                                                                                                                         | 6 94    | Ditto, 2d quality, or imitation, do                                                                                | 0 4     |
| Cornelians, per 100 stones                                                                                                                                                                                          | 0 70    | Gums—Benjamin, per 100 cattiees                                                                                    | 1 40    |
| Cornelian beads, per 100 cattiees                                                                                                                                                                                   | 13 89   | Olibanum, do.                                                                                                      | 0 70    |
| Cotton, do.                                                                                                                                                                                                         | 0 56    | Myrrh, do.                                                                                                         | 0 70    |
| Cotton manufactures, viz. long<br>cloths, white, 30 to 40 yds long,<br>30 to 36 inches wide, per piece                                                                                                              | 0 21    | Unenumerated, 10 per cent. <i>ad valorem</i>                                                                       |         |
| Cambrics and muslins, 20 to 24<br>yards long, 41 to 46 in. wide do.                                                                                                                                                 | 0 21    | Horses, buffaloes, and bullocks                                                                                    | 2 78    |
| Grey or unbleached cottons, viz.<br>long cloths, domestics, &c., 30<br>to 40 yards long, 28 to 40 in.<br>wide do.                                                                                                   | 0 14    | Horns, unicorns or rhinoceros, do.                                                                                 | 4 17    |
| Grey twilled cottons, 30 to 40 yds.<br>long, 28 to 40 inches wide do.                                                                                                                                               | 0 14    | Linen, fine, as Irish or Scotch,<br>20 to 30 yards long, 29 to 37<br>inches wide, per piece                        | 0 70    |
| Chints and prints of all kinds, 24<br>to 30 yards long, 26 to 31 inches<br>wide, do                                                                                                                                 | 0 28    | Coarse linens, or linen and cotton<br>mixtures, silk and linen mix-<br>tures, &c., 5 per cent., <i>ad valorem.</i> |         |
| Handkerchiefs under 1 yrd square<br>each                                                                                                                                                                            | cl 2.5  | Mace, or flour of nutmeg, per 100<br>cattiees                                                                      | 1 40    |
| Ditto, over 1 yard square, each                                                                                                                                                                                     | 0 2½    | Mother-o-pearl shells, do.                                                                                         | 0 28    |
| Ginghams, pullicates, dyed cottons,<br>velveteens, silk and cotton mix-<br>tures, woollen and cotton mix-<br>tures, and all kinds of fancy<br>goods not in current consump-<br>tion, 5 per cent. <i>ad valorem.</i> |         | Metals, viz. :—                                                                                                    |         |
|                                                                                                                                                                                                                     |         | Copper, unmanufactured, as in<br>pigs, do.                                                                         | 1 40    |
|                                                                                                                                                                                                                     |         | Ditto, unmanufactured, as in<br>sheets, rods, &c., do.                                                             | 2 10    |
|                                                                                                                                                                                                                     |         | Iron, unmanufactured, as in<br>pigs, do.                                                                           | 0 14    |
|                                                                                                                                                                                                                     |         | Ditto, manufactured, as in bars,<br>rods, &c., do.                                                                 | 0 21    |
|                                                                                                                                                                                                                     |         | Lead, in pigs, or manufactured<br>do.                                                                              | 0 56    |
|                                                                                                                                                                                                                     |         | Quicksilver, do.                                                                                                   | 4 17    |
|                                                                                                                                                                                                                     |         | Steel, unmanufactured, do.                                                                                         | 0 56    |
|                                                                                                                                                                                                                     |         | Tin, do.                                                                                                           | 1 40    |
|                                                                                                                                                                                                                     |         | Tin plates, do.                                                                                                    | 0 56    |
|                                                                                                                                                                                                                     |         | Unenumerated metals, 10 per<br>cent. <i>ad valorem.</i>                                                            |         |

|                                      | dol. | c. |                                        | dol. | c. |
|--------------------------------------|------|----|----------------------------------------|------|----|
| Nutmegs, 1st quality, or cleaned,    |      |    | Seahorse teeth, do.                    | 2    | 78 |
| per 100 cattiee                      | 2    | 78 | Treasure and monies of all kinds       | free |    |
| Ditto, 2d quality, or uncleaned, do  | 1    | 40 | Wine, beer, spirits, &c., in quart     |      |    |
| Pepper, do.                          | 0    | 56 | bottles, per 100 bottles               | 1    | 40 |
| Putchuck, do.                        | 1    | 04 | Wine, in casks, per 100 cattiee        | 0    | 70 |
| Rattans, do.                         | 0    | 28 | Woods, viz. :—                         |      |    |
| Rice, paddy, and grain of all kinds, |      |    | Ebony, per 100 cattiee                 | 0    | 21 |
| duty free.                           |      |    | Sandalwood, do.                        | 0    | 70 |
| Rose Maloes, do.                     | 1    | 40 | Spanwood, do.                          | 0    | 14 |
| Saltpetre, (to be sold only to       |      |    | Unenumerated woods, 10 per             |      |    |
| government agents), do.              | 0    | 42 | cent. <i>ad valorem</i> .              |      |    |
| Sharks' fins, 1st quality, or white, |      |    | Broad-cloths, Spanish stripes, ha-     |      |    |
| do.                                  | 1    | 40 | bit-cloths, 51 to 64 inches wide       |      |    |
| Ditto, 2d quality, or black, do.     | 0    | 70 | per chang of 141 inches                | 0    | 21 |
| Skins and furs, viz. :—              |      |    | Long-ells, cassimeres, flannels, &     |      |    |
| Cows and ox hides, tanned or         |      |    | narrow cloths of this descrip-         |      |    |
| untanned, do.                        | 0    | 70 | tion, do.                              | 0    | 9½ |
| Sea otter skins, each                | 2    | 10 | Blankets of all kinds, each            | 0    | 14 |
| Fox skins, large, do.                | 0    | 21 | Dutch camlets, per chang of 141        |      |    |
| Ditto, small, do.                    | 0    | 10 | inches                                 | 0    | 21 |
| Tiger, leopard, marten, do.          | 0    | 21 | Camlets, do.                           | 0    | 9½ |
| Land otter, racoon, sharks'          |      |    | Imitation do., bombazetts, &c. do      | 0    | 5  |
| skins, per 100                       | 1    | 78 | Bunting (narrow) do.                   | 0    | 2  |
| Beaver skins, do.                    | 6    | 94 | Unenumerated woollen goods, or         |      |    |
| Hare, raibbt, ermine, do.            | 0    | 70 | silk, and woollen cotton, and          |      |    |
| Smalts, per 100 cattiee              | 5    | 55 | woollen mixtures, &c., 5 per           |      |    |
| Soap, do.                            | 0    | 70 | cent. <i>ad valorem</i> .              |      |    |
| Stockfish, &c.                       | 0    | 56 | Woollen yarn, per 100 cattiee          | 4    | 17 |
| Articles unenumerated in this        |      |    | tariff 5 per cent. <i>ad valorem</i> . |      |    |

The above copy has been taken from that published at the British agency, Macao, and is an exact copy with the exception of the line of cents, which has been added for the more easy understanding of the duties. The mace at 720 taels per 1,000 dollars, is equal to 13.88 cents, and the tael to 1 dollar 39 cents; but to avoid fractions we have assumed the value of the mace at 14 cents, and that of the tael, where less than 1½ taels, at one dollar 40 cents.

Macao, July 21, 1843.

The information respecting the old tariff is necessarily incomplete. To the inquiries respecting it of Sir Henry Pottinger, preliminary to the commencement of his labours for the reconstruction of a new tariff, the Canton merchants consulted replied that,

“After the most diligent enquiry we have failed in obtaining the information requisite to prepare a complete list of duties which foreigners have been in the habit of paying to the Hong merchants on imports and exports. . . . The imperial tariff and the other legal charges have never been published by authority, and not only has it been impossible to obtain authentic accounts on the subject, but the charges have varied so much at different times (and are believed frequently even to have differed at the same time in different hong), that any scale which the information before us would enable us to prepare would be exceedingly imperfect.”

And Elepoo, the Imperial Commissioner, testified generally to the same facts :—

“We find,” says he “upon examination of the subject, that on all goods imported and exported by the merchants of any foreign countries, the duties to be levied are laid down in an old already existing tariff; but the Hong merchants conducting foreign trade have in the process of years gradually added

charge upon charge, till they amount in some cases to several times the sum of the tariff duties."

The *Friend of China*, an English paper published at Hong Kong, had, in the early part of the present year, the following statement professing to represent the per centage extent on value of the "true and imperial duties" as exacted, and which alone should have been legally leviable.

## ON EXPORTS.

|             |              |                   |             |
|-------------|--------------|-------------------|-------------|
| Alum, about | 50 per cent. | Silk nankin       | 4 per cent. |
| Camphor     | 7½           | Silk pongees      | 1½          |
| Cassia      | 80           | Sugar, soft white | 20          |
| China root  | 10           | Sugar candy       | 10          |
| Galingal    | 33           | Tea               | 4           |
| Rhubarb     | 1½           |                   |             |

## ON IMPORTS.

|                                                     |             |                        |              |
|-----------------------------------------------------|-------------|------------------------|--------------|
| On cotton yarn imported,<br>the duty equal to about | 3 per cent. | Gold and silver thread | 30 per cent. |
| On white long cloths                                | 30          | Tin                    | 12           |
| On grey & domestics                                 | 10 to 17    | Copper                 | 6            |
| Iron, bar and rod                                   | 15          | Broad-cloths           | 20           |
| Lead, pig and sheet                                 | 15          | Spanish stripes        | 15           |
| Quicksilver                                         | 3           | Long-ells              | 20           |
|                                                     |             | Camlets                | 60           |

That the legitimate rates of duty as here exhibited were, however, vastly different from those exacted by the rapacity of the delegated authorities of Canton, will be sufficiently evident, from the following memorandum of the gross impositions actually paid as duties, as drawn up by the merchants from data in their own possession—from their own books, in fact. The irregularity and capriciousness of the charges are not the least remarkable features in this mandarin-enacted tariff.

*Memorandum of Duties said to have been charged during the last few years.*

|                                             |                                      |
|---------------------------------------------|--------------------------------------|
| Woollen cloths, 25, 25½, 26 to 23           | 26, 58 to 30 cents per yard.         |
| Long ells, 1.80 dols. 2 dols. and 2.05 dols | per piece.                           |
| White shirtings, No 1, 95 cents and 1 dol.  | per piece.                           |
|                                             | —2, 47 cents and 50 cents per piece. |
| Grey do.                                    | 12½ and 13 cents.                    |
| Cotton yarn, 80 cents                       | per picul.                           |
| Chintzs, 2.50 dols., and 2.56 dols          | per piece.                           |
| Cotton, 3 mace 4 candarins                  | per picul.                           |
| Tea (total duty)                            | taels 1, 2, 4.                       |

Even on tea, the standard article of trade, the exact amount chargeable as duty under the old imperial tariff was not known to the merchants, as will appear by the following extract from their communication to the British envoy:—

"In the principal article of export, tea, we have generally been better able to trace the charges than on other goods; and with regard to this important branch of trade, we may observe that the expense of shipping off was, only a few years since, including duty and consoo fund, only taels 2 5 per picul, the analysis of which charge your excellency will find stated in our letter of 13th January. Four years since the total charge was raised to taels 5; last year as high as taels 8 5, and is now again reduced to 6 taels. From the best information we can obtain, the present charge of 6 taels is subdivided as follows:—

|                                                                                                           |              |       |       |
|-----------------------------------------------------------------------------------------------------------|--------------|-------|-------|
| Paid into the hoppo's office (but we have no means of knowing what is regular and what irregular charge.) |              | Tael  | 1 9 6 |
| Charge for difference in weight (uncertain how far regular)                                               | 12 per cent. | 0 2 3 |       |
| Consoo-fund                                                                                               |              | 1 8 6 |       |
| Difference between the weights of foreigners and teamen                                                   |              | 1 0 0 |       |
| Mending chest, coolie hire, and other Hong charges                                                        |              | 0 3 0 |       |
| Balance assumed to be profit of the Hong merchants                                                        |              | 0 6 5 |       |
|                                                                                                           | Per picul    | Tael  | 6 0 0 |

"From this statement it would appear that the regular imperial duty on this article is now barely two taels, and cannot have for some years varied materially; but that the greater part of the heavy burthens laid on the trade have been in the name of consoo charges."

The plunder perpetrated under the name and disguise of tariff dues did not constitute moreover the sum total, nor anything approximative, of the extortions practised. Under the name of consoo charges, which in their origin represented certain presents it was the custom to make to the port, custom-house and other state officers, the following additional duties were levied:—

*Consoo Charges in 1838 and 1841, levied by the Hong Merchants in addition to Duty.*

Tea, some years ago, consoo charge, 6 mace; in 1838 raised to 1.4 taels. Total charge with duty in 1836, 2.5 taels; in 1839, 5 taels; in 1841, 8.5 taels; in 1843, 6 taels.

|                 |                               |
|-----------------|-------------------------------|
| Silk, Nankins,  | 7 taels per picul             |
| Reduced to      | 2 taels in 1843.              |
| Canton          | 2 taels.                      |
| Reduced to      | 1 tael in 1843.               |
| White Shirtings | 25 cents (average) per piece. |
|                 | 7½ cents in 1843.             |
| Grey shirtings  | 50 cents.                     |
|                 | 15 cents in 1843.             |
| Long ells       | 50 cents per piece            |
|                 | 25 cents in 1843.             |
| Woollen cloths  | 1 dol. per piece.             |
|                 | 50 cents in 1843.             |
| Cotton yarn     | 3 dols per picul.             |
| Cotton (raw)    | 6 mace per picul.             |
|                 | 50 cents in 1843.             |

Finally, the tonnage duties on the entry of shipping were in perfect keeping with all other the system of vice-regal and mandarin fraud so long triumphant at Canton. From a French official document containing a variety of most interesting details on the commerce of China, as collected and transmitted to his government by a French agent dispatched for that end, the more important and available portion of which was presented at considerable length under this head some months ago, it results that for a ship of 800 tons the following port and other imposts were separately chargeable:—

|                        |                  |
|------------------------|------------------|
| Tonnage by measurement | 12,596 francs    |
| Cumsha (consoo fund)   | 11,833 "         |
| Pilotage               | 637 "            |
| Linguiso and Comprador | 1,205 "          |
| Total                  | 26,271 "         |
| Or say above           | 1,040 <i>l</i> . |

The Chinese weights and measures of value (for internal purposes) are noticed as follow, merely to facilitate the few calculations which may be necessary for the comparison of the old and new tariff of duties before referred to.

The catty is reckoned at 1 1-3d lb English; 100 catties make one pecul. Subject to variations of exchange the Chinese denominations of value may be thus stated:—

The *tael*, making 10 mace, equal to about six shillings. 10 mace make 100 candarins. 100 candarins make 1,000 cash.—*Herald*.

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#### THE INDIAN ARCHIPELAGO.

(Continued from p. 755.)

Lombok, the island next to the eastward of Bali, has latterly attained a high standing among the countries of the Indian Archipelago, and is particularly interesting to the British from its being frequented by a greater number of our ships than any port in the eastern seas, with the exception of Singapore. The island is about 250 miles in circumference; two chains of mountains extend along the northern and the southern coasts, between which lies an immense plain, and abundantly watered, divided about the centre by a range of hills of moderate elevation; the entire plain is cultivated for rice, while the sides of the hills and mountains produce coffee and Indian corn. Ampanam, the principal port, is a bay situated near the centre of the west coast of the island; the anchorage is good during both monsoons, but here, as at Badong, communication with the shore is occasionally interrupted by a rolling swell coming in from the south-west. Mataram, the capital and the residence of the Rajah, lies three miles inland from Ampanam.

Mr. King, an English merchant, has resided at Ampanam since the year 1832, and it is to him that the present prosperous state of the island may chiefly be attributed, owing to the great assistance he afforded to the Rajah during a late war, in which the latter extended his dominion over the entire island. Mr. King received some commercial privileges, which enabled him to maintain his ground in opposition to the Chinese and Bughis, who had formerly the trade in their hands, and consequently, viewed him with great jealousy. The British trade with Lombok could scarcely exist, were there not a resident merchant at Ampanam; vessels from our colonies, in Australia for example, rarely bring anything but Treasury and other bills with which to purchase their cargoes, which would be of no value at Ampanam were there not a merchant there to negotiate them. During the year previous to my visit to Ampanam, in Her Majesty's brig *Britomart*, in October 1841, 25 English ships had loaded rice at Ampanam, about one-third of which sailed for our Australian colonies, the remainder going to the Mauritius, Singapore, and China. Mr. King has several vessels of his own which are mostly employed in trading with Singapore, whence he obtains articles of European manufacture, and Chinese cash (a coin composed of copper and zinc, 600 of which are the exchange for a Spanish dollar), these last having, by some accident, become the current coin of Lombok. So considerable a commerce with a country of which even the name is scarcely known in England is very gratifying, but at the same time, it is evident that its tenure is very precarious; for, on the departure of Mr. King, should he not be succeeded by another merchant, the accommodation afforded by the ready exchange of bills, which has been the chief cause of so many of our merchant ships resorting to the place must cease.

Ampanam is also visited by many native ships and prahus which load with rice and tobacco for Singapore, Borneo, Celebes, and all the islands to the eastward as far as New Guinea. Lombok, with Bali and Java, are indeed the granaries of the Archipelago, being the only countries which export this necessary article; Lombok exports annually about 14,000 tons; Bali about half that quantity; Java, taking the average of ten years, exports annually 24,000 tons. The great increase that has lately taken place in the culture of coffee

and sugar in the latter island is, however, likely to cause a decrease in the production of rice.

Labu Hadji, a port on the east side of Lombok, was formerly much frequented by the traders, but since the present King became paramount, he has made it his object to draw all the trade to Ampanam.

Ampanam being situated on the strait which is generally preferred for ships passing into the eastern seas by the straits east of Java, is much visited by ships which touch there merely for refreshments, or to procure information relating to the rate of freights in the ports of India and China; most of these are light ships from the Australian colonies, that have passed through Torres Straits. Many whale ships, chiefly American, also resort to Lombok for refreshments, as many as 17 having been lying there at one time.

Provisions and stock are so exceedingly cheap, and of such good quality at Lombok, that I think it probable when Port Essington settlement has a sufficient population to encourage the trade, that its supplies will be drawn from that island and Bali, until able to support itself. At Timor, whence we have hitherto received our stock, all articles not produced in the island itself, rice in particular, are generally 100 per cent. dearer than at Lombok; indeed the Macassar prahus which visit this settlement can sell their rice cheaper here than at Timor, owing to the duties imposed at the latter place. I had almost forgotten to mention that there are no duties or port charges at Ampanam.

**SUMBAWA.**—This island is 150 miles long, and, like Bali and Lombok, contains some very high mountains; one of these, the Timboso Mountain, is a volcano, and the country has not yet recovered the dreadful effects of an eruption in 1815, which killed many of the inhabitants, and by creating a famine, obliged many of the remainder to emigrate. The Dutch have a small establishment at Birmah, a bay near the north-east extreme of the island, which appears to be maintained chiefly for the purpose of obtaining horses, those from the neighbourhood of Birmah being considered the best in the Archipelago, and always commanding high prices at Batavia. The other ports are occupied by the natives of Celebes, with some descendants of Arabs, who have nearly the entire trade in their hands, exporting to Singapore sapan-wood, bees'-wax, and a few other articles.

**FLORES.**—This is the largest island of the chain which extends from Java to Timor. The Timuri, a dark curly-haired race, commences here, and occupies all the islands to the eastward as far as Timor Laut. There are many small settlements of the Bughis on the north side of the island, and Larantuca, near the east end, is a post of the Portuguese, but these yield in point of importance to Ende, an excellent harbour on the south coast, the only known one on the south side of this chain. Ende is occupied by a large colony of Bughis, who, besides collecting the chief produce of Flores, carry on a trade with Sandalwood Island, to the southward. The Dutch settlement of Coepang was formerly the mart at which their commodities were disposed of; but the intercourse has ceased for several years, the traders now resorting to Singapore for the purpose.

The Dutch frigate *Bellona* visited Ende in 1839, with the view, I have been informed, of endeavouring to induce the Bughis there to renew their intercourse with Coepang; but if this was the case, their object has not been attained. Sandal-wood, bees-wax, horses and a few slaves, comprise nearly all the exports from Flores.

Cotton is produced in all the islands mentioned in this memoir, especially Bali and Lombok; both which islands export considerable quantities in an unpicked state (that is to say, before the seed has been removed), but never for an European market. All the samples of cotton I collected among the islands have been disapproved of by a person well acquainted with the article. Its chief fault is the extreme tenacity with which the seed adheres to the wool. The staple, however, is excellent, as indeed is evident from the durability of the cloths made from it by the natives.

GEORGE WINDSOR EARL.

**BREAKWATERS.**—The first section of a series of five, intended as a trial off Brighton of Taylor's floating breakwater, is nearly completed. It is composed of about 83 loads of American fir, strongly put together with newly invented Marine glue and iron bolts, galvanised (also by a new invention) to prevent the metal oxidising, and which gives it the external appearance of silver. Its depth in the water will be about sixteen feet, and height out of it about nine. The timbers will be covered with a poisonous pitchy kind of cement, which it is said the seaworm will not penetrate, and therefore is likely to supersede the use of copper on ship's bottoms.

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FRIENDLY RELATIONS WITH CHINA.

(Extract from an official Dispatch from Sir Henry Pottinger to the Earl of Aberdeen.)

"IN the evening (says Sir Henry Pottinger) the Imperial High Commissioner Keying came, according to his engagement, to dine with me, and after he and his two companions had made themselves comfortable by laying aside their mandarin caps and upper dresses, which is the custom at such parties in China, we sat for a few minutes in the drawing-room whilst dinner was being served. During this short period, Keying's attention was attracted to the miniatures of my family which happened to be on the table, and he desired Mr. Morrison to explain to me that he had no son himself, and therefore wished to adopt my eldest boy, and to know if I would allow him to come to China. To this I replied, that the lad's education must first be attended to, but that stranger things had happened than his seeing Keying hereafter—on which, his Excellency rejoined, 'very well, he is my adopted son from this day. His name (which he had previously ascertained) shall henceforward be Fredrick *Keying* Pottinger, and until you send him to me, after he is educated, you must allow me to keep his likeness.' To this proposal I could make no objection, and I accordingly gave him the picture. Immediately after his Excellency expressed a strong wish to have Lady Pottinger's miniature also—but about giving it I made some little demur, and before the matter was either way settled dinner was announced, and we went to table.

"I supposed the thing would be forgotten; but when dinner was partly over, Keying again introduced his request—said that he would send me his wife's likeness in return, and that he wanted my whole family to take back with him when he went to Nankin, and eventually to show to his friends at Peking. I felt it was impossible to refuse this flattering request, and I had the miniature brought, and put it into his hands. He immediately rose, and placed it on his head, which I am told, is the highest token of respect and friendship—filled a glass of wine, held the picture in the front of his face, muttered some words in a low voice, drank the wine, again placed the picture on his head, and then sat down.

"The whole of this extraordinary action was performed without apparent reference to any one being present, and formed quite a scene. He then delivered the miniature to his principal attendant, who was standing behind him and directed him to send it home in his state chair, in which his Excellency had come to dinner, with all his official suite. Afterwards he expressed his deep obligation to me for the gift I had bestowed on him, and inquired through Mr. Morrison, what present he could send to Lady Pottinger that would be acceptable. I wished to evade giving an answer to this inquiry, and said I should think of it, and let him know next morning; on which he asked, 'What! am I the Governor-General of the Two Kiang, and cannot get my order obeyed?' At last to satisfy him, I told him some piece of embroidery would be, as his gift, highly prized, and he had a memorandum made of it.

"Soon after he proposed to sing a Tartar song, which I am told, is customary at their convivial friendly parties—and on my saying that I should be delighted

to hear it, he began with a very animated and loud voice. The couplets he sung, I have since been informed, were allusive to the peace that had been concluded between the two countries, and, likewise, to his great personal friendship for me—and at the close of it, he took a rich golden bracelet, made in the form of a puzzle, with two clasped hands, off his own arm, and put it on mine. He then explained to me that this bracelet, and its fellow, had belonged to his father, who gave them to him when he was eleven years of age—that he had worn this one for upwards of forty years, and had left the other with his wife at Peking, and that it contained his name in the palm of one of the hands in mystic characters, and that he had some friends in every part of China, who would, on my producing it, receive me as his brother.

“In the course of the evening he told me that he expected to go to Peking in three or four years; that he would then send for me; that, in the mean time, I must correspond with him, whether I remained in China or returned to England; that if Taoukevang (the emperor) saw me, he would give me a two-eyed peacock’s feather, the highest honour in China, and that I had gained a great reputation and much distinction, not only in my own country, but in every part of this empire. After we rose from table and retired to the drawing-room again, I presented his Excellency with a handsome sword and belt, which I had commissioned Lieut.-Col. Malcolm to bring from England, for the purpose of sending to him, and with which he was highly pleased. He immediately buckled it on, and though it was a very warm night, and I begged him to lay it aside, he sat with it on whilst he stayed, and went to his chair of state to go home. Just before he went away he put on my shoulders his own upper dress, which he said was made of silk that had been given by the Emperor Kieklong to his (Keying’s) father when he was Prime Minister.

“On the evening of the 26th the whole of the troops were out, and after the exchange of the ratifications they fired a *feu de joie*, and marched round, the officers saluting the Imperial Commissioner, who seemed greatly struck with the whole ceremony, and expressed his admiration of the appearance and regularity of the men as to their dresses, movements, &c. We afterwards sat down to dinner, a very large party, at which the Chinese high officers entered with great spirit and good feeling into the conviviality. Keying himself asked many officers to drink wine, and was asked by many, and as his Excellency had been complaining of a cutaneous disorder, it was hinted to him, by Mr. Morrison’s desire, that he ought to be careful: to which he answered—‘To-morrow must take care of itself; I am too happy to-night.’ Then turning to me, he was about to address me in a whisper, when he suddenly seemed to recollect that I could not understand him; on which he expressed his chagrin that he could not tell me his secrets, and desired Mr. Morrison to explain to me, that if he got tipsy in the joy of his heart, I must find him a bed for the night.

“When the dinner was over I proposed a bumper toast, with all the honours, to ‘the healths of the Queen of England and Emperor of China, and that the peace which had that day been ratified between their Majesties might be eternal,’—on drinking which the Chinese officers most warmly joined. I discovered in the course of the evening that Keying was a great proficient, or at least amateur, in music, and whenever the band played any particular tune, he fashioned it to some of his own native airs, and sung to it in a low voice. This led to a proposal to his Excellency to favour the company with a song, which he did immediately with great good humour; and as Kwang and Heinling (assistants to the imperial commissioner) followed their chief’s example, and they all three called on different officers to sing in return, the evening passed away most jovially and agreeably; and we did not separate until a late hour. Just before we did so, the commissioner and two Chinese officers gratified the company, by playing one of their favorite games at convivial parties, by one party rapidly throwing out his fingers while the other guesses at the numbers they are supposed to represent, and whoever loses drinks a glass of wine, a forfeit which they most scrupulously enforced. On one occasion, when Keying



was playing with Heinling, and the latter lost the game, he was about to have a glass, already half full, replenished, on which Keying taunted him with evading his proper forfeit, and called on him to fill a bumper."

*The following Extract puts us in possession of the proceedings of our Ships on the Coast of China.*

*Amoy, May 17, 1843.*—H.M.S. Minden, Capt. Quin, sailed from Chusan on 9th May, leaving there Thalia, 42, Capt Charles Hope, (senior Officer,) Wolf, Pelican, and Driver, st.; Harlequin, and Childers are also attached to that station. Chusan was healthy, but as the Chinese had commenced irrigating the "paddy" ground again, which had been discontinued for two years, fears are entertained that fevers will return. While the Minden was standing in for Amoy, under plain sail, she struck on a rock, reeled about for two or three minutes, and then payed off into deep water again, having suffered but little injury; the rock is situated in the middle of the channel leading into the harbour of Amoy.

Cambrian has left this (Amoy) for Chusan, to relieve the Thalia, she being ordered here, in consequence of a sudden resolution of the Plenipotentiary. Wolverine and Sapphire are here. The divers are all ready to examine the Minden's bottom, but it is blowing too hard for them at present. To-day the Minden is to begin to take the guns from the batteries on board. It is said they are to be taken to Calcutta, where an iron trophy, in the shape of a monument is to be cast, in commemoration of our Chinese campaign. It is to be regretted that the Minden, being a hospital-ship, should be selected for their conveyance; however, she has but 22 patients on board, not the average in a 28-gun ship. The American frigate Constellation has just arrived here from Hong-Kong. The opium trade has proved a great pest, and has tended more than anything else to cripple the Plenipotentiary's plans. The parties concerned try all sorts of schemes to push the trade; among others, they have hired Americans, or vessels bearing that flag. The Minden found one at Amoy on her arrival—the *Æriel*. When the American frigate arrived she attempted to move off, but the Commodore brought her to, overhauled her, and took possession; it is said she is to be sent to New York. She has a large quantity of opium and Sycee silver on board, all English property, belonging to the house of Jardine. The reasons for her detention have not transpired. The cholera is raging with great violence at Manila. The *Agincourt* has suffered much, and was obliged to put suddenly to sea. The *Constellation* lost eight men in a few hours. The *Minden* is very healthy, and will be at Hong-Kong the first week in June, with 200 old iron guns on board.

#### THE STEAM NAVY OF FRANCE.

*La Presse* observes, that "it would be at present superfluous to demonstrate the importance of a Steam Navy. Hereafter the power of a nation will be measured by the number and the force of the steamers which can be set in motion. Steam has changed all the laws of navigation. Neither storms nor calms at sea oppose any obstacle to the steamer. While sailing-boats are obliged to wait for a fair wind to enter or depart from port, to keep in deep water, to lay to, and lose much precious time during a calm, steam-boats

carrying with them their motive force boldly face all the dangers of the ocean, execute with rapidity and precision all the movements commanded of them, bear out to sea or shave the coast, according as one or other manœuvre is necessary for their object—in a word, they govern the terrible element in place of being subject to its caprice.

“In order to second and complete the power of the steam Navy, the art of destruction has made for some years prodigious progress. The inventions of Artillery have been brought to perfection, with a success almost infernal, so that at present a Naval war can no longer be conducted by the same laws as formerly. What part can three-deckers, immense floating citadels, which contrary winds so frequently condemn to inaction, take against a steamer armed with Paixhan's guns and projectiles which explode by percussion? These projectiles make a passage for themselves through the strongest timber, never burst until they have entered the heart of the ship, but in the meantime spread so black a smoke over the vessel, that it is impossible for the crew to provide for their safety. Suppose a sailing-ship having to contend against a steam-boat which can manœuvre rapidly round her sides, throw broadsides into her most vulnerable quarter, and never seem to avoid a return. Such a contest is evidently unequal, and the three-decker, the former conqueror at sea, must submit.

“The problem of landing troops on an enemy's shore, so difficult under the former Naval tactics is equally resolved by the steam Navy. The steam Navy may steer directly towards the points reputed most inaccessible for sailing ships. It has been frequently asked, what would have been the consequence if Hoche, when he commanded the expedition against Ireland, had this powerful resource at his command? England has given us the proof of what he might have done, when she demolished in some hours the ramparts of St Jean d'Acre, and levelled, with a handful of troops, the barriers which for centuries separated China from the rest of the world.

“But, we repeat, to insist upon this point is needless. Every one comprehends that the first condition to command with authority upon the ocean is to have an imposing steam Navy. England has been well aware of this fact, and has, sooner than any other nation, directed her attention to the accumulation of materials for establishing a steam Navy. She possesses several hundred steam-boats, which traverse every sea, guard her coasts, and connect by a regular service all the members of her vast body. In France we are far from being so well prepared; latterly, we have made an exertion to repair the lost time. By a law passed in the year 1842, a supply of 34,450,000 francs was voted to be expended in ten years in purchasing the machinery and material for arming a certain number of steam-boats. Admiral Mackau appears at present to be occupied in reorganizing our navy. A commission has been appointed for that purpose, and the Prince de Joinville, who has a remarkable taste for his profession, has considered it an honour to be appointed one of its members.

“On the other hand, the Trans-atlantic steam-boats undertaken by virtue of the law of July, 1840, by which a special supply of 28,000,000*f.* was voted, are already considerably advanced. The steam-boats which are intended to convey the mails between France and America are to be of 450-horse power, and may in case of war carry artillery. The vessels are constructed by Government engineers, and are the admiration of all scientific men. The machinery has in general been furnished by private companies. The following is a correct list of the machinery bespoken and the state of forwardness in which it is at present:—

“M. Cave, of Paris, has been ordered to prepare the machinery for four steam-boats, viz. :—The Christophe Colomb, received; the Ulloa, received; the Darius, being fitted in dock; the Magellan, about to be delivered. MM. Schneider, of Creuzot, have contracted for five machines;—The Labrador, received; the Canada, received; the Caraibe, being fitted in dock; the Orinoque, being fitted in dock; the Albatros, about to be delivered. M. Hallette, of Arras, three machines, viz. :—The Greenland, being fitted in dock; the Mon-

tezuma, about to be delivered; the Panama, in process of fabrication. The Government foundry at Indret, two machines, viz. :—the Cacique, in process of fabrication; the El Dorado, ditto. Four other steam-boats of 220-horse power have been contracted for by MM. Pauwels and Stehelin; they are now ready for sea, and are named, the Espadon, the Caiman, the Phoque, and the Elan. They are intended to connect the different ports of America.

“One result which has been accomplished, and which is necessary to be observed, is the immense progress which has been made in the construction of machinery. Not very long since the French operative was considered incapable of attaining the same degree of perfection as the Englishman. Some persons even asserted that the organization of a Frenchman would never suffer him to acquire the skill of our neighbours, and that it never would be in our power to compete with them on equal terms. These predictions have been triumphantly refuted. The French operative has demonstrated that this species of natural inferiority, to which it was pretended to condemn him, was an egregious falsehood. All that he required was to be supplied with good tools. Those have been procured, and our principal foundries are now as well organized as those of England; and France will in future be able to construct her steam machinery as well as she casts the cannon which arms her steam frigates.

“The facts ascertained by the comparison of French and British steam-engines afford the most convincing demonstration. At Toulon an experiment was made, in the presence of a commission composed of Engineers and Naval Officers, on the comparative merits of the Labrador, of 450-horse power, whose machinery was built at Creuzot, and the Asmodeé, provided with English engines of the same force. The former was decidedly superior in her speed and in her manner of manœuvring.

“The instructions given to the ship-builders was to construct the hulls of the vessels in as solid a manner as possible. But it certainly was not foreseen that this solidity should be subject to the proof which the Ulloa had to suffer. A short distance outside the bay of Cherbourg there are some dangerous rocks, which the most practised eye cannot always avoid. On her first sailing from the harbour, the Ulloa, a steam frigate of 450-horse power, ran full on one of those rocks, her speed being at the time from seven to eight knots an hour. Similar accidents had already taken place, and English vessels had been seen to split in two on the same spot. The Ulloa suffered no damage. After she was carefully examined, she proceeded on her course, and having put on a speed of ten knots an hour she joined the Christophe Colomb.

“On a signal having been given, a third boat of equal force (450-horse power), the Canada, with engines built at Creuzot, sailed from Brest in the direction of Cherbourg. She met the Ulloa manœuvring, and, confident in her speed, she hastened to accept her challenge; but, she too, was exposed to considerable danger. The pilot, not perceiving the point of the breakwater at Cherbourg, which was covered by a high tide, steered directly upon it, and passed not only over the breakwater, but struck on a rock inside. The spectators thought she was totally destroyed, but the force with which she struck, and her extreme speed, carried her right into the harbour at the very moment when the guns of the port were announcing the danger.

“The following day the three steam frigates sailed from Cherbourg towards the English coast, having the commissioners and several Engineers on board. The Christophe Colomb and the Canada continued close together during six hours sailing, at the rate of twelve knots an hour, with a fresh breeze, the wind on the beam. Having reached the Isle of Wight in four hours and a half, they hoisted sail on their return, and their speed was found to be 13 6-10ths knots an hour. The Canada returned first to Cherbourg, after a cruise of 13 hours; the Christophe Colomb and the Ulloa were not long in joining her.

“Such results are too conclusive to require any commentary. They exceed all that was anticipated. On their first attempt the French manufacturers

reached the level of British perfection, and in some cases surpassed it." We have a right to be proud of our success; we must not either forget that all the work was completed in the time specified in the contract. The Government Engineers have undertaken the work resolutely; and proved that in France nothing is impossible when we wish it.

"According to official documents, we have 90 steam-boats, either complete or to be finished in a few years. These 90 steam-boats will be propelled by a force of 22,150 horse-power.

"To those must be added 24 steam-boats employed by the Post-office representing a force of 3,750 horse-power; which forms a total of 104 ships and 25,900 horse-power."—*Times*.

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#### ON THE MARINERS' COMPASS.

*Royal Observatory, Greenwich, Nov. 15th, 1843.*

SIR.—In your number for the present month, pages 724, and 725, I find the following sentences, in reference to the correction of the disturbance of the compass in iron-built ships:

"The practical directions published by Mr. Airy, although they may be of great practical utility in any iron-built vessel that may navigate the English Channel, or in fact, around the British Isles; yet the plan he has proposed, and the directions he has given are not applicable for distant regions. • • • His method therefore is, to correct the inductive magnetism of the malleable, or cast iron fabric of the vessel by means of permanently magnetic steel bars; that is, to correct or cancel in one hemisphere, by a constant quantity a magnetic agency that may vanish, or from being positive will become negative in the other hemisphere."

I certainly am surprised that a writer, who appears to possess considerable information on the subject of the mariners' compass, should thus express himself so boldly on a matter on which it is evident that he has not read a word, and does not possess any practical knowledge. These are strong assertions, and I will support them.

In regard to the reading,—there are only two papers published by me which contain the investigations and proofs upon which my process of correction is founded. The first is, a memoir in the *Philosophical Transactions* for 1839. The second is, an Appendix to a large work on iron steam-ships, &c., published some time since by Mr. Weale, which Appendix was almost entirely written by me. From these two papers I inclose *verbatim* the following extracts, which I request you to print as part of this letter.

*Phil. Trans.* 1839, p. 196. (The ship to which these remarks apply is the *Rainbow*.)

"It is quite evident from this table, first, that almost the whole disturbance of the compass is accounted for by the permanent magnetism."

Page 202.—"On the whole, I conclude that the explanation of the deviations of the compass, by the combined powers of independent magnetism of the ship and induced magnetism produced by terrestrial action, is perfect; and that there is no reason to doubt that by the introduction of antagonist magnets and masses of soft iron, the correction may be made perfect."

Page 210.—“ The Ironsides has since sailed to Pernambuco, and her compasses have been correct (as far as general observation goes) through the voyage.”

(This vessel has since that time repeatedly made the voyage to South America without alteration of her correcting apparatus, and I am informed, that the compasses so fitted up have always been found correct, in all latitudes.)

Page 211.—“ It appears from the investigations above, that the deviations of the compass at four stations in the Rainbow, and at two stations in the Ironsides, are undoubtedly caused by two modifications of magnetic power; namely, the independent magnetism of the ship, which retains the same magnitude and the same direction relatively to the ship in all positions of the ship; and the induced magnetism, whose force varies in magnitude and direction while the ship's position is changed. It appears also that, in the instances mentioned, the effect of the former force greatly exceeds that of the latter.”

Appendix to Weale's Treatise, pages 7 and 8; (the ship alluded to is the Rainbow.)

“ Here it is evident that very nearly the whole disturbing force will be represented by the combination of one force directed from the ship's head, and equal to 0·50, and one force directed from the starboard side, and equal to 0·17; and that the changes in these forces, depending on the position of the ship, are almost insignificant. The inference from this is, that the principal part of the disturbing force is that of permanent magnetism.”

Page 11, (in speaking of the Ironsides).—“ The forces, then, which are compounded in any position of the ship are: terrestrial magnetism = 1·000 towards the north; permanent magnetism = - 0·386 towards the ship's head; permanent magnetism + 0·314 towards the starboard side; induced magnetism =  $M + P \cos. 2 A$  (p. 181), or - 0·083 + 0·028  $\cos. 2 A$  towards the north; induced magnetism  $P \sin. 2 A$ , or 0·028  $\sin. 2 A$  towards the east.”

To this I may add that the following rule (in the same Appendix, page 15), is intended solely for the correction of the *induced* magnetism, after that the *permanent* magnetism has been corrected by *permanent* magnets.

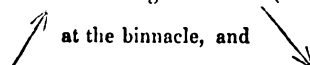



“ Now place the ship with her head exactly north-east or south-west, as shown by the shore-compass; the ship's compasses will, perhaps, be found in error (the error will seldom exceed three degrees). If the needle of one of the ship's compasses point too much to the right, the box of chain must be placed on the starboard or larboard side (it matters not which); if the needle point too much to the left, the box of chain must be placed on the fore or aft side.”

I think I have now sufficiently established my first assertion, viz. that a writer, who states that my method is, “to correct the inductive magnetism of the malleable or cast iron fabric of the vessel by means of permanently magnetic steel bars”, has read nothing upon this subject.

My second assertion is, that this writer has no practical acquaintance with the subject. In proof of this I shall only say that, if he had once witnessed in observation the apparent caprice in the laws of disturbance of the magnet by an iron-built ship, he would never for a moment have conceived that they could be explained by induced magnetism. I enclose, from the paper in the *Philosophical Transactions*

pages 209 and 210, a statement of the directions of principal disturbance in the Ironsides.

“Another compass in the same ship (a tell-tale, or compass suspended to a beam in the cabin) was observed in regard to deviation only. The observations were made by an incompetent person, and are not worth transcribing. The maximum deviation was greater than that at the binnacle. But this singular circumstance presented itself; that the deviation vanished when the azimuth of the ship's head was  $140^\circ$  and  $320^\circ$  nearly, the maximum + error occurring near azimuth  $200^\circ$ , and the maximum — error near azimuth  $80^\circ$ . At the binnacle compass, the deviation vanished in azimuths  $40^\circ$  and  $220^\circ$  nearly, and its maximum + and — errors occurred in azimuths  $90^\circ$  and  $340^\circ$  nearly. Therefore, to make the direction of the ship's independent magnetism at the tell-tale parallel to the magnetic meridian, it was necessary to turn the ship 100 degrees further than was necessary to effect the same for the binnacle compass. Or, supposing the head of the ship towards the top of the page, the direction of the magnetic force (as acting on the marked end of the needle)

is  at the binnacle, and  at the tell-tale. These stations are not, if I remember right, more than twelve feet apart. In the Rainbow, the directions of the forces on the four compasses were represented by lines as  or , all included within a small portion of the same quadrant.

To this I may add that I have in my hands a great number of reports on the experiments in different iron-built ships, (some built at Liverpool, some at Glasgow, some in the Thames,) all of which present the same irregularities in the direction of the principal disturbing force. To attribute these to *induced* magnetism would be ludicrous.

I conclude by expressing my great regret that, in a periodical work of so high a character, and circulated to such an extent among the persons most deeply interested in its contents, an opinion should have been so lightly expressed upon a subject of such importance.

I am, &c.,

G. B. AIRY,

*Astronomer Royal.*

*To the Editor, &c.*

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#### LOMBOK: *Rice Ports.*

It was formerly the custom in Canton to allow ships arriving at that port with rice a large reduction in their harbour charge; which regulation we do not find alluded to in the tariff recently agreed upon between this country and China. Rice, it will be seen upon reference to the list of articles of import into China, is not chargeable with any duty; and, as it may still be found a desirable article of commerce, especially when the crops fail in China—upon which occasions considerable supplies have been heretofore required, and very fair profits have been derived—we think it very possible that the following information respecting the Island of Lombok, and the method of dealing there for rice suitable for the Chinese market, may prove acceptable to

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our readers ; the more so, because we are led to believe that many masters of vessels are desired to proceed to that place for a rice cargo, who have not had an opportunity of acquiring such information beforehand as is necessary to facilitate their operations, and to prevent them from incurring expenses and suffering losses ; which older traders, or persons having a previous knowledge of the place and its customs, manage to avoid.

We are advised, that there are six or seven Bandas, agents, Chinese and others, at Ampanam, the two principal men being Banda Baba Java, and Banda Barode. Banda Java is the Queen's Banda, and possesses most influence ; but from the Bandas of less consequence, rice is often to be obtained cheaper, although they cannot procure it so quickly. They all usually require advances of cash or goods ; and it has been found that in proportion to the advances made, the supply of rice is expedited. Care must however be taken in such negotiations.

As regards quantity, the "koyan" is equal to thirty piculs of 133½ lbs. each ; but their "dudgeons", are about two cattie and a half short of a picul. It is, therefore, necessary to stipulate, on making a bargain, for full piculs.

The rice is brought in in the morning by women. It is then bagged and weighed, which should always be done in the presence of the purchaser. Two bags are commonly weighed at a time, and two cattie on each draft are allowed as tare. A considerable advantage will be gained by taking the women's bags ; four such bags (a horse load) weigh three piculs. When the Banda takes these, he weighs them as they are brought in. He then starts the rice, and fills the bags to be weighed and sent off to the purchaser, keeping the overweight which is generally contained in the original bags. This weight is thus lost to the purchaser.

With all "cash" to offer in exchange, rice has been bought at 18,000 cash the koyan, and at less price ; but if many ships are, or have been loading, a greater price may be demanded. It is well to bargain that the rice shall be put into the ships' boats ; but in this case great attention should be paid to the sailors ; who will else cause some trouble by obtaining liquor, absenting themselves, &c.

The Spanish dollar at Lombok ranges in value from 600 to 700 cash, which is the current coin on the island. It has been struck in and sent out from this country of late, and abundantly brought into circulation. 200 of these cash make one "atak," and five "attacks," or 1,000 cash, one "pukeo." The atak is equal to a Java rupee, and is generally called so by the Bandas.

Should a ship requiring rice have no bags of her own, it will cost at least 1,500 cash per "koyan" to supply them, fill, sew-up, and convey them to the boats.

When the payment for rice is to be made part in goods, one-third, perhaps two-thirds, of the value, may be accepted in goods, with the residue in "cash." On all occasions bargains with the Bandas should be made in writing. A few presents are requisite for the Queen and and Rajahs ; two or three jars of sweetmeats, bottles of wine, a piece of printed stuff, scissors, &c., are usually provided for this purpose. The "goosties", or princes, are often beggars "of inconsiderable trifles ;"

which are given in order to keep upon good terms with them; but they do not obtain much of any thing.

Bamboos for duunage may be had for about 10 rupees per 100. Fire-wood is scarce; but if the longboat be sent to Laboan Treeang, a supply of both articles may possibly be obtained, but certainly of fire-wood and duunage mats.

At Sourabaya the best time to get a rice cargo is July; the new rice is then abundant. At Samarang it comes in about June, and rather later at Batavia. The "koyan" is 28 piculs at Batavia, 30 piculs at Samarang; and it is remarked, that when a rice cargo is shipped at the latter place, notice should be taken that the two piculs are received.—*Shipping Gazette*.

["A MASTER MARINER" recently trading to the islands informs us in the *Shipping Gazette*, that the rice trade at Lombok is now in the hands of Mr. Thomas King, of that place."]

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BOTTLE PAPERS.

(Continued from p. 757.)

*Maranham, Sept. 28th, 1843.*

SIR.—I have the honour of transmitting to you the enclosed, which was picked up on the 2nd of August, at the Bar of Tutoia, entrance to Parnahiba, on the coast of Brazil, which place lies in lat. south  $2^{\circ} 38'$ , long. west  $41^{\circ} 48'$ , and there can be no doubt that the bottle which contained the same, came ashore on the day it was found, for the person who found it and delivered it to me, said that he passed that way on the 1st, and on returning on the 2nd, he discovered the bottle lying on the beach. Without further to add

I remain, Sir, &c.,

ALEX. THOMSON.

☞ "Ship Kinnear, from Sydney New South Wales, to London, May 8th, 1843. lat. south  $8^{\circ} 46'$ , long. west  $24^{\circ} 18'$ . This bottle is thrown overboard to ascertain the course of the current, by

HENRY KELSALL, M.D.,

*Surgeon, R.N.*

"Have the kindness to forward this paper to the Editor of the *Nautical Magazine*, London, informing him where, and when, the bottle was picked up.—H. K."

[The foregoing will not fall within the limits of the chart in our March number, being entirely in the Southern Atlantic. Its course has been about N.  $71^{\circ}$  W. distance about 1100 miles.]

On the bottle paper, in our last number, thrown over from the same ship, Mr. Kelsall has obligingly communicated the following:—

*9, Union Terrace, Plymouth, Nov. 14th, 1843.*

SIR.—The notice of a bottle thrown overboard by me, from the Ship Kinnear, forwarded to the Office by the Commander of the Nunez, and contained in the *Nautical Magazine* for this month, with a request to forward to you the date, when, the bottle was thrown overboard, would have been attended to before this, but that my diary of the voyage, has unfortunately been mislaid. I can however, from some data, which I have by me, fix the desired period *within three or four days*, viz., between the 14th and the 18th of May, 1843, I am inclined to assign the 15th of May as the date; so that the bottle has made *that course and distance in about 72 days*.



I have little doubt but that other bottle papers will be forwarded to you hereafter, relating to the same subject, as, during the *whole voyage* from Sydney round Cape Horn, homewards, I was in the habit of *daily* consigning to the ocean one or more bottles; containing each a paper, noting latitude, longitude, and the day of the month, with a *duplicate* of those three important points, written on the *back of the paper*; in the event of the other side becoming obliterated by a drop of water getting into the bottle.

During the time that the ship was surrounded by the Sargasso, or Gulfweed, I availed myself of every bottle I could obtain, for the purpose of ascertaining the direction, and possibly the termination of that current.

I am, Sir, &c.,

HENRY KELSALL, M.D.,  
Surgeon R.N.,

To the Editor, &c.

[This is a remarkable illustration of the different prevailing currents of the Ocean. The bottle which we call 43*a* appears to have been thrown overboard in that part of the ocean between the northern edge of the equatorial current, and the south-west edge of the Guinea current: and to have arrived at the place where it was found from its starting point, we can suppose it to have been carried first to the north-west, then to the north and north-east (perhaps as far as the Cape Verds,) until it fell into the current, setting to the southward and eastward along the Coast of Africa. The totally opposite course it has taken from bottles Nos. 43 and 44, adds considerably to the interest of it.]

EGMOND-ON-ZEE—Oct. 9th: A bottle, containing a letter signed Francis W. Crane, on board the American barque Olga, dated Sept. 10, 1843, lat. 52° 47', long. 3° 45' W., came on shore here 29th ult.—*Shipping Gazette*.

[There is an evident error in the latitude here, which possibly the contributor to the *Shipping Gazette*, might correct for us. The position of Egmond-on-Zee, is in lat. 52° 38' on the coast of Holland, in the North Sea, which our chart includes.]

We are indebted to a friendly, but unknown hand, for a file of the *Newfoundland Morning Post*, in one of which we find the following:—

“We have been politely handed the following memorandum by a gentleman who was passenger in the Hibernia at the time, and who can vouch for its authenticity. It was found in a bottle picked up by Mr. Mich. Fowloe, a respectable Planter, about the middle of August, in a place called Seal's Cove, near the Rams Islands, in Placentia Bay in this Island. The bottle was corked and sealed. This incident may lead to some useful information relative to the currents.

“Royal Mail Steamer ‘Hibernia,’ Capt. Judkins—her first voyage—Liverpool to Halifax—Lat. 44° 18' N., Long. 51° 35' W., 105 Passengers, ‘all well,’ Sunday, 30th April, 1843. Please to forward this notice to the Company in London, and to Capt. BECHER, R.N., Admiralty.

JAMES LUMSDEN, Glasgow.  
NATHANIEL GOULD, London.  
GEORGE BLACK.”

We are thankful to the above gentlemen for their attention to keeping alive the discussion of this subject in our pages.

The bottle appears to have taken a N.N.W. direction across a part of the usual course of the Gulf Stream, and it would add much to the interest of the subject if we had the direction of the wind on this, as well as other occasions.

## NAUTICAL NOTICES.

## DIRECTIONS FOR AMPANAM AND LABOAN TREEANG, LOMBOK.

ENTERING Lombok Straits with adverse current, most progress may be made by keeping the Bali side on board, and working along shore until the peak bears west. By a stretch over then for Lombok, a ship will most likely fetch the bay, especially if the Bali side of the Strait be left early in the morning for the sake of the sea breeze from the southward. With a contrary current, it is difficult to get down on the Lombok side of the Strait, and on the Bali side after the Peak bears to the northward of west. Supposing a ship to have fetched North Island, she should then keep the north shore on board, and getting Bali peak W.N.W., stand for the anchorage. The village of Ampanam will be in sight. The soundings will be 30 fathoms, 25, 20, and gradually less to 9, 8, and 6, in the anchorage, soft ground. In the fine season, April to November, bring up within not less than half a mile of the beach. After the middle of November a mile or more ought to be allowed to enable a ship to run to Laboan Treeang, if need be. On appearance of bad weather, the chains should be buoyed, and everything ready to slip.

In running for Laboan Treeang Cove from Ampanam roads, a south course will about lead down; but in blowing weather it is preferable to haul out S.b. W.  $\frac{1}{2}$  W. at first, and when abreast of Tanjong Carrang, easily known by a little conical hill near it, and about two miles and a half from Ampanam; steer south, or easterly, if required, as you approach the Cove. The western side of the entrance to the Cove is bluff, and readily distinguished, the eastern side is low and sandy, with bamboos and brushwood upon it. Approaching the entrance, keep nearest to the eastern shore, as a reef runs off the other. A good mark is, to bring the low point about S.b.E., and run in with that bearing, a high bluff point on the east side of the Cove will be seen a little, when off the low point, with this bearing. Haul round the east point until it bears about N.N. W.  $\frac{1}{2}$  W. to N.W.b.N., and bring up in about ten fathoms, mud and clay, two or not more than three cables' length from the beach. The water here will be quite smooth although a great deal of swell may be in the entrance.

A reef surrounds the island with a bush or two upon it, which lies E.S.E. of this anchorage. Of this be careful, by bringing up, as advised, pretty close to the beach, which is so steep to, that four fathoms will be found over a boat's stern, when she touches the ground forward. This is the case in most parts; it is, however, a little shoal for about a ship's length off the eastern extreme point. This is the best anchorage, unless it is preferred to haul the ship into the eastern side of the Cove, which can be done safely and easily.

Having parted in Ampanam roads from two chains during a gale at north-west, a vessel hauled out S.S.W. for a few miles, and then steered S. and S.  $\frac{1}{2}$  E. for the Cove, and anchored in 10 fathoms, mud and clay, with the following bearings:—Low Point N.b.W.  $\frac{1}{2}$  W., West Point N.W.  $\frac{1}{2}$  N., the little islet E.N.E., and the high bluff on the east side of the Cove S.  $\frac{1}{2}$  E. In this position she rode in safety, although there was still a good deal of swell; but in the anchorage recommended above, say two or three ship's lengths to the north-east, the water was perfectly smooth.

The fishermen describe the western side of the Cove as rocky, coral, and not good anchorage, with the exception of a bight, which is also well sheltered; but it is difficult there to obtain water, which is not the case on the eastern side, there being three good wells near the huts. Firewood and bamboos may be cut in plenty; but any other supplies, excepting plantains and cocoa-nuts, are scarce.

From 50 to 100 sail might be moored in the Cove to the eastward, but it is unhealthy during the north-west monsoon.—*Shipping Gazette.*

**NEW YORK.**—Oct. 14.—The following spar buoys were placed on the Bar of St. Augustine, on Saturday 7th instant.

Buoy No. 1, in 5 fathoms water outside the bar. Buoy No. 2, on the bar, 7 feet low tide. Buoy No. 3, inside the bar, 16 feet low tide. Distant  $1\frac{1}{2}$  nautical miles from each other; the whole in a range with the light-house, and bearing nearly W.b.N.

Mark to run for the Bar—Bring the large flagstaff on St. Francis' barracks open one oar's length to the north of the light-house.

Mariners can depend on the above, as the buoys were placed under the superintendence of the collector of the port, Captain Robert Day, of U.S. revenue cutter Crawford, and the pilot of the harbour.—*New York Paper*.

WE have been repeatedly requested during the week, to notice the fact that the buoy placed on the tail of the "Knoll" near Tybee, has filled and sunk. The pilots find it very difficult to bring vessels into our port without these guides, and we have no doubt it will be promptly attended to.—*Savannah Republican*.

THE collector at New London gives notice that the Light Boat at Bartlett's Reef, parted her moorings in the gale of the 8th Oct. and went into New London. Due notice is promised of her return to the station.—*Boston Shipping List, Oct. 14*.

**BUOYS, St. AUGUSTINE Harbour, Florida, Oct. 9th.**—Navigators are informed, that on the 7th of October, 1843, three spar buoys, with tops painted white, were placed at the bar at the entrance of the harbour of St. Augustine, directly in mid-channel. Vessels which from necessity may be forced to enter without a pilot, have, when in five fathoms water, to bring the light-house to bear W.S.W., and steer for the first buoy, passing as near to it as possible, as it lies in the deepest water, then run for the second buoy, and when up with it run for the third, passing along close to both. From the third buoy the channel is defined by a line of breakers on the north, and a sand beach on the south. The depth of water on the bar is from seven to eight feet at low water.—*Shipping Gazette, Nov. 3*.

**CAPE BONAVISTA.**—The light-house on Cape Bonavista, Newfoundland, which has for some time been in course of erection, was to be lighted up from and after the 11th of October, from sunset to sunrise. It is a revolving light, at regulated intervals of two minutes, exhibiting alternately a red and white light, at an elevation of 150 feet above the level of the sea. It will be visible in every direction, seaward, to the distance, it is expected, of thirty miles, and kept open with Spiller's Point will take vessels clear of the sunken rocks called the Flowers, lying between the North Head of Catalina and Bird Island Cove.

**MORUPS TANGE LIGHT-HOUSE.**—The Royal Swedish Marine Administration has given notice, under date of Sept. 22:—1. That the new light-tower near Morups Tange, in the Cattogat, bearing lat.  $56^{\circ} 55' 12''$  North of Ferro, long.  $12^{\circ} 22' 36''$  of Greenwich, one league North of Falkenberg is now completed, and provided with a lenticular apparatus, having a fixed light, which will show a glare round the whole horizon. The tower also offers a particular mark during the daytime, being 70 feet high, the roof and the light 95 feet above the level of the sea, and may be seen, in clear weather, at  $3\frac{1}{2}$  German miles distant.—*Shipping Gazette, Oct. 18*.

**BEACON ON THE ROWAN ROCK, Algoa Bay.**—A meeting has been held, and a Committee appointed, to carry into effect a plan proposed by Sir J. Marshall, of Her Majesty's ship Isis, for a pontoon beacon on the Rowan Rock, which will be done forthwith by private subscription.—*Shipping Gazette, Oct. 28*.

**SUEZ PASSAGE.**—The Royal Swedish Marine Administration have given notice that in the course of the summer a wooden house of 12 ells height, 32 ells long, and 15 ells broad will be erected on the Western Hartholm, near the Fairwater (canal), from Argo for Carlscrona, and which house will be situated 90 ells from the Old Schanze (fort), 14 above the level of the sea.

And also that on the East Shore, before the close of this month, two barracks, of one story high, not painted, will be finished, together 54 ells long, 8 ells high, and 8 ells above the level of the sea; which edifices will be visible at a considerable distance, between S.S.W., and S.b.W., according to compass. These buildings are but temporary, and only intended to remain standing during the erection of the fortifications; but as the time required for their building cannot very well be ascertained, and the appearance of the Hartholm and the country round will, as the works proceed and ultimately be finished, be materially changed, so as to make its recognition difficult, the said Administration hereby draws the attention of mariners to the circumstance, in order to prevent misfortunes, which might, through the altered appearance of the country, probably occur.—*Shipping Gazette, Oct. 26.*

### WANT OF LIGHTS ON THE EAST COAST OF ENGLAND.

(From the Times.)

SIR.—The columns of the *Times* are always open to assist the distressed, or, to remedy grievances. I would now appeal to you to exert its powerful influence in favour of our poor mariners. The November gales have begun, and the coast of England is already strewn with wrecks; in the gale of the 12th ult., not less than thirty vessels on the east coast alone were reported wrecked. In the gale of the 28th a large number went on shore, and many were driven from their anchors:—the long winter nights are fast approaching yet what has been done towards providing Harbours of Refuge, or in placing lights in order to render available the little shelter that already exists on the east coast of England!

It is well known to all in the trade between London and Shields, that the only real harbour of refuge between the Thames and the Humber, is Harwich; and that Yarmouth is the only roadstead. It will be readily supposed that every facility is provided to enable vessels in time of need to reach these friendly anchorages. But alas! what is the fact? to enter Yarmouth Roads from the northward, by night, is next to impossible, merely for the want of a small floating light placed near the Sea Head in the Cockle Gatway; and in the same manner none but those well acquainted with the locality can venture to approach Harwich Harbour, by night, for want of a still smaller floating light placed near where the present Cork Ledge or Fairway buoy stands.

Surely this betokens an apathy, or indifference to the welfare and lives of our sailors, that is difficult to understand, and especially in the face of the evidence before the late Shipwreck Committee of the House of Commons, where it may be seen that the honourable Member for Whitby, who is also one of the Elder Brethren of the Trinity-House, in examining a witness touching the deficiency of lights on the east coast of England, says at Question 1545, "Are you aware that both the lights at the Cockle Gat, and that at the entrance to Harwich are about to be carried into execution?" This occurred in May last; six months have elapsed since that time, the fine season has passed away, dark and dreary November has begun, and we have no sign of life, no symptoms of those lights being placed. Let me adjure those who have the power to remedy these grievances, to think of the awful responsibility they incur, if with the means at their disposal they allow another dreary season of gales and shipwreck to commence without doing all in their power to save the lives as well as the property of their fellow creatures and brother seamen.—I am, &c.,

*Shields, 1st Nov., 1843.*

A COLLIER.

[Since the above was written, we understand that another glaring proof of the necessity of lighting the Cockle Gat occurred in the S.S.W. gale of the 28th ult., when the pilot cutter belonging to Yarmouth, with three of their most ex-

perienced pilots on board, broke adrift from her anchors in the roads, during the night; they attempted to run her out to sea to the northward, as their only means of escape, but not being able to see their way, and having nothing to guide them, the vessel struck on the "Barber Sand," and they gave themselves up for lost; providentially the cutter beat over the sands into deep water, and was saved. If this happen to experienced pilots what must be the fate of numbers of our colliers when caught in a S.S.W. gale by night in Yarmouth Roads? Let the thriving trade of the Yarmouth wreckers answer.—Ed. N.M.]

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#### PLAN OF HARWICH HARBOUR.

WE congratulate all our sailor friends, but especially all those connected with the shipping interest at Mistley, Manningtree, and Ipswich, on the publication of a Plan of Harwich Harbour, surveyed in H.M.S. *Shearwater*, Captain Washington, by Mr. E. K. Calver, master and assistant surveyor of that ship. This plan was drawn upon the scale of 12 inches, and is engraved on that of eight inches, nearly, to the nautic mile; and it is the only harbour in the British Islands hitherto published by the Admiralty on so large a scale. This is of peculiar value at the present moment, when it has just been unanimously agreed upon by all parties that, if the capabilities and resources for traffic of the Eastern Counties' Railroad are to be fully developed, its terminus must be in the sea; and when, consequently, many engineering questions are likely to arise as to depth of water, best position for piers, &c.

The plan before us extends from the Cork Ledge, or Fairway Buoy, on the east, to Dovercourt church on the west, and shews about a mile of the lower parts of the rivers Stour and Orwell; the channels into the harbour are distinctly marked, and a new western channel well brought out; the soundings are numerous, and expressed in feet, and the height of all the ground is given above the level of high water. It is fully illustrated by views drawn by Mr. C. E. Davison, of the *Shearwater*, and accompanied by complete sailing directions engraved on it, a novel feature, we believe, in Government charts, but one which, we hope, will be generally adopted; and though last, not least, the plan is sold at the low price of 3s., thus putting it within the reach of even our coasters.

But while congratulating ourselves on the capabilities for shelter which Harwich Harbour still offers (and we see in one narrow channel, close along Landguard beach, that there is depth for a frigate even at low water springs), yet we cannot shut our eyes to the fact that this plan reveals some remarkable changes in the port for the worse during the last 40 years: at that period there was a deep channel into the harbour, carrying seven fathoms of water, where now the shingle beach is as many feet above high water mark. Then the sea washed the foot of Landguard Fort; now the point projects fully 500 yards beyond. But what the land has gained on this the Suffolk shore, the sea has more than gained on the opposite or Essex coast; here the Beacon Cliff extended far into the sea, with a breakwater of cement stone at its foot, forming an admirable barrier against southerly gales; but all this is changed, and the progress of deterioration is daily going on. The cause of it is obvious, namely, the removal of the cement stone from Felixstow Ledge and the foot of Beacon Cliff. But is there no guardian of the harbour, we would ask? What has happened to the mayor and corporation of the borough, the natural conservators of the port, that they can calmly look on and see their port—their only source of revenue, day by day becoming of less value?

But our space compels us to stop till we can return to this important subject; in the meantime we would implore those who have the power to arrest the progress of destruction to exert themselves, ere too late, to preserve to our poor sailors, and the shipping interest of the kingdom in general, the only real harbour of refuge on the east coast of England between the Thames and the Humber.—*Essex Standard*

## WRECKS OF BRITISH SHIPPING.

(Continued from p. 604,—cs, crew saved; cd, crew drowned.)

| VESSELS' NAMES.    | BELONG TO.      | MASTERS.   | FROM.       | TO.         | WRECKED.        | WHEN.        |
|--------------------|-----------------|------------|-------------|-------------|-----------------|--------------|
| Active             | Newcastle       | Slade      |             |             |                 | Oct. 17. cd  |
| Adonis             | Whithy          | Brown      |             |             |                 | Oct. 21. cs  |
| Adventure          | 265 Newcastle   | Bruce      | London      | Quebec      | abandoned       | Sep. 3.      |
| Africaine          | Newcastle       | Riddle     |             |             | C. St. Lawrence | Sep. 23. 2d  |
| Agnes & Barbara    | Sunderland      | Potts      | Guernsey    | London      | Off Nab         | Aug. 20. cs  |
| Aire               | N. Shields      | Kennedy    | Archangel   | London      | Off Br'dsand    | Sep. 7. cs   |
| Albion             |                 | Evans      | Glasgow     | Liverpool   | Rhyl            | Oct. 28. cs  |
| Albion             | 270 Newcastle   |            |             |             | founder'd off   | Sep. 30. cs  |
| Alemena            | Glasgow         | Galbraith  | Bombay      | China       | St. Abbs H.     | Nov. 17. cs  |
| Alonzo             | Stockton        |            |             |             | Ceram           | Nov. 2.      |
| Amphitrite         |                 | Willis     | Lisbon      |             | R. Plate        | July 28. cs  |
| Andrew Marvel      | Hull            | Chambers   | Hull        | St. John    | abandoned       | Oct.         |
| Ann Kennez         | 275 Pr. Ewd. I. |            | London      | Pr. Edw. I. | Magdaline I.    | Sept. 16.    |
| Ann                | Blyth           |            |             |             | Warkworth       | Oct. 28.     |
| Anna               |                 | McDougal   | N. Shields  | France      | Off Tynemuth    | Nov.         |
| Arkwright          | Liverpool       | Dunbriel   | Bahia       | London      | Rio Francisco   | Aug. 6. cs   |
| Asia               |                 | Storr      | Rio Grande  | Liverpool   | Rhyl            | Oct. 28. cs  |
| Atalanta           | 280             | Snell      |             |             | by a steamer    | Oct. 28.     |
| Athol              |                 | Noble      |             |             | sunk off        | Oct. 28.     |
| Blossom            | N. Shields      | Fenwick    |             |             | founder'd       | Oct. 22. cs  |
| Borneo             | St. John        | Young      | Liverpool   | St. Johns   | Cranberry II    | Sep. 18. cs  |
| Britannia          | Newcastle       | Tate       | Neath       | London      | founder'd       | Oct. 27.     |
| Britannia          | 285 Buruham     |            |             |             | In Wallet       | Oct. 12.     |
| Burhampooter       |                 | Cooley     | London      | Port Philip | Foreness        | Oct. 19.     |
| Buoyant            |                 | Sanly      | Kirkaldy    | London      | Lewis I.        | Oct. 28.     |
| Captain Cook       |                 |            |             |             | Africa          | Aug.         |
| Chr. Rawson        |                 | Robson     | China       | Singapore   | China Sea       | Apr. 2. cs   |
| Coriolanus         | 290             | Garbutt    | London      | Quebec      | founder'd       | Sep. 26.     |
| Cycnet             | Stockton        | her papers | washed on   | shore at    | Southwold       | Oct. 30.     |
| Delhi              |                 | Byron      | Calcutta    |             | Algoa B.        | Aug. 26. cs  |
| Duke of Wellington |                 | Duncan     | Dundee      | Narva       | G. Finland      | Sep. 1. cs   |
| Economy            | Newry           |            |             |             | Printholm I.    | Nov.         |
| Eliza              | 295 Cork        |            |             |             | Croyd Bay       | Oct. 28. cs  |
| Eliza Rowell       |                 | Wakel      |             |             | Algoa B.        | Aug. 26.     |
| Ellen              |                 | Parker     | sprung a    | leak and    | founder'd       | Oct. 10.     |
| Emerald            | Londonderry     | Moore      | Archangel   | abandoned   | Ballingtog      | Oct. 13      |
| Enna               |                 | Haywood    | Honduras    | London      | Off Margate     | Oct. 17. cs  |
| Emperor            | 300 Boston      | Clark      |             |             | Blakeney        | Oct. 21.     |
| Endeavour          | Portsmouth      |            |             |             | Southsea C.     | Oct. 28.     |
| Euphemia           | Wisbeach        |            |             |             | Sunderland      | Oct. 12.     |
| Europe             | Dundee          | Brodie     | Petersburg  | Narva       | Narva           | Oct. 9. cs   |
| Fairfield          |                 | Westlake   | Ancona      | Pembroke    | Keith reef      | Sep. 10.     |
| Favorite           | 305 Sunderland  | Lambert    | Cardiff     | Rotterdam   | Off Bude        | Oct. 28. cs  |
| Fawn               |                 |            | Caernarvon  | Glasgow     | run down        | Oct. 28.     |
| Felice             |                 |            | Marseille   | Malta       | by fire         | Oct. 2. cs   |
| Frances            | Sunderland      |            |             |             | North Sea       | Oct.         |
| Ganges             | Sunderland      | Owen       |             |             | Bideford        | Oct. 18. cs  |
| George             | 310             | Craig      | Arbroath    | Hull        | Filey           | Oct. 28. cs  |
| Glenburnie         | Bideford        | Day        | Bridgewater | Quebec      | St. Lawrence    | July 20.     |
| Golden Fleece      | Cardiff         | Davis      | Kinsale     | Cardiff     | founder'd       | Oct. 28.     |
| Grace Darling      | Neath           | Berriman   | Milford     |             | Angle Bay       | Oct. 27. cs  |
| Harmony            |                 | Quin       | Liverpool   | Newry       | Beaumaris       | Nov. 3. 6d   |
| Harriet            | 315 Cowes       | Brown      | London      | Sunderland  | Seaham          | Oct. 30.     |
| Harry Bluff        | Berkeley        | Miller     | seen to     | founder off | Off Bideford    | Oct. 18.     |
| Heber              | Newcastle       | Storm      | Newcastle   | Petersburg  | Hogland         | Sep. 25. cs  |
| Henry and Thomas   |                 | Daniel     | Dublin      | Liverpool   | Red wharf B     | Oct. 12. 18. |
| Hooton             | Dublin          | McIver     |             |             | Portinllaen     | Oct. 29.     |
| Hope               | 320 Fishguard   | Vaughan    |             |             | Cornwall        | Oct. 18.     |
| Jane               |                 | Carden     | Sunderland  | Rouen       | Havre           | Oct. 16.     |
| Jane Ellen         |                 | Campbell   | Newcastle   | London      | abandoned       | Nov. 2. cd   |
| James Wallis       |                 | Gowrie     | Sunderland  | Rouen       | Havre           | Oct. 17.     |
| John Berry         |                 | Grant      | Aberdeen    | London      | Tynemouth       | Aug. 12. cs  |
| John               | 325 Colchester  |            |             |             | Off Hasbro'     | Oct. 22. cs  |
| John Innes         | Aberdeen        |            |             |             | Havtlepool      | Oct. 13.     |
| J. J. Lee          |                 |            |             |             |                 | Sept. 9.     |
| Kingsbridge        |                 | Jarvis     | Selcombe    | London      | Southend        | Oct. 27.     |
| Lady Falkland      |                 | Dobson     | Liverpool   | St. Martha  | Beaifast R.     | Aug. 7. cs   |
| Lady Stafford      | 330             | Sturt      | St. Johns   | Labrador    | Pinchard I.     | Sep. 22. cs  |

| VESSELS' NAMES.     | BELONG TO. | MASTERS.   | FROM.        | TO.          | WRECKED.     | WHEN.       |
|---------------------|------------|------------|--------------|--------------|--------------|-------------|
| Lapwing             |            | Frost      | Sunderland   | London       | Flambro' H.  | Sep. 10.    |
| Lavinia             |            | Doming     |              |              | Cardigan     | Oct. 28.    |
| Letitia             | Poole      | Strout     | Newport      | Holland      | Pad-stow     | Oct. 17. cs |
| Libra               | Paistow    | Durie      | Archangel    | London       | Sunk sand    | Oct. 29.    |
| Lord Durham 335     | Montrose   |            | Sunderland   | Rouen        | Havre        | Oct. 17.    |
| Lucia               |            | Crickley   |              |              | Alcoa B.     | Aug. 26.    |
| Lynx                |            | Brown      | Liverpool    | Limerick     | Cardigan     | Oct. 24.    |
| Margaret            | Aberdeen   |            |              |              | Longsars     | Oct. 13. cs |
| Margaret            |            | Mollard    | Liverpool    | Alexandria   | Barbary C.   | Sep. 20.    |
| Margaret            |            | Foxton'    |              |              | Scarboro     | Oct. 17.    |
| Margaret            | Bristol    | Simmons    | Bridgewater  | Quebec       | Abandoned    | Sep. 1. cs  |
| Margaret Wellington | Annan'     |            |              |              | Holyhead     | Oct. 29.    |
| Mariua              |            | Consitt    | Hartlepool   | London       | Sheringhms   | Oct. 28.    |
| Mary Ann & Isabella |            |            |              |              | White Sea    | June        |
| Mary                |            | Taylor     | Sydney C.B.  | St. John N.  | Run foul of  | July 10. cs |
| Mary                | Newquay    |            |              |              | Cardigan     | Oct. 28.    |
| Mary                |            | Hill       | Dordt        | Grangeneth   | Dunbar       | Oct. 12. cs |
| Maria Amelia        |            | White      | Aberdeen     | Newca-tle    | Dunbar       | Oct. 12. cs |
| Mary Ann            | Arbroath   | Carroll    | Newcastle    | L Strangford | Abandoned    | Oct. 11.    |
| Matilda 350         |            | Clark      | Hartlepool   |              | G. Finland   | Oct. 4. cs  |
| Noreus              | Part of    | her broad  | side came    | on shore     | Lowestoft    | Nov. 4.     |
| Norman              | Newport    | James      | Alicante     | London       | Bovisand     | Oct. 17. cs |
| Nile                | Harrington |            | Whitehaven   | Dublin       | Off Orms H.  | Oct. 30.    |
| Œschylus            |            | Charlton   | Seaham       | London       | Abandoned    | Oct. 27.    |
| Packet 355          | Cardigan   |            |              |              | Cardigan     | Oct. 24.    |
| Peggy and Jane      |            |            | Dublin       | Coal laden   | Graystone    | Oct. 17. cs |
| Prince Albert       |            |            |              |              | Plettenburgh | Aug. 24. cs |
| Providence          | Boston     | Smithson   | Supposed     | Wrecked      | Stores found | Oct. 21.    |
| Queen, st. v.       |            |            | Dublin       | Dublin       | Off Skromet  | Sep. 1. cs  |
| Rapid 360           | Newcastle  | Booth      | Newcastle    | Petersburgh  | North Sea    | Sep. 29. cs |
| Raven               | Colchester | Madder     | Newport      | Southampton  | C. Wales     | Oct. 18.    |
| Rebecca             |            | Sawyer     | Honduras     | N. Orleans   | Tortugas     | Aug. 23.    |
| Regular             |            | Carter     | London       | Bombay       | Off Maritius | July 19.    |
| Repute              |            |            | Leith        | Liverpool    | E. Hode      | Oct. 14. cs |
| Robert Morrow 365   | Kirkaldy   |            | Bristol      | Constanople  | Off Algiers  | Sep. 19.    |
| Roberts             |            | Gilpin     | Liverpool    | Dundalk      | Skerries     | Oct. 28. cs |
| Salus               | Sunderland | Lamb       | Sunderland   | N. Brunswck  | Abandoned    | Sep. 1. cs  |
| Sarah               | Yarmouth   | Smith      |              |              | Whitby       | Oct. 28.    |
| Sarah & Eliz.       | London     | Bilinghrst | Whaler'      | Burnt by     | Natives      | May 22. cs  |
| Sarah Marks 370     |            | Crowell    | St. Stephens | W. Indies    | C. Lidges    | Sep. 28.    |
| Seagull             |            | Murray     |              |              | Algoa B.     | Aug. 26.    |
| Sedulous            | Exeter     | Potbury    |              |              | Mellook      | Oct. 18.    |
| Shelmelers          |            |            | Wexford      | St. John NB  | At sea       | Oct. 3.     |
| Silistria           |            | McCowley   | Archangel    |              | White Sea    | Sep. 26. cs |
| Sir A. Hammond      | London     | Newby      | Whaler       |              | Perce        | not stated  |
| Sir W. Wallace 376  |            | Cairns     | Peters-burgh | Liverpool    | Pentland F.  | Aug. 23. ls |
| Sovereign           |            | Colin      | Jersey       | London       | Guernsey     | 270 N. cs   |
| Success             | Ipswich    |            | Foundered    | Off Whithy   |              | Oct. 17.    |
| Susanna             |            | Daniel     | Bangor       | London       | Off Kish B.  | Nov. 3. cs  |
| Swallow 380         |            | Bennet     | London       | Maydyke      | Yarmouth     | Oct. 29.    |
| Sylph               |            | Barton     | Liverpool    | Tonning      | Tonning      | Oct. 29. cs |
| Sylvanus            |            | Smith      | Truro        | Mirimichi    | Seatarie     | Sep. 18. cs |
| Symmetry            | Sunderland | Palam      | Maldon       | Sunderland   | run foul of  | Oct. 18.    |
| Tartar              | Hull       | Seaton     | Archangel    |              |              | Aug. 30.    |
| Thistle 385         |            | Page       | Yarmouth     | Caldy I.     | Off Caldy    | Aug. 21.    |
| Thos. Birden        |            |            |              |              | Hartlepool   | Oct. 13.    |
| Transit             | Sunderland | Cole       | Archangel    |              | Off N. Cape  | Sept. 21.   |
| Vigilant            |            | Kerr       | Marsilles    |              | Madagascar   | July 5.     |
| Wanstead            | London     | Moodie     | Foundered    | Mauritius    |              | Sep. 27.    |
| Waterlilly          | Sunderland | Longstaff  | Petersburgh  | Seaham       | At sea       | Aug. 8. cs  |
| W. Robinson 400     |            |            |              | Petersburgh  | Anholt B.    | Sep. 15. cs |

263.—The bodies of the crew floated up, except the boy.

272.—The crew all drowned, and boat washed on shore off Bude.

274.—The crew saved by Lotus, Watson.

285.—The crew saved by a Prussian vessel, and most kindly treated.

288.—From England with coals, crew saved by Midas.

290.—The crew saved by brig Marquis of Normandy.

309.—The crew saved under the gallant superintendence of Captain J. Williams.

327.—The crew saved by Emma, Zoller, abandoned lat. 47°, long. 53°.

339.—Ship surrounded by 500 Bedouin Arabs, crew saved by boat, are at Alexandria.

349.—The crew drowned off River Bann attempting to land from boat.

354.—The crew saved by Hebe, Henderson, master, in a gale of wind off Fern Islands.

488.—The crew taken off by Maid of Kent, and landed at Whitburn.

397.—The crew saved by Apollo, Walker, of Dundee.

## NEW BOOKS.

THE LIFE, VOYAGES, AND EXPLOITS OF ADMIRAL SIR FRANCIS DRAKE.—By John Barrow, Esq., 1 vol. 8vo.—Murray, Albemarle Street.

For some time past we have been on the look out for the publication of this work, and are enabled at length, before the close of the year, to call the attention of our readers to a book, the perusal of which, we believe, will afford them more than usual interest.

The life of such a man as Sir Francis Drake, whose name from childhood has been familiar to our lips, and ears, could not well fail to afford ample materials for an interesting volume; but the great merit of Mr. Barrow's work consists in having succeeded for the first time,—notwithstanding there are many published narratives of the adventures of Drake, and among others one by Dr. Johnson,—in bringing to light a series of *Original* letters of SIR FRANCIS DRAKE, and of HOWARD EARL OF EFFINGHAM, the Lord High Admiral in the reign of Queen Elizabeth, collected chiefly at the State Paper Office from "the almost illegible manuscripts"—a glance "at the best specimen," of one of which (printed at page 300,) fully corroborates the fact of their being so: we confess to us it is "perfect Hebrew." In addition to these Mr. Barrow has procured much new and curious information from manuscripts in the British Museum, and has consulted largely all the old chroniclers, Camden, Stow, Strype, Speed, Holinshed, &c., together with many rare tracts communicated by Mr. Bolton Corney, "a private gentleman of great literary acquirements and research."

We shall, in this present notice, confine ourselves entirely to a few piquant extracts from some of the *original* letters, which appear to have been written chiefly during that eventful epoch in the history of our country, the attempted "Spanish invasion," by the miscalled "*Invincible Armada*;" and in the next, for the benefit of those "who read no more than is set down for them," we propose to give a general outline of the work.

The letters are in themselves so irresistible that we hope to be excused for thus deviating from the usual routine.

The first extract we shall quote is from a letter of the Lord High Admiral, which gives a pretty clear insight into the general state of the finances of the country in those days; and is certainly highly amusing.

It will be recollected that Sir Francis Drake, who took an active part in the defeat of the Spanish Armada, had the good fortune to seize a vessel, on board of which was one Don Pedro, together with a large amount of treasure; a little of which the Lord High Admiral appears to have stood somewhat in need.

The letter is dated from the Ark in Dover road, the 27th August, 1588, and addressed "To my verie lovinge freinde, Mr. Secretarie Walsinghame, at the Courte.

"Sir, I send you heer inclosed a note of the mony that Sir F. Drake had about Don Pedro. I did take now at my comyng downe 3000 pystelets, as I told you I wold, for by Jesus I had not [three pounds] left in the worlde, and had nor anythinge coulede geet mony in London. And I dow assure you my plite has gone befor, but I will repay it within ten days after my comyng home. I pray you let her Majestie know so; and by the Lord God of hevne I had not on crown mor, and had it not byne meer nesosite I wold not have touched one; but if I had not sum to have bestoed upon sum pour and myserable men I should have wysled myselfe out of the worlde. Sir, let me not lyve longer then I shall be most wylling to dow all sarvyys, and to take any paynse I chan for her Majestie's sarvyys. I thynk Sir F. Drake wyll say I have lyttell rest, day or nyght."

The following letter from Sir Francis Drake to the Queen, recommending an attack upon the Spaniards on their own coast, will be read with interest.



## "SIR FRANCIS DRAKE TO THE QUEEN.

"MOST GRACIOUS SOVERAIGNE,

"I have receaved from Mr. Secreatary som particulerr notes and withall a comandment, to ansvere them unto your Maiestie.

"The first is that your Majestie would willyngly be satsfyed from me how the forces nowe in Lysborne might best be dystressed.

"Trewly this poynt is hardly to be awnsivered as yeat, for tow speccyall cawses, the fyrst, for that our intelligences are as yeat uncertayne. The second, is the resolucyon of our owne peoyle, which I shail better understand when I have them at sea. The last insample at Calles is not of dyvers yeat forgotten, for one such flying nowe, as Berrowghes dyd then, will put the wholle in perille ffor that the enemyes strengthe is now so great gathred together and redy to invade;—but yf your Majestie will geve present order for our proceeding to the sea, and send to the strengthing of this fleett here, fower more of your Majestie's good shippes, and those 16 saill of shipes with ther penaces which ar preparing in London, then shall your Majestie stand assured, with God's assistance, that yf the flett come out of Lysborne as long as we have vittuall to leve withall, uppon that cost, they shall be fowght with, and I hope throwghe the goodness of our mercyfull God, in suche sort as shall hynder his qwyett passage into England, for I assure your Majestie, I have not in my lyffe time knowen better men and possessed with gallanter myndes than your Majestie's people are for the most parte, which are here gathred together, vollontaryllye to put ther hands and hartts to the fynishing of this great peice of work, wherin we ar ail perswaded that God, the gerr of all victoryes, will in mercye lowke uppon your most excellent Majestie, and us your power subjects, who for the defence of your Majestie, our relygon, and natyve country, have resolutly vowed the hassard of our lyves.

"The advantage of tyme and place in all marciall accyons is half a victory, which being lost is irrecoverable, wherefore, if your Majestie will comaund me away with those shipes which ar here alreadye, and the rest to follow with all possible expedyceyon I hold it in my power opnyon the surest and best cowse, and that they bring with them vittualls suffycient for themselves and us, to the intent the service be not utterly lost for want thereof: Whereof I most humbly besече your most excellent Majestie to have such consideracyon as the wayghtenes of the cawse reqwyrethe. For an Englyshman being farre from his country and seing a present wante of vittuall to insue, and perseaving no benefyett to be lowked for, but only blowes, will hardlye be brought to staye.

"I have order but for tow monthes vittualles begynning the 24th of Aprell, whereof one wholl monthe may be spent before we com there, the other monthes vittuall will be thought, with the least to bring us back agayne; here may the wholl service and honor be lost for the sparing of a few crownes.

"Towching my power opnyon how strong your Majesties fleett should be to encounter this great force of the enemy, God increac your most excellent Majestie's forces, both by sea and land, dayly: for this I surly thincke ther was never any force so strong as ther is now redye or makyng redye agaynst your Majestie and trewe relygyon, but that the Lord of all strengthes is stronger and will defend the trewth of his word, for his owne name's sake, unto the which God be all glory geven. Thus all humble duty, I contynewally will pray to the Allmyghtye to blesse and give you vycorye over all his, and your enemyes.

From Plymothe this 13th of Aprell, 1588.

Your Majestie's most loyall,

FRANCIS DRAKE.

To the Queen's moste excellente Majestie.

We would continue further extracts of these most interesting documents, but must necessarily defer doing so, till our limited space affords another opportunity; but in the mean time, we earnestly recommend to the service at large,

and to all seafaring men, the perusal of Mr. Barrow's interesting life of that great and extraordinary man, who in the quaint language of an old historian, first "*ploughed a furrow round the world.*"

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### NEW CHARTS.

(Published by the Admiralty, and Sold by R. B. Bate, 21, Poultry.)

The following interesting plans of places in the Archipelago, will concern both the seaman and the classic scholar, to both of whom, the neatness and elegance of their execution will make them doubly welcome.

EGINA AND METHANA.—Surveyed by Commander Graves, *H.M.S. Beacon*, 1839.

POROS ISLAND.—Surveyed by Commander Graves, *H.M.S. Beacon*, 1839.

GULF OF NAUPLIA.—By Captain Copeland, *H.M.S. Beacon*, 1832.

PORTKHELI, *Morea*.—By Commander Graves, *H.M.S. Beacon*, 1839.

ICYLI BAY, *Morea*.—By Commander S. Brock, *H.M.S. Magpie*, 1839.

VATIKA BAY AND CERVI ISLAND.—By Com. S. Brock, *H.M.S. Magpie*, 1830.

MENEMVASIA.—By Commander Graves, *H.M.S. Beacon*, 1838.

PORT IERAKA.—By Commander Graves, *H.M.S. Beacon*, 1838.

To the foregoing may also be added.

THE HARBOURS OF GREAT EXUMA.—*Bahamas*.—By Lieut. E. Barnett, 1837.

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H.M.S. SAMARANG.—The information in our last regarding this ship, is confirmed by recent accounts, which state that the Samarang after being eleven days under water, was weighed on the 27th of July, and without serious damage. She was then unstowed, the mud washed out, her inside dried, and she was to sail from the Sarawak with three months provisions on board on the 17th of August.

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### PROMOTIONS AND APPOINTMENTS.

[From the Naval and Military Gazette.]

#### PROMOTIONS.

COMMANDERS—E. Crouch, John Lort Stokes.

LIEUTENANTS—C. C. Forsythe, W. R. Card, W. G. Deane, J. B. Ballard.

MASTERS—J. E. Davis, H. B. Yule.

SURGEONS—J. O. Goodridge, D. Thomas, W. Robertson—R. Butler, M.D., C. Smith.

superintend Packet Station at Falmouth—E. Norcutt (1838) to be Governor of the Gambia—J. Brisbane (1837) to *Larne*  
LIEUTENANTS—B. Drury (1848) to *Shearwater*—J. Smith (1843), R. Campbell (1843), N. S. Knott (1838), W. F. Feade (1838), and B. Young (1841) to *Helena*—W. Morris (1838), F. H. Vyse, (1842), R. McLeod (1841) to *Hyacinth*—E. Nicholls to *Formidable*—T. Crang to *Peterel*—J. H. Crang (1840) to *Apollo*—E. Collier (1815) to *Caledonia*—J. Bull (1843) to *Sealark*—Sir F. Freeling (1842) to *Formidable*—D. H. Miller, (1841), C. R. Marcuard (1840) to *Vestal*.—R. McDonald (1842), J. Morshead (1836) E. F. Roberts (1841), G. C. Adams (1815), J. Dirom (1841), E. Little (1837) to *Albion*—E. Holmes (1841), M. Burrows (1843), H. King (1841) to *Winchester*—P. Godfrey (1841) to *Warspite*—A. S. Robinson (1810) to command *Tartarus*—T.

#### APPOINTMENTS.

CAPTAINS—N. Lockyer, (1815) to *Albion*—C. Talbot, (1830) to *Vestal*.

COMMANDERS—T. L. Gooch (1852) to *Sealark*—J. J. Robinson (1843) to *Caledonia*—W. N. Fowell (1839) to *Mohawk*—Sir C. Ricketts (1831) to *Helena*—R. Wilcox (1823) to the Portsmouth Ordinary—J. Rains (1829) to *San Josef*, to

Etheridge (1840) to *Star*—C. D. O'Brian (1830) to *Volage*—G. L. Northcutt (1818) to *St. Vincent*—C. J. F. Ewart (1841) to *Camperdown*—H. Charlton (1843), J. Pritchard (1843) *Illustrious*—S. F. Shore (1840) to *Alfred*—W. R. Mends (1835), G. Morrill (1837) to *Fox*—N. Vansittart (1842) to *Agincourt*—J. Borlase, H. Phelps (1842), W. K. Hall (1841), R. Coote, (1143), H. T. Veitch (1843) to *Cornwallis*—J. Foote (1835) to *Dublin*—T. J. Smith (1843) to *Ferret*—H. Clarke to *Ilazard*—C. A. Kane (1841) to *Lilly*—J. B. Kooystra (1841) to *Madagascar*—W. R. Davis (1815) to *Mohawk*—J. Tyssen (1832) to *Montreal*—C. K. Jackson to *Syren*—G. H. Hodgson (1842) to *Wanderer*—G. E. Patey (1813) to *Wolverine*—A. P. Greene (1813) to *Wolf*.

MASTERS—W. Ellis and J. Price (b) to *Helena*—W. H. Pope to *Sealark*—H. D. Burney to *Stromboli*—P. B. Roberts to *Alfred*—W. L. Chapman to *Beacon*—W. Green to *Crane*—D. M. Jagoe to *Daphne*—V. Williams to *Apollo*—C. George to *Tartarus*—T. Elson to *St. Vincent*—J. Burwood to *Vestal*—F. W. Bateman to command *Nereus*—S. G. J. Northcote to *Albion*.

MATES—C. Luckraft to *Caledonia*—E. G. Simkinson to *Albion*—J. Sharp to *Apollo*—C. Glinn to *Vestal*—P. Gilson to *Helena*—S. Aphorpe to *Hydra*—W. Lyster to *Iris*—W. De Vere to *Stromboli*—T. Davies to *Flamer*—H. B. Everest to *Devastation*—W. T. Lower to *Excellent*.

SURGEONS—W. Graham, to *Stromboli*, —F. Sharpe to *Helena*—R. T. Easton to *Sealark*—W. H. B. Jones, M.D., to be Surgeon Superintendent of the *Marion* convict-ship.—J. Tarn to *Caledonia*—R. Wylie to *Isis*—R. Carpenter, to *Bittern*, W. Browne, M.D., to *Madagascar*—E. H. Cree to *Vicen*—R. A. Bankier, M.D. to *Iris*.

SECOND-MASTERS—James Beckett, to *Lightning*—E. Angier to *Snipe*—C. F. Tappin to *San Josef*—C. Greig, to *Albion*—J. F. Patterson, and H. B. Batt, to *Apollo*—T. Russell to *Fox*.—E. Rowe to

*Pique*—J. W. M. I. Hull, H. Ley, to *Caledonia*.—G. S. Hall to *Flamer*—H. A. Moriarty to *Queen*.

ASSISTANT SURGEONS—G. M. M'Clure M. D., to *Albion*—J. Clarke to *Excellent*—W. Henderson to *Isis*.—J. F. Henry M. D., to *Helena*—H. Willan and J. Jack to *Caledonia*—L. M. Minter to *Victoria* and *Albert*.

MASTERS'-ASSISTANTS—J. Paterson to *Apollo*—W. Harris and A. Ford to *Iris*—G. R. Wilkinson to *Beacon*—H. Acheson and C. Cleaveland to *Fox*—H. P. Ward to *Helena*—R. Simpson to *Sealark*.

MIDSHIPMEN—T. McDonald, R. King J. S. Josling to *Iris*—C. P. De Vaugh, C. Wake, H. Peel to *Excellent*—W. H. Dawson, C. Bulteel, A. F. De Horsey, J. Rowley, J. P. Luce, J. Y. Yates, to *Fox*—R. H. Lambert to *St. Vincent*—H. A. Reilly to *Pilot*—A. Herlaise to *Hyacinth*.

VOLUNTEERS, FIRST CLASS—O. Buckley, J. R. Lambert, M. Pechell to *Fox*—G. P. Gourland to *Sealark*—G. Viscount, T. K. Foord, J. D. Crea to *Iris*—Sir. J. Hamer, bart. to *Helena*—G. R. Kear to *Albion*—J. R. Lawrence, T. C. McDougall, to *Vestal*.

PURSERS—T. Pemberthy to *Sealark*—W. Wilkins to *Helena*—G. Waller to *Albion*—B. Jennings, to *Camperdown*—J. Mason to *St. Vincent*.

NAVAL INSTRUCTOR—H. Knapp to *Excellent*.

CLERKS—C. A. Pritchard to *Fox*—W. Wright to *Stromboli*—T. Holt to *Iris*—W. J. R. Hall to *Warspite*—E. Harrison to *Helena*—G. Shambler to *Sealark*.

#### COAST GUARD.

*Appointments*.—Lieut. R. A. Newman to Grand Redoubt (Folkestone district.)  
W. Lory to 24 Tower Romney.

*Removals*.—Lieut. Servante to Dunny Cove, Lieut. Fowler to West Cove, Mr. O'Brien to Howstrand, Lieut. C. E. Taylor to Chapman's Poole.

### MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

#### AT HOME.

**ALBION**, 90, Commissioned at Plymouth Nov. 4th, by Lieut. R. J. Macdonald.

**HYACINTH**, 18, Com. F. Scott, Nov. 10th arr. at Spithead.

**HYDRA**, st.v. Com. Murray, Nov. 3rd, left Plymouth for Coast of Africa.

**MONARCH**, 84, Capt. S. Chambers, Oct. 28th paid off at Sheerness.

NAUTILUS, 10, Oct. 31st arr. at Portsmouth from Cape of Good Hope, Nov. 1st sailed for Deptford.

STROMBOLI, st. v. Capt. Hon. E. Plunkett, Nov. 4th arr. at Plymouth from Portsmouth on way to Cork.

WARSPITE, 50, Capt. P. Wallis, Oct. 31st left Spithead for Lisbon.

PLYMOUTH.—*In Port*—St. Vincent, Victory, Excellent, Victoria and Albert, yacht. *In Harbour*—Helena, Sealark, Nautilus, Fearless, Rhadamanthus.

PLYMOUTH.—*In the Sound*—Apollo.—*In Harbour*—San Josef, Albion, Nereus, Linnet, Penguin, Confidence steamer.

#### ABROAD.

ALBATROSS, 16, Com. R. Yorke, Oct. at Vera Cruz.

ALGERINE, 10, Lieut.-Com. T. H. Mason, Aug. 23rd at Simon's Bay from China and Singapore.

CASTOR, 36, Capt. C. Graham, Sept. 17th at Rio.

COCKATRICE, Sept. 17th at Rio.

CONWAY, 26, Capt. R. Fair, Sept. 17th at Rio.

CURACOA, 24, Capt. Sir T. Paisley, Sept. 17th at Rio.

ELECTRA, 18, Com. Darley, Oct. 11th at Halifax from St. John's.

FIGGARD, 42, Capt. J. A. Duntze, 17th Sept. at Rio.

FORMIDABLE, Capt. Sir C. Sullivan, Nov. 2nd at Lisbon.

GROWLER, 6, Com. C. H. M. Buckle, Oct. 10th at Pernambuco.

ISIS, 44, Capt. Sir J. Marshall, Aug. 16th at the Mauritius.

MALABAR, 74, Capt. Sir G. Sartorius, Oct. 29th at Gibraltar.

MAGICIENNE, 24, Capt. Warren, Oct. 14th left Malta for England.

SIREN, 16, Com. W. Smith, Aug. 14th arr. at Kegeree Bengal from Moulmein.

SPARTAN, 26, Hon. Capt. Elliott, 12th Sept. Prince Edwards Island.

SCYLLA, 16, Com. R. Sharpe, Sept. 29th at Tampico.

THUNDERBOLT, st. v. Com. G. N. Broke, Aug. 22nd at Simon's Bay from Port Natal.

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### BIRTHS, MARRIAGES, AND DEATHS.

#### Births.

At Ilfracombe, Oct. 16, the lady of Capt. Hirtzel, R.N., of a son.

At Bishop Wearmouth, Oct. 28, the lady of J. G. Harrison, Esq., surgeon R.N., of a daughter.

At Marylebone, W. J. Higgins, Esq., to Charlotte, daughter of the late Capt. J. Whyte, R.N.

At Jersey, Nov. 7, Capt. J. B. Cragg, R.N., to Margaret Anne, daughter of S. Little, Esq., R.N.

#### Marriages.

At Southampton, Oct. 21, the Rev. G. A. Booth, M.A., to Anna Maria Godolphin, eldest daughter of Rear-Adml. Asycough.

At Dovercourt, near Harwich, Lieut. T. Woods, R.N., to Susanna Warner, daughter of Lieut. J. Stephen, R.N.

At Plymouth, Nov. 4, Lieut. G. L. Norcock, to Isabella, daughter of the late Major Jenkins, 11th Hussars.

At St. Helena, Sept. 21, H. Mapleton Esq. R.N., to Mary Trent, daughter of W. H. Seale, Esq., Colonial Secretary of that island.

At Freswick, Nov. 9th, J. Jeffery, Esq., R.N., Consulting Marine Surveyor, to Mary Mason, youngest daughter of Lieut. Medley, Inspector of the Coast Guard, county of Caithness.

At Stonehouse, Nov. 14, Lieut. H. P. Veitch, R.N., to Georgiana Ommancey, daughter of Capt. Lawrence, C.B., R.M.

At Brixham, Nov. 1, Capt. A. S. Murray, to Elizabeth, daughter of Capt. Polkinghorne, R.N.

At Singapore, July 12, J. Simpson, Assist.-Surgeon of H.M.S. Dido.

At Islington, Oct. 28, Lieut. C. Parbury, late of the Indian Navy.

At Hilfield, Hants, Oct. 29, Mrs. H. Mason, wife of Capt. H. B. Mason, R.N.

At the Royal Naval Hospital, Stonehouse, Oct. 29, Capt. R. Chambers, R.N. late of the Monarch.

At Rochester, Nov. 1, Capt. J. Kneeshaw, R.N.

At Bovisand, Nov. 2, Fanny, daughter of Lieut. Cornish, R.N., aged 5 years.

In Cobourg Street, Com. Lawrence, R.N.

At Edinburgh, Nov. 8, Capt. J. Sibbald, R.N.

At Portsmouth, Com. Bamber, R.N.

At Harwich, on the 1st Nov. petty officer Moses Hunt, boatswain's mate, in charge of the Speelwell, tender to H. M. S. Blazer, an excellent and trustworthy seaman, and much regretted by his shipmates.

**SICKNESS AT BERMUDA.**—The alarming epidemic which has for several months prevailed in Bermuda, is at length beginning to shew symptoms of mitigation. It has been unusually severe and fatal among the European residents in the islands, more especially so in family households, few of which have escaped without the loss of one or more of their members.

A report had been spread that the disease was brought to the islands by one of the Mail Steamers, this however it appears was not the case, for similar visitations are said to have occurred periodically at intervals of from 7 to 10 years, and the peculiar state of the atmosphere is thought to be their more probable cause. It is remarkable that the winds have been contrary in direction to those usually prevailing at this season, that is from the north-east instead of the south-west.

### METEOROLOGICAL REGISTER.

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

From the 21st of October to the 20th November, 1843.

| Month Day. | Week Day. | BAROMETER. |          | FAHRENHEIT THERMOMETER, In the Shade. |        |     |     | WIND.    |      |         |      | WEATHER.   |      |            |          |
|------------|-----------|------------|----------|---------------------------------------|--------|-----|-----|----------|------|---------|------|------------|------|------------|----------|
|            |           | 9 A.M.     | 3 P.M.   | 9 A.M.                                | 3 P.M. | Min | Max | Quarter. |      | Streng. |      | A.M.       | P.M. |            |          |
|            |           |            |          |                                       |        |     |     | A.M.     | P.M. | A.M.    | P.M. |            |      |            |          |
|            |           | In. Dec.   | In. Dec. | o                                     | o      | o   | o   |          |      |         |      |            |      |            |          |
| 21         | Su.       | 29.88      | 29.92    | 44                                    | 51     | 42  | 52  | SW       | W    | 5       | 3    | qbcph 1)(2 |      | bc         |          |
| 22         | Su.       | 30.08      | 30.04    | 44                                    | 55     | 37  | 56  | S        | S    | 3       | 5    | b          |      | bc         | qbcph 4) |
| 23         | M.        | 30.05      | 30.11    | 50                                    | 56     | 46  | 58  | W        | W    | 3       | 6    | qbcph (1   |      | bc         |          |
| 24         | Tu.       | 29.90      | 29.80    | 54                                    | 58     | 48  | 60  | SW       | SW   | 4       | 6    | bc         |      | qo         |          |
| 25         | W.        | 29.42      | 29.44    | 47                                    | 47     | 46  | 48  | N        | NE   | 3       | 2    | or (1)     |      | o          |          |
| 26         | Th.       | 29.45      | 29.49    | 33                                    | 47     | 30  | 48  | SW       | W    | 2       | 2    | bef        |      | bc         |          |
| 27         | F.        | 29.66      | 29.64    | 34                                    | 46     | 32  | 47  | SW       | S    | 2       | 5    | b          |      | qor 4)     |          |
| 28         | S.        | 29.05      | 29.22    | 43                                    | 47     | 42  | 48  | SW       | SW   | 6       | 8    | qbcph (1)  |      | qbcphr 3)  |          |
| 29         | Su.       | 29.64      | 29.62    | 41                                    | 46     | 35  | 50  | SW       | SW   | 2       | 2    | bc         |      | bc         |          |
| 30         | M.        | 29.45      | 29.32    | 52                                    | 54     | 38  | 57  | S        | S    | 4       | 4    | or (1)     |      | or (3) (4) |          |
| 31         | Tu.       | 29.40      | 29.40    | 51                                    | 45     | 44  | 56  | N        | NE   | 3       | 4    | or (1)(2)  |      | or (3) (4) |          |
| 1          | W.        | 29.62      | 29.70    | 43                                    | 47     | 41  | 48  | NE       | SW   | 2       | 2    | o          |      | bef        |          |
| 2          | Th.       | 29.76      | 29.76    | 40                                    | 46     | 37  | 47  | N        | NE   | 2       | 2    | of         |      | or (4)     |          |
| 3          | F.        | 29.65      | 29.65    | 47                                    | 53     | 45  | 55  | SW       | S    | 2       | 3    | o          |      | bc         |          |
| 4          | S.        | 29.63      | 29.72    | 49                                    | 52     | 45  | 53  | S        | S    | 2       | 2    | bcr (1     |      | bc         |          |
| 5          | Su.       | 29.94      | 29.95    | 47                                    | 51     | 43  | 52  | N        | NW   | 2       | 2    | o          |      | o          |          |
| 6          | M.        | 29.97      | 29.94    | 49                                    | 52     | 41  | 53  | SW       | SW   | 3       | 3    | or (2)     |      | o          |          |
| 7          | Tu.       | 29.68      | 29.70    | 53                                    | 55     | 46  | 56  | SW       | W    | 6       | 4    | qor 2)     |      | bc         |          |
| 8          | W.        | 29.58      | 29.56    | 44                                    | 43     | 40  | 50  | SW       | NW   | 2       | 6    | bc         |      | qbcph (3   |          |
| 9          | Th.       | 29.92      | 29.90    | 33                                    | 38     | 31  | 39  | NW       | NW   | 4       | 2    | b          |      | bc         |          |
| 10         | F.        | 29.52      | 29.56    | 42                                    | 43     | 32  | 45  | S        | S    | 2       | 2    | od (2)     |      | od (3      |          |
| 11         | S.        | 29.94      | 30.02    | 34                                    | 43     | 31  | 44  | SE       | NE   | 1       | 3    | bc         |      | bc         |          |
| 12         | Su.       | 30.13      | 30.15    | 38                                    | 42     | 32  | 43  | NE       | E    | 2       | 2    | b          |      | b          |          |
| 13         | M.        | 30.16      | 30.20    | 29                                    | 41     | 27  | 42  | SW       | NE   | 2       | 2    | bm         |      | bcm        |          |
| 14         | Tu.       | 30.15      | 30.11    | 37                                    | 38     | 32  | 39  | NW       | N    | 2       | 2    | of         |      | or (3)     |          |
| 15         | W.        | 30.20      | 30.14    | 31                                    | 34     | 30  | 39  | S        | NW   | 2       | 2    | bef        |      | ber 4)     |          |
| 16         | Th.       | 29.95      | 30.03    | 38                                    | 44     | 36  | 45  | N        | N    | 3       | 4    | b          |      | bef        |          |
| 17         | F.        | 29.90      | 29.76    | 36                                    | 46     | 32  | 48  | SW       | SW   | 2       | 4    | bc         |      | or (4)     |          |
| 18         | S.        | 29.59      | 29.56    | 42                                    | 47     | 40  | 48  | SW       | SW   | 4       | 4    | b          |      | b          |          |
| 19         | Su.       | 29.66      | 29.82    | 37                                    | 44     | 34  | 46  | SW       | SW   | 3       | 2    | b          |      | b          |          |
| 20         | M.        | 29.46      | 29.68    | 48                                    | 48     | 42  | 49  | SW       | W    | 8       | 6    | qor (1     |      | qb         |          |

OCTOBER.—Mean height of the Barometer 29.735 inches; Mean temperature = 48.6 degrees; depth of rain fallen 4.50 inches.

### TO OUR FRIENDS AND CORRESPONDENTS.

MR. COLEMAN'S useful communication shall appear in our next.

Also that of LIEUTENANT CHURCH, R.N., on Tenerife.

LIEUTENANT JENNING'S useful hints shall be duly noticed in our next.

Hunt, Printer, Carlisle-street, Maida-hill.

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## ERRATA.

- Page 36, line 3 from foot, for "West Passage", read "East Passage."  
 41, line 16 from foot, for "declination" read "right ascension."  
 79, line 23 from foot, for 79° 57' 54" read "87° 57' 54".  
 80, line 12 from foot, for "lit" read "lighted."  
 104, line 24 from foot, for "dictorial" read "dictatorial."  
 106, line 14 from foot dele "tmpt."  
 130, Nautical Notices, second paragraph, line 7, for "month" read "year."  
 130, line 7 from foot, for "Terinoel" read "Temoel."  
 131, line 11 from foot, for "lat. 8° 10' W." read "lat. 8° 10' N."  
 134, line 11 from foot, dele "(mag.)"  
 217, line 18 for "Church Tower on with a Cupola bearing W.S.W." read "Church  
 Tower with Cupola to bear W.N.W."  
 217, line 22 for "N.N.W." read "N.N.E."  
 281, line 1 from foot, for "Horsburgh's" read "Horsburgh's."  
 367, line 28 from foot, for "seamen" read "seaman."  
 522, line 13 for "Melurda" read "Melinda"  
 552, line 8 for "scud" read "sand."  
 585, line 1 for "for" read "24."  
 588, line 19 for "Gillebrand Gresham" read "Gresham Professor."  
 599, line 17 from foot, for "J. W. Beechey" read "F. W. Beechey."  
 606, line 18 from foot, for "with" read "with."  
 607, line 4 for "rotton" read "rotten."  
 625, line 28 for "elicidated" read "elicited."  
 673, line 9 remove the comma to after "it."  
 698, line 6 for "toherably" read "tolerably."  
 700, line 9 for "Exhuma" read "Exuma."  
 736, line 15 from foot for "atmospheric" read "atmospheric."







