A. Lyon
56 mc Magazine
- 1834

Appearance of the Land South of Cape Roxo.

Isla de Lobos S. 43° W. dist. 3 Miles.

High lands of San Juan.

Appearance of the Land South of Cape Roxo.

High lands of San Juan.

C. Roxo N.W.¾W.

Appearance of the land North of Cape Roxo with the high lands of San Juan.

A. Cape Roxo S.¾W. 4 or 5 miles

B

C

D

The RIVER TAMPICO from D to PANUCO on a reduced Scale 1833.

Mag.

LAGUNA

Laguna

Isleta de Palos

Tamos

Monte Gordo

Caracol

Ladrillero

Periquitta

Tamalipococque

Limon

Paso de las Piedras

Paso de Toyale

Punta de Arena

Laguna

Veja de los Otates

Aguacate

Paciencia

Topila

Tamboioch

Tamanti

Panuco

Tecoutl

Distilacion de Fullon

Horno de Polvora

Distilacion

Paso Potrero

LAGUNA

LAGUNA DE TAMPICO

1 2 3 4 5

Scale of Nautic Miles

Laguna del Carpintero

Camino de Alamatla

Cementerio

La boca del Tamesi

Los bocas del Moralillo

TAMPICO de Tamaulipas

Paso de las Piedras

Paso de Doña Cecilia

Calera

Fortin

El Horno

Humo

Pueblo Viejo de Tampico

Road to Tampico el alto

LAGUNA DE TAMPICO

1 ¾ ½ ¼ 0 1 2

Scale of Nautic Miles

The Harbour of TAMPICO FROM ACTUAL SURVEY, 1833.

Note.

The Soundings are in English feet.

Paso signifies Ferry

The bar is in Lat. 22°.16 Lon. 97.50

Mira

La Barra

Entrada de la Barra

Mira

La Barra

Mag.

Var. 8¾E.

It is high water on the Bar at full & change at 2h.30m. P.M. but this is much varied by the wind.—The extreme rise of tide is only two feet.

Costa

Published for the Proprietors of the Nautical Magazine by Fisher, Son & Co. Jan.y 1st 1834.

J. & C. Walker Sculp.

THE NAUTICAL MAGAZINE,

&c.

JANUARY, 1834.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

1. Remarks on Tampico.

The harbour of Tampico,* till within the last ten years, was little frequented; but some European merchants, considering that it presented many advantages favourable for carrying on commerce, have resorted to it for that purpose, by which means it is now established as a trading port. To distinguish the town of that name from Tampico-Viejo and Tampico-el-Alto, it has received the name of Tamaulipas. In the "Derrotero del Seno Mexicano," a work justly esteemed for its correct information, it is stated, that the river Tampico has an excellent bottom, with depth sufficient to float ships that draw less than three fathoms water. But a ship drawing so much water as above stated, cannot, even at the most favourable season, pass the bar, as the depth of water on it never exceeds thirteen or fourteen feet, and this is reduced to eight or ten in the rainy season. This difference arises from the accumulation of sand, brought down by the rapid descent of the waters from the mountains, where it is stopped by the bar. It has frequently happened that vessels, which have visited this port, have been damaged by striking on the bar, although some of the captains have taken the precaution to land as much of their cargo as they thought would have enabled them to enter the river in safety. The "Derrotero" adds, that the bar, which lies N.W. and S.E., has more or less water on it, according to the rise or fall of the river. This statement is but partly correct, for the bar, owing to the displacement of its sands, being subject to continual change, consequently has no constant depth; and this is so well known by the pilots, that every morning they examine it. The channel over it is rarely found stationary more than two or three days; and, as has been

* Annales Maritimes, No. 36, p. 382.

already observed, the number of feet of water in the river is subject to as much change.

It is likewise stated in the "Derrotero," that Tampico-Viejo, Tampico-el-Alto, and Altamira, are well supplied with provisions of all sorts. This was not found to be the case by the crews of two unfortunate vessels, (the Fanne and Flora,) which were wrecked at Tampico Tamaulipas, during the months of May and June; they having had the greatest difficulty in procuring the common necessaries.

Notwithstanding these deficiencies, the new city of Tamaulipas* offers more resources than the three other places mentioned in the "Derrotero" altogether. The deficiency of those articles necessary for heaving down a vessel, it is hoped, will be remedied in the course of time, aided by the assistance of the United Northern States, their Mexican neighbours, which even already carry on more commerce with Tampico, than all the European nations put together.

Coasting Directions from Isla de Lobos to the Bar of Tampico. *By Mr. Peter Masters, Commander of the Brigantine Marinero of Tampico.*

(Compass Bearings.)

A ship, in making the land, or running to the westward, being to the northward of Cape Roxo, will find no dangers; but if uncertain of her latitude, it would be advisable to ensure making the land north of it, if possible, as the water there is deep, twenty to twenty-four fathoms being found at the distance of about two miles from the shore to the southward of Tampico el Alto. As it generally happens after a norther has set in, that the atmosphere is thick, and as the surf near the shore tends to increase the difficulties of seeing objects used as land-marks, it must be remembered, that from Cape Roxo the land trends towards the Bar of Tanguijo about S.S.W., and from Cape Roxo to the northward as far as the Bar of Tampico, it lies N.W. by W. nearly.

From about half a mile to three-quarters of a mile north of Cape Roxo, the tops of the sand-hills first appear, covered with trees or bushes. These extend along the whole line of coast to the southward without interruption. The north end of the high land of San Juan, from the above position, then bears S. 30° W., and the southern part of the low land of San Juan, S. 22½° W.; the centre of the high land, S. 25° W.; which high land is formed by several ridges which extend in different directions. Further north, for about two miles, the whole of the sand-hills are only interspersed with a few bushes between their tops and the beach, as at B;† and to the northward, about four

* Formerly the lake of Carpintero, north of the town, was subject to great variation in its level; and when this was low, during the hot season, the malaria it generated not only affected the health of the inhabitants, but yielded the most offensive exhalations. In 1832, during the internal disturbances of Mexico, a field-work was constructed, to defend the narrow isthmus, which separated the lake from the sea, and its ditch communicated both with the waters of the lake and the river. The consequence has been important to the health and comfort of the inhabitants. The water of the lake has ceased to be stagnant; and some flows into the river, when the latter is low, and the latter flows into the lake, when this is low; the rise of tide in the river being not more than two or three feet, the surfaces of both are maintained at nearly an equal level. The result has been to render intermittent fever much less frequent than before the cut was made.

† See the appearance of land, B and C, in the plate of Tampico.

miles from Cape Roxo, is another portion of sand-hills, with their tops covered with bushes about half a mile, or less, in length, as at C.* From this last-mentioned place to the northward is almost a continuation of bushes, about one-third from the beach, the tops of the sand-hills being clear of vegetation. Navigators should be careful to make allowance for refraction, which, as it is a sandy coast, is very great when the weather is fair, making the bushes appear at times higher than they actually are; but, even should this be the case, if the tops of the sand-hills be clear, the ship is then to the northward of Cape Roxo at least four miles. Should she be farther northward, it will be seen if the tops of the sand-hills are clear of bushes; if not, she must be between the rising ground of Point Jerez and Tampico el Alto. The whole line of coast from Point Jerez to the Bar of Tampico is covered with bushes. Should a ship be disabled, (which happened with the vessel I command,) or in want of water, or even provisions, and a norther comes on whilst off the Bar of Tampico, when all communication from the shore will be cut off by the heavy sea on the bar, it would be advisable to bear up for Isla de Lobos, (which affords a very good shelter,) provided there be an appearance of the gale lasting, in preference to running off soundings, and lying to the wind; for as soon as the weather is favourable, a vessel has more chance of reaching the anchorage off the Bar of Tampico from Isla de Lobos, than if she had kept the sea, the current always setting strong to the southward during a norther. With respect to water on the Isla de Lobos, there are two small wells on its south side, in one of which I found fourteen inches. The quality of it was very good, and better than could be expected on such a small island. Lobos is also covered with trees, some of which are a very large size, and fish are in abundance near the shore. But attention must be paid in getting into the anchorage; although every danger with regard to the ship may be seen, yet the anchors may be lost, as in some parts the bottom is very foul. The Flecha of Tampico ran in to leeward of this island (the wind being to the northward) and lost two anchors; but the last time the Captain had an opportunity of sounding round the reefs, and about the anchorage; and by the information I received, and by the observations I made, the following statement I think is correct.

The Isla de Lobos is in latitude (by double altitude) 21° 30′ N.; is low, and formed by a coral reef and sand, but covered thickly with trees, the tops of which are about thirty-five feet above the level of the sea. The island is about three-quarters of a mile in diameter, and nearly round, decreasing a little in height towards the N.W. From the western part of the island, a narrow reef extends out about a cable's length from it. To the northward is another, or rather a continuation of the same reef, which extends about two miles from the island. The latter reef in day-time can always be distinguished by the sea breaking over its outer edge. Its eastern edge runs about S.S.E. and N.N.W. until the southern part of the island bears about W.S.W. and extends about three-quarters of a mile from it.

In running for the Isla de Lobos from the northward, having made the land north of Cape Roxo, and stood in until the distance from it is about two or three miles, steer S.E. ½ E.; and when off Cape Roxo, unless the weather is very thick, the Isla de Lobos may be seen from the foreyard. Having made the island, the best guide to clear the north-east and eastern reef is a good look-out from aloft, there being no danger but what may be clearly seen. When the island bears about W. or W. by N., haul up to the southward and westward, round the south part of the reef, for the anchorage, keeping in not less than seven fathoms water, which will be about a cable's length from the edge of the reef. When crossing a ledge which extends a little to the south-

ward of it, the eastern part of the island will then bear about N.W. by N. From here the centre of the island bears about N.N.W. The ground is very foul, and should be particularly avoided as an anchorage, although it appears good shelter from a norther, and from the sea.

The best anchorage is when the centre of the island bears about N. or N. by E. in from seven to eight fathoms water, which will be about three cables' length from the shore, on a sandy bottom. This is an excellent berth for catching fish in, and also has the least swell during a norther. When the centre of the island bears about N. by W., and in from nine to eleven and a half fathoms water, the bottom is sandy, with a few stones. Eastward of this, bearing to the shore, the ground is very foul. It would not be advisable to anchor nearer the island than seven fathoms water, for, should the wind shift to the westward, southward, or south-east, (which makes this anchorage bad,) there would then be sufficient room to get under way, and clear the reefs either to the eastward or westward of the island. Neither would it be prudent for a stranger in getting under way in the night to pass to the westward of the island, as the currents are so changeable that the ship might be on shore on Baxo del Medio, or Blanquilla, when it might be supposed she was some distance from them. I am informed that the depth of water can be no guide in approaching either of these sand-banks, they having seven fathoms close to them. But, supposing the wind to shift to the southward during the night, and blow strong, so that a vessel could not clear the eastern part of the reef, and was obliged to go to the westward of the island, after having rounded the western reef, which extends from the island as already mentioned, the coast should be dealt with in preference to approaching Blanquilla.

Blanquilla bears from Isla de Lobos about N.W. by N., distance four miles. Cape Roxo bears from Isla de Lobos N.W. $\frac{1}{4}$ W. nearly, distance about eight miles and a half. The south end of the high land of San Juan from Isla de Lobos is S. 61° W., and the northern part of the high land of San Juan from ditto, S. 71° W.

From off the Bar of Tampico, in seven fathoms water, the centre of San Juan bears S. 4° 30′ E.

Between the northern reef of Isla de Lobos and Blanquilla, is a sand-bank called Baxo del Medio, over which the sea breaks. It is mentioned in most books of directions, that Blanquilla is an island; but this is not the case, for when I passed it, which was three days after a norther, and there had only been a light breeze from the N.E. by day, and the wind off the land by night, of course there could not have been any swell of consequence at the time, but what there was broke entirely over Blanquilla, as well as Baxo del Medio; the former appeared about half a mile in diameter, and Baxo del Medio about a cable's length.

From Cape Roxo the centre of the high land of San Juan bears S. 43° W., and when off shore about two miles and a half, there is about twenty-four fathoms water, with fine sand: the Isla de Lobos then bears S. 38° E., distance three leagues, and can be seen from a little above the deck.

In sailing for the Bar of Tampico, the best guide is a good observation. A vessel should run down in 22° 16′ N, its parallel of latitude, provided she be tolerably near the land; but it should be remembered, that if a norther had been blowing strong a day or two previous, that the current will be setting to the southward as much as two knots per hour, and then of course the land should be made a few miles to the northward of the bar. But the contrary should be observed, if the wind had been blowing to the southward or S.E., as the current will be then setting to the northward at nearly the same velocity, and of course the land should be made to the southward; but no opportunity

should be lost in ascertaining the latitude of the ship, either by the Pole star or any other means, when approaching the land in the night; and the lead should be attended, if the vessel be going fast through the water.

Having got soundings in about forty fathoms, which is near its outer edge, you will then be from four to five leagues from the coast. Should the weather be moderate, you may stand in for the land in from nine to twelve fathoms water, and must keep off and on until daylight in about the same soundings: the distance from the shore, about three or four miles.

When near the Bar of Tampico, you will know when you are off it by the bottom being soft blue mud, without sand, on which you may anchor with perfect safety in from nine to ten fathoms water, until daylight, or till the sea-breeze sets in, when the vessel can be placed in a good position, either for passing the bar, or discharging her cargo outside if requisite. The deepest water I have found on the bar was fourteen feet: this was only on one occasion, and after heavy northers; but generally there is from 9 to 10½ feet, except in the rainy season, when there is less.

Most strangers have been deceived in making the coast, in consequence of the directions which have been given for making the bar. The land, instead of being sand-hills, as stated, to the southward of the Bar of Tampico, (which would lead a person to suppose it is no height above the level of the sea,) is a regular range of land, which, at the highest part, is about 350 feet, and covered thickly with trees, excepting two small patches. It decreases more in height towards the Bar of Tampico than to the southward.

The land near the bar is lower than on any other part of the coast, and to a stranger is bad to make. The mark for knowing the bar is a white house to the southward of its entrance. If the vessel be about a mile to the northward of the bar, two houses may be seen on the south side of the river. On the north side of the river are three houses, or huts. And also on each side of the entrance is a vigia, or look-out. That on the north side of the entrance signalizes to the town of Tamaulipas. Both of the vigias have an appearance from the offing like ships' masts. It must not be forgotten, that there are neither houses nor look-outs to be seen on any part of the coast near the Bar of Tampico, excepting these.

In the book of directions it is stated, that Tampico el Alto, or Tampico, (as it is there called,) can be easily distinguished. Unless a vessel be close in shore, and nearly abreast of it, Tampico cannot be seen, as the land about it is higher than any buildings in it. The situation of Tampico is in a hollow, and from this the land to the southward begins to decrease in height.

About one mile and a half to the northward of Tampico el Alto, and five or six miles to the southward of the Bar of Tampico, on the highest part of the land, is a remarkable tree, which is very large and high. This tree may be distinguished from the offing nearly as soon as the land may be seen. To the northward of the Bar of Tampico, the bottom is mud mixed with sand, but to the southward fine sand, except off Point Jerez, where, for a small distance, the bottom is the same as to the northward of the bar, mud and sand.

The coast north of the bar is formed of sand-hills for several miles. These are partly covered with bushes; but the two high hills of Mecate and Matanzas are good land-marks, both being near the coast, and in general may be seen from the bar. To the southward there are no such hills.

The river at Tampico is navigable for vessels as far as Panuco, which is about seventy-five miles up from its entrance, and in the shallowest part has nine and a half feet water.

I have observed, in taking the altitudes of objects at night north of the zenith, when approaching the land, (particularly in low latitudes,) that the

latitude has differed considerably from the ship's actual place; and, also, when the altitudes of objects south of the zenith have been taken at the same time, the error has been the contrary way. This must be attributed to the effects of refraction; but as the horizon might also be raised or depressed by the fogs or vapours which hang near land, independent of refraction, and no calculation can be made for it, I have always found, that by taking the altitudes of two objects, the one north and the other south of the zenith, the mean of the results has been nearly the correct latitude.

2.—Spar-Buoy in Buzzard's Bay, Nova Scotia.

NOTICE TO MARINERS.

Compass Bearings.

New Bedford, Oct. 9.

A spar-buoy has recently been placed, by order of the collector of this port, on the Weepicket Rock, in Buzzard's Bay, which lies in a direct track from this place to Wood's-hole. The buoy is about twenty feet distant, in a N.W. direction from the rock, and is in thirteen feet at low-water.

3.—Western Islands. Breakers Reported. Lat. 38° 15′, Long. 30° 51′ W.

Compass Bearings.

We insert the following, as a caution to navigators. The position of the reported danger is nearly due south of Flores, and west of Pico by the chart:

Extract of a letter from Captain Robson, of the brig Hartford, arrived in Portland Roads, from Rio Grande, dated 9th of October:—"22d September, 1833, at noon, lat. 38° 15′ N., long. by distances of sun and moon, taken about 5 P.M. reduced to noon, 30° 55′ W., and also by bearings of the extremes of the Island Fayal, at 5 h. 30 m. A.M. on the 23d, reduced to the noon of the preceding day, 30° 48′ W., saw breakers, bearing N.N.E. six miles, or thereabouts. The wind was fresh, and, although very little sea, it broke constantly in a space of two ships' lengths, from E. to W., full twenty feet high. The wind was N.N.W."

4.—Baldock Island, Mediterranean, *reported by Lieut. Baldock, R.N. commanding H.M. Steam-Vessel Firebrand.*

In our last number we expressed our intention of examining the statement of Lieut. Baldock, respecting an island on the north coast of Africa, in the Mediterranean, discovered by him in August, 1832, when in command of H.M. Steam-Vessel Firebrand. In our last volume, the report of Lieut. Baldock concerning it will be found; in which, however, some error found its way with regard to its true position. The existence of the island itself, in consequence, having been altogether questioned by Capt. Belcher, lately in the Mediterranean, in command of H.M.S. Ætna, it was but justice to Lieut. Baldock to investigate the discovery. Our opinion of the correctness of this officer's observation, from our knowledge of his experience and careful attention, has already been recorded, and

we shall now lay before our readers the following extracts from the log-book of H. M. Steam-Vessel Firefly, in which vessel Lieut. Baldock has had frequent opportunities of confirming his discovery:—

"H. M. Steam-Vessel Firefly, 21st May, 1833. Bearings and distance at noon, lat. 36° 36′ N. long. 1° 44′ E.—Cape Caxines, E. 15° N. 62 miles—P.M. moderate and fine. At 12*h*. 30*m*. saw a small island ahead. At 1*h*. 20*m*. passed about 2¼ cable's length outside of it. Soundings 50 fathoms, coral bottom. Off shore about 3½ miles. A castle on a hill, near the sea, S.E. At 4*h*. moderate and fine. At 4*h*. 20*m*. the town of Zerzahal, S.S.W. Wind easterly."

The Firefly was on the meridian of Cape Tenez, at 9*h*. 30*m*. A.M.; distant from it 2½ miles, going seven knots; between which time and 1*h*. 20*m*. P.M. when the island was passed, the distance run was 26.8 miles. We may also observe, that the wind was against the vessel. Also, that the distance run by the log from Cape Tenez to Zerzahal was 47.7 miles.—On referring to the chart, we find it measures no more than 33 miles.

On the 15th of October following, we find inserted in the same log-book—

"Bearings and distance at noon—Palomas Island, W.S.W.; Cape Tenez, E ½ S. off shore 3 miles—P.M. moderate and fine, at 2*h*. passed Cape Tenez, S.S.W. 1 mile. At 5*h*. 10*m*. passed a small island, S.S.W. 1 mile."

The vessel was here going 8 knots per hour, and steering E b S. From her passing the meridian of Cape Tenez to that of the island 3*h*. 10*m*. elapsed, which will give a distance by the log of about 26 miles. Light westerly wind.

From the foregoing, therefore, we may safely conclude, that there is an island 26½ miles to the eastward of Cape Tenez, between two and three miles off the coast, not laid down in the charts. There is too much reason, however, for believing, that this is not the only discrepancy in the charts of that coast. The distance between Cape Tenez and Cape Caxin, near Algiers, repeatedly measured by Lieut. Baldock, by the run of the Firefly, differs some 8 or 10 miles in excess of the chart; and it is rather remarkable, that of the various surveys that have been made in the Mediterranean, we believe none have included the coast in question. The attention of our officers, like that of Lieut. Baldock, will, however, go far in improving the charts, by contributing such discoveries.

5.—Navigation of the Dardanelles and Sea of Marmora.

The following communication, kindly furnished by Captain Middleton, is submitted to the attention of navigators:

To the Editor of the Nautical Magazine.

Sir—I have lately returned from another voyage through the Dardanelles, up the Black Sea, &c., and, having discovered that I was wrong in stating my

disbelief in the existence of a shoal in the Dardanelles, above Galipoli which is marked in Norie's new chart as having seven feet on it, and which disbelief was contained in my observations on this navigation, which you published in your number for last March; I lose no time in acknowledging that error, an English vessel having lately got on shore about where this shoal is designated. The commander of this vessel says that it was nearly a mile from the north shore where he grounded.

In the observations above alluded to as having been published in your Magazine, I have also, in accordance with the generally existing opinion, stated the necessity, in approaching Constantinople, of giving Point Stephano a very large berth; it is of some importance to know that there is no necessity for so doing. The practice of passing this point, (which Norie's directions says has only two fathoms at two miles off,) at such a distance is very inconvenient in working up, as, in rounding it, the wind is sure to head you, out of the Bosphorus; and you are thus forced at the same time into the current, and a wind more directly adverse. In proceeding up this last voyage, with the wind just so scant, that, by hugging Point Stephano, I fetched right up to the back of the town; I am convinced I anchored at least six hours sooner than I otherwise should have done, (and with many ships the difference would have been much more considerable,) had I given the point a berth of two miles. I was induced to pass this point very close, from observing a Greek vessel preceding me, evidently of greater draught of water than my schooner,) and I did so without having less than five fathoms, at a distance of a good quarter of a mile. I, however, do not mean to assert, that there is not less water further out; but it will be of great utility to know that you may pass so close.

I would also add, on the subject of the currents of the Black Sea, that, as I have observed that the waters of this sea are set in the direction of the prevailing wind, it is essential not to lose sight of what will often be the case, namely, a considerable current, with little or no wind at all. I was set for two successive days, from twenty to twenty-five miles each day, to the eastward, on going to Trebisonde, with the lightest possible easterly wind. But *it had blown* fresh from the east for some days previous; and this current was evidently a reflux of the waters which had been forced to the westward. Therefore, it is essential in navigators to keep in mind as well the wind that *has been blowing*, as that which blows.

I am, &c.

London, 7th December, 1833. R. D. MIDDLETON.

6.—NEW LIGHT-HOUSE AT PORT-DALRYMPLE, VAN DIEMEN'S LAND.

Post-Office, Launceston, Van Diemen's Land, May 20.

Sir—I have the honour to inform you, for the information of the committee at Lloyd's, that a Light-house is now erecting on the Low Head, at the entrance of Port Dalrymple, and is intended to be furnished with a revolving light; it is situated near the flag-staff, and as nearly as possible in the same position, and is of a conical shape, with a ball of twenty feet diameter, and will be nearly sixty feet high.

I am, Sir, your most obedient servant,

MATTHEW CURLING FRIEND.

To John Bennett, Esq., Secretary, Lloyd's.

ORIGINAL PAPERS.

I.—Various Methods of Measuring Ships for Tonnage, *including those proposed by the existing Tonnage Committee.*

The methods at present in use are as follow:—

ENGLAND.

By the 13 Geo. III. cap. 74, it is directed that,

The length shall be taken in a straight line along the rabbet of the keel of the ship, from the back of the main stern-post to a perpendicular line from the fore-part of the main stem under the bowsprit.

The breadth shall be taken from the outside of the outside plank, in the broadest part of the ship, either above or below the main-wales, exclusive of all manner of doubling planks that may be wrought upon the sides of the ship.

In cases where it may be necessary to ascertain the tonnage of vessels afloat, by 26 Geo. III. cap. 60, the length is to be taken as follows. Drop a plumb-line over the stern of the ship, and measure the distance between such line and the after-part of the stern-post at the load water-mark: then measure from the top of the said plumb-line, in a parallel direction with the water, to a perpendicular point immediately over the load water-mark at the fore-part of the main stem, subtracting from such admeasurement the above distance; the remainder will be the ship's extreme length, from which is to be deducted the three inches of every foot of the load draft of water for the rake abaft.

From the length, taken in either of the ways above-mentioned, subtract three-fifths of the breadth taken as above, the remainder is esteemed the just length of the keel to find the tonnage: then multiply this length by the breadth, and that product by half the breadth, and, dividing by 94, the quotient is deemed the true contents in tons.

FRANCE.

The three measures of length, breadth, and depth are multiplied together, and divided by 94 for the tonnage.

In Single-decked Vessels.

The length is taken from the after-part of the stem on deck to the stern-post; the extreme breadth is taken, being measured inside from ceiling to ceiling, and the depth from the ceiling to the under surface of the deck.

In Vessels of two Decks.

At Bourdeaux, the length of the upper deck, and that of the

keelson, are meaned for the length. But, at Brest, Marseilles, and Boulogne, the mean of the length on the two decks from the stem to the stern-post is taken as the length. The depth of the hold, from the ceiling to the under surface of the lower deck, is added to that of the height between decks, and considered as the depth. The extreme inside breadth is taken in the same way as in single-decked vessels.

At Bourdeaux, an allowance is sometimes made for the rake of the vessel.

At Boulogne, in measuring steam-boats, the length of the coal and engine chambers is deducted from the length of the vessel, and the breadth is taken at the fore and aft extremities of the same, the mean of which is considered as the breadth. The depth is taken inside the pumps from the lower surface of the deck between the timbers.

At Brest, measures are frequently taken with a string, although contrary to law, and an error of seven tons in the tonnage of a cutter has been the result.

SPAIN.

Three breadths are measured at the following places: 1st, at the mizen-mast; 2d, a few feet abaft the foremast; 3d, at a point half-way between the two former. The heights at which the three breadths are taken at the above places are, 1st, on a level with the deck; 2d, on a level with the upper surface of the keelson; 3d, at a level half-way between the two former positions.

To find the area at each section, the half of the sum of the upper and lower measurements is added to the middle measurement, and this sum is multiplied by the height of one above the other. Then half the areas of the fore and after section is added to that of the middle section, and this sum is multiplied by the length which the sections are apart from each other. The result will express in Burgos cubic feet the capacity of the part of the hold between the fore and after sections, and it still remains to add the spaces between these and the stem and stern-post. The former may be found without any considerable error, by multiplying the area of the foremost section by half its distance from the stem; and the latter, in the same manner, by multiplying the area of the after-section by half its distance from the stern-post. It is evident, that the room occupied by the pumps must be deducted from the foregoing result, in order to obtain the fair quantity of space filled by the cargo.

Having thus found the capacity of the hold of any vessel, in the above manner, in Burgos cubic feet, it is to be divided by $41\frac{6}{7}\frac{1}{7}\frac{1}{9}$, and the result will be the amount of displacement of such vessel in tons of Burgos measure, because each ton is reckoned equal to $41\frac{6}{7}\frac{1}{7}\frac{1}{9}$ feet of Burgos.

PORTUGAL.

Single-decked Vessels.

The length is measured from the cabin bulk-heads to the fore-castle bulk-heads. The depth is measured from the upper surface of the keelson to the under surface of the beams. The extreme breadth of the deck is considered the breadth.

The continued product of these three dimensions will give the contents in cubic feet, which, divided by $57\frac{196}{1000}$, gives the tonnage.

Vessels of two Decks.

In these vessels, two distinct operations are made; one for the hold, the other for the middle deck.

For the hold: the length is measured from the heel of the bow-sprit to the stern-post. The breadth is the extreme breadth of the upper deck, deducting two feet. The depth is from the surface of the keelson to the under surface of the beams.

For the middle deck:—The length is considered as half of that for the hold, the other half being allowed for cabins, &c. The breadth as before; and for the depth the height of the middle deck to the under surface of the beams.

The foregoing is the method adopted at Lisbon; but at Oporto, the length of the vessel is taken from the second timber at the bows to the stern-post; the breadth, at the widest part, from the inside of each bulwark on the upper deck; and the depth from the upper surface of the keelson to the lower surface of the beams of the upper deck at the main hatchway.

If the keelson be more than ordinarily thick, allowance is made accordingly; and where there are two decks, the thickness of the lower deck is also deducted from the depth. The length is then multiplied by the breadth, and the product by the depth. This product is then divided by 96, the number of Portuguese cubic feet contained in a ton, and the result is the tonnage of the vessel.

NAPLES.

For Vessels with two Decks.

The length of the deck is measured from one end of the vessel to the other, *over all.*

The length is also measured from the after-part of the stem to the rudder hatch under the poop. The mean between these two lengths is multiplied by the extreme breadth of the vessel.

The depth is then taken from the bottom of the well to the lower surface of the upper or poop deck; and the above product being multiplied by this depth, and divided by 94, gives the tonnage.

For single-decked Vessels.

The tonnage is found by multiplying the extreme length by the extreme breadth, and the product by the extreme depth, and divided by 94 as above.

NETHERLANDS.

The length is measured on deck from the stem to the stern-post.

For the breadth, the hold is divided into four portions, and two measurements taken at each of the three divisions: 1. Across the keelson, on a level with its upper surface, from ceiling to ceiling. 2. The greatest breadth of the hold at each division. The mean of these six measurements is considered the breadth.

The depths are taken at each of the foregoing points of division from the upper surface of the keelson to the lower surface of the upper deck between the beams, and the mean of these three is assumed.

The length, breadth, and depth, are then multiplied together, and two-thirds of the product is considered as the tonnage. But an allowance for provisions and water, cabins and ship's stores, varying from $\frac{30}{100}$ to $\frac{45}{100}$, is deducted from the depth before it is multiplied by the length and breadth.

NORWAY.

From the after part of the stem the length of the ship is taken to the inner part of the stern-post.

Dividing the length of the vessel into four equal parts, the breadth is measured at each of those divisions.

The depth of the vessel from the under surface of the upper deck to the keelson to be taken at the above three points of division.

Then multiply the length by the mean of the three breadths, and the product thereof by the mean of the three depths.

The result of the foregoing is divided by 242½, if there be no fractional parts of feet; but if there are, the calculation is made in inches, and the divisor becomes 322767, the result thus obtained being the burthen of the vessel in wood lasts, of 4000 Neva pounds each. To reduce these into commerce lasts, one of which is equal to 5200 Neva pounds, it is multiplied by 10, and divided by 13.

RUSSIA.

Length of the keel in feet multiplied by the extreme breadth over the sheathing, and the product multiplied again by half the breadth, and divided by 94, gives the number of English tons.

UNITED STATES.

If the vessel be double-decked, the *length* is taken from the fore-part of the main stem to the after part of the stern-post above the upper deck. The *breadth*, at the broadest part above the main-wales, half of which breadth is accounted the *depth*. From the length *three-fifths* of the *breadth* is deducted; the remainder is multiplied by the *breadth*, and the product by the *depth*. This last product is divided by 95, and the quotient is deemed the true contents or tonnage of such ship or vessel.

If the ship or vessel be single-decked, the *length* and *breadth* are taken as above for a double-decked vessel; and three-fifths of the breadth is deducted from the length. The depth of the hold is taken from the under side of the deck-plank to the ceiling in the hold; these are multiplied and divided as aforesaid, and the quotient is the tonnage.

At Philadelphia, a system of measuring, called carpenter's tonnage, appears to be adopted. The rule is as follows:—

For Vessels with one Deck.

Multiply the length by the breadth of the main beam, and the product by the depth. Divide this second product by 95.

For double-decked Vessels.

Take half the breadth of the main beam for the depth, and work as for a single-decked vessel.

At New Orleans the mode at present in use is as follows:—

Take the length from the stem to the after-part of the stern-post on the deck. Take the greatest breadth over the main hatch, and the depth from the ceiling of the hold to the lower surface of the deck at the main hatch.

From the length deduct $\frac{3}{5}$ths of the breadth, multiply the remainder by the actual breadth and depth, and divide by 95, for a vessel with a single deck; but if the vessel have a double, half the breadth of the beam is considered as equivalent to the depth, and is multiplied accordingly.

PROPOSED BY THE COMMITTEE APPOINTED BY THE ADMIRALTY IN 1821.

1. Measure the length in feet and inches from the after part of the stem to the fore part of the stern-post; on the level of the deck, or of the upper deck, when there are more than one.

2. Divide the length into four equal parts, and measure the depth, at each point of division; from the under surface of the upper deck plank to the upper surface of the ceiling, near the keelson, or the limber-strake.

3. Divide the middle depth into two equal parts, and measure the breadth of the ship, at the half-depth; between the inner surfaces of the planks of the ceiling.

4. Divide each of the other two depths into four parts, and measure the breadth at the two quarters of each; that is, at a quarter depth below the deck, and at three quarters.

Rule for the Computation.—Add together the five breadths, and multiply the sum by the half sum of the two depths at the quarter lengths, and by the length; the product, divided by 560, will give the tonnage.

PROPOSED BY MR. G. PALMER, OF THE PRESENT TONNAGE COMMITTEE.

LET the following lines be measured, and each of them marked at the extremes by government nails* being driven into the plank or timber of the ship.

1st. The extreme length on the upper deck, no notice being taken of a poop deck or raised forecastle.

2nd. The inside breadth on the upper deck, at the middle of the length.

3rd. The depth from the under part of the upper deck to the ceiling at ditto.

4th. The inside main breadth, at the widest part in the line of the depth.

5th. The inside length, at a height from the ceiling equal to half the main breadth.

6th. The inside breadth, at a height equal to one-fourth of the main breadth for the ceiling, and in the perpendicular line, at a distance of one-sixth the length.

7th. The inside breadth, at the same height, and at one-sixth the length from aft, the length alluded to in both being that of the upper deck.

For the Contents of the Upper Division.—From the mean of the two lengths, take one-tenth part for the round of the side; multiply the remainder by the mean of the upper breadth and main breadth, and again by the difference between half the main breadth and the depth.

For the Contents of the Lower Division.—From the length at the height equal to half the main breadth, take three-fifths of the inside main breadth for the rake of the stem and stern-post, and one-fifth of the remainder for the round of the bottom, then multiply by the inside main breadth, and again by half that breadth; the result will give the cubic contents, in the generality of well-built merchant ships.

Some vessels, however, are built uncommonly full, and a few sharp, like men-of-war; it becomes necessary therefore, in the measurement, to adopt a rule which will apply to both cases.

* 16 marks required.

Take the mean of the two breadths, taken at one-sixth from either extreme, and compare that with the main inside breadth, by ascertaining its decimal parts thereof, should those decimal parts be $\frac{75}{100}$ no further allowance is to be made; but where it is more or less than $\frac{75}{100}$ of the main breadth, as many hundred parts as the difference amounts to, must be added to or taken from the cubic contents, found as above, for the lower division of the vessel, to shew the true contents thereof.

Divide the sum of the contents of the two divisions by 100, for the register measurement.

PROPOSED BY THE REV. DR. INMAN, OF THE PRESENT TONNAGE COMMITTEE.

The dimensions are supposed to be taken in English feet and decimals of feet. If inches are used, they must be turned into tenths and hundredths of feet, by dividing by 12, adding decimal ciphers if necessary.

1. Divide the whole girth* by 2, and call the quotient the *half-girth for tonnage.*

2. Divide the breadth by 2, and add the quotient or *half-breadth* to the depth. Divide the sum by 2, and call the quotient the *radius for tonnage.*

3. From the length of deck subtract the half-breadth, and call the remainder the *length for tonnage.*

* *Measuring the Girth.*

The girth of the greatest transverse section to the height of the under surface of the *tonnage deck* may be taken by sweeping a chain under the false keel, either from forward or from aft, according to circumstances, and placing it in a vertical position at the extreme breadth of the ship; then, stretching it as tight as possible to opposite spots, marked on the sides at the height of the under surface of the tonnage deck, between which spots the breadth is taken. This measurement is easily taken at any time of tide, either when a vessel is lying in a tier or singly.

Extreme Breadth at Deck.

The extreme breadth at the tonnage deck is taken at the height of the under surface of this deck, by placing a stout straight board across the gunwale, or through two opposite ports, according to the size of the ship, so as to project sufficiently beyond the sides to allow two plumb-lines to drop clear of the water or broadest part of the ship. The distance between the lines gives the *extreme* breadth of the ship. The sum of the distances between the plumb-lines and the two spots marked on the side, exactly within the plumb-lines, being subtracted, the remainder will be the breadth required.

Length of Deck.

The length of the tonnage deck is taken by stretching a small line fore and aft, as tight as possible, on the upper surface of the deck, at a parallel and sufficient distance from the middle line of the ship, in order to clear the several hatchways and other obstacles that may present themselves. The line is then fastened at each end, and measured in this position. The places of the ends of the line are then squared over to the middle line of the ship, and the lengths forward and aft taken from the spots squared to, to the inside of the stem and

4. Multiply the *half-girth for tonnage* by the *radius for tonnage*, and multiply the product by the *length for tonnage*. Divide the last product by 80, and the quotient will be the required tonnage in English tons.*

5. The multiplication just described may be more easily performed by *logarithms* thus:—

Add together the logarithm of the *half-girth for tonnage*, the logarithm of the *radius for tonnage*, the logarithm of the *length for tonnage*, and the constant logarithm 8·096909; the sum (rejecting 10 from the index) will be the logarithm of the tonnage required.

PROPOSED BY MR. RIDDLE FOR MEASURING THE INTERIOR CAPACITY OF SHIPS FOR TONNAGE.

Take the depth at one-sixth of the length of the upper deck from the stem and the stern, and at the middle, from the under part of the deck to the ceiling at the timber strake, and measure the inside breadth at one-fifth, and four-fifths of the fore and aft depths, and at two-fifths of the midship depth, and the length, at the middle of the midship depth, from the aft part of the stem to the fore part of the stern post.

Take the sum of the fore, the aft, and twice the midship depth, and also the sum of the breadths at the fore and aft sections, and twice that at the midship section.

Multiply the product of these two sums by the length, all in feet, and the result, divided by 25·35 will be the interior capacity in feet.

PROPOSED BY LIEUT. H. RAPER, R.N. OF THE PRESENT TONNAGE COMMITTEE.

The length of the deck for tonnage, that is, the upper deck of two, or the middle one of three, from the stem to the stern-post

stern-post. The sum of these additional lengths is then added to that already measured. The result is the length required.

Depth.

The depth abreast the pump-well† is taken by fastening a line to the under surface of the deck at this station, applying it perpendicularly to the surface of the keelson, by placing one arm of a square well with the keelson and the other with the line. The line is then measured, and the distance from the surface of the keelson to the ceiling, close to the limber boards (measured in the direction of the line,) is added.

Should this method be, in any case, difficult to be executed on account of lumber or stowage, the depth may be taken down the pump, or in any other way that seems most convenient, the proper allowances being made for the height of the ceiling above the point measured to.

* The first product is nearly the *area in square feet* of the greatest transverse section: $\frac{4}{100}$ths of the second product is nearly the *interior capacity in cubic feet* of the ship up to the under surface of the tonnage deck. These results, in many cases, will be found extremely useful.

† This depth might be taken, perhaps more advantageously, at the greatest transverse section, or as near thereto as possible.

inside, being divided into six equal parts, the following measures are taken at the foremost and aftermost points of division, viz. the half-breadth, the depth from the under surface of the deck to the ceiling, and the distance or diagonal from the same point in a direction half-way, or at an angle of 45°, between the depth and breadth.

The areas of the half-sections below the deck at these points of division are found thus:—

Add the three measures (half-breadth, diagonal, and depth) into two pairs, and take out the two numbers corresponding from the table;* the sum is the area of a half section.

Then, for the tonnage:

Add together the foremost and aftermost half-sections, multiply their sum by 6, and to it add the midship half-section, multiplied by 10; divide by 100, and multiply by the length. The product, divided by 8, is the tonnage. For the capacity, multiply by 8, instead of dividing by 8.

PROPOSED BY MR. G. PARSONS, OF CHATHAM DOCKYARD.

Take the length of the vessel on a straight line between the fore side of the rabbet of the stem and aft side of the rabbet of the stern-post, at the height of the wing transom; call this length L. Take the half of the extreme breadth; call it B. Take the half-girt of the vessel at the greatest transverse vertical section, measured in a direction perpendicular to the keel, carrying the line to the under side of the keel, or false keel, and to the medium height of the upper deck at the side; call this half-girt g. Add g and B together, square the sum; multiply this square by L, and multiply the last product by the decimals ·0018 for the register tonnage.

METHOD PROPOSED BY MR. T. CARTER.

Rule. Take the length on the upper deck from the inside of the bow next the side of the apron, to the aft side of the stern-post, or the line thereof.

Ships with raised quarter-decks, measure from the inside of bow as above, along the main deck to the break bulkhead, to which add the length of quarter-deck from the break to the aft side of post.

Having the length, take three transverse sections, as follows:—

Viz. the 1st at $\frac{1}{6}$ from forward.

„ 2nd at the broadest part, which is usually found about $\frac{2}{3}$ from forward.

„ 3d at $\frac{1}{6}$ from aft.

The superficial measurement of those sections to be ascertained as shewn within, and their sum total to be divided by three, for an average section of the ship.

Multiply the superficial measurement of the average section by the whole length, and divide by 100.

* We regret being obliged to reserve the table for another number.

THE DISCOVERY OF EASTERN AUSTRALIA:

BY HENRY HALLORAN, SON OF DR. HALLORAN.

The incidents of which this Poem is composed are taken from Cook's Narrative of his Discovery of the Eastern Coast of Australia.

WHO can fix limits to the human mind,
Or daring genius in dull bondage bind?
Arrest the spirit's fervency and fire,
Or lull to apathy its keen desire?
Fame, like an Iris, rests upon the steep,
And lures the seaman o'er the dangerous deep:
Around him roars the loud and hollow wind,
Rocks spread before and coral reefs behind;
Unfathom'd seas, and vortices that hurl
The quivering barque in their voracious whirl,
Beset his course; and horrors worse than these:
The freezing sleep—the tropic's fell disease—
Famine and fire—a death and grave unknown—
Would dash a trembling spirit from its throne;
But eagle genius spurns both doubt and dread,
And rears on high its bold Titanic head—
To unknown regions wends its death-fraught way,
While dangers pass, like fog-banks, far away.

Mute be my lyre when I descend to praise
The sons of blood, or prostitute my lays:
Cold be my heart, and tuneless be my strain,
If e'er I laud the paltry sons of gain;
But when my theme is virtue, truth my aim,
May my verse glow with bright Byronic flame—
Spread a pure picture to the ravish'd eye,
And in the throbbing heart, awake the joyous sigh

Immortal COOK! thy lov'd lamented name
May give my simple verse no fleeting fame.
Here on the margin of this southern world,
Where first thy brilliant banners were unfurl'd—
Where first thy barque her streamy image threw
O'er the dim mirror of the ocean blue—
Where first thy British cannon pealed around,
And faithful echo rendered back the sound—
Where first thy keels upturn'd the glitt'ring strand—
Yea, on the very shore I musing stand;
And in unequal and unworthy lays,
Aspire to sing the British COLON's praise.

From Zealand's coast the favouring breezes blew,
And o'er the yielding wave the vessel flew;
Her swelling sails their snowy forms extend—
Her streamers wave—her lofty topmasts bend;

Around her prow the fretting billows rise;
Now o'er the watery ridge she swiftly flies—
Now buried in the trough of gaping seas—
Now reeling 'neath the pressure of the breeze;
By calms now baffled—now by storms impelled—
O'er the vast deep her fearless course she held;
Her gallant Chieftain marks each heavenly sign—
Her watchful seamen heave the sounding line;
And days and nights beheld them on the wave,
Tho' calmly patient—confidently brave.
At length the lead returns with promise crown'd,
With sand encased, with ooze and seaweeds bound;
And more to glad the Chieftain's anxious eyes,
Athwart the bow the darting gannet flies—
The albatross extends her sailing wings,
And from the wave the sounding egg-bird springs—
The floating seaweeds—the discoloured seas—
The frequent *lulls* and *freshes* of the breeze—
With many nameless, noted tokens more—
Proclaim them stretching to no distant shore.

'Twere worse than useless in this verse to sing
The like events which stated periods bring;
The bright ascension of the orb of day—
The faithful log that marks the vessel's way—
The sounding bell, from which the wing of time,
In passing, draws a melancholy chime—
The watery volume whirling o'er the deep—
The dolphin's plunge—the pellock's frequent leap—
The friendly watches of the hardy crew—
The song which echoes to some fond adieu—
With all the trifling changes which impart,
A soothing solace to the seaman's heart.

'Tis evening's hour, the sky is dark and wild,
And clouds on clouds are in disorder piled;
Their mountain masses o'er the heavens extend,
And to the deep their sullen darkness lend;
No star is seen with scintillating ray,
To dash the murky gloom of night away;
The waves roll past with long, and vale-like sweep,
Then foaming burst, and whiten all the deep;
As when the pillar which the impending sky,
Tears from the bounding surge to whirl on high,
Bursts in the billowy air, and to the main,
In gyral torrents rushes down again;
The squall increases, and the lightnings fly,
In *fiery gashes* thro' the ebon sky;
While here and there the chieftain's manly form
Confronting danger, combats with the storm;
The boatswain's whistle shrieks above the gale,
And daring hands compress the flapping sail;
The cordage flutters in the dying wind;
The rain descends in torrents unconfined;

And faintlier glares the lightning's paler ray,
As in low tones the thunder rolls away.

The clouds dissever, and the Queen of Night,
Spreads o'er the watery world her solemn light;
Midst silent stars, she seems to glide away,
To where the past receives the parting day;
Again the sails along the masts extend,
And o'er the deep their fleeting shadows send;
The helmsman's form is now distinctly seen,
His upturn'd gaze, his meditative mien;
Awhile he wonders why each distant star
Calls to his mind the dream of joys afar,
Why throbs of transport to his bosom come,
And memory paints his visionary home.

'Tis beauteous midnight, and the sounding lead
Seeks for the mighty ocean's oozy bed;
Its answer cheers them, and their course they keep,
In silent hope, along the eternal deep;
While far upon the bosom of the night
The lone pintado takes her lonely flight,
And, with one cry of weariness, again
Sinks on the surface of the moonlit main.

Cool is the midnight air! the tall sails lie
Along the masts in sleep-like apathy;
Upon the prow the hardy seaman rests,
With folded arms upon his dauntless breasts,
And weaves the song a Briton loves to hear,
By faithful memories rendered doubly dear;
Or mutely leaning on the massy gun,
Glows with the deeds his daring sires have done;
Views the vast tablet of his country's fame,
And proudly glories in a Briton's name!

The morning breaks, and in the eastern sky
One lovely planet holds her throne on high;
Until the sun, with amethystine light,
Consumes this latest, loveliest orb of night—
Throws his long beams above the rising clouds,
Which spread above him their vermilion shrouds—
He flames thro' all, and his vast disk is roll'd
O'er burnished piles of red and molten gold.

Far to the west, upon the horizon's verge,
A misty ridge uprises from the surge;
Tho' dimly seen, the Chieftain's piercing sight
Beams with the sudden fulness of delight;
The glass is raised, its magic powers portray
The lofty mountain, and the shelving bay—
The white waves dashing on the rocky shore—
The distant forest's wide and waving store—

The Iron Cliff, so named the headland brow,
Which spurns afar the vessel's foaming prow,
Rears from the waves its desolated form,
And seems to throne the genius of the storm;
While, further inland, shining rivers come,
In bright meanderings, from their mountain home—
Speed thro' the vales, and to the forests give
The dews by which their spreading honours live.

But when the blazing sun's meridian ray
Spreads o'er the world the fulness of the day,
The hidden treasure of six thousand years,
More plainly traced, its mighty form uprears;
Mountain o'er mountain rises from the plain,
Or valleys meet the margin of the main;
The spiry smoke uprises from the land,
While dusky figures pass along the strand,
And tell, that even in this southern clime,
Where Nature walks with footsteps half sublime,
Grasping creation in her boundless span,
She framed that awful mystery—a man!
What, tho' the meanest of the human kind,
His form bespeaks the presence of a mind,
Which time may rescue from its rayless mine,
For British hands to model and refine,
And from this poor, degraded race may rise
Some fearless son of mighty enterprise,
Whose deathless deeds shall for his country claim
The sacred chaplet of historic fame!

Along the shore their steady course they keep,
And sound at every hour the faithless deep—
Trace every feature of the varying shore,
And unto knowledge add their little store,
That future pilgrims of the wave may be
By doubt unclouded, and from error free.

To scan creation, mortals boldly dare
To float through regions of unpeopled air—
To grasp the lightning as it streams on high,
And win it from its eyrie in the sky—
To traverse desarts where the Samiel's breath,
In storms of dust, brings black and noisome death—
To furrow waves where keels have never been—
To make of sterile shores a lovely scene—
To trace the mazes of the dreary mine,
And o'er the mountains, lead the clustering vine.

Where nature freezes 'neath the northern skies,
We'll rear a tomb to martyr'd enterprise;
Mourn o'er a Hudson's unrecorded grave,
And weep that pity had not power to save.

Onward they sweep thro' waves of silvery spray,
And mark each sandy beach and shallow bay;

Now here, now there, the dusky forms appear,
With threat'ning gesture and uplifted spear;
Along the shore, like famished wolves, they run,
Then pause, and listen to the flashing gun,
Which wounds the darting gannet, as on high,
With outstretch'd wings, he sails along the sky;
Then from some lofty rock, or headland's brow,
They watch the vessel as she reels below;
With savage wonder, terror, and surprise,
Indulge the fears which ignorance supplies;
Believe her cloud-born, with her sails of snow,
Her lofty masts, bright flags, and gilded prow.

At length a deep and sheltered bay is seen,
Of tranquil surface and inviting mien;
Its heads are rocky, and the foaming tide
Rolls round each barren base its hoary pride;
But further inland, on the southern shore,
The land is low, with sea-weeds mantled o'er;
And further still, a chain of mountain blue,
In vapoury distance, meets the ardent view;
The northern shore with sand and shells is strewn,
And piled fragments from some hoar cliff hewn;
And near the shore, from out its rocky bed,
An islet lifts its low denuded head;
No plant, no flower adorns its barren side,
But o'er it breaks the rolling ocean-tide.
The Chieftain bids the careful Master sound
The channel's depth, the safety of the ground;
The yawl is lower'd, the sweeping oars keep time,
Now o'er each lofty swelling surge they climb,
Now skim a vale of waves— on every side
Above them frowns the blue and curling tide;
The *frequent lead* descends, but e'er they reach,
And press with weary feet, the welcome beach,
On which, in throngs, the hostile Indians stand,
To meet the invaders of their native land.
The lofty barque appears; her foaming prow
Furrows the waves with its gigantic plough;
The sails are clewed; the falling anchor rings,
And to the wind the stately vessel swings.

'Tis eve—'tis cloudy night: the moon's pale hue
Along the bay its silvery image threw;
But on the shore a red and fearful blaze
Bursts from a lofty pile with flickering rays;
Before the flames the thronging Indians spring,
And, yelling, round it form their mystic ring,
In wild contortions, strike the blackened sand,
And whirl the *waddie* in each dusky hand;
Now crouching low, now with a sudden cry,
Around the pile with frantic speed they fly,
Shout at each turn with horrible delight,
And mar the beauty of a southern night;

Nor cease their revels till the morning gun
Booms o'er the waves to greet the rising sun;
Then to their *gunneahs*, sullenly repair,
Like wolves retreating to their caverned lair.

Why is the Chieftain's brow so changed since night?
Can baffled danger yield him no delight?
Do painful thoughts disturb his manly soul,
And o'er his mind their waves of darkness roll?

Oh, what is Man? The child of clay and breath,
Whose path is danger, and whose goal is death!
Linked to the dust, yet with a spirit fraught,
That leads him to eternity—or *nought!*
Doubt, fear, and error on his path intrude,
Yet still he struggles faint, tho' unsubdued,
And as time leads him to his latest day,
He clasps his chain and doats his age away.
In *youth*—all fire and wildness, scorn and strife,
Reckless of danger, prodigal of life,
He spreads his sails with all the pomp of pride,
And, fearless, sweeps existence' treacherous tide:
In *age*—all caution; feeble, vain, and cold,
Shrinking from shadows, and by fear controll'd,
He hugs the shore, and trembles lest the storm
Should wreck his aged, miserable form.

On yonder beach a mournful throng is seen,
With downcast eyes and melancholy mien:
In silent grief, a brother's corpse they bear,
And o'er it breathe a short, tho' heart-born, prayer;
To foreign earth a Briton's dust consign,
Above it raise a rude, sepulchral sign;
A cross—a name—a little mound of earth—
Attest his age—his country—and his birth!
And can the callous breasts of Britons know
Compassion, yearning for another's woe?
They can—they do! for hearts where valour's force
Holds its impetuous, overwhelming course,
Have tenderer feelings than the casual eye
Can scan, when masked in hardy apathy:
A form that meets the tempest's death-fraught shock,
Unharmed, unscared, unflinching as the rock,
May shroud a spirit, gentle tho' sublime,
As meteors nourished in a northern clime.

The boat descending from the vessel's side
Throws into ripples the surrounding tide;
Flashes the wave beneath the sweeping oar—
Grates the long keel upon the sandy shore!
The Indians seek a rock's protecting height,
And shun all converse with th' intrusive white:
Two from a neighbouring eminence descend,
And vainly strive their country to defend;

Wave the long lance with savage gesture, wield
The massy club, or raise the painted shield;
Shake their dark locks—their naked bodies throw
In threat'ning postures, to alarm their foe.
But, vain their threats! The Britons press the shore—
The ensign spreads—the cannon's deep-mouthed roar,
In iterated echoes, peals around!
Flash follows flash, and sound replies to sound!
The clam'rous drum's barbaric tones arise—
The fife's shrill whistle o'er the waters flies—
The smoke in volumes slowly rolls away—
And Britain's Genius hovers o'er the bay!

Far to the east a lofty barque appears;
Above the waves her white-winged form she rears;
A cloud—a speck; and now o'er billows tost,
She ploughs the deep, and is in distance lost:
And gallant Cook beholds with joyful eyes
The mighty trophy of his bold emprise;
To Britain's shores, at last, directs his prow,
Where fame enwreathes the laurel for his brow.

III.—On the Change of Rates in Chronometers.

To the Editor of the Nautical Magazine.

Sir—An article in your Magazine for May, entitled "Magnetic Experiments on Chronometers," by Messrs. Arnold and Dent, has appeared to us, and to several others of our distinguished cotemporaries in the profession, to require some notice, as its effect may be, to lead persons unacquainted with the subject to form very erroneous notions as to the degree of perfection which the art of chronometer-making has reached. Indeed, if chronometers in general, as sent from the hands of respectable makers, were the imperfect sort of machines which those appear to have been on which your correspondents have experimented, they would ill deserve the confidence which nautical men have long seen reason to place in them.

We remark in the first place, on the striking change of rate which your correspondents represent as caused by the (we presume *careful*) removal of chronometers from London to Greenwich, amounting to as much as two seconds per diem, that it is not at all in accordance with our experience. We are constantly in the habit of taking chronometers from our house of business in town to our private residence in the country, without finding their rates affected by the removal in any sensible degree—certainly not to any thing like the extent which Messrs. A. and D. represent *as common*.

After reading the letter of Messrs. A. and D., we took four chronometers, and after ascertaining their rates in 'Change Alley

we removed them to our private residence, about three miles from thence, and ascertained their rate of going there. We then brought them back to 'Change Alley, and again found their rates. After this, we had them carried round the Royal Exchange in the hand for about half an hour every morning, for several days; and after this trial we put them in an iron chest for the same period.

We subjoin the average rates during their various trials, from which it will be seen that no systematic variation took place which could be attributed to the peculiar circumstances under which the chronometers were acting.

Average Rate per Day during each of the Trials.

No. of Chron.	At 'Change Alley.	Private Residence.	'Change Alley again.	Round Royal Exchange.	Placed in Iron Chest.
	s. ″′	s. ″′	s. ″′	s. ″′	s. ″′
776	+1 0	+1 5	+1 3	+0 7	+1 0
1978	5 0	5 3	5 2	5 7	5 2
745	5 0	5 1	5 1	5 8	5 6
925	1 6	1 2	1 4	1 5	1 8

We may further state on this subject, that, in August, 1833, we sent two of our chronometers, Nos. 1731 and 1751, to the Royal Observatory, Greenwich, on private trial. Their average rates for a short time previous were,

		s.	″′	
No. 1731	+	0	8	per diem.
.. 1751	+	0	3	

After their having been at the Observatory some time, the following were given to us as the rates they had kept there:

		s. ″′			s. ″′
1731	At Greenwich	+ 1 2	1751	At Greenwich	+ 0 7
	At 'Change Alley..	+ 0 8		At 'Change Alley..	+ 0 3
	Difference in Rate	+ 0 4		Difference in Rate	+ 0 4

It is evident that these chronometers shew no remarkable change of rate, as resulting from their removal from London to Greenwich.

With respect to the difference between land and ship rates, on which much has been said and written within the last few years, we have also to state, that we have no evidence of the existence of any such difference in chronometers made by ourselves; and, from the many hundreds of our making which have long been in use in all climates, we cannot doubt that we should have been aware of the fact, if it had been a general one.

On this point, we have much satisfaction in referring to the

following extract from Captain Sabine's work on the figure of the earth, page 391 :

"An opinion has lately prevailed, that the change in the rate of chronometers on embarkation, which used to be considered as a consequence of the motion of the ship, is principally occasioned by the magnetic influence of the iron which she contains; and it has been assumed by some of the writers who have taken part in the recent discussions on the subject, that the effect so attributed is one of general experience. I believe, on the authority of others, rather than from my own observation, that a difference does sometimes, and even frequently, take place between the land and sea rates of chronometers; but from whatever cause the irregularity may arise, I must regard its occurrence as an evidence of the inferiority of the particular chronometer, to the advanced state to which the art of their construction has attained; because, amongst the many with which I have at different times been furnished by Messrs. Parkinson and Frodsham, and which I have frequently transferred from the ship to the shore, for two or three weeks at a time, for the purpose of trial, I have never been able to discover any systematic variation whatsoever, consequent on their removal."

On the subject of the supposed magnetic influence of iron in a ship on the rates of chronometers, we may as well take the opportunity of quoting from the same distinguished authority.

Captain S. says, "With regard to the influence of the iron, as the cause of the irregularity, a more decisive evidence can scarcely be imagined of its not being practically discovered under the most favourable circumstances for its exhibition, than took place in the four chronometers of Messrs. Parkinson and Frodsham, of which I have given an account in the appendix to Captain Parry's Voyage of Discovery in 1819 and 1820, pages 7, 12, 18, 19, and 20."

Having succinctly mentioned the result, Captain S. adds, "These particulars are stated in detail in the pages referred to, but the circumstance is thus again generally noticed, because it appears to have been overlooked by many whose ingenuity has been exerted in devising contrivances to remedy an evil which has no practical existence, where the common discretion of life is exercised in obtaining the better article at an equal price.

"Had the especial purpose of the Hecla's voyage been to inquire whether the iron of a ship, in its ordinary distribution, would, under extreme circumstances, exert a sensible influence on the chronometer, better adapted arrangements could scarcely have been devised for the experiment, nor could a more decisive result in the negative have been obtained.

"The Hecla was stationary and immoveable, being frozen up, for more than ten months in the vicinity of the magnetic pole, the dip being between 88 and 89 degrees: such is the situation, and such the circumstances, which are supposed to be best adapted for the

development of magnetism in the stancheons, and other vertical iron of a ship. The chronometers were kept on board the whole winter, and their rates, preparatory to the polar navigation of the following summer, were assigned from the average of the four months immediately preceding her extrication from the ice, at an equal period of four months of navigation. The Hecla arrived at Leith, having experienced much bad weather in crossing the Atlantic, but, on comparing the four chronometers at the Observatory at Leith, their Greenwich time, employing the winter harbour rates, proved less than two seconds in error.

"On the arrival of the Hecla in the Thames, the chronometers were returned to Messrs. P. and F.'s house in London, when, after a month's interval, they were found to be still going at the same rate as in the Hecla whilst in the harbour of Melville Island."

Attention was first, we believe, drawn formally to the supposed alteration of the rates of chronometers on their removal on ship-board by the Rev. Mr. Fisher, who found that the rates of those in his charge were uniformly accelerated under such circumstances; and he assigned as the cause the magnetic effect of the iron, to which Captain Sabine, in the above, has so pointedly adverted.

Many persons well acquainted with the subject were of opinion at the time of the publication of Mr. Fisher's memoir, that, from the obvious inferiority of the chronometers which he used, no authoritative inference could be drawn from any anomalies which their rates might exhibit—an opinion in which we fully concur.

One of these chronometers had a rate on board of $3^s\ 4'''$; but, on its removal to the Observatory, its rate was found to be $18^s\ 2'''$; and on being taken back again to the ship, the rate was found to be $6^s\ 5'''$; shewing a change in the ship-rate of $3^s\ 1'''$.

Another of them, by a different maker, lost about 9^s by its removal from the vessel to the shore; and a third, by another maker, still more. The variation in the shore rates is also remarkable, that of the first appearing to have been 8^s; of the second, 6^s; of the third, $7^s\ 2'''$; and of a fourth, 8^s. And all these errors were noted in the short period of 17 days.

From the performance of such chronometers, it would surely be unsafe to draw positive inferences as to the effects of any generally operating causes on their rates of going.

Mr. W. C. Bond, of Boston, in America, a gentleman well qualified for the task, has taken much pains to ascertain whether there is any regular and systematic tendency in chronometers to change their rates when put on ship-board; and, in a paper published in the Transactions of the American Philosophical Society, he has given the result of experiments on a great number of chronometers.

When he had opportunity, he found the rate before the chronometer was sent to sea, and its rate after its return, and he took

the mean for the shore rate; and, dividing the change in the error which had occurred while the chronometer was at sea by the number of days, he obtained the sea rate.

The following extracts are the results from eighty-seven chronometers made by us, with their different numbers, and whose rates previous to the chronometers being placed on ship-board were accurately determined, and the same after their return from the voyage:

No. of Chron.	Difference of Rate.	No. of Days at Sea.	No. of Chron.	Difference of Rate.	No. of Days at Sea.	No. of Chron.	Difference of Rate.	No. of Days at Sea.	No. of Chron.	Difference of Rate.	No. of Days at Sea.
875	+0·4	96	752	+0·7	59	1100	+0·5	48	1146	−0·4	47
928	0·0	56	549	−0·1	388	832	+0·3	66	1179	0·0	55
427	−0·6	167	1035	+0·9	....	1047	−0·3	231	1100	0·0	55
930	+0·2	153	905	−0·6	54	1142	+0·3	58	599	−0·8	56
966	−0·3	46	871	−0·4	200	1184	−0·1	29	508	+0·1	677
873	+0·8	53	1061	−1·0	61	981	−0·5	95	981	+0·2	146
981	+0·4	55	1090	+0·1	109	1170	+0·1	36	521	+0·3	74
1030	−0·7	64	919	+0·1	47	1006	−1·0	57	947	−1·0	254
920	+0·7	157	981	+0·3	113	613	−0·5	176	599	+0·1	84
534	−0·1	63	125	−0·2	Pacif.	430	−0·1	313	873	0·0	95
871	+0·2	186			Ocean.	871	+0·7	89	1053	0·0	61
919	−0·5	....	.....	+0·0	....	866	−0·4	101	1246	+0·3	61
664	+0·3	....	727	+0·4	28	832	+0·5	114	966	−0·6	112
889	+0·1	....	1030	−0·7	57	1122	−0·9	95	1184	+0·2	68
1056	−0·4	52	549	−0·6	169	.....	0·0	53	1068	+0·2	60
669	−0·5	294	669	+0·5	45	609	+0·3	220	901	0·0	50
704	+0·3	62	.....	−0·7	187	966	−0·3	120	1210	+0·3	47
832	+0·7	59	.....	−0·3	338	1091	−0·6	77	1242	−0·7	47
1091	+0·6	50	.....	−0·5	294	873	0·0	27	635	+0·3	102
1079	−0·8	50	.....	−1·0	143	1030	+0·3	177	1100	−0·2	57
891	−0·3	161	811	+0·5	136				1215	+0·7	57
928	−0·7	65	534	−0·6	26				1030	−0·3	202*
928	−0·7	90	1144	+0·5	44						

* 70 tons of iron on board.

Summary.

	No. of Chron.	No. of Days at Sea.
Number of Trials	87	
Number wherein the average shore rate differed from the ship-board rate—and the difference		
Number wherein the difference was One second	4	37 to 254
Ditto wherein the ditto was $\frac{9}{10}$ of a second	2	— to 95
Ditto .... ditto .... $\frac{8}{10}$ ditto	3	50 to 56
Ditto .... ditto .... $\frac{7}{10}$ ditto	11	47 to 157
Ditto .... ditto .... $\frac{6}{10}$ ditto	7	27 to 169
Ditto .... ditto .... $\frac{5}{10}$ ditto	10	44 to 294
Ditto .... ditto .... $\frac{4}{10}$ ditto	7	28 to 200
Ditto .... ditto .... $\frac{3}{10}$ ditto	17	46 to 338
Ditto .... ditto .... $\frac{2}{10}$ ditto	8	57 to 286
Ditto .... ditto .... $\frac{1}{10}$ ditto	9	25 to 677
Number wherein there was no difference whatever	9	27 to 95

It is evident from these experiments, that there is no general tendency in these chronometers either to gain or lose at sea, on

their land rates; as it appears from the above, that, out of eighty-seven trials, thirty-nine gained on their rates, and thirty-nine lost on their rates: the remaining nine made no variation whatever.

Mr. Barlow, of the Royal Military Academy at Woolwich, whose attainments in science, skill as an experimenter, and discoveries on the laws of magnetism in particular, are known to all scientific men, took up the subject on the appearance of the Rev. Mr. Fisher's paper, and published the result of his inquiries in the Transactions of the Royal Society. He found, indeed, that chronometers were influenced by their *near proximity* to masses of iron; but instead of the rates of those which he tried being accelerated, five of the six which he used were retarded, and the acceleration of the sixth was doubtful.

We may be excused for stating, that the one least affected was made by us, and it was constructed on the same principle as the four mentioned above by Captain Sabine, and whose performance, under such extraordinary circumstances, was to us a subject of gratifying remark.

That a material effect on the going of a chronometer would be produced by applying a powerful magnet to it, we have no doubt, as the magnet would then operate as a disturbing force with all the advantage of proximity, but to infer from thence that the rate of a chronometer must necessarily be affected by its removal within the sphere of the ordinary magnetic influence existing in a ship, appears to us not more legitimate than to infer, that, because a chronometer will stop if put in the fire, it will necessarily go ill in the ordinary temperature of a sitting-room.

We are far from imagining, that, because so much has been done for the improvement of chronometers, there is *nothing* left to be desired; and we shall rejoice unfeignedly at any suggestion which may enable those who are engaged with the delicate task of constructing them, to arrive at this, and by more simple and certain means. Our object in writing to you on this occasion, is to convince those whom it chiefly concerns, that the errors, and causes of errors, on which your respectable correspondents have animadverted, cannot, in the present state of chronometrical science, have any appreciable effect in practice.

We are, Sir, your obedient servants,

PARKINSON & FRODSHAM.

'Change Alley, November 14, 1833.

IV.—MITCHELL'S NEW MOORING.

London, Nov. 21, 1833.

SIR—I have been much gratified by learning that my new mooring, as connected with my lately patented dock, has been considered

by you as deserving public attention, and I have much pleasure in giving you a more detailed account of it.

The annexed drawing will explain its construction. It is on the principle of the screw, the spiral thread being extended to a broad flange, with little more than one revolution round the central shaft. This flange, when forced round by means of a long shaft, adapted by joints to the depth of water, insinuates itself into the earth, until a firm hold is obtained, when the long shaft is withdrawn, leaving the mooring at the required depth, with a strong bridle-chain attached.

Fig. 4. Fig. 2.

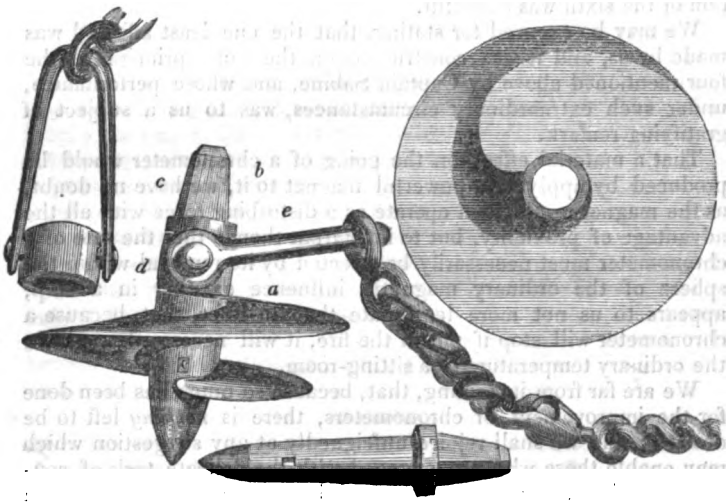

Fig. 1. Fig. 3.

Fig. 1. The screw mooring, as prepared for use.

a. A spiral, or screw flange of about one and a half turns, having a hollow cylindrical centre cast of iron in one piece.

b. A wrought iron spindle, passing through the cylindrical socket of the screw flange, somewhat taper, and when driven up, fixed thereto by a key which passes through both. A square head to receive the key for turning it into the ground.

c. The head of the key.

d. A collar of wrought iron, fitting so as to turn freely on the upper part of the shaft of the spindle below the shoulder.

e. A shackle turning upon two journals of the collar.

Fig. 2. Shews the upper surface of the spiral flange. The spiral makes about one turn and a half, and curves in towards the centre, at both terminations, as shewn, having its edge somewhat sharp, to facilitate its entrance into the ground. The hole through it is a little conical, corresponding with the taper of the spindle, so that the latter may be driven firmly in before the key is introduced.

Fig. 3. The spindle.

Fig. 4. The collar and shackle. The shackle is fixed to the spindle by means of the loose collar, in order to prevent the dragging round, and consequent fouling of the chain, whilst the spindle is being turned in or out of the ground.

These moorings may be used wherever the water is not of extraordinary depth, unless the ground be rocky. In soft ground they may be sunk considerably below the surface. I have myself placed them twenty feet beneath the bed of a river. However, where the bottom is firm, or what seamen call good holding-ground, a depth of six or seven feet is generally sufficient.

The size of the mooring must be regulated by the nature of the ground, and the resistance required.

I have used them from two to five feet in diameter, and there is nothing to prevent their being cast of a much larger size, should it be found necessary.

Allow me now to compare my mooring with the two at present in general use, and I will point out some circumstances which I conceive will prove the advantage of mine.

One of the two methods I allude to consists of a broad flat stone being sunk two or three feet into the ground with a bridle-chain. To this mode it is objected, that in shallow water, vessels frequently receive injury from it; and, besides, the excavation for receiving the stone is almost impracticable in more than three, or three and a half fathoms water. The other description of moorings is formed of a strong chain stretched along the ground, and secured at its extremities by mooring-blocks or anchors, the vessel swinging at a bridle-chain near the middle. But the vast expense of this apparatus, the foul bottom which it makes—ships' anchors often catching in the ground chain, and thereby occasioning much labour and difficulty—and the fact, that in shallow water the mooring-blocks are as dangerous as rocks; all these are objections which it would be well to remove. Now, my mooring-machine, I may venture to say, is liable to none of the above objections. It is necessarily so far below the surface of the ground, that the ship's bottom cannot possibly come in contact with it, as in the case with the stone mooring; and the necessity of ground-chains and mooring-blocks being

superseded, gives it a title to preference, not only for doing away with their danger and inconvenience, but from the saving of an enormous expense, for I have determined on making *economy* another inducement to its adoption.

I have the honour to be, with the highest respect,
Sir,
Your much obliged servant,
ALEXANDER MITCHELL.

Captain Beaufort, R.N.,
&c. &c. &c.

V.—SKETCHES IN THE GULF OF ARTA. PREVESA.

Tuesday, 1st June.—In the evening, after our return from Nicopolis, we strolled into the town of Prevesa, situated just within the entrance of the Gulf of Arta, on the left or northern side. It is a long and straggling assemblage of miserable houses, built in the Turkish style, surrounded by a dry ditch, and lines of Venetian structure, that had once been fortified. It is also flanked by Fort Pantokratara and Fort George on the south and south-east side, and Fort Nuovo on the north.

Fort Pantokratara is detached from Prevesa. The communication between it and the town is through an olive wood, about half a mile in extent. This fort entirely covers the approach to the entrance of the Gulf by sea, the guns of the south-east bastion enfilading the mouth of the port of Prevesa, and sweeping the south face of Fort George. Towards the sea it has three irregular bastions, with a double tier of guns, some of heavy calibre. In its centre there is a quadrangular building, serving as a kind of citadel, that unites the east and west face of the fort, and is pierced with loop-holes for musketry. Under the ramparts are arched bomb-proof recesses. It is surrounded by a ditch, across which, on the north side, is a drawbridge. Towards the sea Pantokratara is rather strong, although the artillery is in a state so dilapitated as to threaten more mischief to friends than foes.

Fort George is situated on the southern extreme of Prevesa, and guards the entrance and anchorage of the port. It contains within its walls the former palace, haram, gardens, baths, and granaries, of Ali Pacha; also his magazines, all of which are now entirely in ruins. His son, Vali Facha, made his last stand here against the Seraskier, but it yielded to him. The buildings were razed, and Vali transported to some place in Asia, and has never been heard of since.

Fort Nuovo flanks the north side of the town, and also defends the north side of the harbour of Prevesa, and the channel that leads up to the Gulf. The mosque, the Bey's palace, and the

residences of the principal authorities, are within this fort. It has several heavy guns and mortars, badly mounted. The parapets are pierced for musketry.

In the course of our ramble, not a female face was to be seen, excepting those of a few Greek women. These ladies were privileged by their "years of discretion," to a little more freedom than is allowed to their younger charges, whom they take care of by means of lock and key. A stranger, unaccustomed to the habits of the people here, would be surprised at seeing every body armed. It is common to find even youths that would make good schoolboys, strutting about with pistols stuck in their girdles, the handles of which are more or less ornamented, according to the circumstances and condition in life of the owner; this ornamental part being generally worth far more than the weapon itself. The dress of these youngsters, as well as that of their seniors, is picturesque; more especially when clean and new, which is not often the case. It was a novel sight to an Englishman to see tradesmen at work in their shops with a brace of pistols, a zatagghan, and a dagger, in their belts.

Notwithstanding the weather is often intolerably warm, the men are seldom seen without their shaggy capotas (or floccatas.) The greater part of the inhabitants are native Albanese, although they do not coincide entirely in character with the idea that term would convey. They are different from the mountaineers, being not quite in such a savage uncivilized state, and partake more of the Greek in feeling, though they are Turks in religion, and should be considered so. They detest the Osmanlis, or true Turks, in their hearts. Dinner at noon, and supper about eight, are the only two meals they take; but coffee is at all hours welcome, and taken at pleasure. Although there is only one mosque, still there are many coffee-houses at Prevesa, which are frequented, at the close of the day, for the purposes of playing backgammon or chess, smoking pipes and drinking coffee.

Prevesa cannot boast of a single manufacture. A great quantity of grain and Indian corn is grown in the neighbourhood, principally in the plains of Arta, enough for exportation to the Ionian Islands; but in all Prevesa there is not even a mill of any sort to grind it, and the corn is in consequence sent over to the Greeks at Vonizza, on the opposite side of the Gulf, for the purpose of being ground. An Italian engineer once attempted to construct a horse-mill, but he did not succeed. In the town is an old Venetian church, still used for divine service by the Greeks. The face of a clock remains; the works, like every thing else that was, or was thought to be valuable, having been plundered by the Albanians. Several traces of the Venetians are still to be seen. At the fountain in the market-place, is a piece of basso relievo from Nicopolis. It has been a part of some frieze, ornamented by a

wreath, suspended alternately by children and bullocks'-heads. We also observed the capitals of two antique marble pillars, one Corinthian, the other Ionic, supporting the balcony of a wretched hut. The shafts were partly of granite (ancient,) and partly of modern freestone, the granite still retaining its smooth surface.

For a trifling bribe, the muezzin or priest gave us permission to ascend to the gallery of the mosque in the castle, a lofty balcony, from whence he calls the Mahometans to their prayers. We had to pass through the body of the mosque, which we found quite plain and unornamented. A kind of pulpit was conspicuous in one part, opposite to which was a gallery large enough to hold about one hundred and fifty persons. The floor was covered with mats. The whole building is surrounded by a piazza, formed by a medley of pillars of all descriptions, brought from Nicopolis. Capitals, shafts, and bases, of all sizes, stone, and order, were to be seen. A dark and dangerous staircase, of deep steps, led to the minaret. The view was commanding; but the gallery so narrow, that we could scarcely pass each other. While we were there, the Bey, accompanied by his guards, passed by from his morning walk. He no sooner saw us, than, with horror and astonishment, he exclaimed, "Those Christians are looking into our harems;" for it so happened that the minaret commanded a view also of the seraglio; in fact, it was immediately over it. In a moment the muezzin was summoned into his presence, and the vice-consul was sent for; and it was with no little difficulty that he was persuaded that our object in visiting the minaret was not to cast an evil eye on the Mussulman fair sex.

Provisions are reasonable at Prevesa. An ox may be purchased for about eight dollars, and a sheep for a dollar to a dollar and a half. Vegetables are not abundant, although fruit is plentiful. The little commerce that Prevesa enjoys consists chiefly in exporting firewood and cattle to the Ionian Islands. The country in the neighbourhood is one large olive plantation; and we were informed by a respectable native of Santa Maura, that "a considerable part of this plantation is the property of subjects of the Ionian Islands, held under deeds from Ali Pacha, and which deeds the present government does not acknowledge."

It is scarcely possible to ascertain the present population of the town. It contains about one thousand houses, one mosque, and one Greek church, and perhaps six thousand inhabitants.

Wednesday, 2d June.—Last evening, being the vigil of the feast of Beiram (the lesser), was celebrated with mirth and revelry, or, in other words, feasting and drunkenness, notwithstanding the good precaution Mahomet took to prevent the latter vice, by forbidding the use of wine or spirits. It is common on these occasions for the Turks to discharge their muskets and pistols as children would let off squibs and crackers, and this is always done

in the town. On the present occasion, a man accidentally lost his life by a pistol-shot; that is, it passed for an accident, but there were many reasons for supposing that it was intentionally done, for it is common to take advantage of these unguarded moments, to gratify the spirit of revenge.

Yesterday we left Prevesa, and commenced our tour of the Gulf of Arta, making our first encampment at Poathaki. It had been a great desideratum with us to bring our vessel into the Gulf, and despatches had been forwarded to Yanina, the seat of government, requesting permission for us to do so. We had been long waiting for an answer to our request, and this morning the courier arrived from Yanina with one, which determined us not to relinquish all hopes of getting her in.

The messenger informed us, that on his entering Yanina, he found the bodies of four persons whose throats had been recently cut, lying by the road-side. Such is the condition of the capital, that scarcely a day passes without one or more murders of this horrid description taking place.

As we had now nothing but our boats to proceed with, it was determined that we should hire a vessel of the country to assist us in making our tour; and this evening we obtained a large trabaculo of about 30 tons, belonging to Corfu, for a month, at the rate of four dollars per diem. This vessel, named the I, we intended to employ as a rendezvous and transport; she had also accommodation for our men to sleep below under hatches, a more desirable mode of proceeding than our campaigning quarters.

In the evening, the news reached us of an evening party at a Greek's house, to be given in honour of the anniversary of his father's birth-day. This was not to be lost, for we could not desire a more favourable opportunity for seeing the character of the people. and we therefore politely communicated our desire of attending it, through the means of our host. No preliminaries ever succeeded better, and we were escorted by our worthy landlord to the abode of the dutiful son just in proper time. Although entirely unknown to him, we were very kindly received by the master of the house, a fine, handsome Greek; and having taken off our shoes, we seated ourselves cross-legged on the ottoman, which, as is the custom here, occupied two sides of the room. Unhappily, we were ignorant of the language, and, consequently, lost much information; but our excellent landlord, M. Bonatti, who had accompanied us, served as our interpreter. Soon after we were seated, some ardent spirits, the produce of the country, in an unadulterated state, was handed round in very small cups, and seemed to be well adapted to the taste of most of the company, consisting of Greeks and Turks. Among the rest a remarkably fine fellow was pointed out to us as an officer who had commanded one of the mysticoes that had forced their passage into the Gulf.

His name is Anastalia; he had come over to the Turks, and was now chief of the custom-house.

In one part of the room were the musicians, consisting only of three, hired for the occasion. One of these was a woman, who played on the violin, for so it must be called. Another of them, a man, had an instrument very much resembling a mandolin, with which he produced a lively jingling sound; and the other had something which appeared to be an imitation of the clarionet, which gave a buzzing sound as if it were cracked. For three hours these most persevering of musicians never ceased playing, even for five minutes. The woman, who played well and with great execution, had been employed, in the time of Ali Pacha, in the seraglio, to amuse the lovely Odalisque.

As midnight drew near, the excitement of the music, and the effects of the numerous libations which had been poured forth to the health and prosperity of the host and his father, began to be visible among the company. As the sentiment inspired by the musicians became warm in patriotism or in love, the voices and gestures of the whole rose in unison; and ere long, so great was the enthusiasm, that they could no longer keep their seats, and a dance was resolved on. The first performance was by the men, who hopped about in the figure of a ring. A great deal of action was displayed by them, but very little grace in their movements; and their united efforts did not appear to be confined to any regular figure, and yet, after all, they had a kind of difficult step, and kept the time with great regularity and precision. There was a wildness in the dance according well with the music; indeed, both approached the *sauvage*, and those who have witnessed the performance of the Sandwich Islanders or the New Zealanders, may form some idea of it. The passions appear to be worked up, till the whole performance becomes more painful than agreeable to behold. This dance continued about ten minutes; and the parties, when they sat down, appeared very much fatigued by it.

In the course of the entertainment the woman who performed on the violin, gave us a song, the burden of which was, "The death of Ali Pacha." With her violin she accompanied her voice; to which, at times, she lent the whole strength of her lungs, and with an expression of feeling which was highly entertaining. It was a kind of martial piece of music; the words adapted to it relating to the character and warlike feats of the celebrated Ali. Those parts which treated of his heroic achievements in battle, were well marked by the increased energy of the performer, and the shouting of the whole company. The very name of Ali Pacha seems to be held in fearful though grateful remembrance, and he is every where the principal subject of their conversation.

We were anxious to witness another dance by two Albanians, who appeared to be rather superior to the former; but perceiving

that the spirits of the whole company became rather too much elevated by the frequent libations to the health of their host, we considered it prudent to retire, notwithstanding a supper was to be served at moonlight, a custom which is usual on these occasions.

VI.—Steam Boats on the St. Lawrence—Method of Steering—Engines, &c.

To the Editor of the Nautical Magazine.

Sir—The rapid progress which the application of steam to navigation, the locomotion of wheel carriages, and various other mechanical powers, is at this instant making, has most deservedly occupied a portion of the columns of your very valuable Magazine; and, among other matters touching on this subject, I am happy to observe, from notices in the Nautical (as well as in other scientific journals,) that the claim and merits of the late very ingenious Mr. William Symington, as the inventor and father of the steam navigation of the present day, is likely to be clearly established.

Having myself seen a good deal of steam navigation both here, and in the United States of America, and Canada; I have felt much interest in the subject; and am persuaded that in point of accommodation, cleanliness, and general arrangement, the palm must be yielded to our transatlantic brethren, as it must also for the ease with which their vessels are steered from the front of the vessel, and managed in harbour and at wharfs, by the power of working the paddles backwards and forwards independent of each other, so as to be enabled to turn on their own centre; it is possible, however, that the application of this latter principle may be suited rather to the steam navigation of rivers and still water, than the ocean. Your correspondent W——, in the April number of your Magazine, has, for want of information, called this a "desideratum." The alarm expressed by this gentleman, that *dry-rot* in steam-vessels was most likely to be engendered by the heated state of the hold, had somewhat surprised me; it appearing to me that if the vessels are built without much lining, they would be secured from dry-rot by the alternations of temperature, and consequent change of atmosphere to which they are subject by reason of the heat employed.

However, having written to Captain Armstrong, the very intelligent master of the "John Bull" tow-boat, running between Quebec and Montreal, I beg leave to ask for space in your columns for his reply, trusting that, by keeping the subject before your readers, not only may facts be established, but hints thrown out, and opinions elicited, from which both practical and scientific

men may derive information, and the science of steam-navigation receive improvement.

I am, Sir, your obedient, humble servant,

N. GOULD.

Montreal, August 10, 1833.

DEAR SIR—I wrote you on the 15th of June last, by the Ottawa, Captain Douglas, and am now more prepared than I was at that time, to answer your inquiries upon certain points relating to the management of our steam-vessels, on the river St. Lawrence. And in the first place shall remark, upon the power of driving one wheel forward and the other backward, as is now the custom in all the late American steam-boats. The arrangement is simple, and depends entirely upon the separation of the two engines; one of which drives each wheel; and between which there is no connexion whatever; except, that in general, both boilers are connected with the steam-pipes of each engine, in order to *equalize* the supply of steam. It will be clear to you, that under this arrangement, either engine, and consequently *either wheel may be worked ahead, reversed,* or *stopped, independently of the other.* This mode of applying the power of steam is entirely different from that adopted in England. There the feeling, in favour of the connexion of the two engines is so strong, that "'W——" (in the Nautical Magazine for April) considers the remaining engine as nearly useless after its partner is disabled, whereas no inconvenience has as yet been found to result from the want of connexion. Each engine works as easily, and passes the centres as well, as it could do, if connected with the other; and may be stopped and reversed while the boat is under *full speed,* without any difficulty or danger.—I may just compare the *steamer* to a *small row-boat* with two oars, *one backing and the other filling,* and *vice versa,* or, *both forward,* or both backward, as the occasion may require. The advantages of this arrangement in a tow-boat, when getting under way from a wharf, or in a crowded port, with vessels in tow, can hardly be too highly estimated. The boat can literally turn round and round in her own length; and the *manœuvre* is performed here daily: nor is it in river boats only that this plan is adopted; on Lake Ontario, and in the boats passing through Long Island Sound from New York to Providence, it is universal. On Lake Ontario the sea is particularly short and trying to a steamer, yet the *Great Britain* is now running from Prescot to Queenston, for the third summer, without having met with any accident, although she carries her *boilers* on *deck,* and although her two engines (of eighty-horse power each) are perfectly unconnected.

With respect to our plan of steering from the fore-part of the vessel, with which you expressed so much satisfaction, and which is thought, on our side the Atlantic, by far the preferable mode;

the wheel is placed on the upper deck about $\frac{2}{3}$ or $\frac{3}{4}$ forward, and frequently on a raised platform or pulpit, free from the interruption of passengers; and the rope or chain, passes from the barrel through the upper deck, in which there are two sheaves for it to pass over; it then passes into a boxed channel, immediately below the upper deck, and reaching from the sheaves to the upper part of it; but after so passing for a few feet (equal to the distance moved by the chain when the wheel is shifted from a-midships, hard over to either side,) it is connected with an iron rod reaching to within the same distance of the after part of the upper deck, when another chain is connected with it.

The rudder-head comes up to the full height of the deck, and immediately abaft it. The tiller ships aft, and the chain last mentioned passes over a sheave, through a block attached to the end of the tiller, and back to a point close to the sheave, when it is made fast; the accompanying sketch make this clear.

Fig. 1. Fig. 2.

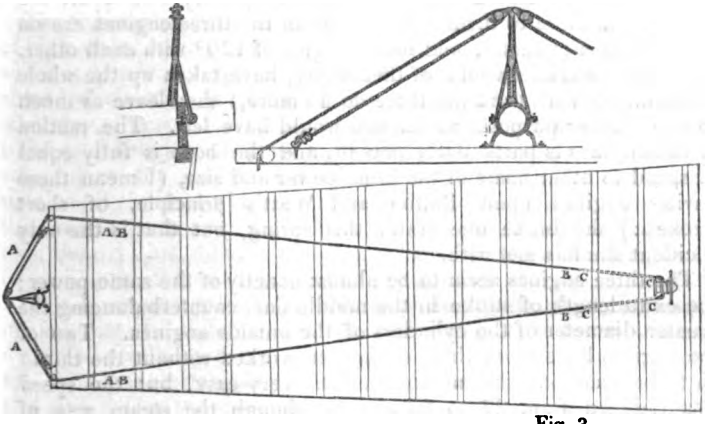

Fig. 3.

Fig. 1. Rudder Post Head.
Fig. 2. After-part of Round House—scale $\frac{1}{8}$th inch to a foot.
Fig. 3. Scale $\frac{1}{2}\frac{1}{4}$ inch to a foot.

Plan of the method of steering the steam-boat Canada.

A—Rope.
B—Half-inch round iron.
C—Chain to work on the wheel.

The round iron chain and rope to be notched and fitted on the beams before the upper deck is laid.—*Montreal, Aug.* 4, 1833.

Sheay and Merrit, Ship-builders.

I have the Nautical Magazine for April before me, and with reference to the article signed "W.," I may here be allowed to state, in respect of steam-boats being particularly liable to dry-rot, that I have seen every boat which has been worn out on the river St. Lawrence, and in none of them have I discovered fungus or any thing indicating dry-rot: their duration has been from eight to ten years. I have never known any heavy repairs given to any of them: they had, however, *single sides*; and I agree perfectly with you, in thinking that the double sides would greatly promote the introduction of dry-rot into the vessel. With reference, also, to the same article in the Nautical, I may now mention, that there is one vessel on the St. Lawrence, in which the plan of having *three engines* has been fairly tried: the name of this vessel is the St. Patrick; she was built in the winter of 1831-32, and has run between Quebec and Montreal during the last and present summer. She has three engines, two made by Messrs. Bolton and Watt, with 31 inch cylinders and 3 feet stroke: and one by Mr. Henry Maudslay, with a 28-inch cylinder and 3 feet 6 inches stroke. The engines are placed side by side abaft the boilers, and close to them; the cranks of the three engines are on the same line of shafts, and make angles of 120° with each other. As the two engines would, of themselves, have taken up the whole width of the boat, (and the three do no more,) they leave as much room for other purposes as the two would have left. The motion of the engines is particularly smooth, and the boat is fully equal in speed to other boats of the same power and size, (I mean those having engines upon Bolton and Watt's principle, of short strokes:) she broke one crank this spring, but that is the only accident she has met with.

The three engines seem to be almost exactly of the same power; the extra length of stroke in the middle one, counterbalancing the greater diameter of the cylinders of the outside engines. Two of the engines have more than once been worked without the third; on these occasions the motion was still very easy, but the speed was reduced from 27 to 23 strokes, though the steam was, of course, more plentiful than when the three were at work. I think well, therefore, of W.'s plan: but it must, of course, be understood to apply to sea-going steamers only, and such as have their boilers and engines under the deck. It could not come into competition with the late improvements in steam-engines in America.

The "John Bull" can now perform the trip from Quebec to Montreal, being 180 miles, in much less time than 19 hours; we have given her 3 feet 9 inches more diameter of wheel, which has increased her speed considerably; we have not hitherto had a fair opportunity of trying her speed between the two ports, being principally employed in towing ships. The *Canada* and *St George*, two new boats, of about the same speed as the John Bull, have run the distance *up* in 17 to 17 ½ hours, and down in 13½ to 14

hours, stoppages at Three Rivers, and William Henry, of one hour each, included, the actual time of running being 11¼ hours. I have only to beg that you will overlook any trifling inaccuracies that may present themselves in this hasty communication, and believe me to be, with sincere thanks for your polite attentions,

Dear Sir, your very obedient servant,

(Signed) J. D. ARMSTRONG.

To NATHANIEL GOULD, Esq.

Chairman to the North American Colonial Association, &c. &c.

VII.—DIRECTIONS FOR TIDE OBSERVATIONS. *By the Rev. W. Whewell, M.A., F.R.S., Fellow of Trinity College, Cambridge.*

(*Continued from* p. 665, *No.* 21.)

The Establishment of the Place.

The interval at which high water follows the moon's meridian passage, or transit, at a given place, varies from day to day, (being affected by the semimenstrual inequality.
The *Vulgar Establishment* is the duration of this interval on the day of new or full moon.
The *Corrected Establishment* is the mean duration of this interval.

The "Establishment" of any place is usually said to be the hour of high-water on the day of new or full moon. The time of high-water at London Bridge on Sept. 28 (which was full moon) was about two o'clock. It will be the same, or nearly the same, on every other day of new or full moon. Hence, two hours exactly, or nearly, is the establishment of London Bridge. In the same manner, at any other place the time of high-water falls very nearly at the same time on all the days when the moon is new or full. At Portsmouth this time is 40 minutes past 11; at Plymouth, 33 minutes past 5: and, thus, 11 hrs. 40 min. is the establishment of Portsmouth, and 5 hrs. 33 min. the establishment of Plymouth.

This hour was called the *establishment* of the place, from an opinion that the differences of the tide-hours at different places depended solely upon the difference of the establishment; so that this hour being established, the whole course of the tides was settled also. This is not exactly true. If it were so, we could use the tide-tables of London to find the time of high-water at Portsmouth, merely adding or subtracting the difference of the establishments of the two places; but, in reality, this way of proceeding would lead us into error, as I have already stated.

It is not true that the differences of tide-times at different places depend *solely* upon the differences of the establishments; they depend upon other differences also, as I shall endeavour to explain hereafter. The establishment may be considered as the starting-point from which the tide-hours set off every new or full moon; but these hours differ, not only in the point from which they start, but also in the pace at which they proceed; for this is, though in a smaller degree, different for different places.

The establishment is, however, much the most important of the circumstances which influence the tide-hours at any place, and, therefore, deserves to be attended to in the first instance.

If we say that the establishment is "the time of high-water on the day of new or full moon," the reader may naturally ask, *which* high-water? since there are two on the same day. Are we to take that of the forenoon or that of the afternoon? On the full moon day of the 28th of September, the tide at London Bridge was at 1 hr. 59 min. in the morning, and at 2 hrs. 15 min. in the evening. Which of these times is to be selected as the establishment?

The proper reply to this question would be, "*that* time is to be taken which corresponds to the exact moment of the full moon." But this introduces a new difficulty; for neither of the tides happens at the moment of the full moon. The full moon is at 17 m. past 11 in the afternoon. And it can rarely happen that the tide should occur at the very instant when the moon is new or full.

The reason why the tide-hour of the forenoon and afternoon are different, is, that the tides are mainly and principally regulated by the moon, in consequence of which they fall later and later every half-day, by about twenty-four minutes on an average, when we refer them to common time, that is, to the time of the *sun* passing the meridian. Hence, this perpetual difference of the hour will disappear, if we refer the tide to the time of the *moon* passing the meridian. Let us do this with respect to the tides above mentioned. The times of the moon's passing the meridian were the afternoon of September the 27th, at 18 minutes past 11, and the morning of the 28th, at 38 minutes past 11. Thus, the morning tide on the 28th (at 59 minutes past 1) was 2 hrs. 41 min. after the moon's southing; and the afternoon tide of the 28th (at 15 minutes past 2) was 2 hrs. 37 min. after the moon's northing. The difference is only four minutes. And, at whatever period of the day the tide had occurred, the interval between the moon's passage and the tide would have been the same within a few minutes.

Hence, we describe the (vulgar) establishment to be "the interval at which high-water follows the moon's meridian passage on the day of new or full moon. And, taking this definition, it is not necessary to specify whether we mean the forenoon or the afternoon tide, because each of the two follows the next preceding southing or northing of the moon at very nearly the same interval.

When I speak of the moon's northing, I mean her passing the meridian on the north side of the heavens, which will generally take place when she is below the horizon. And the time at which this occurs may easily be calculated when we know the time of the two successive southings between which this northing is intermediate.

This may serve as an explanation of the *vulgar establishment*, as described in the above "memoranda and directions."

The interval at which the tide follows the moon's passage across the meridian continues nearly the same, not only for the two tides of the same day, but also for all the tides of successive days. The tides are mainly governed by the moon; and, though the interval at which they follow the sun's transit, or noon, varies to all the hours of the day in the course of a fortnight, the interval at which they follow the moon's transit is only altered at the same place by about two hours at the most.

Thus, in the course of fifteen successive days, the intervals of the tide and the moon's transit are as follows:

		h. m.				h. m.	
Sept.	28,	2 41	morning tide.	Oct.	6,	0 26	afternoon tide.
	29,	2 36			7,	0 50	
	30,	2 21			8,	1 42	
Oct.	1,	2 4			9,	2 12	
	2,	1 48			10,	2 21	
	3,	1 7			11,	2 18	
	4,	0 43	afternoon tide.		12,	2 9	
	5,	0 29					

And this interval will go on alternately decreasing and increasing for seven or eight days each way.

Now, this interval on the day of new or full moon is, as has been stated, the vulgar establishment; and if all the intervals were equal, the establishment might be got from the observation of the tide on any one day. But, in consequence of the continual increase and decrease of the intervals which has been mentioned, a correction is required in this way of obtaining the establishment, namely, the correction for the half-monthly, or semimenstrual inequality, which will hereafter be explained.

Since the interval of tide-time and moon's transit goes through all its changes in half a month, as has been mentioned, if we take the *mean* of such intervals for half a month, we shall have an interval which is independent of these half-monthly changes. This mean interval will differ by a small quantity from the vulgar establishment; but, as it is independent of the half-monthly inequality, which the vulgar establishment is not, I have called it the *Corrected Establishment*.

Thus, the mean of all the above intervals is 1 hr. 47 min., which is the corrected establishment, while the vulgar establishment, as collected from these observations, is 2 hrs. 41 min. The corrected establishment is always less than the vulgar establishment, for reasons which will appear hereafter.

(To be continued.)

VIII.—Erasing Doubtful Dangers from the Chart.

"Precaution is the parent of security."

To the Editor of the Nautical Magazine.

Sir—There is, perhaps, no circumstance demanding the most serious consideration of the hydrographer, and the exercise of his clear and mature judgment, more than the privilege attached to his useful vocation of erasing doubtful dangers from the chart. The extreme difficulty* of finding the precise position of a small isolated submarine danger has often been exemplified; and the identity of a rock, or a shoal, or even of an island, has not been substantiated until years have rolled on from the period of its first discovery.

Admitting, which I readily do, that navigators have sometimes been deceived by appearances in the ocean to consider, and report, dangers, which, in reality, have no existence; yet, from their well-known strong power of vision, and the opportunities which constantly occur during their voyages to various parts of the world, of observing those things in the sea that bear a resemblance to, or may be mistaken for, breakers, rocks, shoals, and banks, it is not unreasonable to suppose that the instances may be few. It will here be unnecessary to name those things which, from their appearance, may give rise to doubt in determining real dangers from false ones, as these must be familiar to all experienced men; but a list and description of them, severally, might be of much use in assisting the juvenile sailor in forming his judgment.

These remarks I have been induced to make, in consequence of a notice in your number for July (17, vol. ii.) on the Cuidado reef, (article 44,) which is stated to have been seen by Mr. A. De Mayne, R.N., and looked for in vain by Captain R. Owen; and, that Capt. Owen has rejected it; and, of course, it has been, or will be, erased from the chart.

We must allow, that, of all dangers which lie near the surface of the ocean, a reef is certainly the most likely to become known, especially if situated near the land, to those seamen employed in coasters, or vessels which often traverse the sea in its vicinity; but, the ridge of rocks, or the bank which occasions the breakers, may be so far below the surface of the water as to cause it to break only during high winds and rough seas; in which case vessels may pass and repass the danger often without noticing the circumstance of its existence.

Captain Owen says he has been four times across the space within which it is said to exist, without having seen any appear-

* The instance of the Virgin Rocks, Art. 1. in the first number of the Nautical Magazine, is a good illustration of this.

ance of shoal water. I recollect, whilst cruising in a frigate about the Bahamas, during the late war, that we could no where discover the Hogsties, situated between Acklin's Island and the Great Inagua, although night and day we were there to and fro.

Coupled with his personal experience, the reports of the wreckers, (some of whom had been for twenty years traversing the sea where the breakers are reported to be,) Captain Owen says, he has every reason to doubt the existence of the danger, and thinks it altogether incredible that such could exist without their knowledge.

These circumstances, I agree, may afford reasonable doubt of the existence of the Cuidado reef, but are not sufficient to authorize an entire rejection of it; because it is possible, considering the difficulty of satisfactorily determining these points, that, notwithstanding the proofs against it, it may still exist; and, further, should that be the fact, the expunging it from the chart, by removing the caution observed by mariners in approaching its site, as hitherto given, might lead to very distressing consequences, as has before been experienced.

As to the opinion of the wreckers, no doubt they have much local experience among the islands, banks, and keys, of this extraordinary group, and their knowledge entitled to due confidence; but they are not infallible, nevertheless.* The Chesterfield Rock, near the S.E. part of Long Island, eluded their vigilance for more than a century. Other instances might be given, where marine dangers have remained unknown, perhaps, from the period of the great convulsion of nature.

The Esprit reef (article 45) is a convincing proof, that even an extensive danger may exist, although not always found when looked for. The Cuidado reef may be formed by the mechanism of the slow but industrious exertion of the minute coralline insect;† in which case its approximation towards the surface may not be of remote date; and, probably, in due course of time, it will rise to the surface, and remove all doubts on the subject. But, whether existing or not, as the danger *has been marked in the chart*, it is wise to act on the side of security, and *there let it remain*.

To the eastward of the above mentioned danger, a British vessel

* The Lorton Rock, Art. 65. of No. 20. is an instance of this. The wreckers knew nothing of it.

† Careful observations are yet wanting whereby to determine the progress made by the coralline zoophyte, in its structure in a given time.

In the voyage of Archibald Campbell round the world, we have the following notice on this head. Speaking of the harbour of Honoruru, in Woahoo, one of the Sandwich Islands, he says, "The entrance to this harbour may, probably, at no very distant period, be filled up by the growth of the coral, which must be rapid indeed, if Hairbottle, the pilot, was correct, when he informed me that he knew a difference of three feet during the time (15 years) he had been at Honoruru."

The channel spoken of is through a reef, and is three or four fathoms deep: so that, upon this datum, in 120 years it would be filled up, if no adventitious causes prevented or retarded the labour of the insects. We may suppose, however, that the progress of their structure may be impeded or accelerated by local causes, so that any general rule could not, perhaps, be fixed to guide calculation in this matter.

was lost by striking upon a rock, at 8 P.M. of the 26th of February, this year; which danger appears not to have been before known. Yet we may suppose that the vigilant wreckers of the Bahamas often wander thus far to windward in search of the objects of their calling. According to the mate's account, this rock lies in 20° 15′ N. and in 70° 00′ W., or, about N. by W. 35 miles from Old Cape François, in Hayti, and S. by W. 10 miles from the western extreme of the Silver-Kay Bank.

Captain Owen will not, I trust, be displeased with the liberty I have taken in this communication, as the circumstance touched upon is one of momentous importance to navigators; and I think he will arrive at the same conclusion with myself, upon mature reflection, that it is better to allow a danger *once admitted into a chart to hold its place*, when there is the *slightest* reason remaining of its existence, than to expunge it therefrom.

AN OLD STAGER.

July 10th, 1833.

IX.—NOTES ON THE ISLAND OF ASCENSION IN MARCH, 1833. *By an Officer of the Zebra.*

To the observations of Mr. Bennet, at page 30 of the Nautical Magazine for January last year, may be added the following:- The island has now been fortified at all accessible points. The marines are all masons, carpenters, quarrymen, or some other trade; not more than one-fourth are artisans.

The officers, &c. consisted of Captain Bate, commandant; Capt. Payne, superintendant of works, &c. at the Green mountain; Lieut. Barnes, assistant ditto; Lieut. Evans, adjutant; Lieut. M'Luthern, R.M.A. engineer, &c.; Lieut. Droyer; Lieut. Johns; Dr. Wilson, surgeon; Mr. Morris, assistant-surgeon; Mr. T. Pratt, agent victualler; with about 270 marines, 4 seamen, and 20 women, with children. A battery is constructing close to the landing-place, where it is intended to mount seven 24-pounders; besides which, two martello-towers are projected, to mount six 24-pounders.

A large tank has been excavated, near the battery, and faced with a sort of chunam, which contains 1700 tons of water. Leaden pipes of three inches and a half bore, extending 33,000 feet, have been laid down, reaching from the Green mountain to the town, and brought down to it, in many places perpendicular, particularly as far as Dampier spring.

A tunnel has been cut through a solid mass of cinder, 200 feet above the government buildings at the Green mountain, (to carry a pipe through;) to prevent the labours of horses, &c. which have been always employed in bringing the water down from the heights

to the large tanks. This tunnel is 930 feet long, 6 feet 6 inches in height; was cut by six men, in three months, under the able superintendence of Captain Payne, to whom this little settlement is deeply indebted, for his zeal and perseverance in its improvement. There are also several buildings, and another tank, in progress in the Green mountain.

The stock, consisting of horses, cows, and sheep, is also raised there: the latter being principally brought from the Cape of Good Hope, and are disposed of on Government account to any ships requiring them, at thirty shillings per head. There are about forty thousand acres of pasture and arable land, including the gardens, &c. on Green mountain, in excellent order, and which produce many European, as well as tropical fruits and vegetables. This department is also managed by Captain Payne, ably assisted by Lieut. Barnes. Wild goats are numerous, and are hunted for the use of the hospital. Wild Guinea-fowl, and also the common fowl, are numerous, and afford good sport for the bold sportsman; certainly not for the timid one. From the scarcity of horned cattle, and the difficulty of providing provender, fresh beef is issued but once a year; turtle, one and a quarter per man, twice a week. The island is under martial law, there being no settlers allowed to reside upon it; consequently the whole labour is performed by the marines, who are allowed their rations for extra services. In the event of a war, it will prove a desirable rallying point for our ships.

There was in March last provisions enough for the garrison for eighteen months, or more. Want of rain is, however, a great draw-back; for the supply of water from the springs is very limited.

X.—Supplies at Tristan d'Acunha.

To the Editor of the Nautical Magazine.

Sir—In your number for September last, you insert some useful information respecting Tristan d'Acunha, furnished by Captain J. Herd, of the barque Rosanna: your numerous nautical friends may rely on it as being substantially correct. That gentleman, however, has omitted to mention the "one thing needful," viz. the market prices at Tristan d'Acunha. Mr. Glass furnished me with the following in March last, at the same time assuring me that a plentiful supply might be had:

Milk Cow, and Calf,	£8.	Beef.....	3d. per lb.
Sucking Pigs.....	2s. 6d.	Sheep	15s. to 20s.
Potatoes.....	8s. cwt.	Fowls	18s. per dozen.
Grown Pigs.....	10s. & 12s.	Geese	5s. each.

Mr. Glass has cut a trench from the run of water that forms the "Cascade," from which a hose is attached, and fills the water in the cove. (See Captain J. Herd's remarks about an additional hose.) However, if there be any swell running, the best way is to *raft* it, as there is no inconvenience arising from the sea-weed, beyond an oar fouling occasionally. Observe, also, that the current generally sets to the E.N.E. The ship ought to keep the cascade to the eastward of south, to enable the boat to fetch the cove with the raft, (supposing the wind westwardly;) and when the boat is returning, and has got a sufficient offing to run down inside of her, and receive the raft with the head off shore. The people on the island will cheerfully render all the assistance in their power.

Yours, &c.,

Liverpool, Nov. 18, 1833. ALBERT.

PRUSSIC ACID FIRST EMPLOYED FOR KILLING WHALES.

To the Editor of the Nautical Magazine.

SIR—In page 741 of the second volume of the Nautical Magazine, you have inserted a paper on the Whale Fishery, wherein you have given Captain Petrie, of the ship Betsey, credit for the invention of introducing Prussic acid in a cavity of the harpoon, in order that it might flow into the wound, and accelerate the death of the whale. Allow me, sir, to inform your readers, that I consider the priority of the invention due to me: the idea occurred to me in the year 1828, and in order to give the experiment a fair trial, I communicated my ideas on the subject to Dr. Faraday, and other scientific friends; who encouraged me to go on. I, therefore, immediately intrusted the invention to a very scientific engineer, who made me six harpoons, on a new principle, for the purpose; and as fortunately, at the time, my brother-in-law, Captain Kendrew, of the bark Ann Elizabeth, was on the point of sailing on a whaling voyage to the South Seas, and engaged to give the experiment a fair trial, I furnished him with the six harpoons, and several bottles of highly concentrated prussic acid, made expressly for the purpose. As he had himself inspected the construction of the harpoons, as well as, with me, frequently visited the laboratory of the chemist who made the acid, in order that he should be acquainted with its nature and strength; I had no doubt about the success of the experiment.

Captain Kendrew sailed from London about August, 1828; and in February, 1830, I received a letter from him, dated Mahe, October 5th, 1829, wherein he states, having tried the experiment upon a whale, and had every reason to expect it would succeed by giving a larger dose: the fish I am now speaking of, he adds,

"was paralysed for a few minutes, and when opened; the blood about the harpoon was white and partially curdled." It may appear extraordinary to your readers, that an experiment of so much importance should have laid dormant for five years without further trial, but it must be acknowledged by every one that the proposition is one that cannot be put to the test by a person living ashore, and I have, ever since February, 1830, been anxiously waiting for letters, or his arrival, in order, that should we have considered it prudent to lay it before the public, we should have been enabled to have done it with such degree of confidence, and in such a mode as would have, in some measure, compensated us for the great expense and trouble we were at in perfecting the harpoon.

I am, Sir, yours, &c.

JOHN LEWTHWAITE.

23, *Princes-street, Rotherhithe, December 10th*, 1833.

PORT-WILLIAM.

To the Editor of the Nautical Magazine.

SIR—In order that the proposed harbour at *Redcar*, on the south side of the Tees bay, on the Yorkshire coast, may be accessible at all times of tide, and in the severest weather, it would be desirable that the entrance should not be *traversed* (to use a military phrase) by the rock called the "*High*," which appears by the map to be about the distance of half a mile from the entrance proposed by Mr. Brooks. In every other respect, with the exception, perhaps, of being rather liable, in its present state, to be choaked up by the silt brought down by the ebbing tide, this entrance may be considered as unexceptionable, being, by its direction to leeward, the least liable to disturbance from sea-gales. With such a rock, however, as the High, so immediately contiguous to it, I should consider that vessels, particularly strange vessels, making for the harbour, in dark tempestuous weather, and which being obliged to beat about, in their efforts, might be apt to run foul of a sunken rock so situated, in relation to the entrance. It is besides too near the shore to admit of a vessel putting about so quickly as may often be requisite, under certain circumstances of wind and tide.

As there appears to be fifteen feet of water on this rock at low-water, it is quite evident that no aid can be derived from it, in protecting the entrance of the proposed harbour from south-easterly gales. On the contrary, if such a sunken rock had any effect at all, it would rather be to accelerate the surf, than to retard or break it. It is too far under the surface to act as a breakwater, and too near the surface to be rode over safely in stormy weather.

As a friend to the undertaking, I would suggest that the north pier should not be carried round quite so far as delineated on the plan accompanying No. 15 of the Nautical Magazine, but stop very near the sounding, forty, instead of going to forty-four as at present; and that the south pier, as presently laid down, should continue seaward, in the same direction, until near the sounding forty-four above referred to—to which it should incline by an easy, gradual

bend—leaving the space between these two soundings, forty-four and forty, or 290 yards, as the entrance to *Port William*.

The advantage of this would be, that the very largest class of vessels could have an easy and safe ingress and egress at all times of tide, and in all weather, as well by night as by day.

The reason for reducing the mouth of the harbour from 1,300 to 870 feet, is obviously to expose as little of the harbour as possible to surfs, and heavy swells from the south-east and north-east, to which it would necessarily, of course, be exposed. By examining the plan, however, it will be seen that these waves would tend towards a sand bank; their rebound would be in some measure prevented by the piece of rock lying near the back part of the harbour.

Could the waves entering at the mouth of a harbour be directed conveniently to a sloping bank immediately opposite, the agitation caused in the body of the harbour by the rebounding waves, would be very much obviated. But this is not always practicable. Where the entrance consists of several bendings, as at Dover, Ayr, &c., this can be easily effected.

With the exception of the sand and shingle which may be thrown into the harbour occasionally by means of easterly winds, and which must be comparatively trifling, the harbour would be evidently, by the direction which I have proposed giving to the pier, completely protected from the most pernicious of all silting—that caused by the flood and ebb-tides co-operating respectively with the wind.

The very slightly deflcating curvatures, proposed to be given to the piers, are calculated to communicate a direction to both the flood and ebb tides, which, there is every reason to suppose, would carry them past the mouth of the harbour; thereby equally averting agitation, and a deposition of mud and sand.

These remarks, however, I throw out merely for further discussion. At Hartlepool, and I believe at Huntcliff, abundance of very good red marly sandstone can be easily procured, of the secondary formation. It is not very durable, but well adapted, from its porosity, to be cemented together very compactly. The outside of the sea walls should be faced with granite.

W. T.

LITERARY AND SCIENTIFIC NOTICES.

CHARTS.

The Banks of Soundings westward of the British Islands. Surveyed by Captain A. T. E. Vidal, R.N. 1830-31. (Size, half Double-Elephant.) Admiralty. (71.)

This is a most valuable little chart. To the port of Liverpool in particular, we don't know one that could be more acceptable. It contains the *first* information yet published of the western approaches to the British Islands. In a recent number, we alluded to the proceedings of Captain Vidal, when he was collecting the data for this chart; and we then observed, that, to vessels running from sea for the North Channel, their lead would be of little use, as they had no chart that shewed the deep-water soundings. The deficiency is here made good, and vessels may run for the land in safety, and know their distance

from it almost without recourse to their reckoning. For the first time, also, we here see the dangerous "Rockall" in its proper position, and the bank on which it is situated delineated; a feature in itself that would enable the navigator, with a cast or two of the lead, to know his position. This chart may be considered one of the most important to the commercial interests of the country, that has been published for a long time.

MERCHANT SEAMAN'S ORPHAN ASYLUM.—This excellent institution, the very name of which should find its way to every Englishman's heart, must be better known than it has been, and we shall do all in our power from time to time to make it so. Since our last number, the anniversary festival has been held, at which Dr. Lushington presided, and at which nearly two hundred gentlemen, friends to the institution, were present. The duties of his station were admirably performed by the president; and we trust that the Society, at such anniversary meetings, may always ensure as much sound eloquence as was displayed by Dr. Lushington. The appearance of the orphan boys and girls, to the number of sixty-five, in the course of the evening, was not less gratifying than the kind and impressive manner in which the president addressed them a few words on their fortunate condition, in comparison of what it might have been but for the exertions of the Society. Supported, as this establishment is, by so many able and influential men, we have no doubt of it shortly becoming one of the most extensive in the metropolis. We trust that it may. An establishment that has not only charity for its object, but the benefit of the country; one that not only affords an asylum to the sailor's destitute orphan, but cherishes that orphan until he can be in his turn made a sailor;—such an institution in maritime England, we say again, ought and must prosper.

PRIZE CHRONOMETERS.—The eleventh annual trial of chronometers at the Royal Observatory, just concluded, is signalized from all the preceding by the circumstance of the first premium of £200 not having been gained. The successful chronometers were, Appleton, No. 145, for the second premium of £170; and for the third, of £130, Mr. Molyneux's, No. 1263. It must not be inferred from the above circumstance, that the art has deteriorated, for it is gratifying to find that the trial numbers of these two chronometers are both less (excepting those of the trial of 1832) than any of the preceding. But it must be attributed to the very narrow limits of the trial number, and the uncertainty, even in the present day, that exists of producing a good chronometer. Messrs. Arnold and Dent have shewn, through the medium of our pages, that the best chronometer-makers cannot surmount difficulties that lie in their way regarding the material of which chronometers are at present constructed, and that all is uncertainty until proved by experience. We are not without our hopes, founded on good grounds, that all these difficulties will eventually be removed by their glass balance-spring, an account of some experiments on which we gave in our last number. Should this succeed, as is our opinion it will do, a better chronometer than has ever yet been made, may always be commanded, and that at no exorbitant price.

In our tenth number* will be found a statement of all the prize-chronome-

* P. 525, vol. I. Nautical Magazine. See, also, p. 523, for the method of finding the trial number.

ters, with their trial numbers, since the establishment of the prizes in 1823. The present trial numbers are as follow :—

For the 1st premium of £200, not exceeding 2½ seconds.
.... 2d ..... £170, ... 3½ .....
.... 3d ....., £130, ... 4½ .....

TONNAGE.—*Addenda to Lieutenant Raper's Method.*

When there are two decks, the sections being measured from the lower one, the following correction is to be applied for the space between decks :—

Take the mean of the three half-breadths, multiply it by the height between decks amidships, divide by 4, and add the quotient to the figures left, after being divided by 100.

WHALE FISHERY.—The following is a statement of the number of vessels, and amount of tonnage, sent out in the season of 1832 by the various whaling ports :—London, 2—tons, 781. Hull, 19—6324. Whitby, 1—324. Newcastle, 4—1504. Berwick, 1—310. Leith, 6—2074. Burnt Island, 2—640. Dundee, 9—2925. Kirkaldy, 5—1609. Montrose, 1—311. Aberdeen, 5—1541. Peterhead, 6—1927.

The foregoing are for Davis Straits, in addition to which the following ports fit out besides, for Greenland: London, 2—tons, 618. Hull, 11—3619. Montrose, 2—651. Peterhead, 5—1149 tons.

WHALE TRADE OF AMERICA.—It is computed, that, in the United States there are about 800 whale ships, employing 10,000 men, and bringing home every three and one-third years 227,960 barrels of oil, worth about 4,000,000 dollars. The outfit for each ship for two years' and a half cruise is estimated from 15,000 to 20,000 dollars.

NIGER EXPEDITION.—Recent accounts of this expedition have been received at Liverpool, by the George Canning, from Fernando Po. The Columbine brig, and Quorra steamer, were there in September, the former having on board Mr. Laird, who had suffered so severely in his health that he was no longer able to continue up the river. This gentleman, we understand, is on his way home in the Columbine. He had proceeded up the Tshadda as far as Funda, the country near which he describes as very beautiful. On his way down, Mr. Lander was met by him in an open boat, proceeding up the river, intending to continue further up the river in the Albuikha. The report of the crews of these vessels having been murdered is not correct; they have experienced much kindness and attention in the lower part of the river. No further mortality had occurred in the expedition.

To the Editor of the Nautical Magazine.

Sir—Perceiving you omitted to notice in your Magazine of last month, an excellent letter that appeared in the Times, respecting the Nautical Almanac for 1834, (which no doubt escaped your observation,) induces me to take the liberty of forwarding a copy of the same, for the benefit of seamen, by whom

your Magazine is highly prized and valued, and to whom the information I am about to send you will be very acceptable.

I remain, Sir, yours, respectfully,

17*th December*, 1833. TIMOTHY SMITH..

COPY.

"Permit me to solicit, for the notice of seamen in general, insertion in your valuable columns, the following remarks respecting the *Nautical Almanac* for the year 1834, in which there seems to have been an oversight, as regards the original, or rather general names of many of the stars there inserted, which I noticed on overhauling this highly esteemed and popular work, when it first appeared. Every commander and officer I have named the subject to have, one and all, expressed their surprise at the change here alluded to.

"In the lunar distances, put down every three hours in each month, our old friends Aldebaran, Pollux, Regulus, Antares, Fomalhaut, &c., are there inserted with their original names, as above, but in the 'Catalogue of *Fixed Stars*,' from pages 362 to 413, both inclusive, our old friends have all *new names*, quite unintelligible to seamen. The most remarkable are as follows :—

New Names.	Old Names.	Page of the Naut. Alm.
γ Pegasi	Algenib	380
α Cassiopeiæ	Schedar	380
α Eridani	Achernar	381
α Ceti	Menkar	382
α Tauri	Aldebaran*	384
α Auriga	Capella	384
β Orionis	Rigel	384
α Orionis	Betelguese	386
α Argus	Canopus	387
α Canis Majoris	Sirius	388
α Geminorum	Castor	389
α Canis Minoris	Procyon	389
β Geminorum	Pollux*	389
α Hydræ	Alphard	391
α Leonis	Regulus*	392
α Ursæ Majoris	Dubhe	393
β Leonis	Deneb	394
α Virginis	Spica*	396
η Ursæ Majoris	Benetnach	396
α Bootis	Arcturus	397
α^2 Libræ	Zubenesch	398
β Libræ	Zubenelg	399
α Coronæ	Alphacca	399
α Scorpii	Antares*	401
α Herculis	Ras Algethi	403
α Ophiuchi	Ras Alhague	403
γ Draconis	Rastaban	404
α Lyræ	Vega	404
α Cygni	Deneb	408
α Cephei	Alderaimin	409
α Piscis Aust	Fomalhaut*	412
α Pegasi	Marcab*	412
α Andromedæ	Alpheratz	413

*Those stars having an asterisk marked against them are by seamen called "Lunar stars."

"Upon examination, it will be found there is no affinity or similarity whatever between the old and new names of these stars; consequently seamen will find some difficulty in determining the right ascension and declination of the star they want. Now, as it is universally known, that the *Nautical Almanac* is published for the use of seamen, as well as for astronomers, and, although the new names here inserted are known to the latter, I will venture to affirm no seaman ever heard of their being so designated before; therefore, why are the names changed? is it to puzzle seamen, or, is this age of reform resolved on capsizing the stars, as well as the weights and measures, &c.? I would respectfully ask, would it not be inteiligible to both astronomers and seamen, if the new names were printed in large capitals for the former, and the names of our old friends, Aldebaran, Pollux, Regulus, Antares, Fomalhaut, &c., in italics for the latter? By adopting this plan in future Nautical Almanacs, the right ascensions and declinations of the principal fixed stars could be very readily found by seamen. "I remain, Sir, yours, very respectfully,

"11*th November*, 1833. "G. C."

P.S. By inserting this admirable letter in your next number, you will greatly benefit those seamen that take in your valuable Magazine, as they, and, no doubt, many others, will rectify the mistakes "G. C." properly points out for their notice. T. S.

Our limited space has only prevented us from noticing this before. We see no reason why the old-fashioned names of the stars should not have been placed beneath their proper ones in the tables of R. Ascension and Declination, as they had been previously used in those of the lunar distances, until the seaman became accustomed to the new ones; and we recommend our nautical friends to insert them as pointed out by our correspondent.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

*** S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 2d Nov. arrived at Vourla. Sailed for Constantinople.

Ætna, S. V. 6—Com. W. G. Skyring, 24th Nov. arr. at Madeira, and sailed for Africa.

African, St. V.—Lieutenant J. Harvey, arr. at Falmouth. 5th Dec. sailed for Woolwich.

Alban, St. V.—Lieutenant A. Kennedy, 27th Aug. at Demerara.

Alfred, 50—Capt. R. Maunsell, 3d Nov. at Vourla.

Algerine, 10—Com. Hon. J. F. F. De Roos, 23d Sept. left Rio for England. 16th Nov. arrived at Spithead. 20th Nov. sailed for Chatham, to pay off.

Alligator, 28—Captain G. R. Lambert; August, had left Madras for New South Wales.

Arachne, 18—Com. W. G. Agar, 5th Nov. at Bermuda.

Andromache, 28—Capt. B. Yeoman. Hamoaze, fitting.

Ariadne, 28—Capt. C. Phillips, 5th Nov. at Bermuda. About to sail for Barbadoes.

Asia, 84 — Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus, 27th Oct.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, 27th October, arrived at Plymouth from Lisbon.

Badger, 10—Com. G. P. Stowe, Simon's Bay.

Barham, 50—Capt. H. Pigot, 23d Nov. at Malta.

Beacon, S. V.—Com. R. Copeland, Surveying service, Archipelago.

Beagle, 10, S. V.—Com. R. Fitz-Roy, 13th July Monte Video.

Belvidera, 42—Capt. C. B. Strong, Portsmouth, fitting.

Blonde 46—Capt. T. M'son, C.B. Portsmouth, fitting.

Brisk, 3—Lieut. Stevens, 15th June at the Gambia; arr. there 14th.

Britannia, 120—Vice-Admiral Sir P. Malcolm, Captain P. Rainier, 3d November, at Vourla.

Britomart, 10—Lieutenant H. Quin, 24th August arrived at the Cape; remained there 7th Sept.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, Master, 17th July at Rio; 21st July sailed for Australia.

Caledonia, 120—Captain T. Brown, 18th Oct. sailed for Malta, from Lisbon; 23d Oct. arrived there; 31st remained.

Canopus, 84—Hon. J. Percy, Plymouth, fitting.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 1st Dec. at Lisbon.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. M. Seymour, 3d Nov. arrived at Madeira; 4th sailed for South America.

Champion, 18—Com. Hon. A. Duncombe, 3d Nov. at Vourla.

Charybdis, 3 — Lieut. Com. S. Mercer, Portsmouth, fitting for Africa.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbine, 18—Com. O. Love, 17th October, arr. at Jamaica.

Columbine, St. V.—Lieut. R. Ede, Portsmouth.

Comet, St. V. — Mr. T. Allen, Woolwich.

Comus, 18 — Com. W. Hamilton, arrived at Port Royal 13th Sept.

Conway, 28—Captain H. Eden, 22d Oct. arrived at Bahia.

Cruizer, 18—Com. Jas. M'Causland, 23d Nov. put back to Plymouth; 30th into Hamoaze.

Curaçoa, 26 — Capt. D. Dunn, 20th July at Singapore.

Curlew, 10—Com. H. D. Trotter, 9th May captured a vessel with 290 slaves on board, off Fernando Po. Expected home.

Dee, St. V. 4—Com. W. E. Stanley, (*b*) 1st Dec. put into Plymouth, on her way to Cork, with troops.

Dispatch, 18—Com. G. Daniell, 1st Nov. at Barbadoes. Sailed for Trinidad.

Donegal, 78—Capt. A. Fanshawe, 27th Oct. in the Tagus.

Dromedary—R. Skinner, Bermuda.

Dublin, 50—Capt. C. Hope, 29th June at Coquimbo; 8th July arr. at Lima.

Edinburgh, 74—Capt. James R. Dacres, Portsmouth, fitting.

Endymion, 50 — Captain Sir S. Roberts, Knt. C.B., 26th Nov. into Hamoaze, to make good defects.

Excellent, 58 — Capt. T. Hastings, Portsmouth.

Fair Rosamond, *Schooner*—Lieut. Com. G. Rose, African station.

Fairy, S. V. 10—Com. W. Hewett, 11th Nov. arr. at Woolwich.

Favorite 18 — Com. G. R. Mundy, 25th Nov. sailed for Mediterranean, via Cadiz. Stopped at Portland. 10th Dec. sailed.

Firefly, 2—Lieutenant J. M'Donnel, 9th July at Jamaica; 24th Aug. sailed from Port-au-Prince.

Flamer, St. V. 6—Lieut. R. Bastard, 12th Nov. arrived at Cadiz; 25th Nov. arrived at Malta.

Fly, 10—Com. P. M'Quhae, 5th Nov. at Bermuda.

Forester — Lieut. G. Miall, African Station.

Forte, 44—Capt. W. O. Pell, 8th Oct. arr. at Bermuda. Sailed for Halifax; 23d Oct. arr. at Halifax.

Gannet, 18 — Com. J. B. Maxwell, 6th July left Jamaica for Halifax; 30th July arrived; 13th Aug. left for Bermuda.

Griffon, 3 — Lieutenant E. Parlby, Gold Coast.

Harrier, 18 — Com. H. L. S. Vassal, 23d April sailed from Sincapore; 25th July at Trincomalee.

Hornet, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

Hyacinth, 18—Com. F. P. Blackwood, 13th July sailed for East Indies; spoken 6th Aug. 32° S. 12° E.

Imogene, 18—Capt. P. Blackwood, 5th July, spoken off Sydney, from New Zealand. All well.

Investigator, 16, S. V.—Mr. G. Thomas, Woolwich.

Isis, 50 — Captain J. Polkinghorne, left Ascension previous to 15th Sept. for a cruise on the African Coast.

Jackdaw, S. V.—Lieut. E. Barnett, 10th Oct. sailed from Jamaica for Honduras; survey.

Jaseur, 18—Com. J. Hackett, Sheerness, fitting.

Jupiter, *Troop Ship*—Mr. R. Easto, about to proceed with troops to Cork, Gibraltar, and Corfu.

Larne, 18—Com. W. S. Smith, 4th Oct. at Jamaica.

Leveret, 10—Lieut. G. Triall, 20th Oct. arr. at Plymouth.

Lightning, St. V.—J. Allen, 30th Nov. arrived at Plymouth.—The Lightning, steamer, arrived from Deptford, on 1st Dec., and left for Falmouth on the 4th, to embark Lord Howard de Walden, for Lisbon, his Lordship being appointed to succeed Lord William Russel, as minister plenipotentiary to the Court of Donna Maria.

Lynx, 10—Lieut. Com. H. V. Huntley, Portsmouth, fitting for Africa.

Madagascar, 46—Capt. E. Lyons, 2d Nov. at Malta; sailed for Vourla.

Magicienne, 24—Capt. J. H. Plumridge, 13th to 19th April at Sincapore; 9th June at Madras; left Batavia 8th May.

Magnificent, 4 — Lieut. J. Paget, Port Royal.

Malabar, 74 — Capt. Hon. J. Percy, 3d Nov. at Vourla.

Mastiff, 6. S. V.—Lieut. T. Graves, 33d Nov. at Smyrna.

Melville, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 4th Aug. at Trincomalee.

Messenger, St. Transport—Mr. J. King, Woolwich.

Meteor, St. V.—Lieut. Symons, 22d Nov. at Malta,

Monkey, — Lieut. ———, 26th May at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 17th Dec. arrived at Portsmouth from Bilboa.

NIMBLE, 5—Lieut. C. Bolton, 3d July at Havana.

NIMROD, 20—Com. J. Mc. Dougal; 18th Sept. in the Douro.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

ONYX, 10—Lieut. A. B. Howe, Plymouth station.

ORESTES, 18—Com. Sir Wm. Dickson, Bart. 23d Nov. arrived at Lisbon; 1st December sailed for Oporto.

PALLAS, 42 — Capt. W. Walpole, 9th and 19th July at Jamaica.

PEARL, 20—Com. R. Gordon, 18th Oct. at Port Royal.

PELICAN, 18—Com. J. Gape, 3d November at Malta from Tunis. December at Gibraltar: about to sail for Genoa.

PELORUS, 18—Com. R. Meredith, 16th Oct. Simond's Bay.

PHŒNIX, St.V.—Com. R. Oliver, Woolwich.

PICKLE, 5—Lieut. C. Bagot, 11th Oct. sailed from Jamaica for Cuba.

PLUTO, St. V.—Lieut. T. R. Sulivan. Coast of Africa.

PRINCE REGENT *Yacht*—Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 17th July sailed for Valparaiso.

PYRAMUS—8th Oct. arrived at Bermuda; sailed for Halifax with Forte; 23d Oct. arr: at Halifax.

RACER, 16—Com. J. Hope, 28th October arrived at Bermuda; 6th Nov. to sail for Jamaica.

RACEHORSE, 18—Com. F. V. Cotton, 30th Nov. arr. at Pprtsmouth. Left Barbadoes on the 1st Nov. and Bermuda on the 5th; 12th December sailed for Falmouth. Put back.

RAINBOW, 28—Capt. Sir J. Franklin, Knt. 3d Nov. at Vourla; 20th December arrived at Portsmouth. Passengers, Capt. Drury, R.M., and Mr. Pearce, late Master of the St. Vincent. 19th Dec. left Vourla.

RALEIGH, 18 — Com. A. M. Hawkins, 3d Nov. at Malta.

RAPID, 10—Lieut. Com. F. Patten, 3d Nov. arrived at Madeira; 4th sailed for South America.

RAVEN, S. V. 4—Lieut. W. Arlett, 24th Nov. arrived at Madeira, and sailed for Africa.

REVENGE, 78 — Capt. D. H. Mackay, 16th October arrived at Lisbon; 27th in the Tagus.

RHADAMANTHUS, St. V.—Com. G. Evans, 27th Oct. at Jamaica.

RINGDOVE, 16—Com. W. F. Lapidge, Plymouth, fitting.

ROLLA 10—Lieut. H. F. Glasse; Plymouth, fitting.

ROMNEY, *Troop Ship*—Mr. R. Brown, 1st Dec. wind bound at Spithead, with troops for Cork; 3d at St. Helen's; 13th December sailed for Cork.

ROVER, 18 — Com. Sir G. Young, Bart., 18th Dec. arrived at Portsmouth from Alexandria; 21st sailed for Sheerness to be docked.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, Plymouth station.

ST. VINCENT, 120—Capt. H. F. Senhouse 3d Nov. at Malta.

SALAMANDER, St. V.—Com. W. F. Austin, 3d Dec. arr. at Sheerness from Chatham.

SAMARANG, 28 — Capt. C. H. Paget, 4th Aug. arrived at Rio from Bahia, and sailed 17th for Valparaiso.

SAN JOSEF, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28 — Capt. Hon. W. Trefusis, 4th Sept. at Trinidad.

SARACEN, 10—Lieut. Com. T. Le Hardy, Plymouth, fitting.

SATELLITE, 18—Com. R. Smart, 19th. Oct. at Rio.

SAVAGE, 10 — Lieut. R. Loney, 11th Nov. arrived at Lisbon.

SCOUT, 18—Com. W. Hargood, 1st Sept. at Nauplia.

SCORPION, 10—Lieut. N. Robilliard, Plymouth, fitting.

SCYLLA, 18—Com. Hon. G. Grey, 3d Nov. at Vourla.

SEAFLOWER, 4—Lieut. J. Morgan, 2d Dec. sailed for Falmouth.

SERPENT, 16 — Com. J. C. Symonds, 1st Nov. at Barbadoes.

SKIPJACK, 5—Lieut. W. H. Willes, (*act.*) 29th Oct. at Bermuda from Jamaica; 3d Nov. sailed for Nassau.

SNAKE, 16—Com. W. Robertson, 4th Sept. at Rio Janeiro.

SPARROW, *Cutter*—Lieut. C. W. Riley, 31st Oct. arrived at Lisbon.

SPARROWHAWK, 18 — Com. C. Pearson, Portsmouth, fitting.

SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 4th Sept., at Rio Janeiro; 23d September sailed on a cruise.

SPEEDWELL, 5—Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieutenant J. P. Roepel, Portsmouth Station.

STAG, 46—Capt. N. Lockyer, Sept. 12th in the Tagus.

SWAN, 10—Lieut. J. E. Lane, North Sea station.

SYLVIA, 1—Lieut. T. Henderson, Portsmouth station.

TALAVERA, 74—Capt. E. Chetham, Mediterranean.

TALBOT, 28—Capt. R. Dickinson, C.B. 11th Aug. at Mauritius: to proceed to India, and return home.

THUNDERER, 84—Capt. W. F. Wise, C.B., Sheerness, fitting.

THUNDER, S. V.—Commander R. Owen, 14th October, at Demerara; employed surveying.

TRINCULO, 18-Lt. Com. Thompson, Gold Coast.

TWEED, 20 — Com. A. Bertram, 5th Nov. at Bermuda.

TYNE, 28 — Capt. Rt. Hon. Lord James Townsend, 29th June at Coquimbo.

UNDAUNTED, 46—Rear-Adm. Warren, Capt. E. Harvey. 26th June Cape of Good Hope; 28th June sailed for Madras. Expected home.

VERNON, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 31st Oct. arrived at Bermuda on her way to Barbadoes.

VESTAL, 26—Capt. W. Jones, 1st Nov. arr. at Madeira; 4th sailed for West Indies.

VICTOR, 18—Com. R. Russell, 4th Sept. at Trinidad.
VICTORY, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.
VIPER, 6—Lieut. H. James, 12th Sept. in the Tagus.
VOLAGE, 28—Capt. G. B. Martin, C. B. 3d Nov. at Vourla.
WASP, 18—Com. Jas. Burney, 11th October arrived at Lisbon; 28th to leave Lisbon for Bermuda.
WOLF, 18—Com. W. Hamley, 20th April arr. at Sincapore from Malacca; 23d sailed for a cruise.

COMMISSIONED.

CANOPUS, 84—At Plymouth.
SARACEN, 10—At Plymouth.
SCORPION, 10—At Plymouth.

PAID OFF.

BELVIDERA, 42—At Portsmouth, 7th Dec.
CORDELIA, 10—At Chatham.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains—J. G. Ross B. M'Namara, Rt. Hon. Lord E. Russell.

Commanders—J. W. Aldridge, G. Byng, J. Garrett, Hon. E. A. J. Harris, R. Yorke.

Lieutenants—D. Ackland, H. M. Breadon, T. S. Hill, W. W. Hornby, Hon. Le P. French, G. G. Lock, J. Russell.

APPOINTMENTS.

Mediterranean Station. Commander-in-Chief—Vice-Admiral Sir Josias Rowley, Bart. K.C.B.—*Secretary*; T. Triphook, Esq.

Naval Aid-de-Camp to His Majesty—Capt. P. Mason, C.B.

ÆTNA, *S. V.* 6—*Surg.* D. P. Williams.

ATHOL, *Troop Ship*—*Assistant Surgeon*, J. Baird. (*b.*)

BELVIDERA—*Capt.* C. B. Strong; *Lieuts.* G. N. Broke, F. Wood, P. Chetwode, W. Maclean; *Master*, J. W. Armstrong; *Surg.* W. Falls; *Purser*, A. Carpenter; *Second Lieuts. Mar.* W. Cosser, E. S. Browne; *Assist. Surg.* J. C. Sabben; *Mate*, Mr. Burrows; *Clerk*, Mr. Joiner.

BLONDE, 46—*Lieut.* W. Mc. Lean; *Master*, R. Beecroft; *Midshipmen*, S. Apthorp; Mr. Mc. Leod.

BRITANNIA, 120—*Lieut.* W. Lewis. (*b.*)

CANOPUS, 84—*Capt.* Hon. J. Percy; *Lieuts.* H. Jellicoe, J. Hathorn, J. R. Baker, W. W. Hornby; *Master*, G. Millard; *Surg.* E. Scott, M.D.; *Purser*, W. Thom, lately with Capt. Ross; *Capt. Mar.* D. Campbell; *Sec. Lieuts. Mar.* G. W. Irving, R. G. Mason, G. J. Hayes; *Assists. Surgs.* A. Baxter, J. W. Williams; *Mate*, G. Cruthers; *Clerk*, Mr. Byrth.

CHARYBDIS, 3—*Lieut. Com.* S. Mercer; *Assist. Surg.* A. Kennedy.

CRUIZER, 18—*Purser*, S. J. Butcher.

DEE, *St. V.*—*Master Act.* J. R. Lord; *Pur.* R. Barron.

DEPTFORD—*Mast. Superintendant of Vict. Est.* G. F. Morice.

EDINBURGH, 74—*Lieut.* J. Nott; *Clerk*, W. Brydone.

ENDYMION, 50—*Com.* J. Brazier; *Lieuts.* H. Jauncey, H. J. Worth, H. B. Young.

EXCELLENT, 58—*Lieuts.* J. Billingsby, S. Grenfell.

FIREFLY, *St. V.*—*Surg.* W. Rogers; *Assist. Surg.* J. S. Hampton.

ISIS, 50—*Assistant Surgeons*, G. Ritchie. J. Rogers.

JASEUR, 18—*Lieut.* H. P. White.

LYNX, 10—*Second Master*, I. T. Towsey; *Gunner*, J. Taylor.

LYRA, *Packet*—*Surg.* C. Nutt.

PELICAN, 18—*Lieut.* J. A. W. Hill.

PHŒNIX, *St. V.*—*Assist. Surg.* H. D. Shea.

PLYMOUTH HOSPITAL—*Assist. Surgeon*, R. Pritchard.

REVENGE, 78—*Lieut.* R. H. Elliott.

RINGDOVE, 16—*Com.* N. F. Lapidge; *Lts.* J. S. Ellman, E. L. Harvey; *Surg.* W. Idington; *Purser*, J. Thain; *Assist. Surg.* O. Fergusson; *Sec. Mast.* H. Pringle.

RODNEY, *Ord.*—*Com.* G. Morgan.

ROLLA, 10—*Lieut. Com.* W. F. Lapidge; *Surg.* W. Thompson; *Mid.* G. Moore; *Clerk*, W. Hewen.

ROVER, 18—*Lieut.* J. R. Dacres.

ROYAL FREDERICK—*Convent.* T. Prior.

ROYAL SOVEREIGN, *Yacht*—*Master*, D. Lye.

SAN JOSEF, 120—*Flag-Lieut. to Admiral Sir W. Hargood, C.H.*, M. Buckle; *First Lieut. Mar.* J. Shute.

SARACEN, 10—*Lieut. Com.* T. Le Hardy; *Surg.* D. Campbell; *Clerk*, W. Matthews.

SCORPION, 10—*Lieut. Com.* N. Robilliard.

SERPENT, 16—*Lieut.* P. Collins.

SPARROWHAWK, 18—*Lieut.* E. T. Harris; *Master*, J. Tucker; *Surg.* J. Stevenson; *Purser*, J. King; *Master Assist.* R. Studwell; *Mids.* G. A. Seale, J. C. Snell, F. T. Mc. Carthy; *Gunner*, R. Craigg.

SYLVIA, *Transport*—*Lieut.* A. Howe.

TALATERA, 74—*Assist. Surg.* P. Brenan.

TWEED, 20—*Lieut.* T. M. Harvey.

VERNON, 50—*Lieut.* C. W. Pears.

VICTORY, 104—*Assist. Surgeons*, J. Stevenson, W. Pateson, D. Burnes.

Coast Guard.

Lieutenants—G. Snell, H. Hoskin, D. Rymer, W. E. Ashley, C. A. Thorndyke, J. Sanderson.

The following Midshipmen have passed their examination, at the Royal Naval College, viz.—Messrs. C. R. Broddyll and H. Byne, of the Belvidera; Mr. P. L. Barnard, of the Ocean; Mr. C. A. Brown, of the steam-vessel Confiance; Mr. Y. Effendi (an Egyptian), of the Andromache; Mr. J. H. Brydges, of the Blanche; and Mr. R. Ripon, of the Britannia.

FALMOUTH PACKETS.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Due.*	*Returned.*
Pantaloon	Lt. Com. C. R. Dacres ..	Dec. 25	———	———
African, st. v. ..	Lt. Com. J. Harvey	———	———	———
Confiance, st. v.	Lt. Com. J. W. Waugh ..	———	———	———
Carron, st. v. ..	Lt. Com. I. Duffil	———	———	———
Pike	Lt. Com. A. Brooking ..	———	———	Dec. 3
Firebrand st. v.	Lt. Com. W. G. Buchanan	To sail Dec 25	———	———
Plover.....	Lt. Com. W. Downie	———	———	Decem. 28

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

Messenger, st. v.	Mr. J. King ..	To sail Jan. 1	———	———
Columbia	Lt. Com. R. Ede.....	Decem. 12	———	———
Hermes, st. v. ..	Lt. Com. J. Wright	———	———	———
Firefly, st. v.....	Lt. Com. T. Baldock	———	———	———
Flamer, st. v. ..	Lt. Com. R. Bastow	———	Decem. 27	———

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

Stanmer.....	Mr. R. S. Sutton ..	———	———	———
Rinaldo	Lt, Com. J. Hill	Novem. 9	January 12	———
Thais	Lt. Com. C. Church	Decem. 12	———	———
Lord Melville ..	Lt. Com. C. Webbe.....	To sail Jan. 1	———	———

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserral, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

Opossum	Lt. Com. R. Peter	Decem. 25	———	———
Spey	Lt. R. B. James	———	———	———
Mutine	Lt. Com. R. Paule	October 23	January 15	———
Camden	Mr. J. Tilley	Novem. 23	———	———

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

Swallow	Lt. Com. J. Griffith	Decem. 12	March 2	———
Lyra	Lt. Com. T. St. John.. :	———	———	———
Eclipse	Lt. Com. C. W. G. Griffin	October 5	January 11	———
Pandora	Lt. Com. W. C. Croke ..	Novem. 9	February 16	———
Lapwing	Lt. Com. G. B. Forster ..	Jan. 1 to sail	———	———

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamaica by a Schooner, and returns to meet the regular Jamaica Packet.]

Nightingale	Lt. Com. G. Fortesque ..	Decem. 25	———	———
Sheldrake	Lt.Com. A.R.Passingham	August 24	Decem. 28	———
Pelham	Lt. Com. H. Carey	Septem. 26	January 30	———
Pigeon	Lt. Com. I. Binney.... :	October 23	February 25	———
Duke of York ..	Lt. Com. R. Snell	Novem. 23	———	———

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—Route—January to August inclusive; to *Madeira. Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

Reindeer	Lt. Com. H. P. Dicken ..	Decem. 12	———	———
Briseis	Lt. Com. G. Downie	August 9	———	———
Skylark	Lt, Com. C. P. Ladd ...	Septem. 7	January 25	———
Renard	Lt. Com. G. Dunsford ..	October 5	February 22	———
Goldfinch	Lt. Com. E. Collier.....	Novem. 8	———	———

*** The Packets having no dates against them, are preparing for service.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

VARIETIES.

Mediterranean Packets—Extraordinary Passage.—H.M.S. Firefly, Lieut. Baldock, R.N. Commander, arrived at Falmouth on the 15th inst. with the mails from the Mediterranean. We have received the following communication from one who went out, and returned in the ship. It is only forty days since she sailed from England, having left it on the 5th of October; during her absence, she has twice visited Cadiz, Gibraltar, Malta, Patras, Zante, and Corfu; her stoppages at these ports amount to thirteen days, thus having made a voyage of nearly six thousand miles, encountering every variety of navigation and weather, in little more than five weeks, stoppages included. This is the shortest space of time in which this voyage has yet been performed, the Firefly having been actually at sea only twenty-seven days. This wonderful performance completely shews the advantages attending steam navigation, and reflects great praise on the builder of this beautiful vessel, the constructor of the engines, and the able management of her commander.

The steam vessels running to the Mediterranean have been established to supersede the old system of sailing packets, by which the Mediterranean voyage was seldom performed under ninety days; and, by the facility of over-land communication since the peace, the mails were reduced to a few duplicates by government return. The quick voyages of the steamers have now completely set aside this method of correspondence, even in the case of Corfu, their most remote point. This island is now generally reached in eighteen days, whereas, the mails via Italy take three weeks, and that to Gibraltar, where the packet arrives in six days, usually occupied eighteen days. The correspondence has thus returned to its old channel, as in time of war. The revenue arriving from the passengers and mails completely defraying the expense of coals, leaving an overplus fully competent to meet the repairs of machinery. Thus this extraordinary rapid monthly communication with our Mediterranean possessions is reduced to an expense not exceeding that of three gun brigs.

The mail of August reached the capital of Greece in eighteen days, having been landed at Patras from the packet, and sent across the Morea to Nauplia; and that of October in seventeen days, both having been brought from England in this same vessel.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 22d December.				*Reported to 22d December.*			
VESSELS.	RIG.	WHERE BUILT	TONS.	VESSELS.	RIG.	WHERE BUILT	TONS.
Agenoria	Schooner	Belfast	74	Jason	Schooner	Montrose	155
Alfred	Brig	Bristol	131	Jemima	Schooner	Plymouth	89
Alonzo	Brig	Sunderland	245	John Carnall	Schooner	Fowey	86
Ariel	Brig	Montrose	174	John Hardy	Brig	Sunderland	179
Baltic	Snow	Sunderland	218	Louisa Bailey	Ship	Limehouse	412
Berwick upon Tweed	Snow	Sunderland	292	Monarch	Smack	Padstow	75
Calypso	Barque	Sunderland	286	Norham Castle	Brig	Tyne	258
Catherine	Snow	Kincardine	126	Oporto	Schooner	Arbroath	130
Charlotte Maria	Schooner	Fowey	75	Reaper	Sloop	Arbroath	59
Christian	Barque	Dumbarton	192	Reform	Sloop	Stromness	58
Cintra	Schooner	Holyhead	114	Ruby	Schooner	Leith	150
Commodore	Schooner	Hastings	176	Sarah	Schooner	Wells	80
Concord	Sloop	Plymouth	59	Smyrna	Brig	Plymouth	169
Corsair	Schooner	Plymouth	114	Vere	Barque	Sunderland	308
Devon	Sloop	Alloa	46	Whitton Castle	Brig	Sunderland	270
Georgina	Barque	Liverpool	200	William Turner	Ship	Greenock	488
Hornby	Ship	Bristol	264	William and Mary	Sloop	Burton Strather	54
Howard	Brig	Dumbarton	197				
Isabella	Ship	Leith	422				
Isabella	Smack	Isle of Man	54				

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 750, Vol. 2.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
1	Abeona	Hart	Newry	London	Coast Wales	29 Nov.	Mate drowned
2	Adelaide	Harrison	Liverpool	Charleston	W. Hoyle,	30 Nov.	
3	Admiral Rowley	Christon	Shields	———	North Sea	11 Dec.	Abandoned.
4	Alicia	Gilmore	Bristol	Miramichi	———	23 Nov.	Crew saved.
5	Ann	Lewis	St. Clears	Gloucester	Tenby	7 Dec.	Crew saved.
6	Ann	Cullen	London	Harlingen	Holland	3 Dec.	Crew saved.
7	Betsy and Nancy	———	Halifax	Newfndld.	C. George	12 Oct.	
8	Caroline	———	St. Vincent	Quebec	Sambro	18 Oct.	
9	Christian	Of Grange-	mouth	———	W. Islands	3 Dec.	Supposed
10	Circassian	Dowthwaite	Ceylon	Calcutta	Gordewan	8 June	
11	Colchester	Dorison	Tatmagouche	———	Formby	30 Nov.	
12	Courier	———	Sydney	Hob. Town	C. Barren	4 July	Crew saved.
13	Douro	Newbeck	Wisbeach	Goole	Not heard of	since	3 November
14	Duke of Wellington	———	———	Wexford	———	30 Nov.	
15	Earl of Kilmorey	Chambers	Dundalk	Bristol	Asklow Bks	9 Dec.	Crew saved.
16	Fame	Brown	Newry	Liverpool	Welsh Coast	29 Nov.	Crew saved.
17	Fanny	Geddes	———	Spey	Portsoy	30 Nov.	
18	Francis and Mary	———	Quebec	Waterford	St. Michael	4 Nov.	Abandoned.
19	Friends	Kilgour	———	———	Nr. Sea	2 Dec.	Run down.
20	Good Intent	Osborne	Shields	London	Cutter S.	28 Nov.	Crew saved.
21	Helen	Of Storna	way	Londonder.	Portsallagh	5 Dec.	Crew saved.
22	Hill	Malligie	Newry	Liverpool	Beaumaris	30 Nov.	
23	Industry	Bett	Wick	Dublin	Islay	29 Nov.	Doubtful
23	James and Margaret	of	Arbroath	———	Jutland	4 Dec.	Previous
24	Jane	Britton	Liverpool	St. John's	Gr. Manan	13 Oct.	5 drowned
25	Jane	Wilson	Youghall	Liverpool	Conway	13 Dec.	Crew saved.
26	John	Jacobs	———	———	North Sea	9 Nov.	Crew saved.
27	Kingston	Crouch	Quebec	London	Sandgate	30 Nov.	Crew saved.
28	Kitty & Molly	———	Clyde	P. Nessock	Ayr	29 Nov.	Master drowned
29	Lively	Long	Greenock	Not heard	of since	16 Oct.	
30	Lord Blayney	Steamer	Newry	Liverpool	Ayr	12 Dec.	All drowned.
31	Malvina	Cholwick	Cork	Liverpool	Southport	29 Nov.	
32	Margaret	Sumptom	Montreal	Liverpool	S. Bank	12 Dec.	Carnarvon, crew saved
33	Margaret	Cameron	Inverness	———	Nairne	Dec.	
34	Margaret	Mc Bride	Westport	Glasgow	Islay	29 Nov.	Doubtful
35	Maria	———	Liverpool	Limerick	Mubray	———	Crew saved.
36	Maria	Sheerer	Glasgow	Limerick	Letterkenny	4 Dec.	Reported.
37	Mary	Roberts	Gloucester	Carnarvon	Rgwell Pt.	7 Dec.	
38	Mary Ann	Mc Kenzie	C. Bretou	Limerick	St. Ives	30 Nov.	
39	Micromegus	———	———	———	Newfndland	Nov.	Total.
40	Minerva	———	Newfndld.	Liverpool	Youghall	Dec.	Lately.
41	Montreal	Jackson	Hull	Miramichi	N. Scotia	11 Oct.	Crew saved.
42	Naiad	Hutchinson	Stettin	London	North Sea	6 Nov.	Ran foul of.
43	Neptune	———	Labradore	———	S. Lawrence	Oct.	
44	Promise	———	Gloucester	St Andrews	At Sea	28 Oct.	Foundered, crew saved.
45	Prompt	Barnes	Liverpool	B. Ayres	R. Plato	23 Aug.	2 saved.
46	Providence	Forster	Hull	London	Swin	28 Nov.	By fire.
47	Resolution	———	Moyston	Carnarvon	L. Ormes Hd.	27 Nov.	Crew saved.
48	Sally	Griffiths	Of Colches.	———	Welch Coast	29 Nov	Crew drowned.
49	Sally	Blackett	Newcastle	London	Ringkiobing	22 Nov.	Crew saved.
50	Searcher	Eilloy	Cardiff	London	Seven Stones	18 Nov.	Crew saved.
51	Success	Baxter	London	Maldon	Hailbro' S.	3 Dec.	Crew saved.
52	Susan	Dales	Liverpool	Marseilles	Welch Coast	20 Nov.	Crew saved.
53	Swan	Hutchins	Bideford	Bristol	Not heard of	since	1 December.
54	Thames	Duncan	Dublin	Quebec	White I.	Oct.	
55	Thomas Wallace	Tinley	———	Quebec	C. Rosier	15 Nov.	5 drowned.
56	Unknown	About 800	tons	44° N 38° E	———	Nov.	
57	Unknown	Anderson	Lerwick	Bergen	Jadder	Nov.	
58	Venture	———	———	Park Gate	Hoylake	29 Nov.	Crew drowned.
59	Venus	Rowe	———	———	S. Brides B.	29 Nov.	Crew saved.
60	Windsor Castle	———	St. Petersbg	Sunderland	Seskar	9 Nov.	Crew saved.
61	Young Messenger	Gilmars	———	Dublin	Arklow	24 Nov.	Crew saved.

FURTHER PARTICULARS OF WRECKS.

JOHN, Jacobs.—This vessel struck on the mast of a wreck about three miles NW of the Inner Dowsing.

The English collier ARIEL, Captain D. Baxter, destined from Sunderland to Schiedam, has foundered near Calloo, and sunk with all the crew, except one of the sailors, who had lashed himself to the mast, and remained 24 hours in that situation, and was saved with great difficulty by the Flushing pilot, J. Nacrebebout, who took him to that port. Besides Mr. Baxter, three sailors and two boys met their deaths.

THE PARAGON.—The Paragon, a Stockton trader, sailed from the Tees on the morning of Nov. 1., and, during that and the two following days, encountered heavy gales. On Monday, Nov. 4, at 6 o'clock P.M. they anchored in safety near the Nore. The master of the vessel, overcome by excessive fatigue, retired to rest; the female passengers, four in number, were also in bed. About seven o'clock the seamen were alarmed by the smell of fire in the forecastle; at the same time one of the females perceived fire falling from a locker in the cabin. The captain being called, discovered the half-deck to be in flames, and, though every exertion was made to extinguish the fire, all their efforts were unavailing. The crew and passengers, making sixteen persons, saved themselves by taking to their boat; but not an atom of the property was rescued from the flames. The vessel burned to the water's edge, and then sank. In this state of peril and destitution, the party thus preserved from destruction were received on board the Martha, of Sunderland, and were kindly treated by the captain (Chapman) and his men. By this affecting calamity, an unfortunate family, five in number, has been unexpectedly plunged into the deepest distress. Mr. Thos. Metcalf, with his wife, two daughters, and a son, were taken out of the burning vessel in their night clothes only, and were exposed to the inclemency of the weather, up to their knees in water in an open boat, nearly three hours; and it was not till the afflicted father had arrived in London that clothing could be procured for his family.

TWO SISTERS.—The crew, except the master and mate, of the brig Two Sisters, arrived at Guernsey on the 14th inst. The Two Sisters left for Rotterdam with a cargo of coffee, with which she had just arrived from Rio Janeiro. She had nearly reached her port, and had taken a pilot on board, when, about mid day, she struck on a sandbank on the Hinder, where the sea made a complete breach over her, and she settled so rapidly that the crew were compelled to take to their boat, without being able to save even their clothes. They were all saved except the pilot, who was washed overboard and drowned, just as they were leaving the vessel. In less than twenty minutes after they had left the vessel, she broke up, and went to pieces. We understand that both vessel and cargo were insured.

THE FINSBURY, of London.—On the 9th of February, 1832, the Finsbury, a whale ship, being in the South Seas, at two, A.M. the ship struck on a reef of rocks; the second thump started the mainmast and step, and the vessel soon filled, and fell on her starboard side. Captain Duncan immediately ordered the starboard quarter boat to be lowered, and put into her the ship's papers, log book, journal, sextant, charts, chronometer, some specie, a few clothes, a cheese, a bag of bread, two compasses, and six men; but the sea broke the boat from the ship's side, and the night being dark, she was not seen again.

The Captain then ordered the first mate's boat to be lowered, with a sextant and quadrant, some bread, water, a few muskets, pistols, cutlasses, and a little powder. The men in her, however, called out for assistance soon after leaving the vessel; their fate remained uncertain until the next morning; at daylight the boat was observed to be stove in, and her crew standing on the reef. The Captain then sent the second mate's boat with seven hands, which succeeded in getting ahead of the ship, although suffering some damage.

With the object of sending assistance to the first mate's boat and crew, who were on the reef, the Captain next got out the spare boat; but she was swept away from the ship's side, with three men in her, and broken to pieces. The three men saved themselves by getting on the reef. The third mate's boat was then lowered, and sent with difficulty with some bread, a few pieces of beef, and a little water, to the second mate's boat, which was lying a-head of the ship.

The second mate shortly after made sail to the southward; the third mate's boat returned to the vessel, and came under the jib-boom end. Two muskets, two axes, a boat-anchor, a bag of nails, some powder, and two live pigs, were lowered into her, and there being nothing further to be done, as the sea was breaking completely over the ship, the Captain and two others, who alone of the crew remained on board, got down by the flying jib-boom into the boat, and pulled in search of the other boats. At noon they fell in with the second mate's boat, and saw the chief mate's boat endeavouring to find a passage out from the reef. The chief mate said his boat had been seriously damaged, and every thing in her lost, besides three men. The Captain took his own son and another man out of this boat, in order to lighten her, and two other hands were placed with the second mate.

The three boats were steered to the southward, having eleven hands in each. They encountered that day violent gales and a heavy sea, and at night could not run, but lashed the oars together and rode by them. On the second day the same tremendous weather came, and in the afternoon the second mate said his boat made much water. His companions hove to under their oars, and took every thing out of the boat, stopped the leak, and put every thing in her

again. At this time the chief mate's boat filled, and all the men in her who could swim, came to the Captain's boat, which made the number in the latter nineteen, three remaining in the sunken boat, and one clinging to the stern of the Captain's boat. The Captain repeatedly asked the second mate, Mr. Ward, to take some of the people into his boat, but he replied that he and his men would not permit it.

At daylight they observed the sunken boat with the three men on it, and the second mate's boat a mile off to the leeward. They succeeded in righting the chief mate's boat without the assistance of the second mate, and then steered to the southward. On the 13th, they saw a small island bearing S.E., and anchoring off it at noon, they got a few cocoa nuts and some bad water. Soon after it came on to blow, and they were obliged to remain all night and the following day, which time was employed in repairing the boats. They had scarcely finished this work when the natives came and endeavoured to make prisoners of them, wounding one man.

They then sailed for New Guinea, where they arrived on the 16th, and landed on a small island in search of water, but without success. At this island three men left the boats. On the following day they got in with the main land, and bought water from the natives. At this place, William Dunn, who was sent on shore with a bucket to get water, was detained by the natives. The boats then made the best of their way to Carter's Harbour, landed at several places, and had several engagements with the natives. On the 12th of March, they arrived at Carter's Harbour, and remained till the 15th, when they left, in order to proceed to Ternate. Four days after, Mr. Davis, the chief mate, left to return to Carter's Harbour, his boat's mast being sprung. Captain Duncan proceeded to Ternate, and being off the south side of Mysore, the natives came out and took him and his crew prisoners. During the six months of their captivity, they were conveyed from one place to another, sold and resold; at last, having been brought to Duray, they had the good fortune to be redeemed by Captain Russell, of the schooner Success, of and belonging to Ternate, at which place they arrived on the 17th of December, 1832. —*Singapore Chronicle.*

THE CITY OF LIMERICK, Schooner, Cooper, master, a constant trader between Cork and London.—This vessel was off the Heads on the night of the 12th December, and out for sea, when a tremendous sea struck her on the bows, clearing the decks of bulwarks, stancheons, and every portable article, so as to render her almost entirely unmanageable. Her mast was also sprung by the violence of the storm. Nevertheless, the master and crew endeavoured to keep her off the coast, but the wind blowing furiously from the west, and a violent sea setting in, drove her nearer to land.

As a last resource, on the morning of the 13th, daylight appearing, and still nearing the coast, anchors and cables were let out, under which the vessel dragged for some time, but eventually was swept in upon the sand at Ballybunnion, on the Kerry side of the Shannon, by the overwhelming fury of both wind and tide. For some minutes before this, the prominent points of the coast were covered with hundreds of the peasantry, anxiously watching the fate of the vessel, and so soon as she struck, they rushed down upon the strand, where the ill-fated schooner was already dashing to pieces at each succeeding shock from the combined force of both elements.

The master, mate, and crew, escaped ashore, with no other casualty than the fracture of a limb to one of the latter; but, as soon as the shipwrecked mariners gained terra firma, the savage peasantry surrounded them, knocked down the master, robbed him of a small parcel he had saved from the wreck, deprived the mate of his watch, and attempted also to strip the unfortunate sailors. Some of the coast guard had now arrived, and lent their assistance to save the crew from violence, and protect whatever portion of the cargo remained from plunder, for the number of the peasantry had rapidly increased, and, as the bottom of the vessel had broken up, the puncheons of whiskey floated towards shore, and those were eagerly broached by the crowds assembled, when the coast guard, striving to cover the property from absolute ruin and spoliation, fired on the plunderers, by which one man was shot. This inflamed the passions of the wreckers to desperation, already excited by the taste of ardent spirits, and they made a simultaneous attack upon the small coast guard party, who were obliged to fly for their lives. Then commenced a scene of indiscriminate wreck and plunder—axes, sledges, and saws were employed to cut up the schooner's decks, and get at the residue of the cargo, consisting of beef, pork, bacon, and butter, which they hurried away into the interior, upon horses and cars, &c., with perfect impunity.

Many of those inhuman wretches were seen stretched upon the beach like pigs, in a beastly state of stupefaction from the liberal draughts of whiskey they had imbibed, and seven more are returned as dead from too freely indulging in this poisonous liquid! Sunday morning, Mr. Sandes, a magistrate of Kerry, arrived to witness this revolting spectacle, and adopted every means in his power to save the wreck and property from utter destruction. A reinforcement of police and military came to the aid of the coast guard, and the wholesale plunder was at length checked; but, on collecting the relics of what had escaped the rude grasp of those barbarous marauders, the sum total of what was saved for the benefit of the owners and underwriters, did not, it appears, exceed nine puncheons of whiskey, and about sixty firkins of butter! The police and military have since commenced a search through the surrounding country for the immense property which has been carried off.

We hope sincerely, the Committee at Lloyds, will exert themselves to prosecute and punish, in conjunction with the shippers, the criminal actors in this disgraceful outrage. We are fully aware the natives on the sea coasts of England, Ireland, and Scotland, assume they have a prescriptive right to all property driven ashore by the wind and tide.

The gross injustice of this barbarous notion has been frequently exposed, and we hope in this instance, the absurdity and folly of so monstrous a practice will be visited with exemplary punishment.

MARY ANN.—On the morning of the 8th of December, at day-break, the brig, Mary Ann, of Exeter, was discovered, by the inhabitans of Appledore, to be on shore, at the back of Northam Burrows. When first seen, a terrific sea was breaking over her, and any approach to the spot appeared impracticable. The largest life-boat, however, with four men, put out, but after contending with a fearful sea for above half-an-hour, and finding the decks of the vessel gone, having no chance that any of the crew had survived, they returned.

Another party then volunteered, and proceeded in the same boat for the wreck, followed by a smaller life-boat well manned. On nearing the ship, and whilst the crew were looking out to see if any persons were on board, a heavy sea struck the boat, and capsized her with her crew under. The other boat succeeded in saving four of the crew. The boat, after the lapse of an hour, drifted on shore; and on raising her, two other men were found drowned, lashed to the thwarts; another was miraculously preserved, fastened across the thwart. Every means which the most ready medical aid could suggest, were resorted to, without effect, to recover these men. The whole of the crew, supposed to have numbered about ten, have met a watery grave.—The three men drowned in the life-boat, were called Benjamin Pile, Samuel Blackmore, and John Peake—the former leaving a widow and nine children, the second a widow and two children, and the other a widow and three children.

SUSAN.—About noon, on the 13th Dec., the brig Susan, of London, 230 tons register, bound from Liverpool to Marseilles, with a general cargo, of which two steam engines formed part, was observed to have got upon the north bank. The crew of the life-boat were in readiness, with all her materials complete, so that not a moment was lost, and making their way through a tremendous sea, gained the wreck. Although the brig had then ten feet water in her hold, the Captain obstinately refused to abandon her, stating he did not consider himself in danger. So little aware were all on board of their real situation, that they imagined themselves to be in the mouth of Chester river. The stubbornness of the Captain compelled the life-boat's men to cast off from the wreck three times; they returned again and again, until they prevailed upon the Captain, with his crew and passengers, to consult their own safety, by getting into the life-boat.

The persons thus delivered were thirteen in number, consisting of the captain and nine hands, two engineers and a lady passengers, and the only living creatures left on board were a Newfoundland dog, a cat, and two pigs, which perished when the vessel went to pieces about midnight. Before reaching Belan they observed the light upset all of a sudden, at which time the Sally is believed to have gone to pieces, and all hands perished, as at daybreak nothing was to be seen except the fragments of the wreck which the sea had washed ashore during the night. The passengers and crew of the Susan were landed at Carnarvon late in the evening.

THE DUKE OF WELLINGTON. Captain Esmond, which sailed from Liverpool lately, for Wexford, must have gone down, part of her wreck having been cast ashore at the Rock Battery. Her crew of five hands were all drowned. Another small craft has been wrecked, at Hoylake, and her crew of three men also drowned.

ALBION. FAME.—The Albion, Captain Hart, with flour and butter, from Newry for Liverpool, and the Fame, Captain Burnet, with timber and bricks, from Bridgewater for Liverpool, were both totally wrecked in Maltraeth Bay, on the Anglesey coast—crew saved.—*Portsmouth Herald, Dec.* 6, 1833.

GOOD INTENT, *Pilot Boat, of Liverpool.*—The following is a statement of the melancholy fate of this vessel and her crew —

"*Formby, Nov.* 29.

"Sir,—It is with regret I take up my pen, by the desire of my remaining fellow-creatures, to make known to you our awful situation. Perhaps you may not be acquainted with the loss of No. 1, pilot-boat. Our complement in number was 21, out of which, I presume, as near as I can learn, 12 have met with a watery grave, and 9 of us are saved. We are now residing at Church-house, with three of our fellow-sufferers lying in the dead-house opposite. It is the desire of the surviving part of us that I should not make known the names of the surviving parties. Please to communicate to Mr. Edwards the above as soon as possible. As I am about to conclude, one of our fellow-sufferers has been brought up dead, having been taken out of the rigging; and, believe me, I am scarcely able to use my pen,

"I am, sir, your humble servant,

"HENRY HUGHES."

"To Mr. Leece."

The boat had on board a number of the pilots who had taken the vessels out during the week. She was driven by the violence of the storm towards the Lancashire shore; but owing to the thickness of the weather the crew could not tell their true situation. In the course of Thursday night, during a lurch of the boat, the punt was washed off the deck and thrown into the belly of the sail, which being thus rent, was blown to atoms by the wind. The vessel then became unmanageable, and drove towards the shore. Several of the unfortunate crew lashed themselves to the rigging, while the remainder tried to keep their hold on deck, or sought shelter below. At length she was driven on Formby beach, when only nine men and boys, out of a crew of 22, were saved; the remainder, 13 in number, having been drowned, either before or after the boat struck.

LOSS OF THE LORD BLAYNEY.—About two o'clock on Wednesday morning, the hurricane being then at its height, the chain of one of the anchors of the north-west floating light ship snapped asunder. That vessel is

moored in the channel for the guidance of vessels approaching the port. About this time the Government steamer *Dolphin*, from Dublin, was seen approaching, and the crew of the light-ship took the opportunity of unshackling the remaining chain, and was towed by the *Dolphin* into port. This was early on Wednesday morning, and as soon as it was light the information was communicated by telegraph to the pilot boats on the different stations. Unfortunately, however, it was impossibie to warn every vessel that approached the port of her danger, and to this is attributed the loss of the *Lord Blayney* steamer, with all on board—a fact of which there now, unhappily, remains no doubt. That vessel left Warren Point, Newry, about eleven o'clock on Wednesday forenoon, with a valuable cargo. Her crew consisted of sixteen hands, her burden per register being 210 tons.

The following Ships of War were recently put up for sale by Dutch auction, at the Admiralty office, in Somerset Place, London :— The Echo steam-vessel, copper fastened, was put up at 3,500l. but no purchaser was found at the reduced price of 1,900l. at which she was bought in. The Supply transport was offered at 1,700l. and taken in at 890l. This vessel was offered at the last sale, and bought in. The Philomel gun-brig was put up at 1,200l. and sold at 690l. The Cordelia gun-brig was offered at 700l. and sold for 400l. The upsetting price of the Manly gun-brig was 800l. and she was purchased for 550l. The Barracouta gun-brig was put up at 1,200l. but no buyer was found at a reduction to 640l. at which she was bought in. An offer was made by a party to take her at this price, but it was refused by the Commissioners. The Zenobia gun-brig was put up at 1,600l. and bought in for 890l.

Births.

Nov. 23, in Brunswick-street, Gateshead, the lady of W. Gowdry, Esq., R.N., of a daughter.

At Marine Terrace, Southsea, the lady of Lieut. C. Hill, R.N., of a daughter.

In Lemon-street, Truro, the lady of Captain R. Devonshire, R.N., of a daughter.

Marriages.

Oct. 23, at St. Helena, Commander Francis Harding, R.N., to Davidore-Eleanor, second daughter of the Hon. Brigadier-Gen. Dallas, Governor of that island.

Lately, at St. Andrew's church, George-Henry Godden, Lieutenant, R.N., to Eliza, only daughter of Captain Burgess, late of the 83d regiment of foot.

At South Stoneham, E. F. Heaslop, Esq. R.N., to E. Pollard, daughter of the late Mrs. Parkyns.

Deaths.

Of scarlet fever, after eight days' illness, in his 47th year, the Right Hon. Pownall Lord Exmouth, Captain, R.N. He is succeeded in his title and estate by his son, Hon. E. Pellew, aged 23.

At Ottery, Captain Jeffery, R.N., aged 53. This gallant officer was highly esteemed in the service, and beloved and respected in private life.

At Carisbrooke, after a very long and severe illness, Lieut. Stephen Butcher, R.N., formerly of Plymouth, aged 49 years, leaving a wife and four children to lament his loss.

Dec. 10, at the Royal Naval Hospital, Mr. Bengamin Rogers, of H.M.S. Nautilus, aged 20 years, son of the late Rev. John Rogers, Rector of Feniton.

At St. Servant, on the 11th Nov., Commander James Grant, (1805,) aged 61.

At Canterbury, Captain George Cadman, R.N., aged 86.

At Pitcairly, Captain Robert Cathcart, (1808.)

Lately, at Emsworth, Captain George Aldham, R.N, the senior Captain of 1805.

At Bin Rock, Cardy, Forfar, Captain Skene, C.B., Royal Navy, (1813.)

Lately, was unfortunately drowned by the loss of the Lord Blayney steam-packet, Lieut. Charles Stewart, R. N., her commander, (1798.)

At Southampton, Retired Commander Jas. Lys, R.N., at an advance l age.

Lately, Mr. W. Tireman, Purser, R.N., (1786,) aged 80 years.

Lately, in Cobourg-street, Commander Mason, R.N., aged 73. A brave and experienced officer, and a most benevolent man. He lost a leg in his Majesty's service.

At Peerless Place, Exeter, Captain Dadd, Royal Navy.

Commander Robert Petit, at Walworth, aged 67.

On the 15th December, Lieutenant Chas. Kerr Dow, R.N.

On board the Lyra packet, at Jamaica, Mr. T. H. Jones, Assistant-Surgeon of that vessel.

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Fig. 5.

Fig. 4.

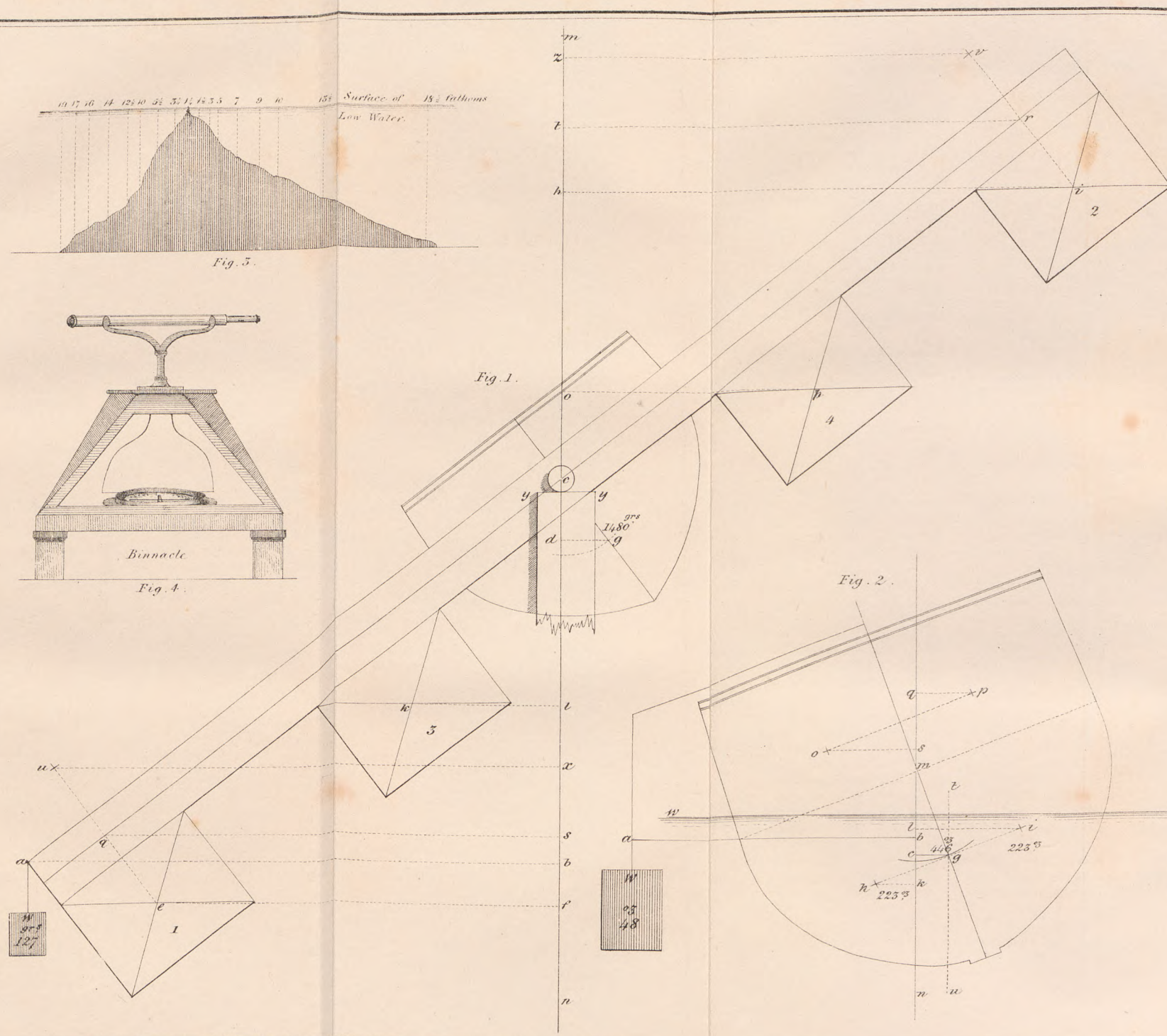

Fig. 1.

Fig. 2.

Day & Haghe Lith.rs to the King Gate St.

C Bradbury Lith.r

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THE

NAUTICAL MAGAZINE,

FEBRUARY, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

7. Description of the Frenchman Rock, off the North Coast of Ireland.

Compass Bearings. Variation 28¼° W.

Extract of a Letter from Commander Mudge, Surveying the Coast of Ireland.

The Frenchman Rock, or *Limeburner*, as it is called by the pilots and fishermen of the coast, (from the resemblance the foam that it throws up bears to the smoke of a lime-kiln,) lies N. 18° E., distant two miles and three quarters from Melmore Signal Tower, on the north coast of Ireland. The light of Tory Island bears from it N. 67° W. 15,4 miles, and Fannet Light-house S. 50° E. 5,8 miles. Ships passing this rock at night should be very cautious how they approach it, and should attend to the bearings of the lights as a guide. In the day the land-marks may be seen, viz. Temple Breaky, or Crooknacloggin Cliff; the western part of Horn Head, (which bears considerable resemblance to the profile of a man's face,) kept open of the extreme point of the Horn, and bearing about S. 78° W. will keep them clear to the northward of it. The two cliffs in one will lead directly over the centre. To pass between it and the shore, keep the Farland Hill on the extreme point of the Horn. This mark will lead a mile inside.

As to the shape and dimensions of this rock, I dare say the sectional view and plan will be the best illustration. (Fig. 3.) The soundings around it differ but little from those at the same distance from other parts of the shores; but I cannot help remarking the great similarity observable between the section of the Frenchman and all the insular rocks on this part of the coast, from whence I conclude they are of the same geological formation, a kind of flinty slate, with veins of quartz running through them.

The Inner Frenchman, which lies about a mile N. 55° W. from Melmore Tower, is about fifteen feet above the sea, and is similar in appearance to the Frenchman or Limeburner, having the steep slope to the N.E. or seaward, and the shelving slope towards its nearest shore, viz. Melmore Point.

I consider the Frenchman a very dangerous rock, for, although there is but a pinnacle on which a vessel would strike, yet the sea breaks on every part of it

in blowing weather, or with a heavy swell, and at least a cable's length in extent round it. It is not a continual break, always visible, and thereby giving warning of danger, but breaking at unequal intervals of time; sometimes its position will be perfectly undiscernible, and the next moment a hollow towering sea, with a curling top, will be seen foaming along, augmenting in size and fury, and carrying inevitable destruction in its course. Instances were related to me of two vessels having been swamped, and a third totally destroyed, by venturing too close to the rock, having been lured by the apparent stillness of the water, when suddenly the sea burst up, and in an instant overwhelmed them. One vessel managed to get in to Sheep-Haven, with one boy only on board; all the men were washed away. It breaks more frequently with the ebb tide, which, setting to the westward, is generally in opposition to the wind. With the flood tide it breaks but seldom, unless the wind or sea are considerable at the time. The spring tide runs about two miles, and the neaps about one mile per hour. The flood coming from the westward, and the ebb from the east, it is high-water about 4 hr 30 m. A.M., and the rise and fall with springs from twelve to nine feet, and the neaps from seven to four feet.

W. M.

The plane of the section is a north-east magnetic line of bearing.

The depths which determine the profile are on a scale of forty fathoms to three inches, and express the number of fathoms with which soundings were obtained. The lateral distances of the depths were ascertained by the angle subtended by the mast of a cutter moored near the rock, and are laid off on the scale of 600 feet to 3 inches.

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8. Dangers and Lately Reported Islands *on the South-East Coast of Cyprus.*

In our number* for June last, we inserted a letter from Mr. Le Grand, master of the schooner Cora, of Jersey, reporting the appearance of two islands on the south-east coast of Cyprus. Notwithstanding the assertion of Mr. Le Grand, that he and his crew had seen them both at sunset of one day and sunrise of the following, we doubted their existence; and the totally different manner in which Graham's Island had appeared and disappeared on the south coast of Sicily, at once confirmed our disbelief. But we considered it our duty to lay Mr. Le Grand's report as we received it before our readers, satisfied that by so doing, no harm could possibly be done, and that it would shortly be decided whether they existed or not. We took care, however, to place, with the drawing of the islands that accompanied it, a view of Cape Greco, that would be of service to the navigator.

It now becomes our duty to inform our readers that no such islands exist. Captain Sir John Franklin has since passed over their reported situation, in his Majesty's ship Rainbow, at a time and under circumstances that would have enabled him to see them, or any broken water near their reported position, if there had been any. Nor were the inquiries that he made of the consul at Larneca, as well as the masters of vessels, attended with more success. It is, however, satisfactory to find, that the view we introduced of Cape Greco is considered by Sir John Franklin as "very accurate."

In the course of his inquiries, Sir John Franklin obtained some information which is of great importance to navigators frequenting the coast of Cyprus. He

* 16, Nautical Magazine.

says, "I learnt, however, from these sources, that the reef or rock marked 'Vigia' in the chart, does exist, and that the sea breaks over it." The above Vigia is on the south-east coast of Cyprus.

"I mention this circumstance particularly," he adds, "because its existence seems questionable, according to the book of the new sailing directory. I was likewise informed, that several English and other merchant vessels had got aground by attempting to pass too close round the very low point of Cape Chiti. The new sailing directory says, 'it may be approached by the lead to the depth of four or three fathoms, as the ground is clear,' but the masters of the traders say ships should not come nearer this point than to the depth of eight or ten fathoms. The sandy spit stretches far out beyond the tower, and its extent cannot be seen until very near. On this account I consider Cape Chiti to be a most dangerous point for a ship to approach in the night."

We consider ourselves as fully recompensed for the *disappearance* of Mr. Le Grand's islands, (which were no doubt the effect of atmospheric refraction so common in the Mediterranean,) by having elicited, through the medium of so high an authority as Sir John Franklin, the confirmation of the existence of a doubted danger, and such important information concerning the dangerous shoal off Cape Chiti. These, we have no doubt, will be duly appreciated by navigators.

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9. Clayton Shoal. A Newly discovered Danger *near the S.W. Coast of Billiton. Lat.* 3° 26′ S., *Long.* 107° 36′ E.

Compass Bearings.

The following extract from the log-book of the ship Camden, gives the position of a dangerous shoal to vessels using Clement Strait. It lies in a part which appears to have been but little examined :—

"July 24, 1833.—In a passage from Sourabaya to Singapore, intending to pass through Clement Straits, made Shoe Island, and steered N.W. to go between Shoal Water Island and the long low island off the S.W. end of Billiton. At 6·30 P.M., when Shoe Island bore S.E. by E., saw the Lestock Islands to the N.N.W.; shortened sail at 8 P.M. and hove to; heading first four hours to the southward, the remaining part of the night, or until 6 A.M. on the 25th, head to the northward by the lead, through the night, the ship being nearly stationary. After making sail, and when Lestock Islands bore N.E. by E. about six miles or thereabouts, a shoal was observed from the quarter-deck close to, about one-third of a mile in extent, with several small black rocks in the centre of it. By bearings from the islands I make the lat. to be 3° 26′ S., and long. 107° 36′ E. This also corresponds with the run up to Shoal Water Island, this shoal lying in the track recommended by Horsburgh. In proceeding from the eastward towards the Straits of Gaspar, it may prove dangerous to ships in running, and I have reason to believe it is not generally known.

"George Thomas Clayton,
"Commander, ship Camden."

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10. Directions for the Passage within the Reefs, or Inner Route through Torres Strait.

Compass Bearings.

In a preceding number of our work, we laid before our nautical readers a letter from Captain P. P. King, R.N., pointing out the great advantages of adopting the passage from Sydney within the Barrier Reefs; and, with the view of doing all we could to assist ships in that intricate navigation, the journal of his Majesty's ship Crocodile, which ship passed through it with a convoy, was inserted in a succeeding number. Still, however, concise directions are wanting, and we consider ourselves following up the good intentions of that able and enlightened officer and navigator, by introducing his into the pages of our work. It has frequently been our lot to deplore the narrow limits of this Magazine, and still more must we do so, now we are obliged, in consequence, to reserve for future numbers the descriptions of the places mentioned in Captain King's directions. As they are not actually essential to making a safe passage, we are content to insert these, and have placed numbers against the names mentioned, so that hereafter an easy reference may be made to the paragraphs in which they are mentioned.

Having hauled round Breaksea Spit (see Flinder's chart, sheet III.) in the evening, it would perhaps be dangerous to steer on through the night; after running, therefore, to the W.N.W. for five or six leagues, bring to until daylight: but, if the day be before you, the course from the extremity of the spit is W.N.W. ¼ W. for about a hundred miles. You will then be about twenty miles from Cape Capricorn; on your way to which you should pass about three miles within Lady Elliot Island (1), and also within the southernmost islet of Bunker Group (2), by which you will see how the current has affected your course, and you can act accordingly: if it has set you to the northward, you may pass on either side of, or through the islands, without danger. After making Cape Capricorn, you may leave it at a convenient distance, and, directing your course about N.W. by N., pass either within or without the Peaked and Flat Islands off Port Bowen (4); then, steering for the Percy Group (6), pass between the 2d and 3d Northumberland Islands (5).

After passing the latter, avoid a low dangerous rock that bears from it N. 8° E. five miles and three quarters, and from 1st Peak S. 85° W. To avoid this in the night, pass close round No. 3, which is high, and of bold approach.

The channel is safe on either side of the Percy Isles, but that to the westward of them, being better known, is recommended as the safest. Following either the Mermaid's or Bathurst's track, will carry a ship round the projections of the coast as far as Cape Grafton (35); as far as which, if the weather be fine, there can be no danger of proceeding through the night; but it must be recollected, that at Cape Grafton the coral keys of the Great Barrier Reef approach the coast, and consequently the channel becomes contracted.

On reaching Fitzroy Island (36), round it at a mile off shore: and, when its north end bears W., steer N.W. ½ N. for thirty-five miles; you will then be a

league to the S.E. of a group of low isles: should it be night when you pass them, come no nearer to them than fourteen fathoms. In steering this course, great care should be taken not to go too much to the eastward, to avoid the reef which the Tamar saw.

If the moon be up, and the weather fine, the islets will be readily distinguished, but it would be more prudent to wait for daylight. This course will carry a ship over two of my tracks, and the soundings will be in 17, 18, and 19 fathoms. From the low isles, direct your course for the Hope Islands, (37), which bear from the former N. 18° W. thirty-eight miles; but the course had better be within that line, to avoid some reefs in latitude 15° 51′: pass, therefore, within five miles of Cape Tribulation, whence a direct course may be steered on either side of the Hope Isles. The better route will be within the western Hope, and along its reef, at the distance of three-quarters of a mile, by which you will avoid reef a. When you are abreast of its north end, a N. by W. westerly course, for twenty-eight miles, will carry you to Cape Bedford (40), which may be rounded at from one to three or four miles. You will see in your way, at 3½ miles from the north end of the Hope Reef, reef b; and at 15 miles from it you will be abreast of e; and five miles farther on you will pass Captain Cook's Turtle Reef (43), which has a dry sand at its north end. These three reefs will be to the eastward of your course.

The current sets to the north-west, so that your course must be directed accordingly. In coasting along the shore, you will discern the summits which are marked on the chart. The high conical hill on the south side of the entrance of Endeavour River (38), is Mount Cook; bearings of which, crossed with the summit of Cape Bedford, or any of the particularized summits or points, will give the vessel's place; by which the effects of the current, which is generally very slight, will be ascertained. On one occasion we found a current in the space between the Endeavour Reef and Turtle Reef, of two miles an hour to the N.W.

Being off Cape Bedford, and steering to the N. ¼ W., you will see the Three Isles (44) ahead; steer between them and the low wooded island, and direct your course round Cape Flattery (41), and Look-out Point (42), in order to anchor under the Turtle Group (49): unless you have time before dark to reach the islands 4, 5, or 6, of Howick's Group (52), under which anchorage may be found. In rounding Look-out Point, do not come within two miles and a half of it, to avoid a reef that is on Captain Cook's chart, which, however, we did not see; it lies a mile and a half north from the peaked hill, at the extremity of the point. You may pass on either side of the Turtle Group, or between Lizard Island (46) and Eagle Island (48), but the latter course is not to be recommended; first, because the wind is generally fresher as you increase your distance from the shore; and, secondly, because the run is ten or twelve miles longer. There is good anchorage under the N.W. side of the Peak on Lizard Island.

From the Turtle Group steer N.W. by W. ½ W. until you see the hillock at the south-east end of No. 1 of Howick Group: pass inside it, and within a mile of 2 and 3, and between islet 4 and Cole's Islands (50), also in shore of 6, and of the dry sands s, t, and u. The Mermaid's track will direct the course to Cape Melville (56). If the day be advanced when abreast of 6, of Howick Group, anchorage had better be secured under it, as there is none to be recommended between it and Cape Flinders (59).

Upon rounding Cape Melville, the Islands of Flinders Group (58) will be seen; and as soon as you have passed between the stony reef that projects off the Cape, (the extremity of which bears from it by compass N.W. by N., and from Pipon Island S.W. by W. ½ W. nearly,) and the reef that surrounds

Pipon Island (57), direct the course for the extremity of the islands to the westward, which is Cape Flinders; the course and distance to it is W. ¾ S. nearly thirteen miles, leaving a low woody island on the starboard hand.

His Majesty's sloop Satellite, in 1822, grounded upon a small reef, a, bearing N. by E. (easterly) from the extremity of the cape, distant about two miles; but, as a ship may pass within a stone's throw of the cape, this danger may be easily avoided. The best anchorage to leeward of Cape Flinders is under the flat-topped hill, at a third of a mile from the shore, in ten fathoms, muddy bottom. In hauling round the cape, avoid a shoal which extends for two cables' length from the shore on its western side.

If daylight will allow of time to run fifteen miles further, the ship may proceed to the anchorage under reef d; but in this neighbourhood anchorage may be obtained under any of the reefs or islets between this part and Cape Grenville, for the bottom is universally of mud; and, by anchoring with the body of a reef bearing S.E., the vessel is sufficiently sheltered from the sea, which is generally smooth.

On leaving Cape Flinders, steer W. ¾ N. for about 23 miles, leaving the reefs c and g to seaward, and d, e, and f, to the southward of the course; then haul up about N.W. ¾ N., and steer within the reef 1 and Pelican Island (63), and to seaward of the Claremont Islands (64) 1 and 2, which are low and woody.

When abreast of island 2, the south-west end of the reef m will be seen, which should be passed at from one to two miles, and the course N. b.W. ¼ W. will carry you to islands 4 and 5, which you may pass on either side of; the channel between them is also quite safe. If you take the latter course, steer north, within the reef o, and then close within 6, to avoid a low rock that covers with the tide. Having passed this rock, which is marked on the chart, steer for 7, and pass within one mile of it, to avoid the shoals that extend off Cape Sidmouth (66). Hence the course is N.N.W. towards Night Island (67); and, when abreast of it, steer N. ¼ W. until near the covered shoal v, when the course may be directed within Sherrard's Islets (68) and reef 10, (on which there is a sandy islet covered with some bushes); and then steer round Cape Direction.

Hence a course N.N.W. ¼ W. will carry you within the reefs y, z, a, b, and c; and without the rocky islet that lies off Restoration Island (70): continuing this course for about five miles beyond Cape Restoration, you will see the long reef e; then steer N.W. along its edge, which extends until you are abreast of Fair Cape (71), where it terminates with a very narrow point. Thence steer N.W. ½ N., and pass between the two easternmost Piper's Islands (74) and the reefs h, i, and k; then on either side of l and m, inshore of Haggerston Island, (76), and round the outermost of Sir Everard Home Group (77).

The anchorages between Cape Flinders and this are so numerous as not to require particular mention: the north-west end of every reef will afford shelter; but the anchor should not be dropped too near to them, because the tide sweeps round the edge with greater strength than it does at half a mile off, and the bottom is generally deeper. If the day is advanced and the breeze fresh, Night Island should not be passed; because the anchorages between it and Piper Islands are rather exposed, and a vessel getting under weigh from Night Island at daylight will easily reach Piper Islands, or Margaret Bay, before dark.

Margaret Bay (77) is round Cape Grenville; the anchorage being fronted by Sunday Island, is well sheltered: it is a safe place to stop at. Anchor in six fathoms, with the island bearing S.E.

In passing round Sir Everard Home Islands (77), steer wide from them, to

avoid the tide drifting you towards the group; for it sets to the N.W. across the course. The course is then about N.W. ¼ W. to the Bird Isles (80), and thence, to the reef v, about N.W. by N.; the better and more direct plan is to pass within v and w, (there is, however, a safe channel between them,) and when abreast of the west end of the latter, the course and distance to Cairncross Island (82) is N. by W. ½ W. about eighteen miles.

There not being any very good anchorage between Cairncross Island and Cape York, it would be perhaps better to anchor under it for the night, in about fourteen or fifteen fathoms, mud, the island bearing S.E., but not nearer than half a mile, because within that distance the bottom is rocky.

Leaving Cairncross Island, steer N.N.W. ½ W. until Escape River (84) is abreast of you, when look out for reef x: steer within it about N.W. by N, which will take you inside the covered reef z. Your course then must be round the Albany Islands (87), and hence N.W. by N. for a, which is a rocky islet that may be seen from abreast the Albany Isles.

The passage through the Possession Isles (90) and Endeavour Strait (91) is not to be recommended for a large ship, on account of the shoal water that extends from Wallis Isles towards Shoal Cape; the route round the north end of Wednesday (92) and Hammond Islands is preferable. Upon passing reef a, Wednesday Island will be seen: in steering towards it, avoid standing too close to the rocky islet that is abreast of the strait between it and Horned Hill, as some sunken rocks stretch off it for about a quarter of a mile; steer round the north point of Wednesday Island at half a mile, then W. by S. ¼ S., which will carry you to the northward of the rock off Hammond Island. From this rock steer S.W. by W.; and when abreast of the south-west end of Hammond Island, haul towards a reef, to the southward of the course, on which you will see some dry rocks, which you may pass within half a mile of: by so doing you will avoid reef d, which is generally, if not always, covered: the fair way of this channel is seven and eight fathoms deep.

When the summit of Good Island (93) bears S.W. by W. steer W. by S. southerly for Booby Island (95), by which you will avoid Larpent Bank, and when you are passed it you are clear of the strait. Hence you may steer W. ½ S. through the night, on which course you will very gradually deepen your water. To the northward of the two tracks to the westward of Booby Island are some coral reefs, the position of which are not correctly ascertained.

Being fully convinced of the great advantage and superiority which the inner route possesses over the passage without the Barrier Reefs, which for many years has been generally adopted, I am anxious to prevail upon navigators bound through Torres Strait to give it a trial; the result of which I feel assured will be in favour of its being ever afterwards used.

The season in which the Strait only can be passed commences with the month of April, and ends with October, that is, during the south-east monsoon. The westerly monsoon, besides being a foul wind, is accompanied by unsettled gloomy weather and heavy rains, and frequently by strong gales, against which it is impossible to make a voyage without great delay and loss of time.

The passage up the north-east coast is not affected by the monsoons. The south-east trade blows up the coast during the whole year, with little variation, save that during the months of June, July, and August, it is occasionally, although rarely, suspended by north-easterly winds, with thick rainy weather. To the southward of Cape Grafton (latitude 16° 51′) this interruption is of more frequent occurrence. Still, however, the prevailing wind to the northward of Breaksea Spit is from south-east, and there will be no difficulty in making an expeditious passage.

The coast from Breaksea Spit to the Northumberland Islands is delineated in Captain Flinders' Atlas, (East Coast, Sheet 3,) and in this space I have merely described such places as are prominent features, and have not been noticed by him.

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11. EASTERN SEAS—*Shoal in Lat.* 1° 04′ *S. and in Long.* 106° 43′ *E. nearly.*

Compass Bearings.

Angier Roads, April 28, 1832.

We sailed from Linton Roads on the 30th March, intending to go round the northern end of Luconia, touching at the New Hebrides, and other islands, on our way down to the Feejees; but, on getting clear of the land, found the wind directly in our teeth, blowing so hard as to keep us most of the time under double reefs, with a large sea and strong current setting S.W. After trying it two days, and finding we should not even fetch the Straits of St. Bernadino, at the southern end of Luconia, we concluded to keep off, and, running down the China Sea, out of the Straits of Sunda, cross the south-east trades, and go round the southern end of New Holland, perhaps to touch at New-Zealand, if the wind was favourable.

On the 2d of April, being in lat. 18° 50′ N., long. by chron. 116° 16′ E. at 10 A.M. up helm, and steered S. by W., with strong breezes, which moderated as we made southing, till we made the island of Pulo Sapata on the 10th: from that time till the 17th, we had light winds and calms, with a strong southerly current. On that day we very narrowly escaped a total loss both of the vessel and crew. I give you below an extract from my journal. On the noon of the 16th, latitude observed, 3° S., longitude, by chronometer, 106° 43′ E.

Tuesday, April 17, commences calm, with pleasant weather. The first seven hours she drifted about seven miles in all. Long. by mean of two sets of sights by chronometer, taken within 20 min. of each other, between 2 h. and 3 h. P.M. was 106° 49′ E. At 4 P.M. lowered down the boats, and tried the current: found it running at the rate of one knot and a half, in the direction of S.E. by S. Sounded, 20 fathoms. At 7 P.M. a light breeze sprung up from E.N.E. The ship going along two knots and a half S. by W. At 3 A.M. the breeze freshened; steered S.S.W. going about four knots and a half. At 8 A.M. steered S. ½ E. going about four knots. Long. in, by chron. at 8 h. 30 m. 48 s. apparent time A.M. 106° 47′ east, which is 12 to the eastward of the run from yesterday's sight. At 11 h. 15 m. A.M. the ship going along four knots, S. ½ E., wind light from E.N.E., and sea perfectly smooth, a man who was at work on the foreyard suddenly sung out, "rocks under the bows." Capt. E. and myself were below at the time. The helm was instantly put hard aport, and sails thrown aback. She went ahead about once and a half her length, and struck, lifting her bows a few inches out of the water, and heeling about three streaks to port, then remaining fast. Hove the lead, and had in several places on each side 2½ to 3 fathoms. On a rock under the fore-chains, had 10½ feet. Run out the kedge into 3 fathoms, and sent the boat ahead to sound; took in all sail, and, after hauling on the hawser a few minutes, and running up the jibs, she backed astern a little, righted, and came off; the current then giving her a sheer to port, she shot ahead about half her length, perhaps a little more, and took on another rock under the fore-channels on the starboard side; the hawser tending nearly ahead, clapped it to the windlass, and hove as taught as it would bear; set all sails, and commenced heaving

over ballast. The least water round her now was from 2 to 3 fathoms, with the exception of the rock on which she lay, where we had 10 feet. The latitude observed at this time was, by a mer. alt. of the sun, 1° 04′ S., which we think is about correct, as our altitudes agreed within a mile, Capt. E.'s taken with a quadrant, and mine with a sextant; though it may be out of the way 3′ either to the northward or to the southward, as the sun was partially obscured by light watery clouds, which made it difficult to define his edge.

Wednesday, April 18. At 30 min. P.M., having hove over about 20 tons of ballast, she started immediately, cut the hawser, and, after running S.E. a cable's length over a bed of rocks, which seemed to nearly touch our heel, came into 17 fathoms, clear of the shoal. Run a few cables' length further, and hove to. Sent two trusty divers (Manilla men) down, who passed under her bottom from stem to stern several times: they reported only a part of a sheet of copper off on each side, under the fore-channels, near the bilge; the sheating rubbed a little, but not appearing broken, tried the pumps, and found she made no water. Manned the whale-boat, and Capt. E. and myself went back on the shoal. Coming on the south-west side, a boat's length from the edge of it, had 17 fathoms; on the edge had 7½ fathoms. We then pulled towards the centre, sounding about every thirty yards: had 6½, 3½, 3, and 2 fathoms; then 6 feet, and 5½ feet, in about the centre of the shoal—sharp coral rocks. Hove up the kedge, and pulled for the ship, she bearing S. by E. sounding as we went, 2¾ and 1¾ fathoms near the edge; on the edge 10 fathoms; a boat's length from the shoal, 12 and 15 fathoms. At 2 P.M. got on board the ship, and filled away S. by E. Long. in, by chron. by mean of three good sights, at 2 h. 01 m. 36 s. apparent time P.M. 106° 43′ east, which is 1° eastward of the run from sight A.M. of the 17th; the shoal at this time bearing N. by W., distant one mile from the ship. This shoal is not laid down on Horsburg's charts, nor could we find any mention made of it in his directory. While the ship lay on the shoal, I went myself to the main-top-gallant-masthead, and could not see any land in any direction, the horizon at the time being clear. The shoal appeared to be nearly in a circular form, and from three to four cables' length across it in its greatest extent, consisting of coral rocks—no part of it visible above water, the ship laying in about the centre. After the boats had carried out the kedge, she went round the ship, and to the edge of the shoal, in several directions, to the southward and eastward, and southward and westward: the average of her soundings were from two to five fathoms on the edge, ten fathoms a short distance from the ship, on the larboard beam. She then laying with her head S.S.W. Had 3 feet on the top of a peaked rock. When on the shoal, in the boat, tried the current, and found it setting S.E. by S. 1½ knot.

It was a most providential circumstance, that at this time the sea was as smooth as a millpond, having had light airs and calms for four days previous. While the ship lay on the rocks, she lay perfectly still; and when she went off, her motion was so easy that we could only perceive it by looking over the side.

Our chronometer was rated at Manilla, by sights taken with a horizon glass, and was slow of Greenwich mean time 31 min. on the 13th February last, her daily rate losing 3″. By same sights, after leaving Linton April 2, she appeared to be about 5′ or 6′ to the eastward of the true long. by the Island of Great Lama, upon which we gave her a new rate of three seconds and five-tenths from Feb. 13. When we made Casper Island, she was about five or six miles out of the way to the eastward.

Captain Horsburgh is of opinion that this is the Vega Shoal, laid down in his chart of these parts.—(Ed.)

ORIGINAL PAPERS.

I.—Discovery of William the Fourth Group of Islands, Pacific Ocean. *Interview with the Natives of the Royalist Group. Canoes of New Guinea. Passage from Australia to India.—By Captain Fraser, of the Ship Planter.*

All the Caroline Islands appear to be inhabited, even down to the most inconsiderable. In my last voyage to the Pacific Ocean, when standing across the Carolines with a scant trade, I fell in with a dangerous small group of islets, reefs, and rocks not noticed in the charts. It is situated in lat. 6° 45′ N. and long. 157° 59′ E., and I named it William the Fourth Group. The Barwell's track, in which vessel they saw no islands, is given over the very spot; but the Barwell must have been considerably out in her longitude. I passed these at day-break, and stood on upon a wind, without seeing any thing more that day.

On the following afternoon I saw the Royalist Group. Being anxious to know the extent of the dangers about these islands before sunset, I stood towards the small ones composing the group, and discovered what appeared to be some numerous detached rocks amongst the extensive coral reefs. Some of these rocks becoming very sensibly more distinct to the eye, I directed the telescope to one of the objects, and at the same moment had the misfortune to lose the field glass overboard. But I afterwards made it out to be a vessel under sail, and I began to suspect that I might be deceived in the other rocks. By watching attentively, I soon found that my conjectures were very reasonable, for they were vessels, some of them rapidly approaching us.

As I had now no glass to ascertain the number of natives in them, I deemed it prudent to make preparation for any hostilities, in case they were numerous, and I therefore ordered up the small arms, cartouches, &c., had the long guns loaded with grape, and the usual directions given to the people as to their preconcerted stations and duty. By the time these things were done, and the hatches battened down, one of the vessels had approached near enough to relieve us from our fear of being overpowered by numbers, for it was no more than a flying proa. These proas are formed the same at each end, thus having no occasion to tack. They have a large mat sail, easily shifted on changing the vessel's course, and by which they may sail within six points of the wind. The sail being large, and the proas narrow, they are obliged to use double outriggers, to give them sufficient stability. Two of the crew were at this time sitting out on the weather outrigger.

There were only four altogether in it, although it might have contained a dozen.

The natives evinced great timidity in approaching us closely, but, by shewing them white cloth, or calico, of which these islanders are always very desirous, they were induced to come under our stern, and hang on by a rope, without venturing on board. They tendered us some fresh water, but, as it appeared they were short of it themselves, we filled up their calabash, and returned it to them, to their evident astonishment. They next offered us some of their food, which seemed to be Guinea corn macerated, and with it a drink made of some milky grain fermented. We returned the compliment, by presenting them with some of our own provision; but we each seemed doubtful of the wholesomeness of the other's viands. For my part, I strongly suspected that the operation of preparing this drink has been performed by the teeth of some of their brown damsels on shore; for I well remember, that, on the east coast of Africa, where the natives use a great quantity of a similar appearance, they affirm that it is worthless if prepared in any other way. This was quite sufficient, and we therefore handed their present back to them, with our own. They had two or three shells, a cocoa-nut or two, for which, and some of their beads, formed from fish-bones, and coarse grass-cloth garments worn round the middle, I gave them a calico sheet, and some empty glass bottles, which much delighted them. The bottles they, no doubt, imagined were a more curious kind of calabash than their trees produce. These islands not being volcanic, like William the Fourth Islands, but of coral formation, of course they cannot have any thing vitreous like lava, neither can they have flint to form their proas with; and as for tools, nails, or iron of any description, the natives did not shew any anxiety to possess them. I handed them down a piece of tortoise-shell, and endeavoured, by gestures, to give them an idea of the value we attach to it, assuming for a certainty that those extensive reefs, with the two white sandy beaches, must abound with turtle, but my attempts were useless; they either understood me not, or their islands do not possess the wealth I had imagined.

Night coming on, we bade adieu to our visitors, endeavouring all in our power to leave the most favourable impression upon their minds with regard to the manners of white people. It is much to be desired, that others of the same pretensions to this title as ourselves, would be as careful to do likewise, for I believe there are too many who, frequenting these seas, consider these poor simple creatures as savages, but who, from their treatment of them, are far more deserving of the appellation.

They are stout and well formed, more athletic than the Malay, and better framed than the Negro. They are of a copper colour, and possess generally an agreeable countenance. Their hair (if

hair it is) is so much matted together with an unguent preparation of different-coloured ochres, that it would be hard to say whether it was straight or woolly. The same race of people inhabits the whole of these islands from the Pellews to the Radick chain. They are also precisely the same as I have traded with at New Britain, and, as far as I can judge from the little experience which a few voyages in those seas may give, it seems to me, by comparing some words, that they all speak a language very similar; a language as limited as their wants.

Whilst speaking of the natives of New Britain, I cannot help expressing my admiration of their bread-fruit canoes. Their canoes are as much superior to any thing of the kind I have yet beheld, in point of speed, lightness, carving, painting, and tasteful decoration, as is his Majesty's yacht to a collier. The shores of New Britain are extremely fertile, having plenty of refreshing showers at all times of the year. This arises, no doubt, from the great height of New Ireland on the weather side of the straits, which causes it to collect the clouds, from whence they are driven over to its favoured sister island, fraught with riches and abundance. All this wealth lying at the back-door of Australia, it does not require much discernment to discover the germ of a flourishing trade, to be brought about by the enterprise and perseverance of these colonists at some future day.

After leaving Dampier Straits, several small clusters of islands, besides the Admiralty Isles, will be seen on the coast of New Guinea, generally one or more in each cluster, in a state of combustion. With the exception of these, they are all inhabited. Although these islands are very imperfectly laid down, yet I believe the track through them into the eastern seas to be free from danger. During the south-east monsoon, I am surprised, (since the danger of Torres Strait is every season gaining fresh confirmation by the numerous shipwrecks occurring there,) that the route by Dampier Strait, round New Guinea, and through Pitt Passage, is not more generally adopted. I think it will hardly ever exceed the other passage by a week; and if underwriters understood this, it would make a great difference in their premiums.

II.—On the Various Effects produced by Different Dispositions of the Weights in a Ship, *and demonstrating that a Ship must be considered as a simple mechanical body.* *By Commander John Pearse, R.N.*

Figure 1 in the accompanying drawing represents the mechanical apparatus alluded to in a former paper. It consists of a beam, *q r*, having a fixed pin *c* through its centre that turns on two

planes which support it, one of which is represented by the line *y y*. The weight of the beam is 172 grains, and its centre of gravity is in the centre *c*. Weights 1 and 2, weighing 654 grains each, are fixed at the ends of the beam, and the centres of gravity of these weights are at *i* and at *e*. The weight of the whole apparatus is 1480 grains, and its centre of gravity at *g*. When free and undisturbed, it will remain at rest in a horizontal position, in consequence of the equality of the weights 1 and 2, and their being equally distant from the centre *c*.

In the drawing, the apparatus is represented as inclined by a weight *w* of 127 grains, applied at *a*; and in this state it will remain at rest, and in perfect equilibrium, in consequence of the inclining weight *w*, multiplied by the distance *a b*, *being equal* to the weight of the apparatus multiplied by the distance *d g*. When free and undisturbed, the apparatus remains at rest in a horizontal position, in consequence of the efforts of the weights 1 and 2 being equal in its inclined state, the equilibrium is preserved by the addition of the inclining weight *w*; consequently, in this state there must be a difference between the efforts of the weights 1 and 2. In fact, the effort of the weight *w* is, as a physical consequence, *equal* to the difference between them, and, therefore, the amount of the inclining weight *w* multiplied by the distance *a b*, added to the weight 1, multiplied by the distance *e f*, is equal to the amount of the weight 2 multiplied by the distance *i h*. The weight of the beam in this case need not be considered, in consequence of its centre of gravity being in the axis of rotation. And, whether the weights are placed near the extremities or concentrated near the centre, provided they are situated in the same plane, an equal amount of permanent inclining power will be required to produce the like inclination, as the difference between the efforts of the opposing weights is always equal; and consequently, if the weights 1 and 2 were fixed in the situations of 3 and 4, the inclining weight $w \times a\,b$ added to the weight $3 \times k\,l$ would be equal to the weight $4 \times o\,p$.

Now, although these are consequences which necessarily result from the employment of a *permanent* inclining power, still the effects which proceed from a *momentary* inclining power *only* are very different, and the *vibrations* which succeed the *first* inclination are produced by the physical properties which the apparatus possesses; and the greatness both of their *extent* and *duration* are in proportion to the distance of the centre of gravity of the weights from the axis of rotation. The greatness of the moments or relative forces of the weights are also in proportion to their distance from the axis of rotation, and consequently the relative efforts of weights at the extremities, as 1 and 2, are greater than those of weights situated near the centre, and as represented by 3 and 4. But it is the resistance generated by the inclination and the physical pro-

perties of the apparatus, which produces the great difference both in the extent and duration of the vibrations; for, although an equal amount of *permanent* inclining power is required to produce the same inclination, whether (provided they are in the same plane) weights are placed near the extremities or concentrated near the middle; and, notwithstanding the difference between the efforts of the opposing weights is always equal, still the distance *o p* being to that of *k l* as 37,0 to 21,7, whereas the distance *h i* to *e f* is only as 74,3 to 59,0, the weight 4 necessarily possesses a greater relative superiority of power over that of 3 than the weight 2 does over that of 1; and consequently weights concentrated near the middle generate greater resistance to a momentary power, and to the vibrations which succeed the first inclination, than weights situated near the extremities. From this cause proceeds the smallness of the extent and duration of the vibrations when weights are concentrated near the centre. And, in fact, it is the preponderance of power of the rising weight on one side, over the descending weight on the other, which is at first a resisting force, and afterwards becomes a moving power; and thus the weights continue to act alternately till the body is restored to a state of rest.

The facts thus demonstrated are precisely the same as those which proceed from different dispositions of the weights in a ship, and, whether longitudinally or transversely the effects are similar, as the efforts of the weights are always estimated by the distances of their respective centres of effort from the vertical which passes through the axis of rotation. Consequently, concentrating the weights longitudinally, or reducing the weights in the extremities of a ship, diminishes the extent of the pitching motion; and, extending the weights transversely in the same plane, renders the motion of rolling slower, without diminishing the stability. Raising the weights diminishes the stability, and renders a less *permanent* inclining power requisite to produce a given inclination; and raising the weights diminishes also the preponderance of power of the weights 2 and 4 over those of 1 and 2; therefore, a less *momentary* inclining power is required, and less resistance is opposed to the vibrations which succeed the first inclination; and consequently the vibrations are proportionally greater both in extent and duration. When the centres of gravity of the weights are at *q* and *r*, in the plane of the *axis of rotation c*, then the distances *t r* and *q s* being equal, the moments or relative forces of the weights are *always* equal also, and no preponderance of power existing, the property of alternately opposing and producing motion is lost, and the body will remain at rest and in perfect equilibrium in any position it may be placed.

Now, this is precisely what the most eminent authors tell us must happen when the *centre of gravity of the ship* is in the same point as the *metacentre*, and that when it is above this point the

ship will upset. And, by again referring to figure 1, it will be clearly seen, that when the weights are above the plane of the axis of rotation *c*, and as represented by *u* and *v*, the smallest force will cause the apparatus instantly to upset; for, in this case, in consequence of the distance *u x* being greater than that of *z v*, the *descending* weight *u* has the preponderance of power which the *rising* weight 2 possessed when the centre of gravity was below the axis of rotation.

Let us now compare the experiment of inclining the apparatus by a weight with an experiment on a floating body for finding the moment of stability, and the situation of the metacentre, agreeable to the method of P. Hoste, and as represented by figure 2, and it will be clearly seen that a floating body is governed by the same laws as a simple mechanical apparatus; for, in both cases, it is the *distance* from the *vertical* which passes through the *axis of rotation* by which the efforts of the weights or forces are calculated, and consequently, in each the inclining weight multiplied by its distance from the vertical which passes through the axis of rotation, is equal to the weight of the body multiplied by the distance of its centre of gravity from the same vertical.

In the mechanical apparatus the place of the axis of rotation is known; in the floating body its situation is found by experiment; and, the exact place of the centre of gravity *g* being known, its distance from the direction of the effort of the inclining weight being correctly known also, there is consequently no difficulty in finding the situation of the axis of rotation as well; for there is *only one* point where the distance between the centre of gravity and the inclining weight can be divided, so as to establish a perfect equality between the two opposing forces; and therefore the same vertical, the position of which establishes this equality, determines also the place of the axis of rotation, and which is the same as the metacentre.

And, in the floating body, as well as in the mechanical apparatus, in place of considering the whole weight of the model, 446 ounces, to be acting at the centre of gravity *g*, we may consider it as equally divided and acting at *h* and at *i*, or in any other part of the plane of *g*, as the difference between these two efforts will always be equal to the effort of the inclining weight *w*; and in this case the inclining weight $w = 48 \times a\,b + 223 \times h\,k = 223 \times l\,i$: and here, as in the apparatus, the weight acting at *i* possesses a great preponderance of power over that acting at *h*, in consequence of its greater distance from the vertical of the axis of rotation or metacentre. And whether we consider the resistance to *permanent* inclination as proceeding from the increase of the moment of stability which the inclination produces, or from the preponderance of power which the weight on one side possesses over that on the other, still it amounts to the same thing; and, as it regards a

momentary inclining power, or physical vibrations, it has been before proved that the amount of resistance depends on the distance of the weights from the middle.

As the situation of the centre of gravity *g* is made to approach the *axis of rotation*, or *metacentre m*, the stability, and the preponderance of power of the weight on one side over that on the other diminishes, and consequently a less *permanent* inclining power is required to produce a given inclination, and the natural vibrations become greater in extent and duration.

When the *centre of gravity* is in the *same point* as the *axis of rotation* or *metacentre m*, the body neither possesses stability nor the property of vibrating, as the efforts of weights situated in the same plane, and at like distances from the centre, are always equal, and consequently the body will be at rest, and in perfect equilibrium, in any position it may be placed.

And when the centre of gravity is above the axis of rotation, the distance *o s* being greater than *q p*, the effort of the weight *o* will prevail over that of *p*, and upset the ship.

Agreeable to the laws of mechanics, and which is proved by the apparatus, the *only point* in which the centre of gravity can be situated so that a body will remain at rest in any position it may be placed, is *the axis of rotation.* Now, if this point was at *g*, figure 2, which is the centre of gravity of the model, *t u* would be the vertical of the axis of rotation; and, consequently, the distance of *h* and *i* from the vertical *t u* being equal, the *efforts* of equal weights situated at *h* and *i* would be equal also, and the model would not remain at rest in the position represented, with the *addition* of the inclining weight *w*, but would instantly upset.

It has, however, been repeatedly proved in former papers, that the metacentre is the stationary point, and there can be *but one*, consistently with the laws of mechanics, in a body which vibrates; and, agreeable to the same laws, and which the apparatus proves, the efforts of opposing forces are always estimated by their distance from the vertical of the axis of rotation; and it is clearly proved in the experiment with the floating model, that the vertical which establishes the equality of the opposing forces determines also the situation of the metacentre, and that, consequently, the metacentre and the axis of rotation are one and the same point.

It has also been proved, that the effects produced by different dispositions of the weights in the mechanical apparatus, and in a floating body, are precisely the same; that the motion of rolling may be rendered slower by raising the weights, or extending them in the same plane, the first diminishing the stability, the latter not; that the relative forces of weights in the extremities are greater than those of weights concentrated near the middle; but, that weights concentrated near the middle produce greater relative resistance to a momentary inclining power, or to physical vibra-

tions, than weights near the extremities; and consequently, that concentrating the weights longitudinally will render the extent of the pitching-motion less, diminish the immense strains which this motion produces, and considerably improve the sailing of the ship.

Now, although the laws of mechanics are so well understood, and that in the theory all the forces which variously and constantly act on a ship, are considered on the simple principle of the lever; and, notwithstanding the most eminent authors tell us, that the most perfect ship will not shew its good qualities, except it is properly stowed; and that in the distribution of the weights longitudinally, an equality of weight and pressure should be preserved throughout; still no attempt has ever been made to accomplish this; and the French, as well as ourselves, are to the present day without a perfect system of stowage. And, notwithstanding that naval architects are fully aware of its importance, and that their abilities as constructors, and the qualities of the ships which they build, must greatly depend on it; still, the stowage hitherto has been left entirely to the seaman, and without the smallest guide to direct him in so important a task.

The late Dr. Young, in a paper published in the "Philosophical Transactions, R. S. 1814," gives a calculation of the weight and pressure in a modern seventy-four-gun ship. And M. Dupin, in the same work for 1817, gives a statement of the excess of weight and pressure in the different parts of a French seventy-four-gun ship. According to those statements, the defects in the stowage of French ships and in our own are similar, and nearly equal in extent. According to Dr. Young's statement, there is in the foremost section of thirty-seven feet an excess of weight of thirty-seven tons; in the next section of twenty feet, which takes in the fore cockpit, an excess of pressure of one hundred and nineteen tons; in the next section of fifty feet, an excess of weight of one hundred and eighteen tons; in the next section of twenty feet, which takes in the after cockpit, an excess of pressure of one hundred and eight tons; and in the after and remaining part, an excess of weight of seventy-two tons. The strain which this inequality of weight and pressure produces is very great, and M. Dupin recommends a more equal distribution of the weights, for the purpose of preventing arching. And, when we consider, that notwithstanding every possible means have been used to give strength and solidity to a ship, its form alters and becomes arched longitudinally as soon as it is in the water, and only in consequence of the extremities being heavier than the quantity of water which those parts displace. When this alone is considered, it is sufficient to prove the necessity of a system of stowage which would equalize the weight and pressure throughout. And we may very naturally conclude, that, in consequence of the present imperfect system, few, if any, of the French

ships, or of our own, have yet attained their fastest possible rate of sailing. It is therefore very evident, that a more perfect system of stowage would not only considerably improve the sailing of our ships, but, by diminishing the great strains on the hull, masts, and rigging, render them more durable, and longer effective without requiring large repairs, and the masts less liable to be sprung or carried away.

But, when the stowage is left entirely to the seaman, he should be furnished with some guide to direct him; and, as an equalization of weight and pressure, or as near an approach to it as possible, is absolutely necessary, he should be furnished with the amount of displacement in each of the several sections of the ship, and also with the amount of the weight of every thing included in each of those sections, *except* the ballast, water, provisions, stores, &c., which are left to him to stow; and the differences between the several quantities will be the amounts of weight required in their respective sections to equalize the weight and pressure. And such a system would give to a ship a natural tendency to seat itself properly in the water.

The proper seat of a ship in the water is one of those fixed principles which ought not to be departed from, except as a temporary means of improving the stowage when the masts may be badly placed; for, by doing so, the views of the constructor are departed from, and one important point is sacrificed for the attainment of another. Seating a ship properly in the water by means of a perfect system of stowage, would also lead to a practical and correct knowledge of the proper positions for the masts, and which, as well as their proportions, all authors have hitherto acknowledged difficult to determine. And there does not appear to be any obstacle to fitting the partners when a ship is building, so as to admit of the positions of the masts being altered when required without much trouble or expense.

A paper on stowage was published in the United Service Journal for August, 1830, in which two new methods are suggested for distributing the weights in the orlop-deck of a seventy-four-gun ship. It has been read, and approved of by distinguished naval officers, and by naval architects. But various means may be adopted, and those suggested are more for the purpose of advocating the principle, and proving that it may be effected, than considering them as actually the best; and, among other things, when coals are stowed in the forepart of a ship, removing them further aft, and stowing water in lieu, would materially contribute to the object desired; as the quantity of water which would fill a space requisite for five or six months' coals would be consumed in a few days, and, as tanks can be made to any form, no room would be lost. And, when ships try their sailing qualities, if they are not equally well stowed, their sails equally well made and on the same principles,

and their yards trimmed to the same angles, no correct estimate can be formed, of which is the most perfect model, or possesses those qualities which would produce the greatest superiority in sailing.

These are national questions, and most important ones, and all those who feel an interest in them, and are sincerely desirous of promoting and improving the science of naval architecture on sound principles, must divest themselves of every species of jealousy or prejudice. Science and practice must also be combined; but, unfortunately, the practical knowledge of the seaman, which might assist the constructor in his design, is at present as imperfect as the theory; and there is no greater impediment to its improvement than the want of a perfect system of stowage. And the imperfect system of masting alone is a sufficient proof of the absolute necessity of science in naval architecture; for, notwithstanding the numerous alterations which, during many years, have been made in the masts of ships to adjust them to their stabilities, still *those* means have not led to a discovery of the error.

Plymouth, September 21st, 1833.

III.—Prevailing Winds of the British Islands.

The following table shews the daily winds for each of the years from 1820 to 1829, inclusive, compiled from the Meteorological Journal of the Royal Society of London:—

Year.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	Total Easterly Winds.	Total Westerly Winds.	Total Northerly Winds.	Total Southerly Winds.
1820	57	21	54	27	39	47	87	33	1	102	168	111	113
—1	36	15	56	20	41	49	112	35	1	91	196	86	110
—2	42	24	59	18	39	46	111	24	2	101	181	90	108
—3	43	30	50	19	31	46	106	37	3	99	189	110	96
—4	50	19	53	9	38	30	127	38	2	81	195	107	77
—5	47	26	49	22	29	33	120	35	4	97	188	108	84
—6	27	49	35	45	21	106	26	55	1	129	187	131	172
—7	40	54	12	49	20	125	19	45	1	115	189	139	194
—8	36	29	28	47	31	132	20	40	3	104	192	105	210
—9	42	59	32	39	21	74	43	54	1	130	171	155	134
Mean	42	33	43	29	31	69	77	39	2	101	186	114	129

Or, supposing a feather to have been abandoned to the wind at the beginning of each of these years, then the mean direction in which it would have moved by the end of the year is stated in the following table; and, assuming the strength of the wind to have

been equal throughout, the number of days which the feather would have advanced is also given :—

Year.	Direction.	Days.
1820	S. 86° E.	56
—1	N. 89 E.	92
—2	N. 84 E.	72
—3	S. 81 E.	81
—4	S. 74 E.	91
—5	S. 75 E.	86
—6	N. 58 E.	47
—7	N. 58 E.	54
—8	N. 39 E.	95
—9	N. 57 E.	38

Or the mean direction in which the feather would have travelled each year would have been N. 78·9° E., 71·2 days.

IV.—Measurement of British Shipping.

To the Editor of the Nautical Magazine.

Sir—Finding in the Nautical Magazine for this month,* some observations on the mode of measuring ships, with suggestions for an alteration thereof, and hearing that this subject is now under the consideration of a "Tonnage Committee," I take the liberty of offering a few remarks thereon.

That the effect of the existing mode of measuring ships in this country is to force ship-owners to construct their vessels in an objectionable manner is unquestionable, and the different suggestions offered by the ingenious gentlemen whose propositions are inserted in your Magazine, are well worthy attention, in so far as they give, in their results, a much nearer approximation to the real burthen of a ship, by taking into account its depth. Some of these, however, it appears to me, would still have the effect of burthening the ship of great beam with a larger nominal tonnage than the deep one. Those plans only, which, in their results, would give the *actual contents* of the inside of a vessel in cubic measure, are free from all objection; but this I fear is not to be accomplished—Dr. Inman himself (unquestionably a man of great ability) only stating that his plan gives *nearly* the contents; and it may perhaps admit of a doubt, whether his method would not in many cases produce results *far* from the truth. I question, indeed, whether the Doctor could give any thing more than an approximation to the truth, were he to endeavour to give the actual interior capacity of any ship whatever, much less lay down a rule applicable to every description of vessel.

* No. 23, for January.

Supposing, however, that a system of measurement which appears to be the best adapted for ascertaining the actual burthen of a ship, should be adopted: how would the owners of existing ships approve of having from thirty to perhaps one hundred per cent. added to the charges collected upon tonnage? Probably, however, it may be understood that parliament will consent to a reduction of these charges; but, to meet all interests in such an arrangement, I apprehend some very perfect plan of measurement must be hit upon.

Such being the positive difficulties in accomplishing the object these gentlemen have in view, that, although the existing method of measurement in its *effects* is destructive of all improvement, yet I cannot but think that it would, notwithstanding, be better to retain it, could any plan be adopted that would remove its injurious operation in the construction of ships: and it is such a suggestion that I now take the liberty of submitting to the "Tonnage Committee;" and this is nothing more than to remove all charges whatever that were collected upon a ship's register tonnage, with a clear understanding, or pledge of parliament, that this mode of taxing shipping will never again be resumed: a per centage being added to the duties on goods imported, equal to the amount of lights, and all other tonnage charges at present paid upon clearing and entering a ship—dock-dues being also entirely levied upon the cargoes. This may, at first view, appear a difficult measure to bring about. It is a bold proposition, I admit; and, although it may startle, it will, I venture to believe, bear consideration. I have thought of it long, and about twelve months ago suggested it through a popular publication, but it perhaps never met the eye of any one who would take the trouble of reflecting upon it. One great point must be conceded at the outset, that it strikes effectually at the root of the evil. We should not then see our merchant ships built of forms that give them the names of chests, boxes, washing-tubs, coffins, &c., but with the proper dimensions of a body intended to carry cargo, and sail upon the ocean with safety, stand without ballast, carry a cargo of equal weight throughout, without kentledge, and possess the proper qualities of a ship.

The idea of this disburthening of shipping from charges collected upon register tonnage, was suggested to me by observing in parts of the world where no such charges exist, the very superior forms of the merchant ships employed in their navigation; whilst in England there is an actual necessity, to avoid heavy charges, to construct a ship in the most unsafe manner imaginable, by giving her the greatest possible burthen, with the least possible nominal measurement: a mode of measurement which would, however, become pretty nearly correct, were ships constructed, as they would be, if the charges were removed as I have suggested.

I will proceed to state how the measure I propose may be turned

to the advantage of the ship-owners in other respects; as I think their interests may in the process be much benefited, without any other party suffering injury. And, first, in removing objectionable charges, it appears to me that the lights and tonnage charges fall upon the ship-owners in a peculiarly oppressive manner. I do not remember having heard their burthen touched upon in the view I take of their injurious effects. Shipping, unquestionably, is supported more by carrying gross and bulky articles of small value, than fine and valuable cargoes. Now, suppose a ship to clear out for Canada, and return with a cargo of low-priced timber, and suppose that ship to be of such nominal tonnage as charges her with lights, &c. &c. out and home, amounting to £30, and that her cargo costs only £300, then we have ten per cent. charge upon such article; and if the same ship brings home a cargo worth £60,000, the same charges amount to one shilling per cent. It may be answered, that these charges fall upon the consumers, and not upon the ship; which, though true in theory, is not always so in its practical effects. But, supposing it even in this instance to hold good, why should the consumer of timber pay so much, and the wearer of silks and consumer of luxuries next to nothing? A tax should therefore be levied upon articles of luxury imported, equal to pay the Trinity-House for the lights, and compensate the customs department for other tonnage charges. I cannot, indeed, see why the lights should not become a national charge, upon the same principle as quarantine expenses have done.

By a judicious selection, such articles might be exempted from any additional tax levied to compensate for the removal of charges on tonnage, as would be a considerable relief to shipping, and promote national industry: the same object being kept in view by the dock companies, in compensating themselves for the abolition of charges upon ships, by an increase of dues upon their cargoes.

The removal of all tonnage charges would be beneficially felt by the ship-owner on sending his ship to sea; he would not have to put his hand in his pocket for a shilling, for charges on clearing out; and, although it must be conceded to the merchant, that he is to have his goods carried for so much less freight as he is to be burthened with in his goods being taxed, yet the compensation being payable on the importation at the end of the voyage, there s a clear gain to the ship-owner in the use of the money otherwise expended at the outset, and its insurance for the whole voyage; a gain, moreover, without any one losing. This alteration would also effect an immediate and very important impulse to the employment of British shipping; for, of course, every charge as heretofore would remain in force upon foreign ships, until there was the most complete understanding of reciprocity in their ports. The continuing this charge on foreign ships until such arrangement is come to, could form no possible subject of complaint on their

part; it would be a tax they voluntarily retained themselves subject to; and as I would make no distinction in their favour, in respect to any increased duties incurred to compensate the withdrawal of the tonnage charges, it would be for some time probably a source of revenue not disagreeable to the Chancellor of the Exchequer; to which the dock companies would contribute, by collecting for government account the dock charges on foreign ships.

These sources of revenue might perhaps be allowed to form a fund, to reduce ultimately some burthen pressing upon shipping. The general adoption of such a compromise for port charges, would, however, I think, be soon found desirable by all countries to accede to, if adopted by this in a decided and peremptory manner; but it would, nevertheless, require some time; and in the interim British ships would undoubtedly be much benefited, and it would be a little *bonus* to them they much require, and which, after the long suffering of their owners, is their due.

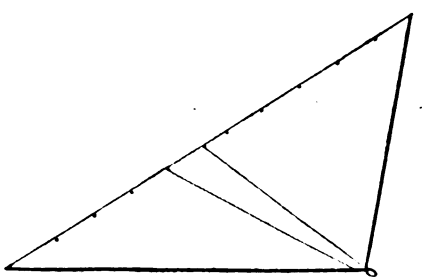
MERCATOR.

January, 1834.

V.—METHOD OF STRENGTHENING SAILS, *by substituting Small Rope for Bands.*

To the Editor of the Nautical Magazine.

HAVING had occasion to repair some sails at sea, after all the spare canvass on board had been expended, and requiring to strengthen a schooner's heavy fore-stay-sail which had been split, I substituted small rope for a band, which I carried right across the sail from the clue, or sheet, to the bolt-rope of the luff. This



rope was six-thread, and sewed fair along the canvass, round the rope, the whole way; spliced into the bolt-rope of the luff at two separate hanks, and passed through the eyelet-holes of the sheet cringle. This plan I never recollect having heard of, and I am disposed to think that it might be advantageously adoptedin strengthening old sails, if not also an improvement upon the bands of

canvass as at present used. It especially strikes me, that it would give important additional strength to all heavy fore and aft sails, if carried across the sail as above described, in the direction where the resistance depends upon the canvass alone, independent of the bolt-rope, as in cutter-jibs, and sails cut with a round foot. In the present instance I have used New-Zealand rope, which, contracting with wet something more than the canvass, insures its support being brought into full operation when most required; sails being mostly wet in the worst of weather, the expansion of this description of rope, when dry, leaving no fear of the sail being girted in fine weather.

It may become questionable, how far such bands of rope would chafe the canvass: but, supposing any advantage to be gained by the adoption of rope generally for this purpose, a narrow piece of canvass (of two or three inches) might be brought on first; and, with such precaution, it appears to me that a great additional strength might be gained by such bands adopted as reef-bands, &c. &c. I should also apprehend it would be some saving of expense, and the sail in wet weather would be lighter, and sooner dried. I shall take this opportunity of stating what I have observed as a great defect in the application of bands and doublings in sails, which are generally left short of the proper points of support, and I think should be altered, as I will take the liberty of suggesting, for example, in a square topsail:—The reef-tackle bands should extend down to the middle band; the top lining should be supported, and attached to the middle band; one cloth at each end extending to the lower reef-band, as well as the two in midships being carried to the head. (This latter is usually done.) I have always observed, that when linings are left without being attached to a band, their weight injures the sail just above them; and, that in the same way, bands used for strength strain the canvass at their extremes, if not attached to some other band. Bands in fore and aft sails sometimes only reach to the leach linings, which I have seen torn out in the way of the sheet-cringle in consequence. They should clearly be attached to the bolt-rope.

These observations may be of some use; and if you think so, you can insert them in your useful Magazine.

A MASTER OF A BRITISH MERCHANT SHIP.

VI.—RUINS OF PHILIPPI. *Extract from a Letter.*

HAVING anchored off Cavallo, (the ancient Neapolis,) I gladly availed myself of the opportunity of visiting the plains and ruins of Philippi, scenes famous in the civil and religious history of the

world. On these plains fell the last champion of Roman liberty, the noble Brutus, so ably dramatized by our immortal Shakspeare; and it was amid these ruins that the great apostle of the Gentiles first preached in Europe that gospel which promises "peace on earth and good will towards man."

On landing, I found that we should procure horses for the excursion much sooner by waiting on the Governor, who is a Bey, and a relative of Mahomet Ali of Egypt. This great man himself is a native of the place, which is indebted to him for the foundation of an excellent school, and for the repairs of an ancient Roman aqueduct of two tiers of arches. This aqueduct conveys the most delicious water a distance of eighteen or twenty miles from the opposite side of a valley. It was between 10 and 11 A.M. when, on entering the residence of the Bey, we found his Excellency at breakfast, with a party of which he made the third. They were seated on the floor, round a circular copper tray, elevated on a block of wood about eighteen inches. On this tray the dishes succeeded each other singly in the centre, being removed as each of the party had helped himself to his satisfaction, by dipping his fingers into that part of it nearest to him. A few mouthfuls of each sufficed, and the fingers were dipped into a vessel of water as a fresh dish appeared. This amusing evolution was repeated about six times, when a more perfect ablution was performed, and, after a sententious grace, each individual retired a few paces back to his seat on the ottoman, which always occupies three sides of a Turkish chamber. The whole time employed in the repast did not exceed ten minutes. Pipes and coffee were then brought, of which we partook, talking of the affairs of Europe under a cloud of smoke; while the Bey despatched his messengers for our horses. This, however, being a work of time, after discussing some excellent tobacco, we strolled about the town.

The ground which Cavallo occupies is rather high, presenting cliffs towards the sea, and sloping down to a valley in the north-east, behind the town. This valley terminates in a slight indentation towards the coast, which forms a small port, well sheltered from the violent north-east winds that prevail. The higher portion of the town, where the Turks reside, is clean, and in good order, but the lower part, about the landing-place, consists entirely of poor dirty hovels, inhabited by Greeks and Franks; most of them are small wine-shops.

Our horses being provided, and the wretched wooden pack-saddle (or sumarra) being in two or three instances replaced through the kindness of the Austrian Vice-Consul, by Turkish or European saddles of a less galling construction, we left the town, and almost immediately began to ascend, by a very steep and rugged ancient road, the hills which border on the coast, and rise to a height of ten to twelve hundred feet. On reaching the

summit, we had an extensive view of the vast plains of Philippi, having all the appearance of an inland sea; with the ridges of the adjacent mountains like capes stretching into it. From the point we had gained, the Acropolis of Philippi stands out conspicuously perched on a sharp peninsular hill about eight hundred feet high, connected with the eastern chain, but very precipitous on its western side. The descent to the plains is by a steep declivity, in which the ancient road could be easily traced. We soon arrived at a chiflik, or farm, belonging to the governor of Cavallo, the neighbourhood of which is highly cultivated, the soil being eminently rich; but the population of the country being thin, the greater part of these plains lie fallow. For about an hour and a half we rode along a level good road, without passing any thing particular but a Turkish burying-ground, when we arrived at a small village consisting of about six or eight huts. Here we observed a large square stone, about fifteen feet high and five in thickness, two sides of which bore a Roman inscription, but greatly defaced. It appeared to have been the boundary-mark of some district or estate; and about two or three miles further to the eastward we observed an object very similar to it.

In half an hour after we reached the site of Philippi, which now presents a mass of ruins, no feature of this celebrated city being discernible (at least to the casual visitor) excepting part of a Roman temple. And this lonely relict of its former grandeur has been preserved amid the general decay by the strength of its angles. It appears to have been among the latest edifices of this once populous town, which is described in the Acts of the Apostles as being "the chief city of Macedonia, and a colony."

The temple had been built of the small red Roman brick, and had two tiers of arches. Above each of them was a cornice of stone, finely carved, the corners and arches being also formed of stone. Among the ruins near the foundation were observed fragments of stone, bearing Greek characters of a much earlier date than the edifice itself appeared to claim.

The town lies close to the western foot of the hill before mentioned, the sides of which served, as was common in the days of Philippi, to form part of the Amphitheatre, the seats being still in some places visible. Owing to the delay of getting horses in starting, it was so late before we left Cavallo, that time did not admit of our examining the ruins closely, or of ascending to the Acropolis, in order to discover the date of the architecture. This building appears to have occupied a most commanding position, and was of considerable size, the walls still being in a tolerably perfect state of preservation. The magnificent plains on which these ruins stand extend to the northward as far as the eye can reach, and, from the richness of the soil, would be capable of supporting a very large population.

In sending you the foregoing sketch, I regret not having made my observations with greater accuracy. Allow me here to recommend my brother officers to bear in mind, in the various parts they have opportunities of visiting, that what is before their eyes may perhaps never have been seen or described by any one, and, that, with very little trouble to themselves, they may contribute greatly to the stock of scientific research. I would first urge the necessity of noting down at the time whatever observations may present themselves. The principal objects of inquiry, viz. produce, commerce, population, &c., will present themselves to every one; but I would, for more minute purposes, recommend an excellent and elaborate set of questions drawn up by the Rev. E. Stanley, by which new sources of information are opened, and more knowledge gained in a single visit than in twenty without them.

VII.—Cinque Port Pilots.

To the Editor of the Nautical Magazine.

Sir—A considerable defect exists in respect to the arrangements for the boarding of ships by pilots, on approaching the Downs from the westward, and as ship-owners are made to pay a heavy additional charge to the pilotage, for keeping up the cutters that are supposed to be always cruising about Dungeness, to furnish pilots, and for the expense of boats for bringing them off when the cutters are not to be found; I cannot but think, if the defect was more generally known, it would be remedied.

I will just state what has recently occurred to myself. I approached Dungeness about midnight, (it was a beatiful fine clear night,) having a light at the mast-head, and firing guns repeatedly, I passed as close round the point as possible, but no cutter was to be seen. At 3 in the morning I was off Dover; the light still at the masthead, and guns were fired; but no pilot made his appearance. If I had got a pilot either out of the cutters or on arriving off Dover, I should have been off the North Foreland by daylight, and in the river before night; instead of which, I was kept lying to off Dover for full four hours; the pilot not coming off till broad daylight, (past 7,) by which a day was lost.

This is not as it should be, and is not what ship-owners have a right to expect, in return for the heavy charge for boarding. That the cutters do not keep a good look-out is notorious; they carry no distinguishing light by which ships can search for them; and I consider ships passing in the night run the risk of about fifty to one, that they do not receive a pilot out of them. It is only in the nights, or in dark thick weather, that a pilot can be supposed to

be of any use to the westward of the Downs; as, of course, nobody wants one so far on a fine clear day.

The utility of the cutters altogether, I think, may well be questioned, that is to say, in practice: the advantage of boarding during the night, and in bad weather, off Dungeness, is not to be doubted, although this is not now of so much importance as formerly, since the entrance into the Downs has been made so plain by the light on the South Sand-head. The cutters being missed, the next consideration is the arrangements for bringing off pilots higher up, and these are as defective as they well can be. According to my information, (which is derived from a Dover pilot,) the first boat that speaks a vessel wanting a pilot, is to go on shore and bring one off. No other boatman will interfere, or can be had. Now, in my case the other day, a boatman did speak me almost immediately on my arrival off Dover, and he went away for the pilot. We were so near the shore, that he must have been there long before 4 o'clock; and what I should like explained, and what the public have a right to know, is, the reason why the pilot did not make his appearance till past 7 o'clock. I believe the pilots are not to blame. I have every disposition to speak well of them, having found them attentive and able men upon all occasions; but the fact is, that they are altogether at the mercy of the boatmen, as much so as an individual would be that happened to be at Dover requiring a boat.

If some better arrangement cannot be made, so that an effective boat's crew be kept up, and on the alert all night, to put a pilot on board immediately on a ship's arriving off Dover; and if they will not understand that a ship's coming up with a light at the masthead, and firing guns, is a sufficient indication of a pilot being wanted; but that they must wait quietly in their beds till a boat is actually sent for them from the ship: why, then I think the whole establishment west of the Downs had better be done away with, and let us find our way quietly to that anchorage, and take a pilot in the morning after he has breakfasted, and can come off comfortably by daylight. The expense would, in a great measure, be saved, and in practice I really do not see that any increased risk would be run; for I consider, that as pilots are so rarely to be had in the night, the exceptions being so few, do not compensate for the trouble, delay, and sometimes risk, we run in looking for them.

I am satisfied, that the uncertainty and difficulty of procuring pilots in the night will be acknowledged by the commanders of ships generally. Nearly the same circumstances have occurred to me twice within these last twelve months, as regards the difficulty of falling in with the cutters; having on one occasion been lying to in a fine night close off Dungeness from three to four hours, without either coming near me. If these cutters were obliged to

exhibit some peculiar light, we might then find *them*, if they would not look for ships coming up; and if they happened to be engaged putting a pilot on board some other vessel, we should endeavour to approach them, and wait their convenience to supply us in our turns.

A MASTER OF A BRITISH MERCHANT SHIP.

December, 1833.

VIII.—COMPASS BEARINGS FROM THE BINNACLE.

OUR nautical readers are well aware of the rough and uncertain manner in which the bearing of an object is generally obtained with the binnacle compass. The hand laid across it, in the direction of the object, is generally the only assistance the eye has, to get its bearing; a method which is evidently liable to considerable error. To remove this entirely, Commander E. Belcher of the Royal Navy, has proposed the following ingenious and simple contrivance, which he adopted with perfect success in the Ætna, and which we believe is at present in use on board one or two of his Majesty's ships. Fig. No. 4, which represents the upper part of a ship's binnacle, will serve to explain it, almost without our assistance. A piece of copper is made to pass through the upper part of the binnacle, formed with a shoulder so as to rest on a copper plate fixed there for the purpose, and on which it is allowed to turn freely. The upper part of it is branched off in two arms, at the necessary height from the binnacle, and at the end of each arm is a crutch for the reception of a glass, as shewn in the figure. To the lower part of the piece of copper are fixed two other slight pieces of the form shewn in the figure, passing down into the binnacle immediately over the compass; and the ends of these are connected by a piece of string stretched tightly between them. Care should be taken that the principal piece is well centered, so that the string should always pass over the centre of the compass. Hence, in taking the bearing of an object, the observer has only to see it through the telescope, and, casting his eye immediately on the string, the exact point of the compass which it intersects will be readily seen.

IX.—NOTES ON NEW-ZEALAND, ETC. *By an Officer of His Majesty's Ship Zebra.*

ON the 14th of November, 1832, his Majesty's ship Zebra, after a short passage from Sydney to New Zealand, cast anchor in the beautiful Bay of Islands. We soon found by experience the esti-

mation in which our countrymen are held by the natives, for we had scarcely made a snug ship, when the chiefs and natives flocked on board in great numbers, and a brisk trade in hogs, &c. &c. was soon commenced; knives, axes, and chisels, &c. being taken by them in exchange from the crew. We had been preceded by the French corvette La Favorite, the officers of which vessel had explored and surveyed, as far as they could, every part of the bay and adjacent rivers. We were informed, moreover, that the natives would hold no sort of communication with them, and had torn down, wherever they could get at them, their surveying marks; and that the vessel had sailed for South America a month before. The natives we found were still apprehensive of an attack from the French, in consequence of the massacre of Marion and twenty-six of his crew in 1771.

Mr. Earle, who resided some time among these people, has given the following particulars of this melancholy event, as related to him by one of the chiefs of the island. It differs from the published account, but, being from native authority, is likely to be correct. He says, our friend George generally paid us a visit after the business of the day was over, and took a cup of tea; wine or grog he detested. So, while he sipped his beverage, we lit our pipes, and managed, with our slight knowledge of his language, together with his imperfect English, to keep up a sort of conversation. Sometimes this was rather wearisome, but occasionally it became interesting in the extreme. He told us, that when Captain Cook touched here, he was a little child, but that his mother (old Turco, who was then with him) remembered his coming well. The French navigator, Marion, he recollected perfectly, and made one of the party that murdered him and his people. His observation was, "They were all brave men, but they were killed and eaten."

He assured us that the catastrophe was quite unpremeditated. Marion's entire ignorance of the customs of the New-Zealanders occasioned that distressing event; as I have before observed, that strangers not acquainted with their religious prejudices are likely to commit some fatal error; and no action is more likely to lead a party into danger than an incautious use of the seine; for most of the beaches (best suited for that purpose) are tabooed. This led to the dreadful fate of Marion and his party. I understood from George, that when Marion's men assembled to trail their nets on the sacred beach, the natives used every kind of entreaty and remonstrance, to induce them to forbear; but either from ignorance or obstinacy they persisted in their intentions, and drew their net to land.

The natives, greatly incensed by this act of impiety, vowed revenge; and the suspicions of the French not being roused, an opportunity soon presented itself of taking ample retaliation. The

seine being very heavy, the French required the assistance of the natives in drawing it on shore. These wily fellows instantly consented to the task, and placed themselves alternately between each Frenchman, apparently to equalize the work. Consequently, in the act of pulling, each native had a white man before him, and, on an oppointed signal the brains of each European were knocked out by a tremendous blow of the stone hatchet.

Captain Marion, who, from his ship, was an eye-witness of these horrid murders, instantly hastened on shore with the remainder of his crew, to avenge the slaughter of his countrymen. Led on more by ardour than prudence, he suffered himself to be surrounded, was overpowered by numbers, defeated, and every one was put to death.

This was not forgotten, and the natives were apprehensive that the French ship was come to their island, for the purpose of taking vengeance for the deed. But, after all, it was but an act of retributive justice on their part, which forms part of the character of the New-Zealanders; for Tourville, the year before, had landed, and burnt several villages, and carried off a chief. It was in that year also, that Mr. Rowe, a midshipman of his Majesty's ship Adventure, was cut off with his boat's crew. Neither was this premeditated on the part of the natives, but arose from a hasty quarrel. It is also well known, that the massacre of the Boyd arose from the ill-judged conduct of her captain. The attachment of this fine race of people to the British government is, nevertheless, very great; and, in consequence of this unexpected visit from the French corvette, and the annoyance they experience from our runaway convicts and others, who are distributed in small bodies all over the islands, but who are never to be found on the appearance of a ship of war, the chiefs petitioned that they should be formally taken under our protection. The propriety of such a measure must be reserved for the decision of the legislature, but the policy of it is worthy of consideration. One of two things is desirable; either to comply with their wishes, under certain stipulations, or to employ a more adequate force to protect the valuable trade of New-Zealand, as well as the commerce of the whole of the South Pacific archipelago.

The population of this quarter of New-Zealand, in a range of fifty miles in length, is about 34,000. The trade, in flax, timber, hogs: and the value of those articles imported into Sydney in 1831, amounted to £15,000. These valuable articles are received in exchange for muskets, powder, blankets, hardware, and piece goods generally. The benefit they have derived from the residence of the Church Missionaries among them (there are five at the Bay of Islands district) seems as yet to be very limited; for, as far as I was able to judge, there were but few converts. Some who were taken young into the missionary establishments have shewn signs

of intelligence, and, in outward appearance, of Christianity; but when they have grown tired of the restraint imposed upon them by their preceptors, they have returned quietly to their old habits and customs. It has been correctly stated by the Wesleyan Missionaries, who have an establishment of between seventy and eighty at Flokianga, according to the information I obtained, that the position which this colony occupies in the southern hemisphere, gives it a peculiar interest to the friends of missions. It possesses extraordinary facilities for the dissemination of the gospel among the numerous islands situated at no great distance from it, the inhabitants of which are immersed in the deepest darkness of pagan superstition. But, in regard to New-Zealand generally, particularly when Cook and Marion visited it, the natives were then so wild and barbarous that Europeans were afraid to trust themselves among them. However, it was soon found that their hasty and clamorous manners gave way before the mild and conciliatory behaviour of their visitors, and that their cruel disposition was not so strongly manifested in regard to Europeans as towards each other. It was then, as it is now, that the weaker party always became a prey to the more powerful.

Mr. Earle very justly observes, that whenever a misfortune happens to a community, or an individual, every person, even the friends of his own tribe, fall upon, and strip him of all he has remaining. As an unfortunate fish, when struck by a harpoon, is instantly surrounded and devoured by his companions, so, in New-Zealand, when a chief is killed, his former friends plunder his widow and children; and they, in revenge, ill-use and even murder their slaves. Thus, one misfortune gives birth to various cruelties. What a complete picture is this of savage life? Mr. Earle also gives an admirable instance of the respect they have for Europeans, in permitting him and his party, consisting only of six persons, to interrupt the preparation of a feast upon an unfortunate female who had been murdered, and was eaten by them in spite of their having buried the mangled and half-baked remains. This act on the part of Mr. Earle, as he justly allows, was most unwise; and there is too much reason for believing, that in all violent proceedings with uncivilized nations, they have not been the aggressors.

The religion of the New-Zealanders is of ancient date: they acknowledge the Deity, worship him in their misshapen images, and consider the left eyes of their dead ancestors and friends as so many stars. They believe, also, that the souls of the wicked are hovering about the North Cape, and that the howling of the tempest is the cry proceeding from anguish, which they suppose them to be suffering.

It is much to be regretted that the Wesleyan Missionaries are not more powerful and numerous in New-Zealand, for, from their

mild, persuasive, and indefatigable habits, much more might be done.

On the subject of the missionaries' labours in New-Zealand, Mr. Earle relates the following, which appears to afford much for reflection as to the method adopted for converting the natives:— "The ceremony of all assembling to public worship astonished the natives greatly, though they always behaved with the utmost decorum when admitted into the house where the ceremony takes place. On the day in question, (a Sunday,) the minister endeavoured to explain the sacred mysteries of our religion to a number of the chiefs who were present. They listened attentively to all he said, and expressed no doubts as to its truth, only remarking, that, 'as all these wonderful circumstances happened only in the country of the white men, the great spirit expected the white men only to believe them.' The missionary then began to expatiate on the torments of hell, at which some of them seemed horrified, but others said, 'they were quite sure such a place could only be made for the white faces, for they had no men half wicked enough in New-Zealand to be sent there;' but when the reverend gentleman added, with vehemence, that 'all men' would be condemned, the savages all burst into a loud laugh, declaring 'they would have nothing to do with a God who delighted in such cruelties, and then, as a matter of right, hoped the minister would give them each a blanket for having taken the trouble of listening to him so patiently.' It is to be hoped that the reverend gentleman profited by this lesson. Surely such a method is making a beginning at the wrong end, and not much unlike the American missionaries at the Sandwich Islands." Mr. Earle also says that the missionaries "prevent the natives by every means in their power from acquiring the English language," which appears scarcely credible. But there is a wide field for them in that country. By a steady perseverance in acquiring a knowledge of their language, which bears a strong affinity with the language generally spoken, being from the ancient Egyptian root; and by teaching them, as in the other islands, to read and write, they might be ultimately rescued from that state of moral degradation which seems to be inseparable from their nature. To the friends of the missionaries I would say, "From those to whom much is given, much will be required;" and when we behold the gigantic exertions which the Wesleyan Missionary Society in the South Pacific is making, to spread the truths of Christianity through the islands in the archipelago, and the success which has crowned their exertions, it cannot but be regretted that the power of the Society is so crippled as to prevent their sending a larger number of labourers into so fertile a vineyard.

X.—Directions for Tide Observations. *By the Rev. W. Whewell, M.A., F.R.S., Fellow of Trinity College, Cambridge.*

(Continued from page 43, No. 23.)

The Semimenstrual Inequality.

The interval at which high water follows the moon's meridian passage, or transit, at a given place, varies from day to day, (being affected by the semimenstrual inequality.)
The *Vulgar Establishment* is the duration of this interval on the day of new or full moon.
The *Corrected Establishment* is the mean duration of this interval.

It has already been said, that the time of high-water is regulated mainly by the time of the moon's transit or southing. The establishment is the interval of time by which the tide follows the moment of the moon's southing, on the day of new or full moon; and the interval at which the tide follows the moon's southing every other day is *not very much* different from this. It may, however, be different to the amount of above an hour, and we have now to speak of this difference.

If at any port, for instance, at London, we take the interval which elapses between the moon's southing and the time of high-water, on every day from new to full moon, we shall have the following succession:—

Moon's Age.	Tide after Moon's Transit.	Time of Moon's Transit.	Tide after Moon's Transit.
Days.	h. m.	Hours.	h. m.
1	1 57	0	1 57
2	1 45	1	1 42
3	1 32	2	1 26
4	1 19	3	1 11
5	1 6	4	0 56
6	0 54	5	0 45
7	0 46	6	0 42
8	0 43	7	0 52
9	0 45	8	1 23
10	1 1	9	1 56
11	1 27	10	2 10
12	1 57	11	2 8
13	2 8		
14	2 10		
15	2 4		

We see, in the second column, that these intervals are unequal; but after half a month, (from new to full moon, or the reverse,) we come back to the original interval; and if we were to go on further, to the 16th, 17th, and succeeding days of the moon's age,

for instance, that is, to the full moon, and 2d, 3d, and succeeding days from the full moon, we should have a recurrence of nearly the same intervals which we had on the day of new moon, and on the 1st, 2d, and succeeding days from the new moon.

In the above table, along with the intervals corresponding to the moon's age in days, I have placed the intervals corresponding to the hours of the moon's transit or southing. In fact, by stating the hour of the moon's transit, we determine her age, and determine it much more accurately than by saying she is so many *days old.* For, if we say the moon is three days old, (or that it is the third day of the moon's age,) this *may* mean any period of a lunation which is more than two, and less than four days from the new moon; and it will be nearer to the one or the other of these limits, according as the new moon took place at a late or at an early period of that twenty-four hours which we call the first day of the moon. Therefore, when we only know that the moon's age is three days, we only know that the interval of moon's transit and high-water at London ought to be less than 1 h. 45 m. and greater than 1 h. 19 m. But if the moon pass the meridian at 2 o'clock, solar time, we know that she must be exactly thirty degrees of hour angle from the sun, and, therefore, that the interval of transit and tide should be exactly 1 h. 26 m.* And the same reasoning applies every day, because the moon is, on every day of the month, at a different angular distance from the sun, and passes the meridian at a different hour of the twenty-four. And, therefore, though it is a very inaccurate way of describing the moon's age to say she is so many days old; it is a very accurate way, to say she makes her transit at such an hour.

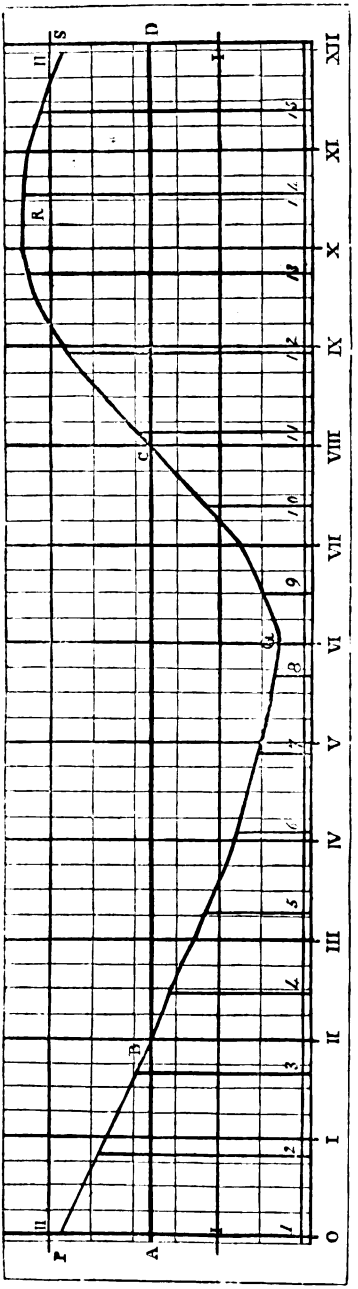
This way of marking the stage of the lunation, or semi-lunation, of which we have to speak, I shall adopt in future; and I recommend it to naval men, and to all persons who have to take into account the age of the moon, in cases where any sort of accuracy is required.

This being understood, I proceed to make some remarks on the inequality of the intervals of time between high-water and the moon's transit; and for the reasons just stated, I shall take the second part of the above table, in which these intervals are referred to the corresponding hours of transit.

1. The inequality of the intervals goes through all its changes, or completes its *cycle*, in a half-revolution of the moon, (in the passage from new to full moon, for instance;) it is hence called the *Semimenstrual*, or half-monthly *Inequality*.

2. The change of the interval will be more easily comprehended, if the changing magnitude is expressed by spaces which can be looked at by the eye at one time.

* In the whole of this section, I leave out of consideration all inequalities except the semimenstrual; as those arising from declination, &c.



Let a base-line be taken, as 0. I. II. III. IV. V. VI. VII. VIII. IX. X. XI. XII. in the figure, and this being divided into twelve equal parts, let lines be drawn perpendicular to it through all the points of division. Such lines are called *Ordinates*. Let there be measured on these ordinates, from the base-line, distances representing the twelve intervals in the last column of the above table; and let a curve-line, as PBQCRS, be drawn through the extremities of all these measured lines: this curve-line is the *Curve of the Semimenstrual Inequality*.

3. This curve has, for all ports for which sufficient tide-observations have hitherto been obtained, the same general figure. It has a *minimum* and *maximum*, or least and greatest ordinate, as at Q and R; or, as it may be otherwise expressed, it resembles the letter S laid along the line. If we proceed from the new (or full) moon, its height first diminishes, then increases, and then diminishes again.

4. If a line be drawn parallel to the base-line, at a distance equal to the *mean* ordinate, the curve of the semimenstrual inequality will be *symmetrical* with respect to this line; and this line is called an *axis* to the curve.

Thus, the line ABCD, which is drawn at a distance from the base-line representing 1h. 26m. is an axis to the curve. It cuts the curve in the points B and C, and the parts before and after

the point B are exactly similar above and below the line; and also the parts before and after the point C.

This mean ordinate represents, for any place, what I have called the *corrected establishment*; which is what Laplace has called the *fundamental hour* of the port. The *vulgar establishment* is represented by the ordinate at the beginning of the curve, on the first day of the moon's age, or when the time of the moon's transit is 0.

5. Though the curve is symmetrical on the two sides of the line AD, it is not symmetrical with regard to the two ends of that line. The distance BC is exactly half of AD, but the curve makes a smaller angle with the axis at B than it does at C.

This circumstance in the form of the curve corresponds to this fact; namely, that the intervals (of moon's transit and high-water) increase more rapidly after their minimum than they decrease before it. They diminish from 2 h. 10 m. to 43 m. in nine days, and increase again from 43 m. to 2 h. 10 m. in six days.

This fact is hitherto found to be true, by experience, at all the places for which we have sufficient observations: it also agrees with the consequences of the theory. It will be seen in the form of the curves for London, Sheerness, Portsmouth, Plymouth, and Brest, if figures like the annexed figure be drawn for those places.

6. Since we know the effect of the semimenstrual inequality, we can correct for it; and thus, from a tide observed at any period of a lunation, deduce the establishment.

Thus, if at Sheerness, when the moon's transit was at 2 h. the high-water was at 2 h. 9 m., if we suppose the semimenstrual inequality to be the same as it is at London, we should reason thus:—The semimenstrual inequality makes the interval less by 31 m. when the moon's transit is at 2 h. than when the transit is at 0 h. (see the above table.) But in this case, the transit being at 2 h. the interval is 0 h. 9 m. Therefore, when the transit is at 0 h. the interval will be 40 m.; and 0 h. 40 m. is the vulgar establishment of Sheerness.

This assumption, that the semimenstrual inequality is the same at all places, for the same age of the moon, is not exact, in consequence of the difference of what I have called the *age of the tide*.

7. The intervals between the tide hours on successive days are unequal, in consequence of the semimenstrual inequality. These intervals are least when the tide is greatest, (at spring tides,) and greatest when the tide is least, (at neap tides.)

This will appear from the above table; for, since the semilunation is fifteen days nearly, (fourteen three-quarters more nearly,) the moon's time of transit, which increases by twelve hours in these fifteen days, will increase by forty-eight minutes nearly each day. We shall therefore have the following times of high-

water on each day, by finding the time of the moon's transit by the successive addition of forty-eight minutes each day, and the time of high-water by adding to this the interval at which the tide follows the moon's transit.

I neglect here the difference between thirty days and an exact lunation; and I neglect likewise the inequalities of the moon's motion: for these enter into another part of the subject. I suppose also the new moon to occur at noon on the first day.

Moon's Age.	Time of Moon's Transit.	Tide after Moon's Transit.	Time of High Water.	Difference.
Day.	h. m.	h. m.	h. m.	h. m.
1	0 0	1 57	1 57	0 36
2	0 48	1 45	2 33	0 35
3	1 36	1 32	3 8	0 35
4	2 24	1 19	3 43	0 35
5	3 12	1 6	4 18	0 36
6	4 0	0 54	4 54	0 40
7	4 48	0 46	5 34	0 45
8	5 36	0 43	6 19	0 50
9	6 24	0 45	7 9	1 4
10	7 12	1 1	8 13	1 14
11	8 0	1 27	9 27	1 18
12	8 48	1 57	10 45	0 59
13	9 36	2 8	11 44	0 50
14	10 24	2 10	12 34	0 42
15	11 12	2 4	13 16	0 41
16	12 0	1 57	13 57	

It appears from the last column of this table, that the time of high-water on successive days is, at springs, later by only thirty-five minutes each day; while at neap tides it is later by seventy-eight minutes, or more than double the former interval.

Nearly the same rule would be proved to hold at any other place.

This agrees also with the theory: according to the theory, the daily retardation of the tides at springs and at neaps respectively, should be in the proportion of the sum of the lunar and solar tides to the difference of the same tides; where, by the lunar tide, I mean the tide which the moon would produce if the sun were not there; and, by the solar tide, the tide which the sun alone would produce. Hence, the lunar and solar tides are in the proportion of fifty-six and a half to twenty-one and a half, or of five to two nearly.

The same rule would hold for the retardation of the tides from one *half*-day to another, except in so far as the rule might be modified by the effect of the *diurnal difference of the tides*.

XI.—On Chronometers—Magnetic Influence.

84, *Strand, Jan.* 18, 1834.

Mr. Editor—Although we feel reluctant to occupy even a small portion of your valuable pages with matters of a personal nature, yet the statement of Messrs. Parkinson & Frodsham in the Nautical Magazine of last month, demands a few remarks, which we hope you will do us the favour to insert.

As these gentlemen admit the "disturbing force" of magnetism, under certain circumstances, and are "far from imagining, that, because so much has been done for the improvement of chronometers there is nothing left to be desired," we do not materially differ in principle. The desideratum then is, to discover from whence proceed the acknowledged defects of this valuable instrument.

The well-known influence of iron on shipboard, on the compass, along with other circumstances, naturally led to suspicion that a balance and spring made of steel might be acted upon by the same cause; and it was for that reason Mr. Arnold some years ago substituted silver and platina for steel, which would unite all the advantages of the latter, without being subject either to magnetic influence or to oxidation. And here allow us to observe, that the experiments we made with the magnet demonstrate that a balance and spring composed of silver and platina is free from its influence.

But your correspondents wish us to believe, that, although the balances and springs may be made of steel, still no material effect can be produced by magnetism upon *their* chronometers, and in confirmation of this opinion they exhibit the rates of a few found to be only slightly affected by being placed in an iron chest. That may easily happen, without, we apprehend, in any degree establishing their case; for, as the upper side of an iron chest is in a contrary state, as regards polarity, to the lower side, the steel in the chronometers must be affected by two opposing forces tending to neutralize each other.

The mode adopted by these gentlemen of illustrating their opinion, in their concluding remarks, serves rather, we think, to corroborate our own, for, if a certain degree of heat will absolutely stop the machine, so the same cause is more or less, according to its degree, "a disturbing force," which, as every body knows, has required a long period of time, and very laborious investigation, partially to obviate.

The inference drawn from Mr. Bond's statement, we do not think will be very convincing to the minds of practical men; for, by the process of mixing together the previous shore rate, the sea rate, and *subsequent* shore rate, it is obvious that a very good rate may

result from the whole, though the chronometer made use of might, for all useful purposes, have been an indifferent one. To us it appears that the real matter in question is the difference between the mean previous shore rate and the mean sea rate. For example, a chronometer is taken on a voyage to India, and if its variations prove so great as to render it of little use during the passage, what utility can result from adding a rate found after the voyage has terminated, which, being compounded with the other two, may result in a good average one derived from the whole?

With all due deference to Captain Sabine, as an authority, we must be excused for doubting whether he has conducted experiments of so delicate a nature with attention sufficiently careful to pronounce an opinion so much at variance with those of other eminent men; and the more so, as he has not given the particular experiments from which he deduced so general a conclusion.

Our endeavours are directed to such an improvement and simplification of the chronometer as to bring an instrument formerly so costly, and yet so indispensable, within the reach of every person connected with the naval profession, without the smallest desire either to disparage the labours of others, or to assume any other merit to our own than what the public may deem them worth. And, as the nicest adjustment of materials, liable in themselves to variations from external influences, must always be attended with uncertain effects, we directed particular attention to the primary source of the defect, that is, the elements of which the machine is composed. If our experiments now in progress should answer the expectations we have formed of them, the object proposed will be fully attained, and our hopes of success continue unabated.

Now, if your correspodents possess the secret of divesting the steel balances and springs applied to their chronometers of liability to magnetic influence, they would render good service to the public by explaining the method of attaining it. At all events, until the means be afforded us of judging for ourselves, they must pardon us for adhering to the results of our own experiments, in preference to receiving assertions without what we consider to be sufficient proof.

After the unreserved manner in which our proceedings are exposed, they need not, we are sure, feel any just alarm about our misleading the public: and, as to the fact of chronometers so frequently assuming rates when taken on shipboard different from those received with them on shore, all persons in the habit of using these instruments have such ample means of forming correct opinions, as to preclude the need of saying a word on that subject.

We are, Sir, your obedient servants,

ARNOLD & DENT.

XI.—Port William at Redcar.

To the Editor of the Nautical Magazine.

Sir—I have been much surprised by a paragraph in the last report of the Ship Owners' Society, relating to the proposal for constructing a harbour at Redcar. As some of your readers may not have seen it, with your permission, I will lay it before them.

"The attention of your committee being drawn to a notice of an intended application to parliament, for making a port at Redcar, in Yorkshire, and levying tolls and duties from all ships passing the lights of the harbour, as well as from those making use of the same, an intimation was conveyed to the solicitor for the proposed undertaking, that if it were designed to persist in the attempt to impose a passing toll on shipping, the committee would feel bound, on the part of the shipping interest, to give the measure their strenuous opposition, and their watchful care will continue to be directed to this subject."

So says the committee of the Ship Owners' Society; or, in other words, that "in their watchful care" of the shipping interest, over which we are to suppose that they preside, they "feel bound to oppose," by their most "strenuous" exertions, a measure which has for its principal object the safety of lives and shipping between Flamborough Head and the Frith of Forth! (Query—Are there Newcastle or Hull ship owners among them, who settled the matter for the rest?) Well, I am quite sure that the ship-builders ought to be very much obliged to them—the more ships that are lost, the more they will have to build—but will the people at large take it so kindly? One thing is quite certain, namely, that they ought not.

The committee from which the foregoing anathema has proceeded, is that of the "General Ship Owners' Society," but I much doubt the Society being a fair representation of this class of the people of Great Britain. At all events, there are many *ship owners* like themselves, in the north of England, who have an opinion exactly the contrary of theirs. But let us consider this proof of their solicitude for the shipping interest, as it is termed, and let us seek for the grounds on which it is rested; for we are left to find them out as we can. Does it arise from the already depressed state of this said shipping interest from light-dues? It would not appear that it does, for in the preceding paragraph of this same report, is an approval of a proposed light-house on the Start Point, of course entailing passing tolls, &c. But the Start Point is a long way from the dry and shallow harbours on the east coast about Redcar, and therefore not likely to interfere with

their prosperity. For my part, I am glad to find that a light-house is to be given to the Start Point, because it will be of great service to vessels in enabling them to run into Torbay, for shelter from westerly gales in the channel. It is not, therefore, the fear of increasing the light-dues that has influenced the committee in their opposition to Redcar.

Now, the proposed light on the Start Point, and those at Redcar, it appears to me, are intended nearly for the same purpose. But how do they stand in the point of affording security to vessels from wreck? for this, after all, is the proper light in which they should be considered.

I shall now suppose, that the asylum harbour to be called Port William, is constructed, for that is the grand object of the opposition which is aimed at the lights. Torbay is secure enough with a westerly wind, but in the event of its hauling to the southward or south-east, of what use is it then? It is a lee shore; and even without a light on the Start, ships can do as they used to do, and stand on up channel. Nevertheless, I must not be supposed to treat the plan of a light on the Start, in the same kindly manner as the committee of the Ship Owners' Society has done those of Redcar. I shall be glad to see it, and so will my brother skippers.

But is the Start a dangerous coast? How is it with regard to wrecks, in comparison with those about Redcar? Alas, Mr. Editor, how lamentable the difference! Seldom, indeed, do we hear of wrecks there, when the Tees Bay, nay, the best ports themselves on our eastern coast, between the Thames and the Firth of Forth, give every year sad proofs of their insufficiency as harbours, the dangers of their bars, their adjacent sands, and the total incapacity of some to receive vessels of any considerable burthen. Really, with these facts before them, and the present state of affairs with regard to the China trade, our northern ship-owners should open their eyes, or they will be left in the lurch by their brethren of the south.

But I have yet to inquire the reason of this opposition to a passing toll for Redcar. Are the southern ports more frequented than the eastern? Can any of them, or all of them put together, shew as many clearances of vessels as Newcastle, Sunderland, or Hull? Why, no less than 9,823 vessels cleared out of Newcastle as far back as 1819: what must the number be now? From Sunderland, in 1829, there were 9180, and at Hull, the dock dues alone, in 1830, were paid on the enormous quantity of 313,815 tons of shipping. What can the ports of the south coast shew in comparison to this?

It is not to be wondered at, that we hear of so many wrecks on the east coast, when it is navigated by this immense number of shipping, dangerous as it is, and without a secure harbour that can

be resorted to with certain safety in bad weather. And the committee of the Ship Owners' Society would crush in its very infancy, an attempt to form one, where nature herself has done half the work, and this, too, in the most favourable locality. I was going to say something about the short-sightedness of mankind, Mr. Editor, but it occurred to me, that there is such a thing as party influence, and this has been known to mar the fairest project.

Well, but I have not yet accounted for this cool, deliberate, and premeditated hostility to an asylum harbour at Redcar, or rather to the lights for the proposed harbour, because application is intended to be made for a passing toll for them, of one halfpenny per ton on loaded vessels.

Now, for the Spurn lights, Winterton and Orford lights, Harwich harbour light, private proprietors receive a half-penny per ton from passing ships. The Fern lights receive three farthings, Flamborough Head, one farthing; the Spurn floating light, one farthing; the Well floating light, one farthing; Foulness, one farthing; Haisborough Sand light, one farthing; and the Sunk Sand light and buoys, one halfpenny per ton, from all vessels passing them, foreign vessels paying double. Will you inform me, Mr. Editor, or perhaps this same committee will do so, of what use is Harwich light, the Well light, and Foulness light, to vessels passing; and if they should be too far off to be seen at sea, tell me whether they can guide vessels of any size into an asylum harbour, where they would be safe from the violence of the gales which produce such dire destruction on their coast. It is well known that they are perfectly useless to them, and yet they receive a passing toll; and, because for the contemplated harbour at Redcar, a halfpenny per ton is required as a passing toll, with all the advantages of *depth of water, capacity* to contain shipping, and *facility of entrance* at all times, in consequence of its favourable locality, it is to meet with the strenuous opposition of the committee of the Ship Owners' Society, in their "watchful care," of the shipping interest! I had thought they would have been the first to promote it, but, alas! it was in my own native simplicity, for I forgot all about rival interests, &c. &c.

I have expressed my doubt that the Ship Owners' Society is a fair representation of this class in Great Britain. How is it there is not a Liverpool man on their committee? Besides, I happen to know a ship-owner, (and also that there are many more similarly circumstanced,) who has a vessel which cost him between two and three thousand pounds. Now, this gentleman is one also of a society of ship owners, and he has paid, during the last six years, nine per cent. annually, for losses suffered in it, the greater part of which losses occurred between Sunderland and Scarborough. He can see full well the advantages that Redcar harbour would afford, and hesitates not to say that a halfpenny per ton is

a trifling charge, and that the harbour would effect a saving of property to a far greater amount to the ship-owner.

It would not be "in keeping," perhaps, to say anything about the saving of life, at the same time when the question is about £. s. d. The insurance, in fact, would fall at once to little or nothing, for property would be comparatively secure, to what it is at present. It is well known that masters of vessels dare not run for Whitby and the other ports near it, in bad weather, for fear of being discharged by their owners, and being thrown with their families "out of bread." They must, therefore risk their lives with things as they are. But with Redcar harbour constructed, they could run for it without the fear of injuring their vessels; and, more too, they might anchor in safety in the bay to leeward of it. Therefore, Mr. Editor, the *real* ship-owners will be benefited by it; and, in point of security, Redcar will be equal to any in Great Britain.

Now, if I thought that the "watchful care" of the committee to prevent the construction of this harbour proceeded from a regard to the depressed state of the shipping interest, I would give them the credit of it. But they have acquiesced in taxing the shipping interest with a light on the Start, therefore it cannot be that, unless they thought that two lights would be too much at a time. But I am tired of guessing, and shall leave the enigma to be solved by our northern ship-owners.

A parting word, and I have done. Was the committee of the "Ship Owners' Society," for I cannot call it by its first cognomen, "general," was it aware of all the advantages already supplied by nature for the formation of Redcar harbour; was it aware of the extraordinary advantages which, when constructed, it would dispense to shipping, and therefore, to the country; that it would, in fact, become one of the first harbours of England; that it would be the means of reducing, in no inconsiderable degree, the frightful loss of shipping on that coast; that it would be the means of establishing a flourishing trade in an important part of the country; that, with these advantages, and many more too numerous to mention, in the event of a future war with eastern Europe, Redcar harbour would be invaluable as a naval station? Was it aware of all this, when it deliberately determined on hostility to its construction? a hostility to be preserved with the most "watchful care," while it extended its fostering approbation to the erection of a light-house on the Start, where not one of these advantages is to be found? I give them the credit of wishing well to their country, of possessing the feelings of humanity; and will answer for them, "No," such a thing is impossible. But there is something behind the curtain,—something yet required, to explain why our eastern trade, extensive as it is, should not receive the same *protection from the Ship Owners'*

Society, as our western; and why such a body as this should determine on resisting a measure that would at least have the effect of saving *life* and *property*, in the shape of *sailors*, *ships*, and their *cargoes*.

Although, then, I cannot help smiling at the importance of this *decree* of the Ship Owners' Society, I really do regret to see it recorded. But to the friends of the contemplated harbour, I would say, "Heed it not—persist in the work you have begun—when you have succeeded, you will have the proud gratification of knowing that you have conferred an inestimable benefit on your country, in having effected a measure, which will add to her strength and her commercial prosperity, by providing a harbour to save her ships and their crews from destruction."

A BRITISH SEAMAN.

Lloyd's Coffee-House, Jan. 20th.

"A British Seaman" will find our own opinion of this project in No. 15 of the Nautical Mag.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

The Nautical Almanac and Astronomical Ephemeris for the year 1835. Published by order of the Lords Commissioners of the Admiralty. Murray.

We hail with much pleasure the appearance of the second volume of this valuable work in its present improved shape; the advantages of which have, no doubt, already been felt by our seamen. And we have reason to believe, that the suggestion regarding the names of some of the stars alluded to by a correspondent in our last number will be attended to in future volumes. To the present volume we find several useful papers attached. One containing tables for computing the occultations of Jupiter's satellites by the planet, by Mr. Woolhouse, of the Nautical Almanac establishment; another on the computation of an ephemeris of a comet from its elements, by the same gentleman. We hope to see that important and valuable method of obtaining the longitude at sea or on shore, by means of the occultation of a fixed star by the moon, receive the same attention. Assuredly, we don't know a greater boon of this kind to the seaman than would be an easy and familiar method of arriving at the resulting longitude from this observation, and we hope soon to see him in possession of it.

An Historical and Descriptive Account of Persia, from the earliest ages to the present Time, &c. By James B. Fraser. Oliver & Boyd, Edinburgh.

This is one of the most interesting volumes of the Edinburgh Cabinet Library, and coming from a person of so much local experience as the author of "Travels in Khorasan" and "A Tour through the Himala," has advantages

which must entitle it to the utmost confidence. The author sets out with a general description of the country, and an account of its provinces, to which, from his own knowledge of it, he has added much to what was previously known. The ancient history, religion, and antiquities of these extraordinary people are treated on largely, and the details of the eventful changes which Persia successively underwent from the Mohammedan conquest to the present time, form one of the most interesting portions of the work. Mr. Fraser has enriched the Edinburgh Cabinet Library with a volume put forth in the garb of unassuming modesty, and, as might be expected, rich with precious ore. It only requires to be known, to become a favourite book.

NEW CHARTS.

Vidal Bank, off the North-West Coast of Ireland. Surveyed by Captain A. L. E. Vidal, R.N., by order of the Lords Commissioners of the Admiralty. 1830-31. Size, Half Double-Elephant.

This is another of those valuable charts resulting from Captain Vidal's operations in H. M. schooner Pike, and one which is peculiarly important to ships using the dangerous North Channel. The coasts of Ireland included in it are those between Carlingford and Black Sod Bay, resulting from the surveys of Captain Mudge. We find the western coasts of Scotland laid down only in outline, from the best surveys, but betraying the deficiency of a correct knowledge of our own coasts. The various positions of Aitkin's Rock, so perseveringly but unsuccessfully sought for by Captain Vidal, are inserted, and the soundings on Vidal Bank will be invaluable to vessels on the coast. On the whole, we congratulate our Liverpool shipmasters on the appearance of this, as well as the chart noticed in our last number. They are the first correct charts of those parts that have yet been published.

Lundy Island, in the Bristol Channel. By Lieut. H. M. Denham, R.N. 1832. Admiralty. Size, nine and a half, by eleven and a half inches.

A useful little plan of this island to vessels that may be caught with foul winds, and desirous of making use of the excellent anchorage on the eastern side of it. Bearings are given for this anchorage, as well as views of the leading marks for it, so that a vessel needs only daylight and ordinary attention, to find her berth, with the assistance of the above plan.

Nova Zembla Expedition.—Some of our readers will no doubt recollect a short notice which appeared in many of the London papers some time ago, of an expedition* which had been fitted out at Archangel, by Messrs. W. Brandt and Son, merchants of that city, to explore the northern coast of Asia, and particularly the mouth of the river Jenissey, with the object of establishing a new shipping port for the produce of Siberia. Of this expedition, consisting of two vessels, properly found, and sufficiently manned for the purpose, no news had been received from the time of its having left Archangel, in August, 1832, until the 20th of November, 1833, when the commander of the smaller of these vessels arrived at Archangel. The instructions given him on

* See a notice of this expedition in p. 439 of our eighth number.

his departure were, that he should endeavour to proceed along, and to make a proper survey of, the east coast of Nova Zembla. A very short narrative is all that he had time at first to give of his voyage; but, though short, and of course imperfect, it may perhaps be found of interest to many.

He states, that on the 10th of August, 1832, he saw the southern coast of the island, but had to contend, in his further progress through the Waigatch Straits, with many hinderances from the ice; until at length, on the 1st of September, he was entirely locked up by it in a bay on the south-east point of Nova Zembla, and was there under the necessity of establishing his winter quarters. After having, with the assistance of his crew, consisting of nine men, constructed a hut out of the drift wood, in which they lived till the 8th of April, 1833, he took advantage of the first favourable weather, to commence a survey, over the ice, of the South coast along the Straits of Waigatch.

While thus occupied, and having proceeded with five of his men forty-two wersts from his winter-quarters, he was overtaken, on the 2nd of May, by a tremendous hurricane and snow storm, which continued till the 5th, during the whole of which time they were only able to preserve their lives by reclining on the snow with their faces towards the earth, protected from the effects of frost by the warmth of the Samoyede clothing with which they were provided. On the 19th of June the sea was clear of ice. As, however, the bay continued frozen, he surveyed, in a boat with two men, the east coast for 147½ wersts northwards, until the 5th of July. On his return, he was able at length, on the 11th of July, to clear his vessel, and leave Kammenoi Bay, where he had wintered. Until the 13th of August, proceeding northwards, he occupied himself in a survey of the east coast of Nova Zembla, which, although it had often been tried, no one had as yet accomplished; and in effecting which, he had to overcome many obstacles and dangers, particularly from the drift ice. On the 13th, he reached the Straits of Matoschnoy, which had been visited and surveyed by Rosmislow, in 1769, and by Lütke, in 1823.

And now, as only three of his crew remained in health and able to work, he found it impossible, although the sea of Kara was still free from ice, to continue his researches any further to the north. He therefore sailed through the Straits of Matoschnoy, and along the west side as far as the Bay of Moller. From the 22d to the 28th of August, he was contending with adverse winds, and the exertions were too much for the small number of his crew who could do their duty, and he was obliged to make the first place he could. He reached the river Petschora on the 6th of September, and thence travelled overland to Archangel. A glance at the map will shew exactly what he accomplished, and what he was obliged to leave undone; but it is only those who are somewhat acquainted with that region, who will be able to appreciate the resolution required for, and the dangers attending, such an undertaking.—*Times.*

CAPTAIN BACK.—We find in the *Montreal Gazette*, the following notice respecting the express sent to recall this officer:—

Montreal, Dec. 3.—A despatch was forwarded on Saturday evening, 30th of November, from the Hudson's Bay Company's Office, at Lachine, for the interior, *via* the Otawa river, and Sault St. Mary, for carrying into effect the directions received from land, as to acquainting Captain Back with the return of Captain Ross and his adventurous companions. We learn that this despatch is the duplicate of one of which appears to have been forwarded direct from New York to St. Mary's by the mail, addressed to the care of the Commanding Officer of the American garrison at that place.

As the journey in winter from Sault St. Mary's to Great Slave Lake may be accomplished by an express in two or three months at the most, we are in hopes that the despatch may find Captain Back at his expected winter quarters at the latter place, ere he commences his journey in the spring. If the duplicate despatch is, immediately on receipt, sent on from Sault St. Mary, without waiting for orders from Montreal, there is an increased probability of overtaking Captain Back, from the greater expedition that may be obtained in canoe navigation, from Sault St. Mary to Red River, at an early period of the season.

African Expedition.—Mr. Laird, who was associated with Lander in his expedition to the Niger, and has just returned to England in the Columbine, brings with him accounts from Lander, then at Atta, to the 21st of July last. The following, as regards Lander, is the substance of his information:—His trip up the river from the mouth of the Nun, (in a canoe,) occupied him 32 days. He met Mr. Laird and Lieut. Allen, who had imagined he was either dead or had returned to England, descending the river with the steamer on their return back to the coast. This was on the 12th of July. Lander immediately arranged that Mr. Laird should return to the coast in the Quorra, and gave back to him some part of the cargo from the Columbine; while, with the iron steamer, he would himself push on to Rabba and Boussa. He seems determined further to distinguish himself by discovery, and by the establishment of a commercial intercourse with the natives, in which he had confident hopes of being successful. Mr. Laird, during his sojourn in Africa, suffered greatly from fever. For several months he was confined to a miserable hut, till some of his bones had actually penetrated the skin. Lander expected to be in England by Christmas, so that his return may daily be looked for.

St. Croix.—An ordinance respecting shipping and commerce in the Island of St. Croix, dated "Copenhagen, 6th June, 1833," has recently been promulgated at St. Croix, declaring that island a free port. With regard to shipping, it is made known, that "all vessels, without exception, Danish or foreign, either from Danish or foreign parts, shall, in virtue of this ordinance, have free admittance at St. Croix, and may discharge or load cargoes in the port of Christianstad, or the road of Frederikstad."

On the importation of goods, Danish or foreign, the following exemptions from duty are directed, viz.:—"Corn meal, Indian corn, rum puncheons, staves, heading and hoops for sugar hogsheads, and rum puncheons, copper nails, hoes, bills, utensils for boiling sugar and distilling rum, fire-bricks, mules, and asses. Provision and fresh fruits, such as yams, cassava, bananas, oranges, &c., brought from foreign West India islands; West India colonial produce, with the exception of coffee and tobacco, on which duty will be paid."

Line of Steam-Packets between Falmouth and Nantes.—A steam conveyance will take place early in the spring, and will be performed by a fine steamer, the Ocean, now on her passage to Nantes, Marseilles, and Naples. It will give travellers the opportunity of visiting France by her finest river, the Loire, and returning by the Seine—a route at once the cheapest and most beautiful. It is supposed that the average passage between Falmouth and Nantes will not exceed thirty hours, while from the latter city to Orleans the passage is now performed about the same time, stopping one night at Tours.

ROYAL HUMANE SOCIETY.

At the last half-yearly meeting of this society, the Hon. Justice Gaselee was in the chair. The report stated, among other things, that a legacy of 1000*l.* had been left to the society by Mr. Gough; that a donation of 200*l.* had been made by the corporation of London towards building a new receiving-house in Hyde-Park. The report also stated that a Humane Society was about to be established at Calais; that a vote of thanks had been passed to Mr. Grantham for his eminent and humane services during the storms, and particularly for his brave efforts in attempting to save the unfortunates in the Amphitrite. It appeared that in the course of the year 112 persons had been recovered from the water, of whom 103 had been successfully treated by the society.

The secretary then read the following cases of persons saved by individuals, whose humanity and bravery were recommended to the attention of the society—

W. Field, R. Jones, and W. Evans, saved the lives of twelve of the crew of the Felicita, a Neapolitan brig, in Milford Haven. The brig was wholly wrecked; and the destruction of the crew, but for the prompt bravery of the individuals named, was inevitable.

John Baldock, a seaman on board his Majesty's ship La Hogue, then at Sheerness, saved the life of a little boy, aged six, the son of Mr. Wright, the gunner of the vessel. This man's conduct was the more praiseworthy, as he was but a poor swimmer; and when he saved the poor boy, (who had fallen overboard,) the latter was on the point of being sucked under another vessel.

Lieut. Lee, (who at the last anniversary of the Society received a medal for saving four of the crew of his Majesty's sloop the Henry,) assisted by twenty-five men, saved sixteen men of a vessel, the Crawford, Davison, which was wrecked.

Thomas Forbes, a seaman, had saved the lives of three men—one of them, named T. Oliver, in the Ganges; another, named Richard Flynn, at sea, when the vessel was going at the rate of six miles an hour; and the third, named James Ratcliffe, in the Hamoaze. This intrepid and praiseworthy seaman had also attempted to save the life of another man in the Archipelago, but was unfortunately unsuccessful, and narrowly escaped himself. This individual was described by his officer as a most sober, honest, and praiseworthy man in all respects.

Admiral Donnelly observed, that he had never before heard of any man's being saved from the Ganges, whose waters have some such peculiar property, that any person who fell overboard into them is sucked in, or drops down to the bottom like lead.

Lieutenant Liardi saved the life of James Glenny, a man who had jumped overboard with an intention to destroy himself, and who struggled much with his preserver in the water, before the latter succeeded in bringing him to the vessel. This meritorious individual had already received medals from the society, as a reward for having saved the lives of not fewer than five of his fellow-creatures from a watery grave, at different periods.

R. Richmond, master mariner, of Great Grimsby, saved the lives of four boys in the Humber, who had been overturned from a boat, and who would have been inevitably drowned but for the prompt and intrepid exertions of this praiseworthy man, who had before, at different periods, saved the lives of not fewer than fifteen of his fellow-creatures.

C. Anderson, of the Admiralty, saved a boy from drowning in Chelsea Reach.

J. Hunt, a surgeon, saved the life of N. Beevor in the Thames.

Thomas Jacks (who had already saved four people from drowning,) saved the life of a woman who had jumped into the London Docks.

Mr. Baron Gurney here took occasion to observe, that a very general mistake existed as to the quality of the waters in those docks, which were considered as

poisonous, by the copper sheathing of the vessels; but this was by no means the case.

Serjeant E. Dunlap, 79th Highlanders, saved the life of an infant in one of the most dangerous rapids of the river St. Lawrence. The mother of the infant had perished in the waters before the intrepid soldier could reach her. The serjeant was at the time only a private, but, such was the feeling of admiration excited by his humanity and courage, that he had been raised by his colonel to the rank of corporal and acting serjeant.

Patrick Newell, a drummer boy, saved the lives of two boys at Sheerness.

Captain Hyland saved the life of an insane person in the Hooghly. This gentleman's danger was much increased by the alligators, which swarm in that particular part of the river.

The case of Pierre Antoine Henin, whose intrepid attempts to rescue the unfortunate in the Amphitrite has been detailed to the public, was then laid before the Society.

Lieutenant (now Captain) Aldridge saved the life of a seaman in the Gulf of California. This gentleman has saved, altogether, three men.

The case of Mr. Wm. Carruthers, whose heroic rescue of his bride from a watery grave in the Hooghly, is given at great length in the last May number of the Asiatic Journal, was then read from that journal.

Mr. Sumner, surgeon, near Liverpool, saved the lives of four men of the pilot boat Good Intent. This gentleman's conduct has been done justice to in the public prints.

The Society then proceeded to award the medals as follow:—Mr. Sumner, a silver medal; Mr. Elliot, ditto; Mr. Carruther's case postponed for further consideration; Lieutenant Aldridge, a silver medal; P. A. Henin, ditto; Mr. Hyland, ditto; Serjeant Dunlap, ditto; T. Jacks, ditto; Mr. Anderson, thanks on vellum; Lieutenant Liardi, a medal; R. Richmond, ditto; Hunt, ditto; Forbes, ditto; Lee, ditto; Baldock, ditto; W. Field, ditto; R. Jones, ditto; W. Evans, ditto.

The secretary then read a report of the income and expenditure of the past year. The income was stated at 3238*l.* 17s. 10d., and the expenditure, 1395*l.* for salaries, rewards, &c. The society have also purchased 965*l.* Three per Cents., and 275*l.* Bank Stock, which, with the amount in hand, of 376*l.* 17s. 10d., and the amount of the expenditure, will balance the accounts.

Gun-Carriage.—A model of a gun-carriage has been lately exhibited at Woolwich, invented by Lieut. J. B. Emery, R.N., (formerly of Portsea,) which supersedes the use of side and train tackles, as it works by means of small winch handles, which act upon a roller placed between the sides of the carriage, underneath the gun. It is exceedingly simple, and four men by this method could work a two-and-forty pounder with greater facility than can be accomplished by thirteen on the present system. It is also considered to be admirably adapted for a battery, or any other fortification, particularly small garrisons, as few men could fight many guns; the working of them would be easy and quick, and handspikes rendered useless. Many practical and scientific men, both of the Navy and Army, have seen the model, and expressed themselves highly delighted with the invention.—*Hants Tel.*

Caution.—The captain and four of the crew of Mr. John Barnett's trow, called the Bristol Packet, were taken before a magistrate, when the captain was committed for six weeks, and the others for a month, to Worcester House of Correction, for leaving the vessel for several hours in the river at Bristol, with only one man on board, whereby the vessel and cargo were much damaged.

IMPORTANT TO MARINERS: LIGHTS.—On and after the 1st of January, 1834, the steamers belonging to the City of Dublin Steam Company will carry three lights at night; namely, one at the foremast head, and one on each bow, that on the larboard bow being in deep red. This information may be the means of preventing collisions at sea, for commanders of vessels can see the three lights only when right a-head of the steamers, and in that position they will form a triangle, the mast-head being the apex, and as the bow lights are attached to the houses before the paddle-boxes, with an angle of about thirty degrees, so as to throw the rays broad on the bow, it is impossible to misunderstand the position of a steamer in the darkest night, the deep red on the larboard bow of the steamer being taken as a guide.—*Dublin Evening Mail.*

STEAM-BOAT DISASTERS IN AMERICA.—In looking over our file of papers for the last six weeks, we find that we have recorded no less than twelve steamboat disasters, attended with a loss in the aggregate of more than 100 lives! They are as follows:—New England, boiler burst, 16 lives lost; St. Martin, burnt, 30 or 40 lives lost; Capstan, burnt, 20 or 30; Illinois, boiler burst, 13 to 20; Thomas Yeatman, boiler burst, 7; Columbia, sunk, 4; Paul Pry, boiler burst, 1; a total of 91 to 118 lives lost. George Washington wrecked; Rapid sunk; Black Hawk burnt; Peruvian sunk; Chippewa sunk. Why is it that English steam-boats are so safe to travellers, and American steam-boats so unsafe? Why is it that more lives are lost on board American steam-boats in one year, than on board English steam-boats in ten years? Cannot the difference be partly accounted for by the fact, that in England very strict regulations are prescribed and enforced by the government in relation to steamboats, and in the United States none? If not, can any man tell how the fact is to be accounted for?—*American Paper.*

LOSS OF SHIPPING.—There has probably been no quarter of a year in the memory of man, in which the loss of shipping has been so great as in the last. For nearly three months, we have had perpetual storms, and those not partial in their devastations, but felt along all the coasts of England, Scotland, and Ireland, as well as on both sides of the British Channel, and on the shores of the German Ocean. It is not possible to form any very correct estimate of the number of ships lost, or of their value; and it is still more difficult to estimate the value of their cargoes. Many hundred thousands of pounds will, however, we fear, be necessary to cover the loss; and whether it falls on the underwriters or the owners, the loss of property is frightful, though far less so than the loss of life with which it has been attended.

HOLYHEAD PACKETS.—An order has been issued that Kingstown, and not Howth, shall be in future the harbour from which the Government steamers are to depart for Holyhead.—*Cork Evening Herald.*

NAVAL OFFICERS.—The following return, made up to the 1st of January, 1834, will shew the decrease in the number of the officers standing upon the Admiralty List of the Royal Navy:—

	1st Jan. 1832.	1833.	1834.
Flag Officers	184	173	158
Retired Admirals and Captains	45	43	43
Captains and Commanders	1700	1684	1650
Lieutenants	3305	3210	3155
Masters	522	499	485
Surgeons and Assistants	1050	1039	1017
Pursers	641	631	619
	7447	7279	7127

During the past year 63 new Commissions have been added to the list. The number of deaths of Commissioned Officers, during the year 1832, was 215.—The undermentioned Officers, not having been heard of for several years, have been removed from the Admiralty List:—Captain Thomas Thrush, and Lieuts. R. G. O'Neill, G. A. Ross, John Harvey, Thomas Barrow, G. A. Gore, James Duncan, P. H. Trant, John Murray, and Henry Brooks. —Captain Thrush is the officer who resigned his commission several years since, from religious motives, he having become impressed with a belief, that to embrace the science of war as a profession, is contrary to the principles of Christianity. He published his sentiments in a well-written pamphlet.

ROYAL NAVY.—The British Navy is composed of 557 ships and vessels, of all rates, of which number 171 are in commission.

A LIST OF SHIPS BUILDING IN HIS MAJESTYS DOCK YARDS.

At Pembroke.—Algiers, 110; Victoria, 110; Collingwood, 80; Vanguard, 80; Cambrian, 36; Cleopatra, 36; Sybille, 36; Carysfort, 36; Lily, 16; Harlequin, 16; Tartarus, 6 (Steam vessel.)

At Portsmouth.—Royal Sovereign, 110; Royal Frederick, 110; Indus, 80; Constance, 36; Inconstant, 36; Electra, 16; Hazard, 16; Buzzard, 10; Termagant, 10.

At Woolwich.—Trafalgar, 120; Indefatigable, 52; Chichester, 52; Amphion, 36; Spitfire (Steam vessel.)

At Plymouth.—St. George, 120; Nile, 92; Hindostan, 80; Flora, 36; Pique, 36; Sappho, 16.

At Chatham.—London, 92; Goliah, 80; Cumberland, 70; Meander, 46; Active, 36; Wanderer, 16; Blazer, S.V.

At Sheerness.—Calliope, 28.

At Deptford.—Worcester, 52.

Total number of ships building, 39.

BISCUIT.—An experiment is about to be made, to ascertain whether bread can be better preserved in warm climates, when enclosed in iron tanks, than in bags. The Belvidera, 42, and Blonde, 46, are each to take out an iron cask filled with bread, which are to be returned to the Royal William Victualling Yard after they have been abroad 12 months, to undergo inspection.

DOCK.—A new dock for line-of-battle ships has been commenced at the western end of Woolwich yard; several extra labourers are employed in the excavation.

FALKLAND ISLANDS.—Lieutenant H. Smith *(b)* late First Lieutenant of the Tyne, is appointed Governor of these Islands, and four seamen, volunteers, as a boat's crew for his use and protection. They were to proceed by the first ship from Rio. It was expected that this little nucleus party of a new colony, would be reinforced by a party of Royal Marines, from England. It has been ascertained that these Islands are not so unproductive as has been believed, and that a limited number of settlers would do well on the eastern island, where, in fact, one is forming; a situation, called Port Louis, at the head of Berkeley Sound, had been fixed upon as head-quarters. At least 7,000 head of fine wild cattle, and 500 wild horses, are roaming over a large expanse of most excellent pasturage. Game is also in abundance, particularly rabbits, and the shores abound with excellent fish, as well as whales and

seals. Though there is no timber on the islands, the sheltered spots are favourable to the growth of hardy trees; there is peat in abundance, which would furnish a never-failing supply of fuel, and kelp, for manure. The climate is not severe, considering its localities, and there is good anchorage all round the coast.

At a late meeting of the Hull Philosophical Society, the following interesting account of the whale was given. Mr. Edward Wallis proceeded to read a paper "*On the Northern Whale, and the results of the examination of a Fœtal Whale.*" Mr. W. commenced by stating that the fœtal whale (now exhibited on the table in a prepared state) presented to the Society by Mr. Cooper, had been brought from the polar regions by the ship Swan, Capt. Dring. It afforded a favourable opportunity for investigation, and having been dissected in these rooms, a few anatomical facts had been ascertained in connexion with this animal, which it would be his object now to lay before the Society. Notwithstanding the number of young surgeons who proceeded from this port annually to Greenland and the Straits, little was known of the anatomy of the whale; in fact nothing had been added to our knowledge since a paper had been written upon the subject by the celebrated John Hunter, in 1783. A very general error had prevailed in calling the whale a fish; and it was shewn by anatomical examination that it was more properly an animal of the mammalia class. The specimen now exhibited shewed its outward form, in addition to which he would hand them a very beautiful drawing, made by Mr. Pearsall, the keeper of the Society's museum.

Mr. Wallis, after describing its outward form, then proceeded at great length to explain the anatomy of the animal, accompanying his descriptions with such remarks as appeared to result from the investigation to which the various parts were submitted. The outer skin, he observed, was kept in a state of lubrication by the oil which exuded through it, by which means its passage through the water was facilitated. The bones of the fins appeared to bear analogy to the human hand; but he thought Scoresby wrong in stating those fins not to be used at all for the purpose of progression. The fin was occasionally used for the protection and preservation of its young, the animal throwing the fin over it, and holding it to its side, while swimming away from its pursuers. The tail, the blade of which is placed horizontally, and not vertically, is the principal organ of motion, being raised and depressed for that purpose, and striking the water behind the animal. Mr. W. stated it not to be capable, from its anatomical processes, of any motion similar to sculling. Its ordinary speed is from four to six miles an hour; even when struck with the harpoon its rate of swimming never exceeding the latter. The jaw-bones of the mother of the fœtal whale now exhibited were 22 feet 3 inches long. These bones are frequently broken by the animal's descent to the bottom on being struck. The eye is better adapted for the dense medium in which they move, than for seeing in the atmosphere; thus whales can be approached nearer when their heads are above the surface than when swimming below it, and they are so placed that the creatures can see objects behind and above them. The spiracles, or breathing holes, were next described, answering to the nostrils of quadrupeds—and it was explained that the whale is obliged to ascend to the surface to take in atmospheric air; while fish, furnished with gills, breathe air and water combined. The spouting of water through the spiracles was also explained at length. Whalebone was next treated on. The essayist objected to the term "bone" as applied to this substance, as exceedingly improper. He described its situation in the mouth of the whale, and considered its use to be the retaining the vast quan-

tities of small creatures required for the food of so large an animal, and which were received into the enormous mouth of the creature, and prevented from escaping by the whalebone, which seemed, with its fringe of hair, to form a sort of trap or net, admitting the exit of the water, and retaining the molluscous and other animals. The mouth of a moderate-sized whale was described as about the capacity of an ordinary chamber. The œsophagus is very small in proportion to the size of the creature.

Mr. W. considered it incorrect that whales did not possess the faculty of smell. The arrangement of the heart and lungs was described as similar to that of quadrupeds. The stomach was described as one large stomach, subdivided into smaller compartments. It was supposed that whales had never more than one young one at a birth, but this was erroneous, as Captain Humphrey had mentioned to the essayist an instance of his having seen one, during the last season, which had twins. The quantity of blood was described as very great, from ten to fifteen gallons being thrown from the heart at a single respiration. The situation and uses of the blubber were described at length. It is spread over the whole body of the animal, being situated immediately under the skin. It is of less specific gravity than the remainder of the animal, by which it is enabled to float near the surface of the medium in which it lives. It is also a bad conductor of heat, an admirable provision for an animal residing in the Arctic seas. The temperature of the whale is about 110 degrees. It has no air bladder, and is supposed to descend in the water entirely by the exertion of its enormous muscular power. It is supposed that the whale, when struck, mistakes the blow of the harpoon for an attack from the sword fish, and makes for the bottom; if it remained at the surface, and used its immense strength, it would be more than a match for man. Mr. Wallis, towards the conclusion of the paper, pointed out some singular errors into which Cuvier had fallen in his description of this animal.

An animated discussion followed, principally on the mode in which the tail was used in propelling the animal, upon which great difference of opinion seemed to exist; upon the errors that had prevailed on the subject of the whale's history; and upon the backwardness of Hull in furnishing correct information on a subject so intimately connected with the pursuits and prosperity of its inhabitants.

Loss of the French Ship Superbe.—The Paris Papers of Monday, bring the following account of the unfortunate loss of the French line-of-battle ship *Superbe*, in a gale of wind, on her return from Smyrna to Toulon. All accounts agree as to the recent very tempestuous weather in the Mediterranean, which fact, in connexion with other causes, has hastened the return of the fleet in question.

Extract of an official report to the minister of Marine, from Rear-Admiral, Baron Hugon, dated on board the *Iphigenie*, in the roads of Nauplia, Dec. 27. 1833.—"I have the painful task of communicating to you the loss of the *Superbe*, Capt. the count d'Oysonville, which was wrecked on the 15th inst., in the port of Pareika, in the Island of Paros. As I had the honour of informing you, by my despatch of the 10th inst., I had made every preparation for quitting the Roads of Smyrna on the 15th. In order to prevent there being too many ships close together, in case of adverse winds in the narrow straits of the Chateau, the difficulties of which you are well aware of, I directed the *Superbe* ship of the line, and the *Galatee* frigate, Capt. Harmand, to sail on the 14th, and at the same time recommended the two Captains to come to anchor on the banks called Salines, if the appearances of rough weather, which had been already observed at Smyrna, continued when they were in the gulf. The two

ships were to proceed to Nauplia, and there wait my arrival. Misled by the expectation of a quick passage, which was encouraged by a fine breeze from the east, that carried them at a good rate towards Cape Carabourmon, they determined to leave the gulf. They were not long without having to regret this resolution. In a few hours the weather became tremendous, and during the night of the 14th there came on one of the most violent hurricanes ever known in these seas. After having lost her main-top-mast, all her sails torn from the yards, and her boats washed over board, the *Galatee*, miraculously, gained the passage of Cape Doro at mid-day, on the 15th, though unable to distinguish the land, from which she was only distant a few cable-lengths, and entered the Bay of Carvi, where she lay till the storm had ceased. On the 22nd she cast anchor at Nauplia. The *Superbe* having also lost her main-top-mast and a part of her sails, was driven into the channel between Tina and Miconi, and made for the port of Naxos. The darkness, however, prevented her from distinguishing the entrance, and having past to the west of it, she was compelled to suffer herself to be carried on, in the hope of gaining the small port of Pareika. At two in the afternoon of the 15th, the ship was no more. She had struck on a concealed reef of rocks, and gone to pieces. The fall of her masts, and the difficulties in forming at first a communication with the shore, caused the loss of nine men. These, Sir, are all the particulars that have yet come to my knowledge, respecting this unfortunate wreck. But, incomplete as they are, I hasten to transmit them to your excellency, in order that the public in France may not be alarmed with more disastrous accounts. I hastened to despatch the *Ville de Marseille*, Capt. Lalande, to the port of Naxos, (Naussa,) which is the nearest of Pareika, in order to bring away the crew and convey them to Nauplia. They will be distributed among the ships which are about to return with me to France. I shall leave on the spot where the ship was wrecked fourteen sailors, under the command of an officer, to watch it till the weather permits an attempt to save something of her.

"I am waiting the arrival at Nauplia of the *Cornelia* and the *Palinure*. I am somewhat uneasy about the former. She left Smyrna on the 9th, for Salonica, where she was to receive on board the crew of a merchantman which was wrecked in November, on the coast of Macedonia, and may have been overtaken by the hurricane of the 14th. The *Palinure* left Smyrna on the 19th, forty-eight hours after the *Iphigenie*; and the calms and westerly winds which have prevailed since my arrival at Nauplia may be the cause of her delay.

'I am &c.

(Signed) "BARON HUGON.

Rear-Admiral commanding the squadron in the Levant.

"P.S. I open my letter to anounce that the *Cornelia* has just been descried. I have also just learned that the American ship, the *United States*, Commodore Patterson, which left the Bay of Smyrna a few hours before the *Superbe*, after having lost some of her masts, had her sails torn away, and her boats carried off, and being nearly embayed off the coast of Andros, and expecting every moment to be lost, a sudden gleam of light enabled her to discover the narrow passage between Tina and Andros, she was enabled to get through it and gain the harbour of Milo.'

VENTS IN GUNS.—It has long been complained of, that a very large portion of the charge of all pieces of ordnance, from a 13-inch mortar to a pocket pistol, is expended at the touch-hole in vent, the force of explosion through which has hitherto prevented the use of percussion caps to field-pieces or larger guns; and it has also been deemed a great inconvenience, that no safe

means have been invented to stop the vent-holes of guns during the period of their being reloaded, the only stopper now in use being the thumb of one of the men working the gun, the pressure of which is at all times uncertain, and forgetfulness to apply which has frequently been the cause of melancholy accidents. A very simple, but at the same time most certain, remedy for those evils has been shewn us, the joint invention of Mr. Bartholomew, of Titchfield, and Mr. H. Clarke, of Portsmouth: it consists in the introduction of a pin through the metal of the bore ring and grooved into the vent field, and fits so close to the vent-hole as to be air tight. A small portion of this pin is perforated at the end, and an opening in the side communicates with the touch-hole; at the perforated end is fitted a percussion cap, the fire from which is sufficiently strong to ignite the cartridge, and as the pin remains in its place, the vent is never unclosed. The mode of striking the pin, when the gun is to be discharged, is ingenious and simple, and is done by a man who stands behind the gun, with a lanyard in his hand, as he now does, when he pulls the trigger of a lock. By this contrivance, no loose powder nor quill tubes are wanted, by which many accidents have happened. No accident can happen in the re-loading the gun from the vent being unstopped; the rapidity of firing is increased, as the cartridge does not require to be pricked, and the percussion fire is thrown to the centre of the bore of the gun, and quite into its extremity, and not to the top of the cartridge, as at present; by which means all the cartridge will be driven out, and the piece will not require sponging at every discharge. It will be a great saving of powder, for as none is lost through the vent, either less will be required, or the shot will be thrown further: it is calculated this will make 25 per cent. difference. The invention is sanctioned by the Admiralty Board, and is about to be tried on board the Excellent. Such officers as have seen it have been much pleased with it, and highly recommend its adoption. A number of the members of the Yacht Club have also declared their intention of having this *self-serving vent pin* applied to the guns in their yachts.—*Hants Tel.*

NAVAL INTELLIGENCE.

THE ROYAL NAVY IN COMMISSION.

*** S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

ACTÆON, 26—Hon. F. W. Grey, 2d Nov. arrived at Vourla. Sailed for Constantinople.

ÆTNA, S. V. 6—Com. W. G. Skyring, 2d Dec. at Santa Cruz, Teneriffe.

AFRICAN, St. V.—Lieutenant J. Harvey, arr. at Falmouth. 5th Dec. sailed for Woolwich.

ALBAN, St. V.—Lieutenant A. Kennedy, 30th Oct. at Demerara from Berbice.

ALFRED, 50—Capt. R. Maunsell, 4th Dec. at Vourla.

ALLIGATOR, 28—Captain G. R. Lambert; 7th Aug. arrived at Madras from Pondicherry.

ANDROMACHE, 28—Capt. H. D. Chads, C.B. Hamoaze, fitting.

ARACHNE, 18—Com. G. S. Fremantle, Oct. 3d Dec. arr. at Barbadoes from Antigua.

ARIADNE, 28—Capt. C. Phillips, 5th Nov. at Bermuda. 16th Nov. sailed for Barbadoes. 3d Dec. sailed from Barbadoes for Martinique.

ASIA, 84—Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus, 28th Dec.

ASTREA, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Karley, 27th October, arrived at Plymouth from Lisbon.

BADGER, 10—Com. G. F. Stowe, Simon's Bay.

BARHAM, 50—Capt. H. Pigot, 8th Dec. at Malta, having been injured in a gale on her passage to Vourla.

BEACON, S. V.—Com. R. Copeland, Surveying service, 4th Dec. at Malta,

BEAGLE, 10, S. V.—Com. R. Fitz-Roy, 25th Oct. Monte Video.

BELVIDERA, 42—Capt. C. B. Strong, Portsmouth, fitting for West Indies. Mr. Chatfield, Consul at Guatemala, takes his passage in her.

BLONDE 46—Capt. F. Mason, C.B. Ports-

mouth, fitting for the South American station. She is first to convey the Marquis of Sligo and suite, appointed governor of Jamaica. To sail about 27th.

BRISK, 3—Lieut. Stevens, 25th Oct. at Fernando Po.

BRITANNIA, 120—Vice-Admiral Sir P. Malcolm, Captain P. Rainier, 4th December, at Vourla.

BRITOMART, 10—Lieutenant H. Quin, 12th Oct. arrived at Ascension, on way to Cape.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 17th July at Rio; 21st July sailed for Australia.

CALEDONIA, 120—Captain T. Brown, 4th Dec. at Vourla.

CANOPUS, 84—Hon. J. Percy, Plymouth, fitting.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 21st Dec. off Oporto.

CEYLON, 2.—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 3d Nov. arrived at Madeira; 4th sailed for South America.

CHAMPION, 18—Com. Hon. A. Duncombe, 4th Dec. at Vourla.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, Portsmouth, fitting for Africa.

COCKATRICE, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

COCKBURN, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

COLUMBINE, 18—Com. O. Love, 17th October, arr. at Jamaica.

COLUMBINE, St. V.—Lieut. R. Ede, Portsmouth.

COMET, St. V. — Mr. T. Allen, Woolwich.

COMUS, 18 — Com. W. Hamilton, arrived at Port Royal 13th Sept.

CONWAY, 28—Captain H. Eden, 2d Nov. arrived at Pernambuco. 15th Nov. arrived at Bahia.

CRUIZER, 18—Com. Jas. M'Causland, Jan. sailed for Jamaica with Major-Gen. Sir Amos Northcote.

CURAÇOA, 26 — Capt. D. Dunn, 7th Aug. at Negapore. 22d July left Sincapore for Penang.

CURLEW, 10—Com. H. D. Trotter, October off Cape Lopez.

DEE, St. V. 4—Com. W. E. Stanley, (*b*) 1st Dec. put into Plymouth, on her way to Cork, with troops.

DISPATCH, 18—Com. G. Daniell, 3d Dec. arrived at Barbadoes from St. Thomas.

DONEGAL, 78—Capt. A. Fanshawe, 12th Jan. in the Tagus.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Captain C. Hope, 13th Sept. arrived at Lima from Valparaiso. 3d Oct. returned to Valparaiso. Going to Lima.

EDINBURGH, 74—Capt. James R. Dacres, Portsmouth, fitting.

ENDYMION, 50 — Captain Sir S. Roberts, Knt. C.B.; 19th Jan. arrived at Spithead. 21st hoisted the flag of Vice-Admiral Sir Josias Rowly, Bart. K.C.B.

ESPOIR—Lieut. Com. C. W. Riley, Portsmouth, fitting.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, African station.

FAIRY, S. V. 10—Com. W. Hewett, 11th Nov. arr. at Woolwich.

FAVORITE 18 — Com. G. R. Mundy, 25th Nov. sailed for Mediterranean, via Cadiz. Stopped at Portland. 10th Dec. sailed.

FIREFLY, 2—Lieutenant J. M'Donnel, 9th July at Jamaica; 24th Aug. sailed from Port-au-Prince.

FLY, 10—Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER — Lieutenant G. Miall, 6th Nov. arrived at Teneriffe. To sail immediately for Ascension and Cape.

FORTE, 44—Captain W. O. Pell, 23d Nov. left Bermuda for Barbadoes.

GANNET, 18 — Com. J. B. Maxwell, 6th July left Jamaica for Halifax; 30th July arrived; 13th Aug. left for Bermuda.

GRIFFON, 3—Lieut. E. Parlby, Gold Coast.

HARRIER, 18 — Com. H. L. S. Vassal, 7th Aug. at Negapore.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, 3d Sept. arrived at Mauritius; to sail 12th for Trincomalee and Calcutta.

IMOGENE, 18—Captain P. Blackwood, 9th Sept. arrived at Batavia from Sydney. 25th Sept. Sunda Strait.

INVESTIGATOR, 16, S. V.—Mr. G. Thomas, Woolwich.

ISIS, 50 — Captain J. Polkinghorne, left Ascension previous to 15th Sept. for a cruise on the African Coast.

JACKDAW, S.V. —Lieut. E. Barnett, 10th Oct. sailed from Jamaica for Honduras survey.

JASEUR, 18—Com. J. Hackett, Sheerness, fitting.

JUPITER, *Troop Ship*—Mr. R. Easto, about to proceed with troops to Cork, Gibraltar, and Corfu.

LARNE, 18—Com. W. S. Smith, 4th Oct. at Jamaica.

LEVERET, 10—Lieut. G. Triall, 20th Oct. arr. at Plymouth.

LIGHTNING, St. V.—J. Allen, 24th Dec. arrived at Falmouth from Lisbon; 24th Jan. Woolwich; 20th Jan. arrived at Portsmouth, to convey Lord Howard de Walden ambassador to Lisbon.

LYNX, 10—Lieut. Com. H. V. Huntley, Portsmouth, 4th Jan. sailed for the Gambia; 16th Jan. put into Falmouth. Passengers Assistant-Surgeons Peters, Ritchie, and Rogers, to join the Isis, and Mr. Williams to join the Ætna.

MADAGASCAR, 46—Capt. E. Lyons, 4th Dec. at Nauplia.

MAGICIENNE, 24—Capt. J. H. Plumridge, 13th to 19th April at Sincapore; 9th June at Madras; left Batavia 8th May.

MAGNIFICENT, 4 — Lieut. J. Paget, Port Royal.

MALABAR, 74 — Capt. Hon. J. Percy, 4th Dec. at Vourla.

MASTIFF, 6,. S. V.—Lieut. T. Graves, 4th Dec. at Malta.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 4th Aug. at Trincomalee.

MESSENGER, St. Transport—Mr. J. King, Woolwich.

METEOR, St. V.—Lieut. Symons, 4th Dec. at Vourla.

MONKEY, — Lieut. ———, 26th May at Jamaica.

NAUTILUS, 10—Lieut. Com. W. P. Croke.

NIMBLE, 5—Lieut. C Bolton, 17th Dec. arrived at the Havana with a prize containing 480 slaves and 34 men, captured off I. Pines, named the Manulita. On 3d of Nov. she captured the Joaquina with 329 slaves and 25 men, and a few days afterwards destroyed the Amistad Havanera. Lieut. Bolton has in less than 9 months captured 3 vessels and upwards of 1000 slaves.

NIMROD, 20—Com. J. Mc. Dougal; 22d arrived at Plymouth, 2½ days from Santander. Lost a boat and 13 men in endeavouring to assist the Spanish frigate Lealtad, wrecked near Santander.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

ONYX, 10—Lieut. A. B. Howe, Plymouth station.

ORESTES, 18—Com. Sir Wm. Dickson, Bart. 23d Nov. arrived at Lisbon; 1st December sailed for Oporto.

PALLAS, 42 — Capt. W. Walpole, 9th and 19th July at Jamaica.

PEARL, 20—Com. R. Gordon, 16th Dec. at Port Royal.

PELICAN, 18—Com. J. Gape, 3d November at Malta from Tunis. December at Gibraltar: about to sail for Genoa.

PELORUS, 18—Com. R. Meredith, 5th Nov. Simon's Bay; 8th Dec. arrived at St. Helena, and sailed for Ascension.

PHŒNIX, St.V.—Com. R. Oliver, Woolwich.

PICKLE, 5—Lieut. C. Bagot, 29th Nov. at Port Royal.

PLUTO, St. V.—Lieut. T. R. Sulivan. Coast of Africa.

PRINCE REGENT *Yacht*—Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 17th July sailed for Valparaiso. 3d Oct. arrived at Valparaiso from Rio. Going to Arica.

PYRAMUS—8th Oct. arrived at Bermuda; sailed for Halifax with Forte; 23d Oct. arr: at Halifax.

RACER, 16—Com. J. Hope, 28th October arrived at Bermuda; 8th Nov. sailed for Jamaica. 12th Dec. sailed for Carthagena.

RACEHORSE, 18—Com. F. V. Cotton, 30th Nov. arr. at Portsmouth. 26th Dec. sailed for Falmouth and Plymouth to pay off: 2d Jan. arrived at Plymouth.

RAINBOW, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie. Portsmouth, fitting.

RALEIGH, 18 — Com. A. M. Hawkins, 4th Dec. at Corfu.

RAPID, 10—Lieut. Com. F. Patten, 3d Nov. arrived at Madeira; 4th sailed for South America.

RAVEN, S. V. 4—Lieut. W. Arlett, 2d Dec. at Santa Cruz, Teneriffe.

REVENGE, 78 — Capt. D. H. Mackay, 21st Dec. in the Tagus. Expected home daily.

RHADAMANTHUS, St. V.—Com. G. Evans, 27th Oct. at Jamaica. 12th Dec. sailed for St. Domingo.

RINGDOVE, 16—Com. W. F. Lapidge, Plymouth, fitting.

ROLLA 10—Lieut. H. F. Glasse; Plymouth, fitting.

ROMNEY, *Troop Ship*—Mr. R. Brown, 25th Dec. sailed from Portland for Cork; 9th Jan. put into Plymouth.

ROVER, 18 — Com. Sir G. Young, Bart., 22d Dec. sailed from the Downs.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, Plymouth station.

ST. VINCENT, 120—Capt. H. F. Senhouse 4th Dec. at Vourla.

SALAMANDER, St. V.—Com. W. F. Austin, 22d Jan. at Sheerness.

SAMARANG, 28 — Capt. C. H. Paget, 3d Nov. at Panama on her way to San Blas. 5th Oct. at Valparaiso.

SAN JOSEF, 110— Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28—Capt. Hon. W. Trefusis, 3d Dec. arr. at Barbadoes from Antigua.

SARACEN, 10—Lieut. Com. T. Le Hardy, Plymouth, fitting.

SATELLITE, 18—Com. R. Smart, 24th. Nov. at Rio.

SAVAGE, 10 — Lieut. R. Loney, 22d Dec. off Oporto.

SCOUT, 18—Com. W. Hargood, 4th Dec. at Tripoli.

SCORPION, 10—Lieut. N. Robilliard, Plymouth, fitting.

SCYLLA, 18—Com. Hon. G. Grey, 3d Nov. at Vourla.

SEAFLOWER, 4—Lieut. J. Morgan, Torbay.

SERPENT, 16 — Com. J. C. Symonds, 1st Nov. at Barbadoes.

SKIPJACK, 5—Lieut. W. H. Willes, (*act.*) 29th Oct. at Bermuda from Jamaica; 3d Nov. sailed for Nassau.

SNAKE, 16—Com. W. Robertson, 31st Oct. at Rio Janeiro: from Monte Video, captured a slave vessel with 400 slaves on board.

SPARROWHAWK, 18 — Com. C. Pearson, Portsmouth, fitting.

SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 26th Nov., at Rio Janeiro.

SPEEDWELL, 5—Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieutenant J. P. Roepel, Portsmouth Station.

STAG, 46—Capt. N. Lockyer, 11th Jan. in the Tagus.

SWAN, 10—Lieut. J. E. Lane, 5th Jan. sailed for the Clyde to protect herring fishery.

SYLVIA, 1—Lieut. T. Henderson, Portsmouth station.

TALAVERA, 74—Capt. E. Chetham, 4th Dec. at Vourla.

TALBOT, 28—Capt. R. Dickinson, C.B. 12th Sept. at Mauritius: to proceed to India, and return home. Daily expected.

THUNDERER, 84—Capt. W. F. Wise, C.B., 24th Jan. sailed for the Nore.

THUNDER, S. V.—Commander R. Owen, 12th Dec. sailed from Jamaica.

TRINCULO, 18—Lt. Com. Thompson, 31st Oct. Cape of Good Hope.

TWEED, 20 — Com. A. Bertram, 5th Nov. at Bermuda.

TYNE, 28 — Capt. Rt. Hon. Lord James Townsend, 29th June at Coquimbo. 8th Jan. arrived at Portsmouth from Valparaiso 27th Sept. and Rio 25th Nov. with 460,000 dollars, 11th Jan. into harbour.

UNDAUNTED, 46—Rear-Adm. Warren, Capt. E. Harvey, 6th Aug. arrived at Madras from Trincomalee. Daily expected.

VERNON, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 20th Dec at Jamaica.

VESTAL, 26—Capt. W. Jones, 1st Nov. arr. at Madeira; 4th sailed for West Indies. 22d Nov. arrived at Bermuda, 28d sailed for Barbadoes, 3d Dec. arrived there.

VICTOR, 18—Com. R. Russell, 3d Dec. sailed from Barbadoes for Tobago.

VICTORY, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

VIPER, 6—Lieut. H. James, 22d Dec. off Oporto.

VOLAGE, 28—Capt. G. B. Martin, C. B. 3d Nov. at Vourla.

WASP, 18—Com. Jas. Burney, 11th October arrived at Lisbon; 28th to leave Lisbon for Bermuda. 22d Nov. arrived at Bermuda.

WOLF, 18—Com. W. Hamley, 21st July left Sincapore for Malacca and Penang. In August refitting at Trincomalee. On 30th Oct. was to sail from Colombo for Madras and England.

PAID OFF.

NAUTILUS, 10—At Portsmouth, 3d Jan.

RAINBOW, 28—At Portsmouth, 8th Jan.

ALGERINE, 10—At Chatham, Dec.

SPARROW *Cutter*,—At Portsmonth, 11th Jan.

CHARYBDIS, 10—At Portsmouth 10th Jan.

TYNE, 28—At Portsmouth, 23d Jan.

RACEHORSE,—At Plymouth, 16th Jan.

FLAMER, St. V.—Woolwich, 22d Jan.

COMMISSIONED.

NAUTILUS, 10—At Portsmouth, 3d Jan.

RAINBOW, 28—At Portsmouth, 10th Jan.

CHARYBDIS, 10—At Portsmouth, 10 Jan.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commodore of Second Class—F. Mason, C.B.

Captains—H. S. Marsham.

Commanders—W. Notten, *retired;* G. S. Omer, *retired;* G. Byng.

Lieutenants—D. Acland.

APPOINTMENTS.

ANDROMACHE, 28—*Capt.* H. D. Chads, C.B.

ASIA, 84—*Lieuts.* E. Wodehouse, T. Harvey.

BARHAM, 50—*Surg.* J. A. Chartres.

BELVIDERA, 42—*Mates*, C. Jackson, J. Wyburn, R. Pipon, Lord F. Clinton; *Mids.* Hon. H. Kennedy, J. A. Pritchard, P. Bower; *Sec. Master*, R. Studwell.

BLONDE, 46—*Clerk*, E. S. Passmore.

CALEDONIA, 120—*Com.* E. Brazier; *Lieuts.* E. Stopford, H. B. Young, A. Slade; *Master*, J. Napier; *Sec. Master*, J. Boxer; *Assist. Surg.* J. S. Symes.

CANOPUS, 84—*Master*, G. Millard.

CEYLON, *Rec. Ship Malta*, Clerk, P. Mac Lennan.

CHARYBDIS, 3—*Lieut. Com.* F. Mercer; *Surg.* D. King, M. D.; *Sec. Master*, M. Watson; *Assist. Surg.* D. Kennedy; *Mast. Assist.* J. Hodson; *Clerk*, M. Plumbley.

COAST GUARD—*Lieuts.* W. H. Goslin, R. W. Henderson, A. M. Higgon, J. A. Morcat, G. Snell.

EDINBURGH, 74 — *Lieuts.* Hon. H. A. Murray, J. Burrough; *Clerks*, W. Turner, W. Walker.

ENDYMION, 50—*Lieuts.* C. Pearson, J. Harrison.

ESPOIR, 10—*Lieut. Com.* C. W. Riley; *Surg.* R. Maxwell; *Sec. Master*, G. Grant; *Mast. Assists.* C. Harris, S. Whethem; *Clerk*, E. Doubt.

EXCELLENT, 58—*Lieuts.* J. W. M'Adam, R. Harris.

FIREBRAND, *St. V.*—*Surg.* W. Bland; *Mate*, W. Morris.

GREENWICH HOSPITAL—*Lieut.* J. Church, *out pension.*

ISIS, 50—*Assist. Surg.* M. Hamilton.

LEVERET, 10—*Surg.* R. H. Brown.

MILFORD *Lazaretto*—*Lieut.* J. George; *Surg.* M'Millan; *Superintendants of Quarantine Establishment.*

NAUTILUS, 10—*Lieut. Com.* W. P. Croke; *Surg.* T. Thompson, M. D.; *Mate*, H. Mottley, J. Bower; *Sec. Master*, J. D. T. Gibson.

PLYMOUTH DOCKYARD — *Superintendant New Police*, Lieut. J. Gill.

RAINBOW, 28—*Capt.* Rt. Hon. Viscount Ingestrie; *Lieuts.* Hon. H. A. Murray, J. N. Gladstone, J. G. D'Urban; *Master*, J. T. Dormer; *Surg.* W. Lindsay, M. D.; *Sec. Mast.* W. C. Triphook; *Assist. Surg.* J. Plimsoll; *Purser*, R. Ellis; *Lieut. Mar.* R. Searle.

RANGER, *Rec. Cut.*—*Lieut.* J. Stewart. (*a.*)

ROMNEY—*Clerk*, W. Rowe.

ROYAL CHARLOTTE, *Rev. Cutter*—*Lieut.* J. S. Keatley.

SAN JOSEF, 110—*Lieut. Mar.* C. W. Pascoe.

SAPPHIRE, 28—*Surg.* R. W. Campbell.

SCORPION, 10—*Surg.* J. Cook (*a*); *Mate*, T. Coffin.

SERPENT, 16—*Lieut.* P. Collins.

SHEERNESS DOCKYARD—*Master Shipwrt.* R. Blake.

SPARTIATE, 74—*Sec. Master*, W. H. Emes.

THUNDERER, 84—*Master*, G. R. Cole; *Schoolmaster*, J. Barrett.

VERNON, 50—*Assist. Surg.* Robertson.

VICTORY, 104—*Capt. Mar.* D. Campbell; *Master Assist.* G. Eastman; *Assist. Surgs.* J. M. Brown, J. M'Conchy; *Mid.* H. Probyn; *Clerk*, Mitchell.

WASP, 10—*Assist. Mast.* J. Jackson.

Lieutenant Francis Gray, of the Chatham ordinary, is appointed to be Director of Police in Chatham Dock-yard, *vice* Warden Lieutenant Cockraft (1790;) and Lieutenant John Wise, of the Coast Guard, to be Director of Police in Sheerness Dock-yard, *vice* Warden Lieutenant de Montmorency (1801.) These officers will have a residence in the Dock-yards, and their pay, four shillings a day in addition to the half-pay, to be paid weekly, as the other police salaries are. The Directors of the Dock-yards Police, and their men, are to be considered as a part of their respective Dock-yard establishments.

28TH JANUARY.

LISBON—Sails every Tuesday.

Packet.	Commander.	Sailed.	Last Spoken.	Where.	Due.
Rolla	Lt. Com. H. F. Glasse	9 January	———	———	6 Feb.
Confiance, st.v.	Lt. Com. J. W. Waugh	20 January	———	———	17 Feb.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

Columbia	Lt. Com. R. Ede.....	12 Decem.	21 Decem.	Gibraltar.	1 Feb.
Messenger, st.v	Mr. J. King	7 January	———	———	27 Feb.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

Thais	Lt. Com. C. Church ..	12 Decem.	———	———	13 Feb.
Lord Melville	Lt. Com. C. Webbe	20 January	———	———	24 March.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

Camden	Mr. J. Tilley	23 Novem.	———	———	15 Feb.
Opossum	Lt. Com. R. Peter	25 Decem.	———	———	19 March.
Spey	Lt. R. B. James	20 January	———	———	14 April.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

Swallow	Lt. Com. J. Griffith ..	12 Decem.	———	———	20 March.
Lapwing	Lt. Com. G. B. Forster	7 January	———	———	15 April.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamaica by a Schooner, and returns to meet the regular Jamaica Packet]

Pelham	Lt. Com. H. Carey	26 Sept.	———	———	30 Jan.
Pigeon	Lt. Com. I. Binney	23 Oct.	5 Dec.	Honduras	26 Feb.
Duke of York	Lt. Com. R. Snell	23 Nov.	———	———	29 Mar.
Nightingale ..	Lt. Com. G. Fortescue	25 Dec.	———	———	30 April.
Stanmer.....	Lt. Com. R. S. Sutton..	20 January	———	———	26 May.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

Renard	Lt. Com. G. Dunsford	5 Oct.	21 Nov.	Bahia.	21 Feb.
Goldfinch	Lt. Com. E. Collier	8 Nov.	———	———	28 March.
Reindeer	Lt. Com. H. P. Dicken	12 Dec.	———	———	2 May.
Lyra	Lt. Com. T. St. John ..	Detained with Mail since 15th Jan.			

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 80, St. Martin's-le-Grand.

REFITTING.——Pantaloon, Lieut. S. C. Dacres, 17 Jan.—Eclipse, Lieut. Com. C. W. G. Griffin, 27 Dec.—Mutine, Lieut. Com. R. Paule, 27 Dec.—Skylark, Lieut. C. P. Ladd, 28 Dec.—Flamer, St. V. Lieut. R. Bastard.—Plover, Lieut. Com. W. Downie.—Briseis, Lieut. Com. G. Downie, 5 Dec.—Firebrand, St. V. Lieut. Com. G. W. Buchanan, 18 Jan.—Pike, Lieut. Com. A. Brooking, 16 Jan.—Rinaldo, Lieut. Com. J. Hill.—Pandora, Lieut. Com. W. C. Croke.—Sheldrake, Lieut. Com. A. R. Passingham.—Firefly, St. V. Lieut. Com. T. Baldock.—Hermes, Lieut. Com. J. Wright.—African, St. V. Lieut. Com. J. Harvey.—Carron, St. V. Lieut. Com. J. Duffil.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 60.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
62 Adelaide	Bloomfield	Liverpool	Constnople	C Trafalgar	14 Dec.	Supposed foundrd.
63 Adrian	Foster	Quebec	London	46 N 13 W	10 Dec.	Foundered, crew saved.
64 Albion	Garson	Leith	Lisbon	Plymouth	22 Dec.	Abandoned.
65 Albion*	Hart	Bridgwater	Liverpool	Anglesea	Dec.	Total.
66 Ann	Of Leith	——	——	Eartholmes	28 Dec.	Crew saved.
67 Ariel*	Baxter	Sunderland	Schiedam	Callao	Dec.	1 saved.
68 Asia	Of London	——	——	49° N 35° W	1834	Abandoned.
69 Achmuty	Davison	——	——	Scroby Sand	1 Jan.	1 drowned.
70 Avina	Of Sunderland	seen going	down off	Dogger Bank	25 Dec.	Abandoned.
71 Active	Dodd	Dublin	Whitehavn	Isle of Man	9 Jan.	1 drowned
72 Blessington	Maloney	Dungarvon	——	Fresh Water Bay	Jan.	
73 Branch	Gibson	Sunderland	Portsmouth	Newcome S	16 Dec.	Crew saved.
74 Brothers	——	Bahia	Liverpool	Carmarthen Bay	20 Dec.	All drowned.
75 Canadian Packet	Brickham	Foundered	off	Newark	18 Dec.	
76 Charles Law	——	Liverpool	——	Dardanelless	11 Dec.	Crew saved.
77 City of Limerick*	Cooper	Cork	Leghorn	Cork Hds.	12 Dec.	Crew saved.
78 Clyde	Parfitt	Glasgow	Bristol	Bay Fleet	17 Dec.	1 drowned.
79 Cæsar	Surflen	London	Bengal	Mauritius	9 Oct.	Crew, &c. saved.
80 Crown	Cordian	St.Petersbg	London	Ostericsoer	21 Dec.	Crew saved.
81 Daphne	Harrison	Sicily	Newcastle	Holland	Dec.	1 saved only
82 Defiance	——	——	——	Van.D.Land	Sept.	
83 Deveron	Whaler	Coast of N.	Holland	Abandoned	19 July	
84 Diadem	Smith	St.Petersbg	London	G. Finland	23 Dec.	Crew saved.
85 Dolphin	Holman	Fayal	London	Cant Sands	17 Dec.	1 drowned.
86 Dolphin	Roberts	Glasgow	Shoreham	off Brighton	7 Jan.	Crew saved.
87 Dorothy	Turnbull	Londondry	Not heard	of since	23 Oct.	
88 Economy	Seaton	S.Petersbg.	Liverpool	Nidingen	19 Dec.	Crew saved.
89 Ellida	Back	Nwcastl by	Liverpool	I. Mull	23 Dec.	
90 Elisabeth	Stedman	S.Petersbg.	London	Nidingen	19 Dec.	Crew saved.
91 Elisabeth	Hill	Bengal	Liverpool	Northam B.	17 Dec.	Crew saved.
92 Endora	Mackie	Bengal	Mauritius	Cuttack	——	previous to 5 Aug.
93 Euphemia	Bainbridge	StJohnsNB	Wexford	ChathamNS.	19 Dec.	3 drowned.
94 European	Of Newcastle	Abandoned	in a sinking	state	17 Dec.	Crew saved.
95 Falcon	Burrows	Whitehavn	Belfast	Southrock	16 Dec.	3 drowned.
96 Finabury*	Duncan	Whaler	——	South Seas	Fb.1832	Crew part saved.
97 George	Westray	Whitehavn	——	Branaty Rck	31 Dec.	Crew saved.
98 George and William	Waller	Jamaica	Lisbon	Guernsey	Jan.	2 saved
99 Grace	Brabyn	Cardiff	Constnople.	Mediterran.	6 Dec.	Abandoned.
100 Grecian	Salisbury	Liverpool	C. G. Hope	Liverpool	31 Dec.	All lost.
101 Hazard	Campbell	Ballina	Liverpool	Tory Isl.	24 Dec.	Crew saved.
102 Helen	Lodge	London	Quebec	Chaleur B.	Nov.	Crew saved.
103 Henry	Huntrod	Ipswich	——	Memel	7 Nov.	
104 Henry Brougham	Conolly	Quebec	Ross	Valentia	20 Nov.	All lost
105 Hero	——	Hamburgh	Jersey	Scroby Sand	10 Jan.	
106 Hiram	——	Ballina	Liverpool	Killala B.	9 Jan.	Crew & cgo. svd.
107 Hopewell	Meyrick	Foundered	suddenly	Coast Ireland	26 Dec.	All drowned.
108 Industry	——	——	——	R. Hooghly	August	1832.
109 Isabella	Foundered	Liverpool	Port Rush	Dunseverick	12 Jan.	Crew saved.
110 Isabella	——	Clyde	Clare	Galway	4 Jan.	
111 Itinerant	Neale	Gonaives	Cork	River Bay	10 Nov.	Sunk—Jamaica.
112 Jessie	——	Spyland	Liverpool	Supposed	Lost	December.
113 John	Callender	StPetersbg.	London	Baltic	Dec.	
114 John	Keighley	Sciata	Liverpool	Off Sardinia	29 Nov.	Crew saved.
115 Juventus	Mackintosh	Clyde	Limerick	Coast Ireland	29 Dec.	2 drowned
116 Lancashire Witch	——	Liverpool	Vera Cruz	Vera Cruz	27 Oct.	Total crew saved.
117 Lark	Of Whitby	——	——	Yarmouth S	31 Dec.	Crew saved.
118 Margaret	Smith	Sunderland	Lossiemuth	Not heard of	since	2 November.
119 Margaret	Gibbs	Riga	London	Bornholm	18 Dec.	Crew saved.
120 Mary	Of S. Shield	Abandoned	off	Ostend	4 Jan.	
121 Marquis of Anglesea	Griffiths	Liverpool	Belfast	Not heard of	since	25 November.
122 Mary	Taylor	StPetersbg.	London	Whiting Sd.	31 Dec.	Abandoned.
123 Mary and Betty	M'Kane	Campbletn	Liverpool	Not heard of	since	25 November.
124 Mary Elizabeth	Fitzgerald	Halifax	Quebec	Malbay Anticosti	Dec.	Crew saved.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
125	Mayflower	Winteringham	Goole	Boston	Boston Dks.	21 Dec.	Crew saved.
126	Medusa	Of Whitby			Hamboro'Hd	1 Jan.	Abandoned.
127	Nancy	M'Cartney	Restigoucu	Maryport	Magdalen I.	Dec.	Crew saved.
128	Navigator	Solebny	Shields	London	Gunfleet S.	6 Jan.	Crew saved.
129	New Felix	Souligny	Liverpool	Montreal	Millebache	Dec.	
130	Nemesis	Rollins	Poole	St Andrews	LiverpII, NS	Dec.	Total.
131	Norwich Packet	Fuller	Yarmouth	Newcastle	Off Whitby	17 Dec.	Crew saved.
132	Ophilia	Emmerson	Sligo	London	Not heard of	since	13th Nov.
133	Orde	Greenslade	Foundered	off	Hambro' Hd.	10 Dec.	Crew saved.
134	Ovington	Bell	Taganrog	Liverpool	Negropont	13 Nov.	Crew saved.
135	Rebecca	Brunton	Sunderland	Aberdeen	Bondecar R.	7 Jan.	Crew saved.
136	Ringdove	Gilbert	Of London		St. Lawrence	17 Nov.	Crew saved.
137	Rival		Liverpool	Charleston	46½° N 7° W	Jan.	Cw.sd.by Firebrand
138	Sincerity	Legget	Of Ipswich	Broke from	her anchors at	Yarmth	1 Jan. abandoned.
139	Sisters	Gayne	Miramichi	Sunderland	Off Yarmouth	16 Dec.	Crew saved, upset.
140	Smyrna Packet	Haddon	Maranham	Liverpool	Not heard of	since	25 Aug.
141	Swan	Hutchins	Bideford	Bristol	Channel	Dec.	
142	Susan	Landry			C. Breton	11 Nov.	Total.
143	Syren	Pritchard	Swansea	Malta	Burry Hol.	17 Dec.	Crew saved.
144	Telegraph	Johnson	Lynn	London	Blakeney	11 Jan.	Crew saved.
145	Thomas Warham	Robson	Newcastle	London	Corton S.	11 Jan.	Crew saved.
146	Trial		St Andrews	London	49. 11. N., 23. 15. W.	12 Jan.	Abandoned.
147	Traveller	Anderson	Newcastle	Charente	Mundesley	4 Jan.	Crew saved.
148	Trident	George	Porth Cawl	Liverpool	Not heard of	since	2d Jan.
149	Two Sisters*		Guernsey	Rotterdam	Hinder	Jan.	Crew saved.
150	Unknown	A Brig	Timber	laden:	Valentia I.	20 Dec.	All lost.
151	Unknown	Supposed	English	schooner	Scaw	1 Dec.	Holland.
152	Unknown	A Brig	Londonder.	Bristol	Arklow B.	16 Dec.	Abandoned.
153	Unknown	A Schooner			Portland R.	28 Dec.	Foundered.
154	Unknown	A Schooner			Liverpool	31 Dec.	One saved.
155	Unknown	A Brig	Masts wash	ed ashore	Margate	8 Jan.	About 150 tons.
156	Unknown	A Sloop	with grain		Duddon Bar	6 Jan.	All lost.
157	Water Witch	Steamer	Bristol	Waterford	Kilmore	20 Dec.	Seven drowned.
158	Watt		Liverpool	Africa	C. of Wales	7 Jan.	Supposed.
159	William	Taylor	Bristol	London	Ness Sand	26 Dec.	Crew saved.
160	William Donald	Harrison	Liverpool	Savana	Blackwater B. Arklow	28 Dec.	Abandoned.
161	William Hamilton	H. Hawes	Sier. Leone	London	Hurst	16 Jan.	One drowned.
162	Windsor	Findlay	Sunderland	South'pton	Kent, Knok	24 Dec.	Abandoned.
163	Wortley	Garrington	Dublin	Sligo	Islay	17 Dec	Crew saved.

* For account see last number of Nautical Magazine.

FURTHER PARTICULARS OF WRECKS.

JOHN, Keighley. — Fallen in with in a sinking state off Sardinia, by the Jean M'Millan, which vessel landed the crew at Gibraltar.

SWAN, Hutchins. — Nothing further is known of her than her boat and part of her rigging having been washed on shore at Laymouth.

ADELAIDE.—It is feared that this vessel is foundered. She was run foul of by a Dutch galliot, and not to be seen from the masthead of the latter at daybreak, two hours afterwards.

ASIA.—This ship, timber laden, and waterlogged, with foremast, foretopmast, and bowsprit standing, and abandoned, was fallen in with by the Trinity, Walker, arrived at Poole from Newfoundland.

GRACE.—This vessel sprung a leak, and was abandoned in a sinking state by the crew, who arrived at Girgenti in the long boat, on the 7th Dec.

On the 11th ult. the English brig Duncan, homeward bound, from St. John's, America, was wrecked on the French coast near Montreuil. All the crew reached the shore in boats, except the captain, whose body was afterwards found, and buried. Lately, however, suspicions have arisen that he was murdered by his men, and thrown overboard; and these reaching the ear of the Sub-Prefect of Montreuil, the body was disinterred, and, on examination, it became evident that the captain had been strangled.—*French Paper.*

The WILLIAM HAMILTON, schooner, of 88 tons, Henry Hawes, master, from Sierra Leone to London, laden with cann-wood, (dye,) and hydes, was totally lost on the night of the 15th inst. at Hordle Cliff, near Hurst castle. The captain and five men were saved, and one (a krooman) was unfortunately

drowned in the cabin. She sailed from Sierra Leone on the 23d November last, and had encountered dreadful gales during the preceding nine days, scudding under little more than bare poles, all the sails being nearly destroyed, cook-house, and almost every other thing, washed from the deck. The crew were quite exhausted from constant working at the pumps. She was formerly a coast slaver, and was a beautiful vessel, captured by the Trinculo, and sold to Messrs. Hamilton of London. Two men have been taken into custody for stealing copper from the wreck.

On 20th Jan. Captain Fisher, of the brig Avena, of Portsmouth, arrived there, together with his crew, who had been missing for about six weeks. The vessel sailed from thence on the 7th ult. for Chatham, coal laden. On the day following, near the Dudgeon Light, they lost the mainmast and fore-topmast, when the vessel became in a great degree unmanageable. They continued on board for fifteen days, when they were taken on board the Everhand, Captain Barlach, of Bremen, for Charleston, and remained there for twenty-six days. On the 10th of January, they were taken on board of the Little Family, fishing smack, of Brixham, and on the following day were put on board of the Sherlock, of Sunderland, by which vessel they were brought home. Of the kind attention of Captain Barlach and his crew, Mr. Fisher speaks in terms the most grateful and friendly. They parted with the Everhand in 53° 55′ N. lat., 3° E. long. all well. We ought to notice, that, on the 28th of December, three fishing smacks, belonging to Gravesend, came near the Everhand; part of the crews came on board in boats, and consented to take Captain Fisher and his crew to London, whither they were bound. Captain Barlach treated the fishermen kindly, and offered them a supply of provisions; yet, after all his kindness, they jumped into their boats, and pushed off, leaving their countrymen with the hospitable foreigner, but for whose philanthropy they might have perished.

ABSTRACTS OF ADMIRALTY ORDERS.

POWDER AND SHOT.—The Admiralty have directed an alteration in the compliment of powder and shot, for the different ships of war, viz. the number of round shot for each gun to be eighty rounds, and fifty rounds for each carronade. All the cartridges are to be of the same colour, and for the more easily distinguishing each description, the words "Distant," "Full," or "Reduced Charge," are to be stamped on them, also the nature and weight of the guns with which they are intended to be used, and balls of different and distinct colours, for full and reduced charges, will be made thereon. Thus, the duties connected with the ships' guns will be simplified, and the beneficial results derivable therefrom, especially in an engagement, must be very extensive.

NAVAL BILLS. — The Lords Commissioners of the Admiralty have given notice, that all bills drawn upon the Accountant-General of the Navy, by officers of his Majesty's Navy, for stores purchased, necessary money, savings of provisions, &c., are wholly exempt from stamp duty by the 8th and 29th sections of the act of the 2d Wm. IV. cap. 40.

MATES AND MIDS.—An order of the Admiralty, dated the 18th of December last, regulates the entry and rating of young gentlemen on board his Majesty's ships. The order directs, that in future the number of mates and midshipmen in each ship be, for first-rates, 24; second, 20; third, 16; and fourth and fifth, 10; sixth, 8; sloops, 3; cutters and brigs, 2; guard-ships, 8. Of this aggregate number, there must be selected from mates, who have passed both examinations, or from college midshipmen in first-rates, 8; second, 8; third, 5; fourth, fifth, and sixth, 4; sloops, 1; cutters and brigs, 1; guard-ships, 4. The Admiralty claim the approval of all these appointments. In case of an excess of collegians or admiralty mates, the Admiralty will appoint two young gentlemen, but not more than two, in each ship as extras. The number of volunteers of the first class, and of college volunteers in each rate, is in future to be as follows:—

	Volunteers 1st Class.	*College Volunteers.*
1st and 2d rates (sea-going ships)	3	6
3d rates	2	5
4th and 5th rates	2	4
6th and sloops	1	3
Guard-ships	3	0
Brigs	0	1

When the first class and college volunteers have completed four years' servitude, and there are no vacancies in ships to rate them as midshipmen, they may, in that case, be borne as extra midshipmen (but not more than two in a ship) until vacancies occur; their vacancies in the volunteers' class are not to be filled up while they remain as extras. By the 9th article, which directs that quarterly returns should be made to the Admiralty, of mates, midshipmen, and volunteers, the power of disrating midshipmen, masters' assistants, and volunteers, again reverts to the captains, which the former took away. Captains' clerks, in future, may be elected from such persons as have been clerks in the offices of flag officers.

COLLEGE VOLUNTEERS.—By an Admiralty regulation, dated the 1st of the present month, the college volunteers, as they leave the college, will not have, as before, one year's service allowed to them, unless the progress made by them in their professional education warrants it; but they will be allowed only for such portion of the year as the examining officers shall deem it right to certify for, according to their respective qualifications.

SHELLS.—An order has been issued, that all steam-vessels supplied with filled shells, are in future to return them into store while on the home station, but to receive them again when ordered for foreign service.

PUNISHMENT.—The following Memorandum was issued by Admiral Sir T. Williams, on the paying off of the Nautilus, Commander Lord George Paulet, at Portsmouth:—Victory, in Portsmouth Harbour, 28th Dec. 1833. —My Lords Commissioners of the Admiralty having observed, with satisfaction, the readiness with which the officers and crew of the "Nautilus" proceeded to execute the service required of her, after a period of more than three years' servitude; and my Lords having also had the pleasure to observe a circumstance highly creditable to the captain, officers, and crew, namely, the almost total absence of punishment; I am desired by their Lordships to convey their approbation on these heads to you, and hereby direct you to acquaint the officers and crew of the Nautilus with the same, before she is paid off.

(Signed) T. WILLIAMS, Adm.

Capt. Lord G. Paulet, Nautilus.

Births.

At Stonehouse, the wife of B. Dyer, esq., Purser, R.N., of a daughter.

Lately, of a daughter, the lady of Lieut. Wallace, R.N., of Exeter.

At Southampton, the lady of Capt. Wood, R.N., of a son.

At Campbeltown, N.B., the wife of Lieut. Samuel Mottley, R.N., of a son.

At Spithead, 18th Jan., on board the James Patteson, Lady Stirling, of a son.

At the Royal Clarence Baths, the lady of Lieut. E. F. Wells, R.N., of H.M.S. San Josef, of a son.

At Newlands, Ryde, on the 31st ult., the lady of Lieut. James George Mackenzie, of H.M.S. Caledonia, of a son.

In September last, at Bombay, the lady of James S. Unwin, R.N., of a daughter.

Marriages.

Lately, Lieut. D. A. Doratt. to Caroline, fourth daughter of the late John Robertson, esq., of Belmont.

At Eccleshall, Stafford, Lieut. Gretton, R.N., to Sarah, youngest daughter of the late Rev. H. Teach, of Derby.

At Clifton, C. Young, Esq. Commander, R.N. to Miss Norton.

At Corfe Castle, Capt. Rochfort, R.N. to Arabella, youngest daughter of the late Right Hon. John Calcraft.

John Whitmarsh, Esq. Dispenser of the Royal Naval Hospital at Malta, to Mrs. Gullifar, of Wallington, Hants.

Deaths.

On the 22d ult. after a long illness, aged 39, Captain Henry Parkyns Hoppner, R.N. His career in the Navy commenced on board the Endymion, which was engaged in embarking the troops after Sir John Moore's retreat. During the rest of the war he was constantly on active service, either on the enemy's coast in the Channel, or in North America. Captain Hoppner's name has been frequently before the public. His intimacy with Madeira, one of the principal personages at Loo Choo, forms an agreeable and interesting episode in the account of those islands; and the skill with which he conveyed Lord Amherst and his suite to Batavia, in the boats of the Alceste, after the loss of that vessel, and his opportune return on board the Lion Indiaman to the assistance of his comrades, must be remembered by every one acquainted with the particulars of their perilous situation. He was made Post in 1825, and was employed in all the recent expeditions fitted out by Government to explore the Polar Seas, in the last of which he commanded His Majesty's ship Fury, which it unfortunately became necessary to abandon among the ice. His health, which had suffered considerably on these occasions, was still further impaired by an excursion to the south of Europe immediately on his return from his last Polar expedition.

At Brechin, Mr. J. Munro, Surgeon, R.N.

At Florence, on the 24th Decr., Commander James Stewart Brisbane, only son of the late excellent Commodore Sir James Brisbane, C.B. (1829.)

At St. Savant, Commander G. L. Saunders, R.N. aged 50. (1824.)

Lately, Commander Geo. Jones, R.N. aged 65. (1798.)

On the 27th Dec., after a long and painful illness, at his residence in Grosvenor-place, Bath, Captain the Hon. Frederick Noel, R.N., aged 43, much beloved, and highly valued for his sincere piety and active charity.

On the 7th Dec., at Barbadoes, Commander W. Agar, of H.M.S. Arachne.

On the 4th Jan., at his house in Tavistock-place, aged 76, Captain John Blewett, formerly commanding H.M.S. Triumph, in the Quarantine Establishment at Milford.

At Bin Rock, Cardy, Forfar, Capt. Skene, C.B., Royal Navy. (1813.)

On the 19th Jan., at the residence of Rear-Admiral Brooking, after a protracted illness, Henry Baynham, esq., of the Ordnance Department, son of the late Captain Baynham, R.N.

On the 18th Jan., at Panton Lodge, near Emsworth, Hants, Capt. George Aldham, R.N. (1805), who served as a Midshipman in Lord Rodney's action of 12th April, 1782; was first Lieutenant of the Southampton, at the memorable engagement of the 1st June, 1794; first Lieutenant of the Incendiary, in Lord Bridport's action, of the following year; Commanded the Nautilus, in 1802; and the Ville de Paris 110, in 1806.

At the Royal Naval Hospital, Plymouth, Mr. B. Rogers, of H.M.S. Nautilus, aged 20, son of the late Rev. J. Rogers, Rector of Honiton, Devon.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

Fig. 1.

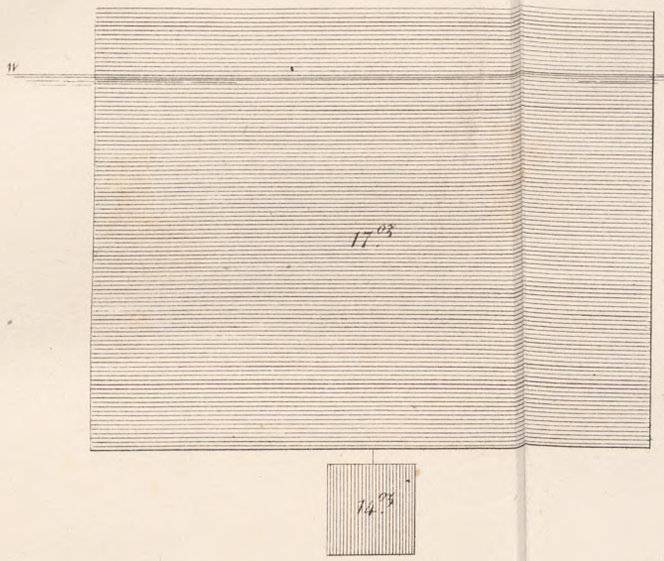


Fig. 2.

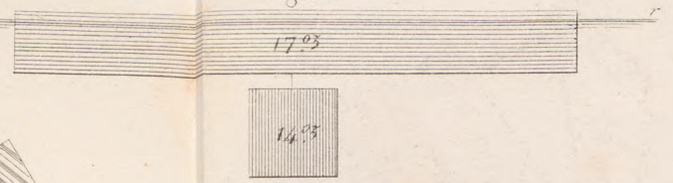


Fig. 3

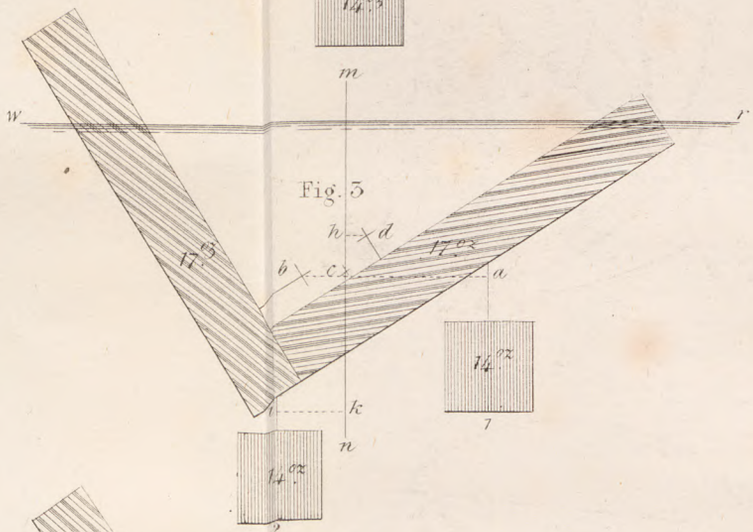


Fig. 5.

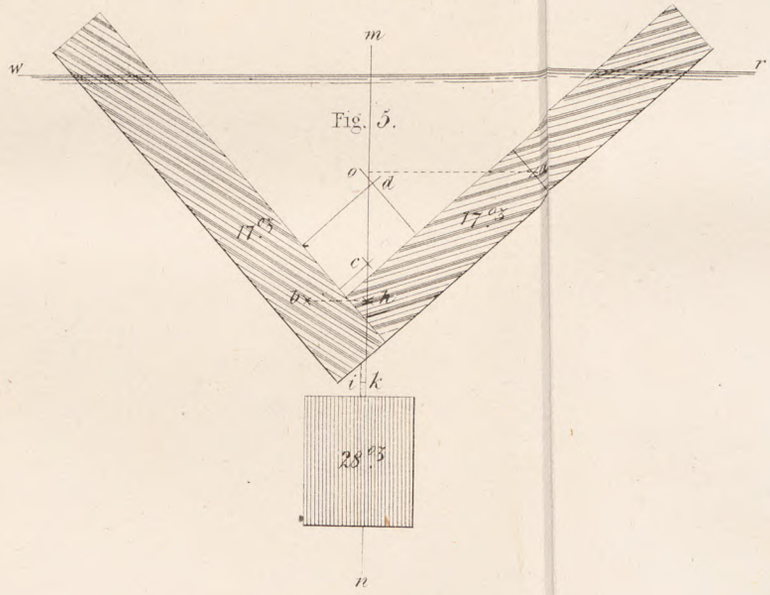
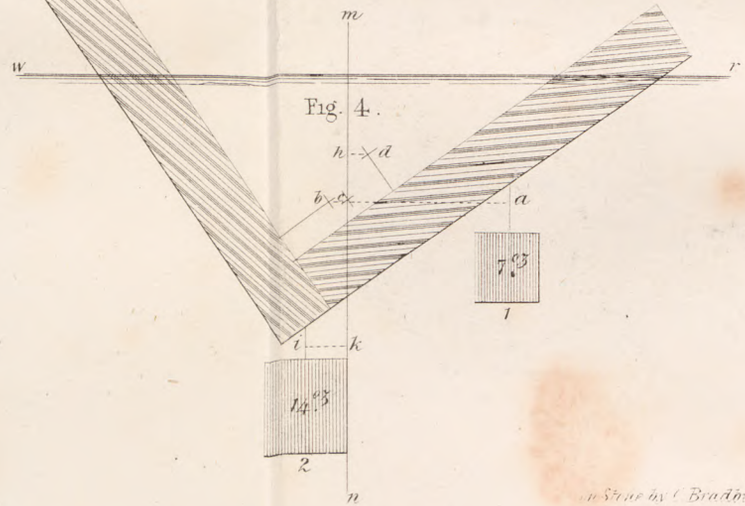


Fig. 4.



John Pearse, Comm.r R.N.

Stone by C. Bradbury.

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THE

NAUTICAL MAGAZINE,

MARCH, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

12. HARCOURT ROCK, *North of the Bahamas. Reported above water in Lat.* 30° 49′ *N., Long.* 78° 27′ *W.*

The following statement of this reported danger is made by Captain C. Huntley, of the ship Governor Harcourt. As we do not find that soundings were obtained near it, nor even tried for, we must be content for the present in laying the account of it before our readers, to place it on the list of doubtful dangers:—

"I sailed from Belize on the 17th of November, and on the 30th of Nov., about 8 h. 40 m. A.M., saw something on the lee-bow, and at about 9 came abreast of it. I, with the rest of the officers and passengers, saw distinctly that it was a coral rock. We were about sixty yards to the southward of it. I immediately hove the ship to, and lowered down the quarter-boat. Unfortunately, the boat swamped, and with some difficulty I got the chief mate and boat's crew on board again. I got some very good sights for an excellent chronometer, and by a very good observation at noon, and by reducing the ship's run, I find that this rock lies in lat. 30° 49′ 15″ N. and long. 78° 27′ 30″ W. from Greenwich. It was about eight feet above the water; and in the fall of the sea it branched out to the N.N.W. about thirty feet distance."

13. NEW LIGHT-HOUSE OF BIARRITZ, *Department of the Lower Pyrenees, Bay of Biscay.*

(Translation.)

"Mariners are hereby informed, that, after the first day of February, 1834, the small fixed light of Biarritz will be discontinued, and a revolving light exhibited instead thereof, upon the summit of the tower recently erected on Point St. Martin de Biarritz, at the distance of a nautical mile north-east of the present light-house, and two miles and a half S. 33° W. from the mouth of the Adour.

"The flashes from the new light will succeed each other every half minute throughout the night, and in clear weather they will be visible to an observer elevated thirty-three feet above the surface of the sea, at the distance of eight marine leagues; and they will not be entirely obscured except beyond the distance of four marine leagues.

"*Direction General des Ponts et Chaussées,*
"*Paris, November,* 1833."

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14. New Light-house at Lunenburgh Harbour, *Nova Scotia.*

The following observation has been made by Lieut. John Hill, commanding his Majesty's packet brig Rinaldo, and may serve as a caution to navigators :—

"On our voyage to Halifax, 11th December, 1833, made Lunenburgh light-house, and mistook it for Sambro light-house, not being aware of any light-house being there. Found that it had been recently erected, but not lit."

(We shall be thankful to any of our readers for an outline-sketch of the above light-house.)

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15. Drift in the English Channel.

The following copy of a letter, taken from a bottle picked up on the coast of France, serves to shew the effect of continued westerly gales in the English Channel, and may be useful to mariners in making allowance for them :—

"*H.M.S. Favourite, Dec.* 14, 1833. *At Sea.*
Lat. 49° 2′ 1″ *N., Long.* 5° 47′ 45″ *W.*

"I write this letter in order that I may find out the current: you see by my lat. and long. we are only just out of the channel; 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 H. 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 to the south of Boulogne, this day, the 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.

Thus a drift is clearly shewn of 300 miles in twenty-one days, to the eastward, or a prevalence of 14·3 miles per day, from the 14th December to the 4th January, of the flood over the ebb tide, produced by the easterly winds; accounting also for high tides.

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16. New Buoy in Lowestoft Roads.

Compass Bearings.

"*Trinity-House, London,* 23*rd January,* 1834.

"Notice is hereby given, that this corporation has caused a White Buoy to be placed on a shoal which has recently grown up in Lowestoft South Roads.

This buoy lies just to the eastward of the shoalest part thereof, in two fathoms at low-water, with the following mark and compass bearings, viz.:—

The highest Wind-Mill to the Southward of Lowestoft, on with the South Pier-Head of Lowestoft Harbour . .	W. ½ N.
Lowestoft High Light-house	North.
Kirkley Church Tower	W. by S.

"By Order, "J. HERBERT, Secretary."

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17. THE LORTON ROCK—*Reported in the Providence N.E. Channel, West Indies.*

It appears, by a letter that we have just received from Commander Owen, surveying the West India Islands in H. M. S., Thunder, that the position of this rock, as given in the letter to Lloyd's, quoted in pages 561 and 562 of our 20th number for October last, is not correct, and that, in fact, the rock does not exist in the latitude and longitude therein stated, which would have placed it in the very middle of the Providence N.E. channel.

The following is an extract from the letter alluded to:

"I was pleased to find on my arrival here, that several persons could shew me the exact spot where the Lorton was wrecked, having been on board of her, and saved several articles from her. And you will perhaps be surprised to hear that it was on Egg Island reef, just to the northward of Royal Island, not more than a mile N. b. W., of Gaulding Cay. The master in his protest says, that he left the brig at 10 a.m. in their boats without provisions or water, and yet he gives the latitude and longitude by observation. It appears that the brig struck at 8h. 30m. a.m. and the next day floated off and drifted out into ocean water, when the master was out with several boats saving what they could. And it must have been at this time that he got his meridian altitude, and probably his bearing and distance. I have such a host of evidence as to the spot on which she struck, as to place it beyond a doubt.

"One young man who saw her on shore from a small sloop, when passing along the south side of Royal Island, went alongside of her, and filled his sloop with articles out of the brig; throwing overboard some iron pipes that he had on board the sloop as ballast, which pipes were afterwards fished up off the rocks by some Spanish wells people. A gentleman of this town ("Nassau") has given me in writing the substance of a conversation that took place in his presence with the master of the brig; it states that 'they were running with a fair wind (W.S.W. by the master's protest) along the reef, *which was perfectly visible from the deck*, and apparently about three miles distant, when the master went below to breakfast, where he had hardly been but a few minutes when the brig struck, and almost immediately filled.' I have been making a critical survey of the whole of that N.W. elbow."

A little plan of Royal and Egg Islands, according to Mr. De Mayne's survey in 1816, and published by the Admiralty in 1824, clearly shews the position of Gaulding Cay on

Egg Island reef; but we understand that Commander Owen is making an elaborate survey of it, which, with the rest of the new matter published at the Admiralty of these parts, our merchants would do well to look after. We have given them immediate information of charts, as they have appeared.

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18. Description of the North-East Coast of Australia. *By Captain P. P. King, R.N., F.R.S.*

1. *Lady Elliot Island* is a low islet, covered with shrubs and trees, and surrounded by a coral reef, which extends for three-quarters of a mile from its north-east end; the island is not more than three-quarters of a mile long, and about a quarter of a mile broad; it is dangerous to approach at night, from being very low. It is situated thirty miles N. 53° W. (mag.) from the extremity of Breaksea Spit, (as laid down in Captain Flinder's chart;) its latitude is 24° 6′, and its longitude 152° 45′ 15″.

2. *Bunker Group* consists of three islets; they are low and wooded like Lady Elliot Island, and lie S.E. and N.W. from each other; the south-easternmost (or first) has a coral reef projecting for two miles and a half to the N.E.; four miles and a half to the N.W. of the north-westernmost (or third islet) is a large shoal, which, from the heavy breakers upon it, is probably a part of the barrier or outer reefs. The centre island (or second) of the group, is in latitude 23° 51′ 10″, and longitude 152° 19′ 5″. Off the south-west end of the second island is a small detached islet, connected to it by a reef; and off the north-east end of the third island is another islet, upon a coral reef.

The spaces between these islands, which are more than a league wide, are quite free from danger: we passed within a quarter of a mile of the south end of the reef off the third island, without getting bottom within ten fathoms.

3. *Rodd Bay*, a small harbour on the west side of the point to the northward of Bustard Bay, offers a good shelter for vessels of one hundred and fifty tons burden. The channel lies between two sand-banks, which communicate with either shore. In hauling round the point, steer for Middle Head, a projecting rocky point, covered with trees, keeping the centre of it in the bearing of about south (mag.); you will then carry, first five, then six and seven fathoms; when you are abreast of the north low sandy point, you have passed the sand-bank on the eastern side, the extremity of which bears from the point W. ¼ N. about one mile; then haul in E. by S. and anchor at about one-third of a mile from the low sandy point bearing north.

In hauling round this point, you must not shoalen your water on the south side to less than four fathoms, as the sand-bank projects for a mile and a quarter from Middle Head. In the centre of the channel, between Sandy Point and Middle Head, and at about one-third of a mile from the former, you will have seven, eight, and nine fathoms water, until it bears N. by E., when it shoals to five fathoms. The situation of the extremity of the low sandy point upon Captain Flinders' chart (East Coast, sheet III.) is in latitude 23° 59′ 45″, and longitude 151° 34′ 45″. High-water takes place at eight hours and a half after the moon's transit.

In standing into Rodd Bay, the water does not shoalen until you are in a line with the north points of Facing Island and Bustard Bay.

There is a run of fresh water in the bay to the eastward of the low sandy point, but it was not thought to be a durable stream. Wood may be cut close to the beach, and embarked without impediment.

4. *Port Bowen.* Captain Flinders, in his account of this port, has merely confined himself to the anchorage under Entrance Island, (lat. 22° 29′, long. 150° 45′ 30″,) which is, at best, but an exposed roadstead. The channel in, on the north side of the island, is free from danger; but, on the south side, between it and Cape Clinton, there is an extensive shoal on which the sea breaks heavily; it was not ascertained whether it be connected with the bank off the south end of the island, but there is every probability of it. The inlet round Cape Clinton affords good anchorage; but, in the mid-channel the depth is as much as eighteen fathoms; the sands on the western side of the inlet are steep to, and should be avoided, for the tide sweeps toward them. The best anchorage is in the sandy bay round the inner trend of the cape, (latitude 22° 31′ 40″, longitude 150° 44′,) where both wood and water are convenient. In steering in from sea, haul round the cape, and pass about half to three-quarters of a mile to the north of the high round island, in seven fathoms, avoiding the sand-banks on either side. In passing the inner trend of the cape, the water will shoal to three and three-quarter fathoms, but do not approach too near the point. When you have opened the inlet, steer in; and, having passed the inner cape, haul in to a sandy bay on the eastern side, where you may anchor in eight or nine fathoms at pleasure.

The centre of the shoal in the middle of the port bears N. ¼ E. by compass, from the high round island; and N. by W. ¼ W. when in a line with Entrance Island.

High-water appears to take place half an hour later than at Entrance Island, or about 10 h. 40 m. after the moon's southing, (the moon's age being thirteen days.) The tide did not rise more than six feet, but it wanted three days to the springs. Captain Flinders supposes the spring tides to rise not less than fifteen feet. The variation of the compass off Cape Clinton was 9° 5′ east, but at Entrance Island, according to Captain Flinders, it was 7° 40′ east.

5. *Northumberland Islands.* In the direction of N. 8° E. (magnetic,) and five miles and a half from the third island, is a low rock, which, at high-water, is very little above the surface of the sea; it is very dangerous, because it lies in the direct track of vessels steering towards the Percy Isles. It escaped the observation of Captain Flinders.

In the direction of S. 42° W., (magnetic,) and ten miles from the west end of Percy Island, No. 1, are some rocks, but I am not aware whether they are covered: they were seen by Lieutenant Jeffries in 1815.

Another patch of dry rocks was seen by me from the summit of a hill at the west end of Percy Island, No. 1, whence they bore S. 60° W., (magnetic,) and were supposed to be distant out eight or nine miles. The variation of the compass here is between 7° and 8° east.

6. The *Percy Isles* have also been described by Captain Flinders; the bay at the west end of No. 1 is of very steep approach, and not safe to anchor in, excepting during a south-east wind. The anchorage at No. 2, inside the pine islets, is bad, since the bottom is rocky; the ground is, however, clearer more to the southward; and, on the whole, this anchorage is not insecure, since there is a safe passage out either on the north or south sides of the Pine Islets. Wood may be procured with facility, and water also, unless the streams fail in the dry season. Captain Flinders was at these islands in the latter end of September, and found it abundant. The flood-tide comes from the north-east; at the anchorage in the channel, between the pine islets and No. 2, the flood sets to the south, and the ebb to the north; the maximum rate was one and a

quarter knot. High-water occurred at the latter place two hours and a half before the moon's passage; but on the following day did not precede it more than one hour and a half. Captain Flinders mentions high-water taking place on shore at eight hours after the moon's passage. (Vide Flinders, vol. ii. p. 82.) The tide rose twelve feet when the moon was thirteen days old. The north-west end of No. 1 is in lat. 21° 44′ 50″, long. 150° 16′ 40″; the south-west end of No. 2 is in lat. 21° 40′ 50″, long 150° 13′.

7. In passing *Shoal Point*, in lat. 21° 0′ 5″, long. 149° 7′ 40″, Capt. Cook's ship got into shoal water, and at one time had as little as three fathoms (Hawkesworth, vol. iii. p. 131:) and the merchant ship Lady Elliot, in the year 1815, met with a sand-bank extending from the island off the point in a north-east direction for ten miles, on one part of which she found only nine feet water.

The Mermaid passed the point at the distance of three miles, and, when the island bore S. 68° W., distant two miles and a half, had four and three-quarter fathoms, which was the least water that was found, but, it being then high-water, five or six feet, if not more, may be deducted, to reduce it to the proper low-water sounding. There was no appearance of shoaler water near us, and it is probable that Captain Cook's and the Lady Elliot's tracks were farther off shore. The variation of the compass, six miles east of Point Slade, was 7° 11′ east.

8. *Cape Hilsborough* is a projection terminating in a bluff point in lat. 20° 53′ 40″, and long. 149° 0′ 15″: being high land, it may be seen seven or eight leagues off. The variation here is 6° 30′ E.

9. The *Cumberland Isles* extend between the parallels of 20° and 21° 6′, and consist generally of elevated, rocky islands; they are all abundantly wooded, particularly with pines, which grow to a larger size than at the Percy Isles. We did not land upon any of them; they appeared to be of bold approach, and not dangerous to navigate amongst; they are from six to eight hundred feet high; some of the peaks on the northern island are much higher.

k 1 (latitude 21° 5′ 40″, longitude 149° 54′ 25″) is about three-quarters of a mile in diameter: it is of peaked shape; at three-quarters of a mile off its south-east end there is a dry rocky lump.

k (latitude 21° 0′, longitude 149° 52′ 30″) is nearly a mile and a quarter in diameter, and has a considerable reef stretching for more than a mile and a half off both its north-west and south-east ends; on the latter is a small rocky islet.

k 2 (in latitude 20° 58′, longitude 149° 44′ 55″) is of hummocky shape; it has also a reef off its south-east and north-west ends, stretching off at least a mile. On the south-east reef is a dry rocky islet.

10. *Three Rocks*, in latitude 20° 56½′, are small islets of moderate height. All these islands are surrounded by deep water. The variation here is about 6¾° east.

k 4, in latitude 20° 53′ 10″, and k 4½, in latitude 20° 58′, and the two sandy islets to the westward of them, were seen only at a distance.

l, in latitude 20° 51′ 10″; l 1, in latitude 20° 54′ 10″, containing two islands; l 3, in latitude 20° 44′ 15″; and l 4, in latitude 20° 45′ 30″, are also high, but we were not nearer to them than six or seven miles; l 2, in latitude 20° 45′ 40″, longitude 149° 33′ 55″, is the island on which Captain Flinders landed, and describes in vol. ii. p. 94: he says, "This little island is of triangular shape, and each side of it is a mile long; it is surrounded by a coral reef. The time of high-water took place *one hour* before the moon's passage, as it had done among the barrier reefs; from ten to fifteen feet seemed to be the rise

by the shore, and the flood came from the northward." The variation near l 2 is 6° 17′ E.

m is a high, bluff island, the peaked summit of which, in latitude 20° 46′ 35″, and longitude 149° 15′ 15″, is eight hundred and seventy-four feet high; there are several islets off its south-east end, and one off its north-west end.

11. *Sir James Smith Group* consists of ten or twelve distinct islands, and perhaps as many more, for we were not within twelve miles of them. On the principal island is *Linne Peak*, in latitude 20° 40′ 30″, and long. 149° 9′ 10″; it is seven or eight hundred feet high.

12. *Shaw Peak*, in latitude 20° 28′, longitude 149° 2′ 55″, is on a larger island than any to the southward; it is sixteen hundred feet high. The group consists of several islands; it is separated from the next to the northward by a channel five miles wide. In the centre is *Pentecost Island*, a remarkable rock, rising abruptly out of the sea to the height of eleven hundred and forty feet. Its latitude is 20° 23′ 10″, and longitude 148° 59′ 30″.

The northern group of the Cumberland Islands are high, and appear to be better furnished with wood, and more fertile than the southern groups, particularly on their western sides.

The principal peak, in latitude 29° 15′ 10″, and longitude 148° 55′, is fifteen hundred and eighty-four feet high, and is situated on the largest island, which is ten miles long, and from three to nine broad: it has several bays on either side, and off its south-eastern end are four small islands; beyond them is a range of rocky islets. The northernmost island of this range is the extremity of the Cumberland Islands, as well as the north-eastern limit of Whitsunday Passage; it forms a high, bluff point, in latitude 20° 0′, and long. 148° 50′ 30″, and is of bold approach: on the western side of the island are some low islets.

13. *Repulse Bay* is a deep bight; its shores are low, but the hills rise to a great height. The extremity of the bay was not distinctly traced, but it is probable, upon examining it, that a fresh-water rivulet might be found; and also a communication with Edgecumbe Bay.

The Repulse Isles are of small size; they are surrounded by rocks, which do not extend more than a quarter of a mile from them. The summit of the largest island is in latitude 20° 37′ 5″, and longitude 148° 50′ 30″. Variation, 6° 15′ east.

Between Capes Conway and Hilsborough the flood-tide comes from the north-eastward, but is very irregular in the direction of the stream. At an anchorage off the island near the latter cape the tide rose twelve feet, but close to the Repulse Isles the rise was eighteen feet. At the former place, the moon being full, high-water took place at about three-quarters past ten o'clock; by an observation the next day, at the latter, it was a quarter of an hour later: the maximum rate was about one and a half knot.

14. *Whitsunday Passage*, formed by the northern group of the Cumberland Islands, is from three to six miles wide, and, with the exception of a small patch of rocks within a quarter of a mile from Cape Conway, and a sand-bank (that is probably dry, or nearly so, at low-water) off Round Head, is free from danger. The shores appear to be bold to, and the depth, in the fair way, varies between twenty and thirty fathoms; the shoal off Round Head stretches in a N.N.W. direction, but its extent was not ascertained.

In steering through the strait, particularly during the flood-tide, this shoal should be avoided, by keeping well over to the east shore; for the tide there sets across the strait; it is about a mile and a half from Round Head, in which space the water is ten and fourteen fathoms deep.

Between Round Head (in latitude 20° 28′ 30″) and Cape Conway, is a bay

where there appeared to be good anchorage, out of the strength of the tides; and to the north of Round Head is another bay, the bottom of which is an isthmus of about a mile wide, separating it from an inlet to the westward of Cape Conway. This bay very probably affords good anchorage out of the strength of the tides.

15. *Cape Conway*, in latitude 20° 32′, and longitude 148° 54′, is the western limit of the south entrance of Whitsunday Passage; it is a steep point, sloping off the eastward. Immediately on its north side is a small shingly beach, a few yards behind which there is a hollow, containing a large quantity of fresh water. At a short quarter of a mile from the point is a rocky shoal of small size, between which and the shore there is deep water.

16. *Pine Head*, in latitude 20° 23′, and longitude 148° 51′ 40″, is the south-east extremity of a small island that is separated from the main by a passage of about a mile wide, but we did not ascertain whether it is navigable. The head is a high, bluff point, clothed with pine trees: near it the tide runs in strong eddies, and for that reason it ought not to be approached nearer than half a mile; it appeared to be bold to. There is a sandy bay on its south-west side, affording a good landing-place; the island is clothed with grass, and thickly wooded. We found no water. The variation was 5° 35′ E.

17. *Port Molle*, so named by Lieutenant Jeffreys, appeared to trend in for four or five miles; and, probably, to afford a convenient port, as it is well sheltered from the wind, and is protected from the north-east by a group of small islands, thickly wooded. Hence the land trends to the north-west, towards Cape Gloucester. The shore was very indistinctly seen, but seemed to be very much indented, and to possess several bays, if not rivers; for the land at the back is very high, and must give rise to several mountain, if not navigable streams.

18. *Mount Dryander*, whose summit, in latitude 20° 14′ 10″, and longitude 148° 30′ 55″, forms a small peak, and is visible from Repulse Bay, as well as from the northern extremity of the Cumberland Islands: it is four thousand five hundred and sixty-six feet high; and the hills around it are at least from seven hundred to a thousand feet in height.

The greater part of the water that collects from these hills is probably emptied into Repulse and Edgecumbe Bays, or it may be distributed in lagoons upon the low land that separates them.

At the back of Point Slade there is a high mountainous range, extending without interruption to the westward of Mount Upstart. In latitude 21° 1½′, and longitude 148° 36¾′, is a high-rounded summit, which is visible at the distance of twenty leagues. Between this range, which is at the distance of from five to seven leagues from the sea, and the coast, are several ridges gradually lowering in altitude as they approach the shore. In the neighbourhood of Repulse Bay this mountainous range recedes, and has a considerable tract of low land at its base, which is possibly a rich country. From the height of the hills, it must be well watered.

19. *Cape Gloucester*. The point of land that Captain Cook took originally for the cape, is an island of about five miles long and two broad, separated from the true Cape Gloucester by a strait a mile and a half wide. The island is called Gloucester Island: its summit at the north end is in lat. 19° 57′ 24″, long. 148° 23′ 38″; it is eighteen hundred and seventy-four feet high, and its summit is a ridge of peaks: its shores are rocky and steep; and, although the sides of the hills are wooded, yet it has a sombre and heavy appearance, and at least does not look fertile. The cape, in latitude 20° 1′ 50″, and longitude 148° 26′ 15″, is the extremity of the mountainous range that extends off Mount Dryander. The variation observed off the island was 7° 11′ E.

Rowland's Patent Double Sextant and Circle.

Fig 1

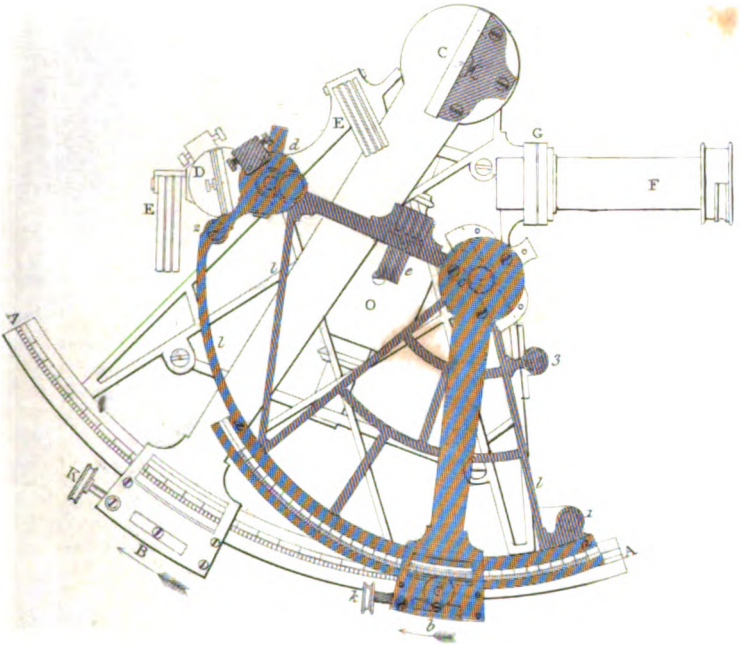
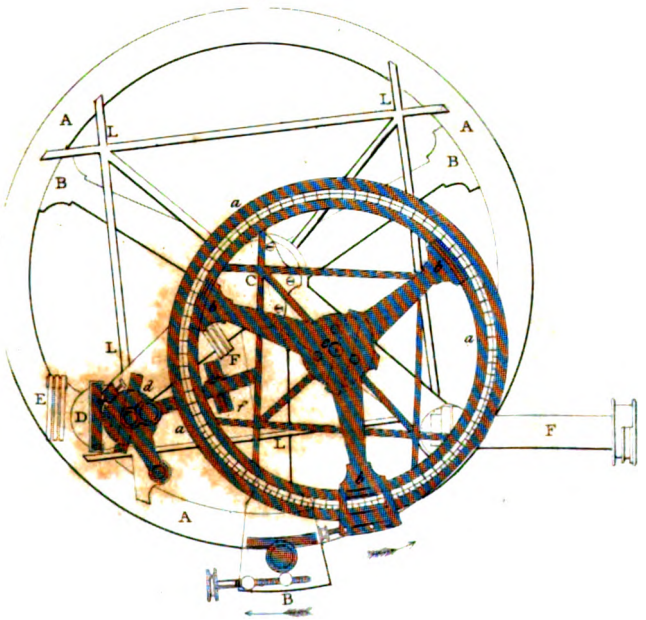


Fig 2



20. *Edgecumbe Bay* is a deep indentation of the land, the shores of which are very low: its extent was not ascertained, but, by the bearings of some land at the bottom, it is seventeen miles deep; and its greatest breadth, at the mouth, is about fourteen miles. It affords excellent shelter; and between Middle Island (a small rocky islet of a mile and a half in extent) and Gloucester Island, there is good anchorage in seven fathoms muddy bottom, with protection from all winds. We did not examine the bay farther than passing round Middle Island in six, seven, and eight fathoms, mud. The western side is formed by low islands, that appeared to be swampy; but our distance was too great to form the most distant opinion of them: if the main is not swampy, it must be a rich and interesting country.

21. *Holborne Island* is a rocky island, visible about seven or eight leagues, and has three small islets near it: it is in latitude 19° 41′ 5″, and longitude 148° 17′ 30″.

Cape Upstart is the extremity of Mount Upstart, which is so high as to be visible for more than twenty leagues in clear weather: it rises abruptly from a low projection, and forms a long ridge of mountainous land: the north-east end of the summit is in latitude 19° 41′ 50″, and longitude 147° 44′ 30″. This point separates two deep bays, both of which were of very inviting appearance, on account of the high and broken character of the gullies on either side of Mount Abbott, and it was almost evident that they both terminate in a river. The hills of Mount Upstart are of primitive form, and were judged to be composed of granite. The variation observed off the point was 6° 16′ E.

22. *Cape Bowling-Green* is very low, and projects for a considerable distance into the sea: its north-east extremity is in latitude 19° 19′ 10″, and longitude 147° 23′ E.; the mountainous ranges are at least thirty miles in the rear, and, were it not for Mounts Upstart and Elliot, both of which are very visible, and serve as excellent guides, this part of the coast would be very dangerous to approach, particularly in the night, when these marks cannot be seen, when great attention must be paid to the lead. A ship passing this projection should not come into shoaler water than eleven fathoms; and, in directing a course from abreast of Mount Upstart, should be steered sufficiently to the northward to provide against the current which sets into the bay on the western side of the mount. On approaching the cape, if the soundings indicate a less depth than eleven fathoms, the vessel should be hauled more off, because she is then either parallel with, or to the southward of, the cape.

23. *Cape Cleveland*, (latitude 19° 10′ 10″, and longitude 146° 57′ 56″,) like Mount Upstart, rises abruptly from a projection of low land, separating Cleveland Bay from a deep sinuosity that extends under the base of Mount Elliot, a high range with a rounded hill and a peak, the latter being at the south extremity of its summit. Mount Elliot may probably be seen at the distance of twenty-five leagues, if not farther: between it and the hills of Cape Cleveland the land is low, and is probably much intersected by water.

A reef extends from the extremity of Cape Cleveland for four miles to the eastward, but not at all to the northward, so that, with the point bearing to the southward of W. ½ S., a ship is safe. There is a breaker near the extremity of the reef, at about three miles from the point; to avoid which, keep the south end of Magnetical Island well open of the north extremity of the cape.

The peaked summit of *Mount Elliot* is in latitude 19° 33′ 10″, and longitude 146° 54′ 25″.

(To be continued.)

ORIGINAL PAPERS.

I.—The Art of Discovering the Representation of Ships, etc. in the Atmosphere.

Sir David Brewster's Letters on Natural Magic, notice the representation of ships in the air by unequal refraction, and observe that the wizard-beacon keeper of the Isle of France, who saw in the air the vessels bound to the island long before they appeared in the offing, must have derived his power from a diligent observation of the phenomena of nature. This is perfectly true, as the contents of the following extraordinary documents just brought to light do most fully corroborate. The letter and certificates from Marat to Daly have been published by a gentleman in possession of copies taken by himself from the original autographs.

He was a *detenu*, and in the year 1806 resided on his parole at Brussels. It being at that period a fashion among French ladies to collect autographs, Madame Guilleminot, sister-in-law to the General of that name, applied to a sister of Napoleon, with whom she was intimate, for a few signatures of celebrated men. The princess mentioned the request to Cambacéres, Chancellor of the Empire, by whose direction an immense package of letters from the state paper office was forwarded to Madame Guilleminot. From these the gentleman before mentioned was employed to make a selection, receiving at the same time permission to copy, for his own use, such as he might think fit. He transcribed several hundreds, and among them those which are translated in the present number on the subject of ships. The presence of such documents in the state paper office is partially, perhaps, to be attributed to the recklessness of the Bureau Noir of the police, but chiefly to the frequent seizures of the papers of individuals during the Revolution. Many of the letters forwarded to Madame Guilleminot had not passed through the post-office; they were original draughts, defaced by erasures and interlineations.

Letter from Marat to Mr. Daly.

"You know, my dear friend, that much of my time has lately been taken up in preparing my work upon Light, Fire, &c. for the press: it is, however, nearly completed; you may, therefore, expect to hear very regularly from me in future. Mr. Bottineau, whom I mentioned to you in my last letter, has experienced here every kind of disappointment. If he be able to raise sufficient money, he purposes visiting London very shortly, where he is likely

to meet with more success; for you gentlemen of the British isles will, I am convinced, patronize the discovery which my friend has made. I, who have made a study of optics, meteors, &c. am, I must confess, somewhat sceptical respecting the science which he terms *Nauscopie*, or the art of discovering vessels and lands at a considerable distance; but the concurring testimony of hundreds of persons, the certificates he has obtained from officers of high rank,—all tend to shew that there must be truth in his statement; and although he may have been neglected in France, I hope, for the honour of science, that a fair trial will be given him in your country, and that he will not be treated as a visionary. Certain it is, that if his art should prove to be true, incalculable advantages will be derived from it. I have seen an officer who resided six years in the Isle of France, and he assures me that the whole population will corroborate the averments made by Mr. Bottineau: but let the latter gentleman speak for himself; the following is his statement:—

"As early as the year 1762, holding then an inferior situation in the king's navy, it appeared to me that a vessel approaching land must produce a certain effect upon the atmosphere, and cause the approach to be discovered by a practised eye even before the vessel itself was visible. After making many observations, I thought I could discover a particular appearance before the vessel came in sight: sometimes I was right, but more frequently wrong; so that at the time I gave up all thoughts of success. In 1764, I was appointed to a situation in the Isle of France: while there, having much leisure time, I again betook myself to my favourite observations. Here the advantages I possessed were much greater than before. First, the clear sky and pure atmosphere, at certain periods of the day, were favourable to my studies, and as fewer vessels came to the island, I was less liable to error than was the case off the coast of France, where vessels are continually passing, some of which may never arrive in sight, although the indications I allude to may have been witnessed by me. I had not been more than six months upon the island when I became confident that my discovery was certain, and all that was requisite was to acquire more experience, and then *Nauscopie* would become a real science.

"As the officers in the island led an idle life, they were frequently on the shore looking through their glasses to discover when a vessel was arriving from Europe. I frequently laid wagers that a vessel was arriving, one, two, and even three days before she was actually in sight, and as I was very seldom wrong, I gained a considerable sum of money. The officers attributed my success to a particular power of vision I possessed; but then again, they were quite puzzled on reflecting that although they used glasses, I never employed any. In 1780, I wrote to the Minister of Marine,

Marechal de Castries, announcing my discovery. In his answer, he instructed the Governor of the island to enter my *announcements* of arrivals in a private register for two years at least. On the 15th May, 1782, my observations commenced. On the 16th May I announced to the Governor that three vessels were near the island. Orders were immediately given to the *vigies;** their glasses were turned to the direction I had pointed out. Their declaration was—'No vessel in sight." On the 17th, the *vigies* informed the Governor that a ship had just appeared above the horizon. On the 18th, a second came in sight, and on the 26th a third was visible to the naked eye. Viscount de Souillac sent for me on the last day, and made me an offer of 10,000 livres, and a pension of 1200 livres a year, on the part of government, if I would disclose my secret; but not conceiving the remuneration sufficient, I declined accepting the offer. Viscount de Souillac, some months after, wrote to M. de Castries: he stated, that I had made the surprising discovery of a new art,—that of being able to observe the arrival of vessels 100, 150, and even 200 leagues distant; that for more than fifteen years I had regularly predicted the arrival of vessels, sometimes three or four days before they could be seen with a glass: that the register kept by order of the Minister shewed that I had almost always been right in my predictions; and that even when I had announced the approach of a vessel which did not actually arrive, it was proved beyond a doubt that the vessel or vessels in question were foreign ones that had come within two or three days' sail of the island, and had proceeded to their destination without touching at the Isle of France. 'Upon one occasion he asserted that a fleet of eleven vessels were approaching the island; the announcement caused great alarm, as we anticipated an attack from the English. A sloop of war was instantly despatched to look out; but before she returned, Mr. Bottineau came to the Governor, and informed him that the signs in the atmosphere had disappeared, and that the fleet had taken a different direction. Some time after this a vessel arrived here from the East Indies, and reported that she had seen a fleet of eleven vessels sailing towards Fort St. William. In fine, that from the year 1778 till 1782, he had announced the arrival of 575 vessels, many of them four days before they became visible. The letter terminated thus—'However incredible this discovery may appear, myself and a great many officers, naval and military, must bear testimony to the *announcements* made by Mr. Bottineau. We cannot treat him as an impostor, or as a visionary. We have had ocular demonstration for so many years, and in no instance has any vessel reached the island, the approach of which he had not predicted; those which did approach, but did not touch the island, were in most cases proved to be foreign vessels.'

* Officers whose duty it is to look out for vessels approaching the island.

"A short time after this letter had been despatched—(this letter, I am certain, reached the office of M. de Castries, but, I am also certain, was never perused by him)—I determined to return to my native country, and accordingly took my passage on board one of His Majesty's vessels, commanded by Captain Dufour. I felt somewhat anxious to ascertain whether the effect produced on the atmosphere, when a vessel approaches, would be somewhat similar, as regards the approach of one vessel towards another, and, to my great delight, I perceived it to be the same, although less powerful; but my eyes now became so practised, that not once, during the voyage, did I make a mistake. I announced to Captain Dufour the approach of twenty-seven vessels, while proceeding to our destination; but what afforded me more heartfelt satisfaction than my previous observations, namely, certain appearances in the skies when a vessel approaches land, the observer being on board; or similar appearances when one vessel approaches another; and, in my opinion, to be able to discover land from a vessel by the same phenomenon, long before it is in sight, is, if possible, of infinitely greater advantage to navigation. Upon one occasion, I told Captain Dufour that we were not more than thirty leagues from some land. This he denied to be possible: however, upon looking attentively to his reckoning, he was compelled to acknowledge that he was in error, and immediately altered his course. I discovered land three times during the voyage; once at the distance of 150 leagues. On the 13th June, 1784, I landed at L'Orient, and instantly proceeded to Paris. My applications to the Minister to obtain an audience were not attended to; and the only answer I obtained from the Officer of Marine was, that my memorial was under consideration. Abbé Fontenay, the editor of the *Mercure de France*, having heard of my *pretended* discovery, without even asking to see my certificates, signed by the Governor of the Isle of France, and all the officers of the garrison there, thought proper to turn my discovery into ridicule, and affirmed that it was not 'ships at sea, but castles in the air,' I had found out. In this state does the affair remain; and all I can add is, that should vexation and disappointment terminate my existence before I can explain my discovery, the world will probably be deprived, for some time, of an art that would have done honour to the 18th century.'

"Such, my dear friend, is the account Mr. Bottineau has given me; he has also explained the phenomenon, which, he assures me, in order to understand perfectly, only requires being on the sea shore for a few hours, and that in less than a week I should understand his art as well as himself. As my poor friend looks very ill, I am afraid he will not be able to visit England, the only resource, he says, that is left him. Mr. Moore, who has been studying medicine here for some time, leaves Paris this evening for London,

and will take charge of this letter. I have not time to explain to you the phenomenon perceived in the atmosphere when a vessel approaches land, &c. but I will give you all the explanation in my power in my next letter, and very possibly it may enable you, who have so many opportunities of visiting the coast, to ascertain whether the art of *Nauscopie* be one of those sublime discoveries that do honour to the genius of man. For myself, if I could conveniently visit the sea shore, I would certainly make more than one trial. When I have sent you the explanation you will judge for yourself; and do not act as the Abbé Fontenay, for one of your poets has said wisely, that "There are more things in heaven and earth than are dreamt in our philosophy." Adieu.

—— "MARAT."

CERTIFICATES.

No. I.

A Letter from the Governor of the Isle of France to the Marshal de Castries.

Au Port Louis, Isle de France, 18th Feb. 1784.

Monseigneur,—A letter which you wrote on the 6th of April, 1782, to Mr. Bottineau, a ci-devant officer of the second class in this colony, in the king's service, as well as in that of the company, renders it imperative on our part, to give him one for you, of which he is the bearer. It is in order to be useful to his country that he is about to visit France; and he would experience much regret were his discovery lost to the world; a discovery with which he alone is acquainted, and which others have, in vain, endeavoured to unfathom: it consists in the art of announcing the presence of one or several vessels at a distance of 100, 150, and even 200 leagues. Is this the result of study, or the application of the principles of some science? By no means: all his science is in his eyes. He sees in nature signs that indicate the presence of vessels, as we assert that fire exists in a place when we perceive the smoke; this is the comparison he makes, when speaking to others concerning his art; in keeping his discovery a secret, this is the clearest explanation he has afforded, in order to shew that he did not make the discovery by the knowledge of any art, or of any science, or by the application of any previous study.

He asserts, that it is the effect of chance that led him to the discovery; he has watched Nature, and found out her secret; this science, therefore, has not, it may be said, cost him any trouble: but that which has required much study, and really belongs to him, is the *art of judging of distances.*

The signs, he says, indicate clearly enough the presence of vessels, but *they only who can read the signs* are able to judge of the distances, and this art, he asserts, is an extremely laborious study.

On this very account, he had for a long time been the dupe of his science: *for these last fifteen years he has foretold the arrival of vessels in this island.*

At first it was merely a play; he was in the custom of making bets, and often lost them, because the vessels did not arrive at the appointed time: on this account, he studiously applied himself to find out the cause of his errors, and the perfection of his art is owing to his exertions.

Since the war has broken out, his *announcements* have been very numerous, and sufficiently correct to create a sensation in the island. We have conversed with him upon the reality of his science; and to have dismissed him, like a quack, would have been an injustice. Moreover, we required proofs, and *he regularly supplied us during eight months with* ANNOUNCEMENTS; *and the result was, that several vessels that had been announced several days beforehand, arrived at the precise time; several others were delayed, and several did not arrive.*

It has since been *proved*, that the delay in the arrival of some of the vessels was occasioned by contrary winds, or currents in the ocean. Those which did not arrive, Mr. Bottineau is fully persuaded were foreign vessels which passed by; and, indeed, we have since ascertained, that a fleet of English vessels arrived in India, which might have been in sight of the island at the time fixed upon by Mr. Bottineau. What we can certify is, that Mr. Bottineau was *almost always right*. Whether this be the effect of chance, or otherwise, it would perhaps be imprudent in us to determine: this, however, is certain, that the circumstance is so extraordinary, in whichever way we consider it, that we endeavoured to prevail upon Mr. Bottineau to make us come to a positive conclusion, either by confiding his secret to us, or to any well-informed person who could be depended upon: but he declined to accede to our request; fearing, no doubt, that he should not obtain a sufficient remuneration for his discovery.

We have the honour, &c.

LE VICOMTE DE SOUILLAC,

——— CHEVRAU.

No. II.

The undersigned, chief officer of engineers of the king in the Isle of France, certifies, that Mr. Bottineau has, at different periods, anounced to him the arrival of more than a hundred vessels, scarcely without ever being mistaken; that he announced these vessels two, three, and even four days before the coast signals; and, moreover, that he stated when there was only one, or when there were several vessels.

16*th November*, 1780.

Signed GENU,

Do. TREBOND, Colonel of Infantry.

No. III.

I cannot refuse my testimony to truth, and I give this certificate in acknowledgment of the pleasure and agreeable surprise I have experienced from your continued and certain announcements. I advise you to cultivate this science, which will prove of immense benefit. The remarks of a few idle persons must not deter you. When Christopher Columbus proposed his discovery, he was treated as a madman by John the Second, king of Portugal, and Henry the Eighth, king of England; and had it not been for Isabella of Castille, who encouraged this celebrated Genoese, America would not perhaps have yet been discovered.

This example, and a thousand others, shew how prudent it is to withhold one's judgment on points of fact, in systems founded on astronomy or philosophy. I am persuaded that nature possesses a thousand secrets which are still hidden from us.

5th November, 1781.

Signed, LE BRAS DE VILLEVIDERNE,
The King's Attorney General of the Isle of France.

No. IV.

We, Commissary-General of the Navy in this port, certify, that having wished to try whether Mr. Bottineau really possessed the talent of announcing (before the usual observers placed upon the mountains) the vessels that arrive here, and having desired him to inform us in writing of his predictions, he has announced to us within six months, one hundred and nine vessels, one, two, three, or four days before the signals were made from the mountains, and in this number he only was twice mistaken; moreover, he explained these errors by contrary winds or the currents. We have also to acknowledge, and not without great astonishment, that his art extends so far as to inform him whether there was one, or there were several in the vicinity of the Isle, and if they were together or separated.

Port Louis, 16*th May*, 1782.

Signed, MELIS.

Bottineau's Explanation of Nauscopie, alluded to in Marat's Letter.

Nauscopie is the art of ascertaining the approach of vessels, or, being in a vessel, the approach to land, at a very great distance. This knowledge neither results from the undulation of the waves, nor from quick sight, nor from a particular *sensation*, but simply from observing the horizon, which bears upon it certain signs indicative of the approach of vessels, or land.

When a vessel approaches land, or another vessel, a *meteor*

appears in the atmosphere, of a particular nature, *visible to every eye*, without any difficult effort: it is not by the effect of a fortuitous occurrence, that this meteor makes its appearance under such circumstances; it is, on the contrary, the necessary result of the approach of one vessel towards another, or towards land. The existence of this meteor, and the knowledge of its different modifications, constitute the certainty and the precision of my announcements.

If I am asked how it is possible that the approach of a vessel towards land can cause any meteor to be engendered in the atmosphere, and what affinity exists between two effects so removed; I reply, that I must be excused giving an account of the *why* and the *wherefore*; that it is sufficient I have discovered the *fact*, without being obliged to explain the principle.

Do not even the learned acknowledge that the explanation of meteors is often beyond their comprehension? Valmont de Bomarre says, "almost all meteors present in the mechanism of their formation, considerable difficulties, profound mysteries, which all the knowledge of philosophers has not yet been able to penetrate."

After this avowal, it certainly is not my province to explain what the most learned men declared to be inexplicable.

The meteor of which I am speaking, although manifesting its effects, may conceal its principle; and, notwithstanding my discovery, does not the less exist.

However, the study of twenty years seems to have given me a right to reason upon a subject that has become so familiar to me; and the following is my opinion on this head.

The vast expanse of water forms an immense abyss, in which substances of every kind are continually entering. The enormous number of animals, fishes, birds, vegetable and mineral productions, which are decomposed in the vast body of water, produce a continual fermentation of matter, which abounds in spirit of salt, oil, sulphur bitumen, &c. The presence of these gases is sufficiently apparent, from the smell and disagreeable taste of sea-water. These gases, closely united with the sea-water, remain stationary so long as the waters are quiet, and not disturbed; or they may only experience a slight internal agitation, which is manifested externally in a small degree. But when the water is put in motion by stormy weather, or by an active mass which passes over its surface with violence and rapidity (a vessel for instance) then the volatile vapours that are inclosed within the bosom of the deep, escape, and rise in smoke *(fumée,)* composing a vast envelope around the vessel. As the vessel advances, the envelope advances with it, increasing every instant by fresh emanations. These emanations are so many small particular clouds which, by degrees joining each other, form a kind of cloud *(nappe,)* that projects forward, one extremity of which touches the vessel, while the other extre-

mity advances to a considerable distance. This train of vapours is not on that account visible; it escapes observation by the transparency of its parts. And it is lost among the other fluids that compose the atmosphere: but as soon as the vessel reaches a situation, in which it meets with other homogeneous vapours, such as those which escape from the earth, one perceives, on a sudden, that cloud *(nappe,)* until then so limpid and subtle, acquire consistence and colour, by the mixing of the two opposed columns. The change commences at the prolonged extremities, which, by contact unite, are strengthened and coloured; and then, every minute, as the vessel advances, the change is graduated, gains the centre, and at length the *engrainement* being complete, the phenomenon becomes more manifest, and the vessel appears.

Such, in a few words, is the revelation of the cause and the effects of a phenomenon, which, however wonderful it may be, accords, notwithstanding, with physical notions.

Whatever cause may be assigned for this phenomenon, it is quite certain that it is the infallible satellite of a vessel; and, that in consequence of its prolonged form, it manifests itself to the eyes, one, two, three, four, five, and even six days before the vessel itself, according to the state of the weather, and the nature of the obstacles it meets with. When the vessel sails with a fair wind *(en poupe,)* and meets with no obstacle, the phenomenon possesses its greatest celerity; and arriving several days before the vessel, it affords the observer the means of announcing the presence of a vessel at a considerable distance; but when the vessel meets with contrary winds, it will be understood that this circumstance must have a great influence on the progress of the phenomenon. On this account, I state that the phenomenon sometimes appears four or five days before the vessel, and sometimes only one day. This defect of uniformity in the apparition results from the greater or less impediment it meets with.

It will naturally be supposed that there may be weather when the phenomenon cannot shew itself before the vessel: for instance, in a violent gale, which appears, at first sight, capable of carrying away the phenomenon—even dissipating, and entirely destroying it. This, however, is not the case. The most impetuous wind only retards the apparition of the phenomenon, without destroying it. But when the vessel has reached a certain distance from land, then the phenomenon has acquired so much consistence, that it overcomes the efforts of the strongest winds, which, though they agitate it, still leave some part which they cannot wholly disperse.

The whole of my science consists in being able to follow the apparition of this meteor, and distinguish its character, in order not to confound it with the other clouds in the atmosphere, and which are not to be attended to. In order to make these observa-

tions, neither telescopes nor mathematical instruments are required; the eyes alone are sufficient.

It is not even necessary to be upon the coast: where the horizon of the sea can be discovered, the observer can announce the arrival of vessels.

The cloudy mass does not present itself suddenly, and with all its character. The first appearance is equivocal, and only puts the observer upon his guard, who then can commence his study, without being in haste, to certify that the vessel is arriving; but, by degrees, the forms are developed, the colours assume a certain tone, the volume acquires consistence, so that the *Nauscopie* can no longer doubt that a vessel is behind; because these forms and these developments are such, that they can only belong to these kind of vapours.

As the vessel advances, the meteor extends, and becomes consistent. From the moment I became familiar with this singular analogy, I never failed seeing my announcements followed with complete success; and this punctuality caused the great astonishment mentioned in my certificates, &c. from the governor, officers, and inhabitants. Convinced of the effect, but not understanding the cause, they could not conceive that a science existed which could give to man a foreknowledge of events so distant, with respect to time and place. The people attributed these operations to the power of magic; the better informed ascribed them to chance. Nothing, however, is more natural than this principle, which has astonished every one, and concerning which, so much incredulity will be manifested throughout Europe.

——— BOTTINEAU.

Note by the Translator.

The *Gazette de France* mentions this discovery; and the Abbé Des Fontains wrote several articles upon the subject; but the public mind was at that period so absorbed in matters of political importance, that the unfortunate Mr. Bottineau was neglected; and a letter from Marat, at the dawn of the French revolution, merely states that Bottineau had died. The different biographical dictionaries we have consulted make no mention of him. J.

II.—REPORT OF THE COMMITTEE *appointed by the Lords Commissioners of the Admiralty to consider the Measurement of Tonnage—made in* 1834.

THE most important question for the deliberation of the committee was, whether the register tonnage should represent the difference of displacement at the load and light water-lines, or whether it should be an expression of the whole internal capacity, including

all those parts of a vessel which, being under cover of permanent decks, are available for stowage. The committee are of opinion, that, besides the difficulty of defining the limits of displacement by any general rule, the capacity will be the fairest standard of measurement, as well for the interests of both builder and owner, as for the collection of those dues which are levied upon tonnage; and the committee are further of opinion, that internal measurements will afford the most accurate and convenient method of ascertaining that capacity.

In order to obtain precise data for their investigations, the committee requested to be furnished with the dimensions and actual capacities of a number of vessels of various sizes and forms, which were accordingly measured, and computed with great care and fidelity by Mr. H. Cradock, of the school of naval architecture. With these documents before them, as well as the several methods employed in foreign countries, and other formulæ of considerable merit, all of which are given in the appendix, the committee have finally resolved to recommend for adoption the rule No. 1, as hereafter stated.

The principle which guided the committee in their selection was, that a rule of such general application should depend on the smallest number of measurements necessary to give the figure of the hull, and that it should afford results sufficiently exact for the required purpose by an easy arithmetical process.

But the tonnage thus found is not intended to shew the real capacity of the vessel, though bearing towards it nearly the same proportion which would result from the average of a large number of cases, on the application of the old and imperfect rule; for it appears to the committee that the annual return of registered tonnage has been so long employed as a comparative index of the increase or decrease of British shipping, that it will be highly expedient to preserve the relative value of this index, as far as possible, unaltered. In order to accomplish this object, the committee have had recourse to an arbitrary divisor, the mode of deducing which from the latest official return to the House of Commons, of the "ships, vessels, and tonnage belonging to the several ports," is subjoined to this report.

As every British vessel must be registered before she can receive a cargo, the committee have assumed that the measurements will always be made while the hold is clear; but, as it will be necessary to ascertain the tonnage of foreign vessels, for light-house and harbour dues, while the cargoes are on board, the committee have added for that purpose the approximate rule, No. 2, which will be found accurate enough for those cases.

Besides these two general rules, the committee beg leave to offer the following suggestions:—

1. That the register tonnage shall be deeply carved in figures of

at least three inches in length, on the main beam of every decked vessel of the United Kingdom.

2. That, as all British vessels have been constructed on the faith of the permanence of the present law of tonnage, so the tonnage of every vessel as now registered shall be allowed to remain unchanged, unless application be made by the owner to have it remeasured according to the new process.

3. That, in registering the tonnage of steam-vessels, instead of deducting the length of the engine-room, (according to the present mode,) an allowance shall be made of one-fourth of the whole tonnage, as obtained by rule No. 1. But the tendency of every improvement being to diminish the space occupied by the engine, some legislative provision might be made, to enable his Majesty's government to alter the proportion of that allowance hereafter.

RULE No. 1.—*For the Measurement of Vessels for Register Tonnage.*

1. Divide the length of the upper deck, between the after-part of the stem and the fore-part of the stern-post, into six equal parts.

2. At the foremost, the middle, and the aftermost of those points of division, measure, in feet and decimals, the depths from the underside of the upper deck to the ceiling, at the limber strake. In the case of a break in the upper deck, the depths are to be measured from a line stretched in continuation of the deck.

3. Divide each of these three depths into five equal parts, and measure the inside breadths at the following points, viz., at one-fifth and at four-fifths, from the upper deck, of the foremost and aftermost depths, and at two-fifths and four-fifths of the midship depth.

4. At half the midship depth measure the length of the vessel, from the after-part of the stem to the fore-part of the stern-post.

5. Then, to twice the midship depth add the foremost and the aftermost depths, for the *sum of the depths.*

6. Add together the upper and the lower breadths at the foremost division; three times the upper breadth, and the lower breadth at the midship division; and the upper, and twice the lower breadth at the after division, for the *sum of the breadths.*

7. Then multiply the sum of the depths by the sum of the breadths, and this product by the length, and divide the final product by 3500, which will give the number of tons for register.

8. If the vessel have a poop or half-deck, or a break in the upper deck, measure the inside mean length, breadth, and height of such part thereof as may be included within the bulk-head. Multiply these three measurements together, and, dividing the product by 92,4, the quotient will be the number of tons to be added to the result as above found.

9. In order to ascertain the tonnage of open vessels, the depths are to be measured from the upper edge of the upper strake.

10. If it be required to find the real capacity of a vessel, multiply the total register tonnage by 92,4, which will give the contents in cubic feet.

Example—Ship Dunira.

Length at half midship depth	159·4	
Depth at foremost division	29·66	29·66
..... at midship ditto	30·66 × 2 =	61·32
..... at aftermost ditto	29·08	29·08
Sum of the depths		120·06
Breadth at foremost division,		
at ¼th of the depth	37·34	37·34
at ¾ths of ditto	31·00	31·00
..... at midship division,		
at ¾ths of the depth	40·00 × 3 =	120·00
at ¾ths of ditto	36·08	36·08
..... at aftermost division,		
at ¼th of the depth	34·58	34·58
at ¾ths of ditto	17·50 × 2 =	35·00
Sum of the breadths . .		294·40

Then $\frac{294{\cdot}4 \times 120{\cdot}06 \times 159{\cdot}4}{3500} = 1609$ register tons.

Mean { Length . . . 39 / Breadth . . . 30 / Height . . . 6,5 } of Poop.

Then $\frac{39 \times 30 \times 6.5}{93} =$ 82

Tonnage as above 1609

Dunira's total register tonnage 1691

If the real capacity be required,

1691 × 92,4 = 156248 cubic feet.

Rule No. 2—*For the Measurement of Loaded Vessels.*

Measure the length, on the upper deck, between the after-part of the stem and the fore-part of the sternpost; secondly, the inside breadth, on the under side of the upper deck, at the middle point of the length; and thirdly, the depth from the underside of the upper deck, down the pump-well, to the skin.

Multiply together these three dimensions, and divide the product by 130; the quotient will be nearly the amount of register tonnage.

Example.

	Feet.
Dunira length of upper deck	163·5
..... breadth	38·7
..... depth	32·6

$$\text{Then } \frac{163{\cdot}5 \times 38{\cdot}7 \times 32{\cdot}6}{130} = 1586 \text{ tons.}$$

Poop as before . . . . = 82

Approximate tonnage . . . 1668

Mode of Deducing the Divisor.

In the official account to the House of Commons already quoted, the amount of the shipping and tonnage of the United Kingdom is divided into nine classes, the average capacity of each of which has been computed by the committee from the measurement made by Mr. Cradock, and from other documents.

Now, put l for the average length of the vessels in one class, b for the sum of the breadths, d for the sum of the depths, c for the capacity, and let x be the factor for that class.

Then $c = \frac{lbd}{x}$, therefore $x = \frac{lbd}{c}$; and applying this formula to the several classes where l, b, d, and c are given quantities, the several factors are found to be 36,41 for one class, 37·09 for another, 39·69 for a third, &c. &c.; and the mean for the nine classes is 37·87. Again, the total capacity in cubic feet, of the shipping of the United Kingdom, inferred from the above-mentioned average capacities, and divided by the whole amount of the present registered tonnage, gives 91·654. Then, $37{\cdot}87 \times 91{\cdot}654 = 3473$, and this becomes the required divisor for l b d, in order to preserve the present proportion of register tons to the real capacity in cubic feet. To simplify the process, however, and at the same time to lean towards the advantage of the ship-owner, the committee recommend that 3500 be assumed for the legal divisor.

III.—On the Protection of Ships from Lightning. *By William Snow Harris, F.R.S., &c. &c.*

No. I.

1. The disastrous effects of lightning on ship board, whether they be considered with reference to the lives of seamen, the loss of property, or as involving the naval and commercial interests of Britain, are most appalling; and it has therefore become a question of very serious consequence to her maritime power, how far her

fleets can be protected from the destructive operation of this powerful element.

2. We may observe, in reviewing the numerous instances in which ships have suffered from discharges of atmospheric electricity, that they have usually occurred at different times, in distant places, and commonly to single ships, and have therefore excited rather an individual than a general interest. Hence the accumulated evil has seldom been fully appreciated; indeed, an idea that the chances of damage at sea by lightning are few, aided probably by the notion somewhat prevalent amongst sailors, that the proposed methods of defence are objectionable, has caused the only effectual means of parrying natural electrical discharges to be on ship-board greatly neglected.

3. The consequences to our maritime interests, of so partial and imperfect an apprehension of this interesting subject, are numerous and important. A selection of a few only, from the great variety of cases in which ships have been damaged by lightning, may probably be the best illustration of them; it cannot fail, on an attentive examination, to impress every one, anxious for the security of our fleets, and shipping generally, with the necessity of applying some correction to so great an evil.

(a) His Majesty's ship Russel, on the 5th of October, 1795, was struck by lightning about three leagues from Belleisle: the explosion fell on the *main and mizen masts throughout*, and disabled the masts so much that no sail could be carried on them when it blew fresh. If the squall had lasted a few hours longer, the ship *must have inevitably been lost on the French coast*, as the wind blew right on it.[1]

(b) In the year 1793, his Majesty's ship Duke, of 90 guns, was struck by lightning off the island of Martinique, *whilst in action under a battery*, which shivered her main-topmast, and did other damage to the vessel.[2]

(c) In the autumn of 1813, great part of the Mediterranean fleet was struck by lightning off the mouth of the Rhone, so that *out of thirteen sail of the line about one half were damaged*, and at least five ships were obliged to shift their topmasts.[3] The fleet was at this time employed under Lord Exmouth, in blockading Toulon.

(d) His Majesty's ship Glory was struck by lightning off Cape Finisterre, in the fleet commanded by Sir Robert Calder, a few days previously to his meeting the combined fleets of the enemy. She was *quite disabled in her mainmast*, and the *top-gallant-mast* and *topmast rent from the head to the heel.*[4]

(e) In the summer of 1830, his Majesty's ships Gloucester and

1. Naval Chronicle.
2. From the late Admiral Bedford, R.N.
3. Captain Barnard, R.N. See also ship's log.
4. From the Late Lieut. Boucher, R.N. See ship's log also.

Melville were both damaged by lightning at Malta, whilst in the act of sailing to join the Mediterranean fleet, so that they were obliged to return and refit.[5]

(f) In November, 1832, at 1 P.M. his Majesty's ship Southampton, one of a powerful fleet destined for an important service, was struck by lightning in the Downs, which set fire to the mat on the mizen topsail-yard, severely damaged the mizen-mast, and, having considerably shook many of the quarter-deck beams, descended into the gun-room, and caused a serious apprehension of the ship being on fire. Two men at the wheel were considerably hurt.[6]

(g) On the 23d of February, 1799, his Majesty's ship Terrible was struck by lightning: the fore-topmast and foremast were destroyed. Two carlings were shivered in pieces directly over the *fore magazine*. The officer of the watch said that the lightning ran in a circular stream down the foremast.[7]

(h) His Majesty's ship Gibraltar, in 1801, had her foremast shivered by lightning, which descended into the gunner's store-room, and shattered the shot-boxes, underneath which were situated 400 barrels of gunpowder.[8]

(i) In the year 1748, the ship Dover was struck by lightning in lat. 47° 30′ north, long. 22° 15′ west; the mainmast was completely disabled, the upper deck stove in, as also the lower deck, all the cabins on one side the steerage knocked down, and four of the outside planks on the starboard side started from the timbers, one of which planks, being the second from the wale, was broke asunder, and let into the ship, in about ten or fifteen minutes' time, nine feet of water.[9]

(j) The French ship Coquin was struck by lightning at anchor in the Bay of Naples, on Christmas-day, 1820. The electric discharge passed through her bottom a little below the water's edge, so that she became speedily in a sinking state. The boats of the squadron then lying in Naples Bay assisted to slip her cables, and run her on shore in the mole.[10]

(k) His Majesty's ship Thisbe was struck by lightning on the 3d of January, 1784, or 1785, off the coast of Ireland, during a heavy gale of wind: the lightning struck the main-yard, passed down into the gun-room, and swept along the decks. The furled sail on the main-yard burst into a flame, which quickly passed along the rigging to the other masts, so that the whole was in a blaze. In this dilemma, the master cut the lanyards of the main shrouds, and the mast fell bodily over the side, carrying with it the fore-topmast and mizenmast. He then, in a skilful way, wore the ship, and finally preserved her from destruction.[11]

5. Ship's log.
6. Nautical Magazine, Jan. 1833.
7. Naval Chronicle.
8. Ship's log.
9. Philosophical Transactions.
10. From the late Mr. Nelson, R.N. who was present.
11. From the late Mr. Moore, R.N.

(l) The ship Logan of New York, of 420 tons burthen, was struck by lightning on her passage from Savannah to Liverpool, on the 19th December, 1832. The electric discharge descended into the hold, and set the ship on fire. The vessel and cargo were eventually destroyed totally, the whole loss being upwards of £19,000. The crew were fortunately saved in the boats.[12]

(m) His Majesty's ship Cambrian was struck by lightning off Plymouth, on the 22d February, 1799. The electric discharge fell on the foremast, killed two men, and wounded several others. The number of wounded men taken below was about twenty; many of them were insensible, and apparently dead. The appearance of the ship was distressing in the extreme, nor could the men for some time get rid of the impression produced on them.[13]

(n) His Majesty's ship Repulse was struck by lightning in the Bay of Roses, by which nine men were lost overboard, and several burned. The main-topmast was much damaged.[14]

(o) His Majesty's ship Sultan was struck by lightning at Port-Mahon, August 12, 1808, by which five men were killed on the jib-boon, three severely burned, and two lost overboard.[15]

4. The above-mentioned instances of damage by lightning on ship-board are calculated to excite reflections of great national consequence.

The first, (a) is a powerful illustration of the hazardous situation in which a ship of the line was placed on an enemy's coast.

The second, (b) is an instance in which a ship of the line was partially disabled by lightning whilst in action.

The third, (c) is an instance in which about one-half of a fleet employed in blockading an enemy's port were more or less disabled. The disadvantage to the country, had the ships been then required for action, (a supposition by no means unwarranted,) is almost incalculable.

The fourth, fifth, and sixth, (d) (e) (f), are similar in the probable consequences. The ships in cases (d) and (f) were actually in requisition, and in case (e) we may suppose the emergency to have been pressing. Now, the absence of two line-of-battle ships from a fleet might be fatal in the result of a general action.

The seventh and eighth (g) (h) shew the liability of discharges of lightning to explode in the vicinity of a ship's magazine: and this also applies to the preceding instance (f).

The ninth and tenth, (i) (j) prove, that a ship may be so damaged by a stroke of lightning as to become speedily in a sinking state.

Eleven and twelve, (k) (l) shew the liability of ships to be burned from the same cause.

Thirteen, fourteen, and fifteen, (m) (n) (o) are melancholy

12. Courier Newspaper, Feb. 20, 1833.
13. Captain Haydyn, R.N.
14. Lieut. Lancaster, R.N.
15. Ship's log.

instances of loss of life, and of the untoward effect produced on the minds of the ships' company, tending to paralyze their exertions.

5. It is not unreasonable to infer, from a due consideration of these cases, that many ships, the loss of which, from the length of time they have been missing, is nearly certain; have either directly, or indirectly, suffered by lightning; for, whilst our marine remains undefended from this source of danger, there is no fatal damage incidental to their perilous situation on the sea by which they may not be suddenly and unexpectedly assailed; more particularly, when we consider the many hazardous circumstances under which ships are exposed to natural electricity, in consequence of the unavoidable position of many parts in their construction. In many of our 18-gun brigs, there is an iron spindle which the capstan works upon placed directly over the after-magazine; and in all the larger class brigs, and corvettes, the spindle of the capstan terminates in the same point, in metallic fastenings. This would certainly admit of the electric matter passing in the direction of the capstan spindle, at the extremity of which it would probably assume a condensed and sensible state. In addition to this, it may be remarked, that the foremast and mizenmast, in most ships, invariably pass within a few feet of the magazines, and in some of the French-built frigates the foremast usually passes through one of them. Now, the masts commonly determine the course of the lightning to the hull; and we shall find, that, in consequence of their imperfect conducting power, the danger is extreme. It is not, therefore, unlikely, that many ships long missing have been destroyed by atmospheric electricity. Thus, his Majesty's ship Resistance, of 44 guns, and the Loup Cervier, the foremasts of which passed through the fore-magazines, were seen previously to severe lightning, and were never seen after. The York, of 64 guns, was also found missing, in a very unaccountable way, in the Mediterranean.

6. The impolicy of allowing the fleets of a country like Britain to remain exposed to these fearful contingencies, when, in all reasonable probability, such exposure may be avoided, cannot for an instant be doubted. The question, therefore, on a review of all the circumstances, returns upon our feelings and interests with increased claims, and we are led to inquire, how far it is possible to palliate, or otherwise altogether to parry, the violent operation of discharges of lightning on ship-board. Happily this question, in the present state of science, is no longer obscure; a copious collection of facts, derived from the experience of more than half a century, have sufficiently proved, that we may effectually defend our ships and seamen from the fury of lightning, by simple and available means, and by the judicious employment of scientific principles, furnished by patient inquiry into the nature and mode of action of the element with which we have to contend.

7. It is to be greatly regretted, that the differences of opinion respecting the utility of lightning-conductors on ship-board, should have so frequently arisen, from imperfect and partial views of the nature of electrical action. The subject has seldom been treated in all its extent; the broad way of science has been constantly neglected, for the intricate and uncertain path of individual prejudice and opinion. Hence it is, that the mere presence of an insignificant chain of wire, occasionally applied to the masts and rigging of a ship, has been not unfrequently viewed as an agent of destruction, which, by a specific attractive force assumed to exist within it, is calculated to draw down an electric explosion on the vessel. The mere lightning-conductor is made an exclusive object of contention, and the intelligible principles of a given mode of defence, as reduced to a consistent system, are altogether disregarded.

It will be my endeavour, in the succeeding papers, to examine in a general way the nature of electrical action, and to shew, by carefully adhering to the only certain means by which science can be advanced, viz. observation and experiment, that it is possible to arrive at an effectual method of defence from lightning on ship-board, so as to obtain, under all the varying circumstances and conditions of ships' masts, as complete a protection as can be reasonably hoped for in the present state of natural knowledge.

IV.—Rowland's Double Sextant.

In several of our former numbers we have alluded to Mr. Rowland's double sextant, and we now lay the following description of it before our readers:

This invention of Mr. David Rowland consists in the simple application of a second index and horizon glass, with a graduated arc, to the ordinary sextant, that enables the observer to measure another angle at the same time that he measures one with the original arc of the sextant. By the addition of these two angles, he obtains the measurement of one, however great it may be.

It is well known to those who are familiar with the use of the quadrant or sextant, and we may add also the circle, that there are certain limits to measuring angles by reflection, beyond which the correctness of the measured angle is not entitled to implicit confidence. The quadrant will not measure an angle above ninety degrees in extent; the sextant will not give one greater than one hundred and twenty degrees; and the circle, it is true, may go further in measuring a large angle, but the errors of reflection arising from various causes increase so fearfully with the obtuseness of the

angle, that little or no dependence can be placed on the result obtained with it.

When this angle, however, becomes divided into two acute angles, the errors of reflection are obviated, and every possible correctness is obtained which can be derived from such means. We will now endeavour to shew how far Mr. Rowland has succeeded in attaining this great desideratum.

In measuring an angle with any reflecting instrument between two objects, one of them, generally that on the left hand, is always seen by direct vision through the horizon glass, and the reflected image of the other from the index glass is seen reflected again from the horizon glass, and brought into contact with it.

In using reflecting instruments, one of two distant objects (the angle between which it is desired to measure) is viewed by direct vision through the upper transparent part of an horizon-glass, the lower part of which is silvered, and the other of the two objects is seen in the silvered part of the horizon-glass by reflection from the index-mirror. The position of the index-mirror being such that its plane is perpendicular to the plane of the instrument, and is parallel to the surface of the horizon-glass, when the index is at zero; and, in taking an observation, the index-mirror is turned, until the plane of the index-glass is brought into such a position that it will receive the image of the right-hand object; and then the reflected image of that object is transmitted to the mirror of the horizon-glass. The index of the instrument being thus moved, until both of the objects are seen by the observer in exact contact or coincidence in the field of the telescope, the division on the graduated arc that the index then points to corresponds to the magnitude of the angle that the two objects include between them.

The double-sextant combines together two sets of the operative parts of sextants, or any other reflecting instruments consisting of any other portion of a circle, so as to form a double or compound reflecting instrument, each operating part of which may have the same range, but will act in opposite directions: that is, it will have first all the parts of a complete reflecting instrument of its particular kind, and it will have besides an *additional index-mirror* (on a centre distinct from the centre of the principal or original instrument) to receive and transmit the image of an object from one side of the line of collimation to an *additional horizon-glass:* and the said *additional index-mirror* may be either moveable about a central pivot, by means of an additional index provided with a vernier scale, to indicate a variable angle on an additional limb, or arc graduated in the opposite direction to that of the limb of the original instrument.

The additional horizon-glass is partly silvered like the other horizon-glass, only in an inverse order; and the silvering of the

two horizon-glasses is so arranged as to leave a transparent space between the lower line of the mirror of one horizon-glass and the upper line of the mirror of the other horizon-glass, by which arrangement a distant object can be seen in the field of the telescope through both horizon-glasses.

The object and effect of thus constructing a reflecting instrument with such additional operative parts, is to enable the observer to divide a large angle into two smaller angles, and measure both either with or without the aid of an intermediate object between the two objects whose angular distance is sought, that is—1st, When there are three objects in sight, and the angular distance of each from the other is sought, the telescope is directed to the intermediate object, which, as before stated, will be visible through both horizon-glasses. The angle between that intermediate object and one of the right-hand objects can be measured in the usual manner. The index being then fixed by its clamp-screw, the remaining angle between the intermediate object and the left-hand object may be measured by bringing it into the field of the additional index-mirror, and turning the additional index, until the image of the said object coincides exactly with the two other images that have already been brought to coincide in the field of the telescope. The two angles are thus measured, and indicated at once on the limbs of the double instrument, and the sum of the two is equal to the angle contained between the two outer objects.

And 2dly, When the angle between two objects only is sought, and exceeds the range of any ordinary or simple reflecting instrument, say, for instance, one hundred and eighty degrees; and there is no intermediate object visible, whereby the total angle might be found with two observations, by a common instrument. Then this angle will be found by using one of the index-mirrors to reflect the image of one of the bodies into the corresponding horizon-glass, when the telescope is directed in the line of some convenient imaginary point, situated between the two objects (say at eighty-five degrees from one, and ninety-five from the other,) and afterwards using the other index-mirror to reflect the image of the other object into its horizon-glass, so that the reflected images of the two objects shall form an accurate contact in the field of the telescope; and the angles indicated on the graduated arcs respectively being read off, their sum will be the total angle included between the two objects.

AA, Fig. 1. is the limb of the sextant, on which are circular arcs, divided into degrees and quarters of degrees, from zero to one hundred and twenty degrees. B is the index, moveable about a pivot at the centre of the arc. A, furnished with a vernier scale, divided in the usual way to the angle observed. C is the index-mirror. D the horizon-glass, which is silvered at the lower part, and the upper part is transparent. E the dark glasses for observing the

sun, or other bright object. F is the telescope screwed into the eye-piece. G, the stem of which slides in a tube, and can be raised or lowered, to adjust the height of the telescope, by means of a screw. K is the tangent-screw, with the usual apparatus for the slow motion of the index, and a clamp-screw for fixing it at any particular division on the limb. LLL is the framing of the instrument. O is a handle, to hold it by when in use.

The corresponding small letters indicate the corresponding additional parts, the combination of which with the ordinary sextant, constitutes my improvement applied to sextants. All these additional parts are constructed like the parts of an ordinary sextant, and are provided with adjustments similar to those of corresponding parts of an ordinary sextant.

The arc on the limb *aa* is divided into degrees, and quarters of degrees, from zero to one hundred and twenty degrees, from right to left, (that on the limb A being graduated from left to right.) The index *b* is a flat bar of brass, turning on a centre pin that projects from the frame *lll* of the additional parts, which frame is fixed to the ordinary sextant, by standards 1, 2, 3.

The end of the index *b* is furnished with a vernier scale, which is divided in the usual manner for reading off the fractions of degrees of an angle. The said end of the index is furnished with a tangent-screw *k*, to move the index forward or backward with a slow motion

Suppose it were required to measure an horizontal angle of one hundred and forty degrees, between two towers, situated on distant heights, when there is no visible object between them.

Hold the instrument by its handle, with the plane of the instrument, as nearly as may be, parallel to a plane passing through the objects whose angle is to be found. Select by the eye some convenient imaginary point in the plane of the two objects, which shall divide the total angle into two of suitable magnitude. Direct the telescope to that imaginary point, then turn the index B round to the right, until the image of the tower that is on the right of the line of vision is reflected from the index-mirror C into the horizon-mirror D, and back thence to the eye. Clamp the index B fast at that part of the arc. Now, turn the index *b* from zero to the left, until the tower that is on the left of the line of vision is reflected from the additional index-mirror *c* into the additional horizon-glass *d*; bring the said left-hand tower, by means of the tangent-screw *k*, to coincide exactly with the image of the other object in the field of the telescope. Set the index *b* there. Then read off each angle on its respective graduated arc, by the vernier scale of its index. The sum of the two angles is the desired angle of one hundred and forty degrees between the two towers. When the angle sought is vertical instead of horizontal the only difference

in the method of making the observation is, that the instrument must be held with its plane vertical, and the image of the object above the line of vision will be brought down by the index-mirror of the limb A into the field of the telescope, while the other object that is below the line of vision will be brought up by the index-mirror of the limb a into the field of the telescope. For instance, suppose it required to measure the sun's altitude on shore, with an artificial horizon, when it is within ten degrees of the zenith, or making an angle with the horizon of eighty degrees, (an altitude which could not be measured at all with the ordinary sextant; because the total angle then required to be measured would be one hundred and sixty degrees, and out of the limit of the instrument.) Direct the telescope to any convenient imaginary point, half-way between the sun and its reflected image in the artificial horizon. Bring up the reflected image of the sun from the artificial horizon, by means of the index *b*, to meet the eye in the field of the telescope, and bring down the image of the sun itself to meet its reflected image, by means of the other index B. When the two images are in contact in the field of the telescope, the sum of the angles indicated on the two limbs of the double instrument will be the total angle included between the sun and its image in the artificial horizon; and the half of that angle is the measure of the sun's apparent altitude.

It may be found in some cases more convenient to use the instrument with the index of one or other of the limbs, set at a constant angle. For instance, let the index *b* of the additional sextant be set at ninety degrees; then, to measure an angle of one hundred and forty degrees between two objects, hold the instrument in a plane parallel to the plane passing through the two objects, as before directed, and move it in that plane, until the reflection of the left hand or lower object, is seen through the telescope in the horizon-glass *d*.

In constructing a double sextant or quadrant, the additional quadrant will be composed of such operative parts, that if detached from the other or original quadrant, and furnished with a telescope, it might also be used separately to observe and measure an angle; and in the double,

The two index-glasses must be so adjusted, that when the indexes are at zero, the planes of the index-glasses will be parallel to the planes of their horizon-glasses respectively.

The construction of the circle exhibited in Fig. 2. is that known by the name of the English reflecting circle, or Troughton's reflecting circle: AA is the divided limb or circle; BBB the triple-index, each end of which is provided with its vernier scale, and the leading index with a tangent-screw and apparatus for the slow motion: C is the index-glass; D the horizon-glass; EF are the dark glasses of the index and horizon-glasses respectively. All

these glasses project as usual from the surface of the circle opposed to that surface on which the graduated arc is marked; LLL is the framing of the circle; MM is the secondary frame which is usually applied to the back of a reflecting circle, and attached thereto by pillars, to support the glasses. The two circles are placed back to back, the small letters in the additional one corresponding to the similar parts in the original, expressed by the large letters.

There are various circumstances in which the correct measurement of extensive arcs is required where the foregoing invention may be turned to account. For astronomical purposes, it may be applied with advantage to measuring the distance between the sun and moon, beyond the greatest extent that is given in the Nautical Almanac. And, while the distance is *small*, the moon's altitude may be measured on one arc nearly at the same moment of time that the distance is observed on the other, by changing the position of the plane of the instrument, and not losing sight of the moon's limb, while the horizon beneath is reflected up to it. With the artificial horizon, the extent to which the altitude of a body may be observed is as great as can possibly be attained; and for observing large angular distances between two stars, the instrument is also adapted. The meridian altitude of the sun may also be found by measuring its supplement to the opposite horizon, when that beneath it is concealed by land; and the instrument may also be applied to measuring the effect of refraction in raising the visible horizon.

In geodetical operations, the value of the instrument, in addition to the power of measuring a large angle, consists also in affording the surveyor the means of obtaining the measure of an angle on each side of an intervening object, at the same moment of time, by which a station may alone be fixed. In this operation, as the silvered parts of the horizon-glasses do not approach closely on each side of the plane passing through the observer's eye, the space left between them enables him to see the intermediate object distinctly, and thus to satisfy himself that he makes an accurate contact of the reflected images with it.

Such are the principal advantages of Mr. Rowland's double sextant, advantages which will be appreciated by the expert navigator, and the surveyor; to the latter of whom we consider it will be of peculiar value. The invention of Mr. Rowland may certainly be classed among the most valuable improvements that reflecting instruments have yet received; and we congratulate him on the complete success of many years' application and perseverance.

V.—Sargasso Weed. *Extract from the Letter of an Officer in the West Indies.*

The first appearance of the Sargasso or Gulf weed was very diligently looked for, and it occurred on the 26th May, (1833,) in lat. 20° N. and long. 49° W. The weed was first seen in very small detached pieces not more than six or eight inches long, without the root; indeed it was only by a very sharp look-out that it was occasionally seen floating on the surface as the vessel passed it. The weed was continually observed, from the time when we first saw it to the close of our voyage to Nassau, increasing in quantity as we approached the Virgin Islands, but in detached pieces. The large compact fields were not met with until our return to the northward, in passing the latitude of 20° N.

There is a very interesting description of this weed in the Nautical Magazine of June, 1832, in which it is observed that the colour of the leaves and bladders is a reddish brown. This, however, was not the case with any that we met with in the first few days. When taken on board, this was of a dirty yellowish green colour, and when immersed in fresh water, previous to being preserved, the water was found to become strongly tinted with the same colour. Some long strings of thick mucus, which was exceedingly tenacious, were also found attached to the stem and branches of the weed. None of the small fish pictured in the above work were found in the weed; but, perhaps this arose from our not being able to take it without disturbing it previously very much from its quiescent state: but we found some crustacea enclosed in the centre of a small compact specimen, that had formed a complete nest.

As we approached the Carribbean Islands we found that the weed assumed a darker hue: this was a dirty brownish green, and the bladders were more frequently black. Does this arise from age?* May it not be inferred, that the weed is here accumulated, and stopped by the irregular currents usually found near these islands, and its colour perhaps changed by its long continuance in a different locality. Was the weed first seen the younger? and recently disengaged from the place of its growth, and travelling on under the influence of the great equatorial currents.

Sir Hans Sloane relates, that this curious companion of the mariner is found on the coasts of Guinea, also near the Cape Verd and Canary Islands, and in the West Indies. Mr. Purdy confines it to a zone in the North Atlantic, lying between the parallels of 20° and 40° N., but gives no eastern limit. By us it was not seen until passing far to the southward of the Canaries, and we con-

* We should say the contrary—that this is the newer weed, and the yellow the more withered.

tinued to find it a degree and a half further south than the southern boundary assigned to it by Mr. Purdy. It is also remarkable, that it was not met with before we were as far west as 49°. Has its southern limit ever been correctly ascertained?

The Sargasso was the only drift of the ocean that was seen during the whole voyage; and it is rather remarkable, that not a single shark or dolphin was once seen. In 37° N. and 10¾° W., on the 2d May, we obtained the following temperatures at the depths specified, while that of the air and surface-water was 63°, at one fathom 62°, at five fathoms 61°, at twenty fathoms 60°, at one hundred fathoms 58°, and two hundred and fifty fathoms 58°, the current running S. 38° E. 16′ in twenty-four hours. We found the Sargasso in the greatest quantity on the 28th May, in 19° 15′ N. and 53° 44′ W., and on the 6th June, in 21° 50′ N. and 68° 11′ W.

VI.—Original Papers on Naval Architecture. *By Commander John Pearse, R.N.*

No. V. On the Action of the Water on Floating Bodies.

It has been generally considered hitherto, that when a ship is inclined, the mean direction, or resultant of the force of the water which supports it, passes through the centre of gravity of the part immersed. The experiments, however, on floating bodies described in former papers, led to an opinion of its being erroneous; and, to place it beyond doubt, recourse was had to other experiments, the simplicity of which should preclude the possibility of error. To effect this, I had two pieces of fir prepared, of equal dimensions, and free from knots, so that the specific gravity should be the same throughout; each piece was nine inches by seven, and one inch thick. To shew the true cause and origin of the effects thus to be described, we will first consider the two pieces immersed as represented by figures 1 and 2 in the accompanying drawing; each piece having a pound weight secured to it—one at the centre of its edge, and the other at the centre of its flat part: but, as the weights displace two ounces of water each, they only exert a power of fourteen ounces each.

Agreeable to the laws of hydrostatics, any body lighter than water, whatever may be its form, or in whatever position it may be immersed, will displace a quantity of water equal to its own weight; and, consequently, two bodies of equal cubic contents and specific gravity, immersed as represented by figures 1 and 2, will displace equal quantities of water. And, agreeable to the same laws, the centre of gravity of each of those bodies is in the same vertical as the mean direction or resultant of the force of the

water which supports it; and the two forces which are equal, "the weight of the body pressing down and the effort of the water acting upwards," are in direct opposition. Now, in this case, the direction of the centre of effort of the water passes through the centre of gravity of the part immersed: so it does when a ship is at rest in a horizontal position, and would when it inclined also, if the immersed part was circular, and always retained the same form; but, in consequence of its not being circular, it will be found that the direction of the centre of effort of the water does not always intersect the centre of gravity of the part immersed.

The two bodies, immersed as represented by figures 1 and 2, being equal, nine inches by seven, and one inch thick each, the two surfaces opposed to the resistance of the water are therefore as one to seven, but then the distance of descent to become equally immersed is as seven to one: consequently figure 2 opposes a surface to the resistance of the water seven times as great as that of figure 1, but has only one-seventh of the distance to descend; whereas figure 1 opposes a surface to the resistance of the water of only one-seventh of that of figure 2, but has seven times the distance to descend to become equally immersed. But, notwithstanding this apparent equality, still the two bodies do not become equally immersed at the same instant, because the greater velocity of figure 1 in its descent increases proportionally the resistance of the water. Now, by increasing the weights equally and sufficiently to sink the two bodies, that represented by figure 1 will retain its greater velocity in descending, and the one represented by figure 2, in consequence of the greater resistance opposed to it, will occupy more time in reaching the bottom: and therefore, when, by the inclination of a ship, the contour of one side of its bottom becomes more vertical, while that of the other becomes more horizontal, the latter sustains the greatest part of the vertical effort of the water, and this causes the direction of its centre of effort to deviate from the centre of gravity of the part immersed.

Let us now consider the two bodies joined together, as represented by figure 3, and which were immersed with the same weights as before, the line *w r* marking the surface of the water, as it does also in each of the other figures. Now, the centre of gravity of the whole system is at *c*, and as the body was at rest and in perfect equilibrium in the position represented, the centre of effort of the water, agreeable to the laws of hydrostatics, must have been in the same vertical, and directly opposed to the weight of the body acting at its centre of gravity; and consequently the vertical *m n* which passes through the centre of gravity of the body, or of the whole system, represents also the direction of the centre of effort of the water. This, therefore, is clearly demonstrative, that the mean direction, or resultant of the force of the water, does not

always pass through the centre of gravity of the displacement; for, in the body represented, the part immersed to the left of the vertical *m n* contains 6,5 cubic inches more than that immersed on the right side. The extreme horizontal distance of the immersed part of the latter from the vertical *m n* is also greater than that of the former; and similar results will proceed from the centre of effort of the water not passing through the centre of gravity of displacement of a ship, as the area at the surface of the water on the side of the least immersion will be greater than that on the other side. If we consider the body represented by figure 3 as divested of the weight 1, *b* will be the centre of gravity of the system, the vertical *m n*, which denotes the direction of the effort of the water, will pass through *b*, the body will be less immersed, and assume a position similar to that represented by figure *5*. And, if the weight 1 is again applied, and considered as an inclining power, then the body will be in the position represented, and the weight of the system, of which *b* is the centre of gravity, $= 48 \times bc = 14 \times ac$. By considering the weight 2 as an inclining power, *d* will be the centre of gravity of the remaining part of the system, and its weight $= 48 \times d\,h = 14 \times i\,k$. Figure 4 represents the body immersed with weights exerting powers of seven and fourteen ounces; and *c* being the centre of gravity of the whole system, the vertical line *m n* consequently denotes the direction of the centre of effort of the water; and, in this case, the difference between the contents of the two immersed parts is 4,5 cubic inches. By considering the weight 1=7 as an inclining power, *b* will be the centre of gravity of the remaining part of the system, and its weight $= 48 \times b\,c = 7 \times a\,c$: and by considering the weight 2 = 14 as the opposing power, *d* will be the centre of gravity of the remaining part of the system, and its weight $= 41 \times d\,h = 14 \times i\,k$. Figure 5 represents the body immersed with a single weight, exerting a power of twenty-eight ounces; as *c* is the centre of gravity of the whole system, and as the body was at rest and in perfect equilibrium in the position represented, the vertical *m n* consequently denotes the direction of the centre of effort of the water: and here the difference between the contents of the two immersed parts is only 2,5 cubic inches. By considering the part 1=17 of the body as an inclining or opposing power, *b* will be the centre of gravity of the remaining part of the system, and its weight $= 45 \times b\,h = 17 \times a\,o$; and by considering the weight = 28 as a power opposed to that of the remaining part of the system, *d* will be its centre of gravity, and its weight $= 34 \times d\,o = 28 \times i\,k$. By divesting the system of the part 1, the remainder will assume the position represented by figure 1; and, in consequence of its weight being greater than the quantity of water displaced, will descend in that position, the direction of the centre of effort of the water passing through the centre of gravity of the system, and conse-

quently, in this case, intersecting the centre of gravity of displacement.

In the system represented by figure 5, there is a difference of 2,5 cubic inches between the contents of the two immersed parts, that is, between the part immersed to the left of the vertical *m n* and that immersed on the right side of it; in that represented by figure 4, a difference of 4,5 cubic inches; and in that of figure 3, a difference of 6,5 cubic inches; and which shews, that, as the parts to which the weights 1 are suspended in figures 3 and 4 approach nearer to a horizontal position, the direction of the centre of effort of the water deviates more from the centre of gravity of the part immersed. These experiments being so perfectly simple, and as the centres of gravity of the different systems are so easily found, there cannot possibly be any error: the centres of gravity of the several systems being known, the directions of the centres of effort of the water are consequently known also. And, as a simple proof of the correctness of the laws of hydrostatics, let us suppose the body represented by figure 3 to be suddenly divested of the weight 1, when *b* would instantly become the centre of gravity of the remaining part of the system, and the concurrence of the two forces, "the weight of the body acting at its centre of gravity *b*, and the vertical effort of the water acting in the direction of the line *n m*," would cause the body to alter its position, and assume one similar to that represented by figure 5, and in which the direction of the centre of effort of the water would pass through the centre of gravity *b*. This, then, is clear demonstration, that a floating body can only be at rest when the centres of effort of the two forces are in the same vertical, and directly opposed to each other; and, that knowing the situation of the centre of gravity of a floating body, or the centre of gravity of all the operating forces which cause it to assume a certain position, the direction of the centre of effort of the water is known also.

These experiments clearly prove, that the mean direction or resultant of the force of the water which supports a ship does not always pass through the centre of gravity of displacement, and, that this is not inconsistent with the laws of hydrostatics; and consequently proves, also, that the rules, which include "the centre of gravity of displacement" as one of the terms for estimating the stability of a ship, are erroneous. "Attwood's" rule is therefore incorrect; and this appears to have been adopted in preference to the one, "by the metacentre," given by Bouguer. Now, the latter is erroneous for the same reason as the former, namely, the centre of gravity of displacement being used in finding the situation of the metacentre; and therefore the same cause appears to have led to the error in each, that is, "the centre of effort of the water always passing through the centre of gravity of displacement in a circular body." The error in either is, however, inconsiderable;

the great mistake has been in erroneously considering the centre of gravity of the ship to be the axis of rotation, and this has led to other false conclusions. But the correction of trifling errors will appear important, when we consider the great impediment which the imperfection of the theory has been to improvements in naval architecture.

The experiments therefore prove the several theories to be erroneous; and, that to be enabled to estimate the stability by the metacentre, or any other rule, it is necessary the mean direction, or resultant of the force of the water which supports a ship, should be correctly ascertained. These experiments also prove, that the centre of gravity of the whole system, or of all the operating forces, is in the same vertical as the centre of effort of the water, and that the two forces are in direct opposition; otherwise the bodies could not have been at rest, consistently with the laws of hydrostatics, in the positions represented. And the experiments described in former papers prove, that the metacentre is the centre of gravity of all the operating forces; therefore the mean direction of the force of the water which supports a ship must be in the same vertical.

The experiments explained in a former paper also prove; that the situation of the metacentre may be found by geometrical construction; for, in the two experiments which were made with models differing in form, size, and weight, there appears no sensible difference in the situation of the metacentre, found by the method of P. Hoste, and the point found by geometrical construction, about which the models would vibrate, and preserve the proper amount of displacement without rising and falling. The experiments were also made at considerable inclinations, "22° and 20° 30′," which is a strong proof that these points, if not always actually one and the same, do not sensibly differ, and which can only happen at greater inclinations than a ship ought to be from the effort of the wind on the sails alone. It has been proved in former papers, that, when the situation of the *centre of gravity* of a ship is known, the metacentre and moment of stability may be found by the method of P. Hoste. By the same means, the centre of gravity of the ship, and the moment of stability, may be ascertained, when the situation of the *metacentre* is known.

The situation of the metacentre or axis of rotation is determined by the mean direction of the vertical effort of the water, but, as has been observed in former papers, the mean direction of the lateral effort of the water, or resistance to lee-way, will, by passing below the axis of rotation, diminish the stability of a ship, or, what amounts to the same, increase the inclination; and, as this, in consequence of the height of the axis of rotation, may be considered as a general rule, the relative force or moment of sail must not equal the moment of stability found by the metacentre, but stand

thus—moment of sail plus moment of the lateral effort of the water equal moment of stability, or moment of sail equal moment of stability minus moment of the lateral effort.

The experiments described in this series of papers were had recourse to for the purpose of endeavouring to ascertain facts and correct errors, and to discover the true cause and origin of the effects produced by the different forces which are variously and constantly acting on a ship. To assist him in his endeavours, the writer has had the advantage of long practical experience, and of having during many years often considered the subject as a seaman; and not having imbibed the principles of the present theories from education, he has examined them without prejudice, and which has led to a confirmation of many opinions which were founded on observation and practical knowledge. Those, on the contrary, who have been educated according to the present theories, have, from education, imbibed opinions which they founded on rules determined by highly eminent authorities; therefore a natural prejudice must exist in favour of those principles: and the subject having been so often considered, and the conclusions arrived at, with respect to some points, been thought so perfectly correct, that this may be considered as having been an impediment to naval architects of the present day giving free scope to their talents and scientific knowledge. The theory has, however, always been considered as imperfect, and the difficulty of ascertaining the true cause of it repeatedly acknowledged. It is therefore evident, that the subject must be reconsidered, and examined, free from prejudice, and independent of those rules which have been determined by the old authors; as it is only by such means that the science of naval architecture can be established on sound and true principles, and the naval architects of Great Britain can hope to take a leading part in it, in place of, as hitherto, remaining content with copying foreign models, and following the imperfect theories of foreign authors. Those theories must not, however, be condemned because they are imperfect, for they are still most valuable; and a careful and unprejudiced perusal of them is one of the best guides to a correction of the erroneous parts; for it is very evident that some of the errors have proceeded from the science being so very difficult and complex, and the confounding of one point with another. And, as has been before observed, with respect to the axis of rotation, by simply reversing the order of M. Bouguer, and considering a floating body as a common pedulum, in place of one *renversé*, the theory on this important point is rendered perfectly correct.

Plymouth, October 16, 1833.

TABLE *for reducing English feet to French metres, and French metres to English feet.*

1 French metre = 3·2808992 English feet.

Metres or Feet.	English Feet and Dec. parts.	French Metres and Dec. parts.	Metres or Feet.	English Feet and Dec. parts.	French Metres and Dec. parts.	Metres or Feet.	English Feet and Dec. parts.	French Metres and Dec. parts.
1	3·281	0·305	38	124·674	11·582	75	246·067	22·860
2	6·562	0·609	39	127·955	11·887	76	249·348	23·165
3	9·843	0·914	40	131·236	12·192	77	252·629	23·469
4	13·123	1·219	41	134·517	12·497	78	255·910	23·774
5	16·404	1·524	42	137·798	12·801	79	259·191	24·079
6	19·685	1·829	43	141·079	13·106	80	262·472	24·383
7	22·966	2·133	44	144·359	13·411	81	265·753	24·688
8	26·247	2·438	45	147·640	13·716	82	269·034	24·992
9	29·528	2·743	46	150·921	14·021	83	272·315	25·297
10	32·809	3·048	47	154·202	14·325	84	275·595	25·602
11	36·090	3·453	48	157·483	14·630	85	278·876	25·907
12	39·371	3·657	49	160·764	14·935	86	282·157	26·212
13	42·652	3·962	50	164·045	15·240	87	285·438	26·516
14	45·932	4·267	51	167·326	15·545	88	288·719	26·821
15	49·213	4·572	52	170·607	15·849	89	292·000	27·126
16	52·494	4·877	53	173·888	16·154	90	295·281	27·432
17	55·775	5·181	54	177·168	16·459	91	298·562	27·737
18	59·056	5·486	55	180·449	16·764	92	301·843	28·041
19	62·337	5·791	56	183·730	17·069	93	305·124	28·346
20	65·618	6·096	57	187·011	17·373	94	308·404	28·651
21	68·899	6·401	58	190·292	17·678	95	311·685	28·956
22	72·180	6·705	59	193·573	17·983	96	314·966	29·261
23	75·461	7·010	60	196·854	18·288	97	318·247	29·565
24	78·741	7·315	61	200·135	18·593	98	321·528	29·870
25	82·022	7·620	62	203·416	18·897	99	324·809	30·175
26	85·303	7·925	63	206·697	19·202	100	328·090	30·479
27	88·584	8·229	64	209·977	19·507	200	656·180	60·959
28	91·865	8·534	65	213·258	19·812	300	984·270	91·438
29	95·146	8·839	66	216·539	20·117	400	1312·360	121·918
30	98·427	9·144	67	219·820	20 421	500	1640·450	152·397
31	101·708	9·449	68	223·101	20·726	600	1968·539	182·877
32	104·989	9·753	69	226·382	21·031	700	2296·629	213·356
33	108·270	10·058	70	229·663	21·336	800	2624·719	243·835
34	111·550	10·363	71	232·944	21·641	900	2952·809	274·315
35	114·831	10·668	72	236·225	21·945	1000	3280·899	304·794
36	118·112	10·973	73	239·506	22·250			
37	121·393	11·277	74	242·786	22·555			

Example.—Required the number of metres in 127 ft. 7⅛ in.

100	30·479
27	8·229
⅛ in. = ·625 in. then $\frac{7·625}{12}$ ft. = ·635 ft.	0·183
	0·011
	38·902

By altering the place of the decimal mark, any number of feet or metres may be taken out to 1,000,000.

VIII.—Directions for Tide Observations. *By the Rev. W. Whewell, M.A., F.R.S., Fellow of Trinity College, Cambridge.*

(Continued from page 102, No. 24.)

The Age of the Tide.

The *circumstances* of each tide do not correspond to the places of the Sun and Moon at the time of that tide, but at a time one, two, or three days earlier; this distance of time is called the *Age of the Tide.*

Two such circumstances may be especially noted:

1°. The spring tide, or *highest* high water, is not on the half-day of New or Full Moon, but at a certain tide on some later half-day.

2°. The interval of tide and moon's transit has not its *mean* value on the dalf-day of New or Full Moon, but for a certain tide at some later half-day.

The distance of time from the New or Full Moon, to the time when the interval of tide and moon's transit has its mean value, is the *age of the tide.*

The age of the tide may be thus explained:

1. The mean ordinate of the curve of the semimenstrual inequality, or the mean interval of the moon's transit and the tide, takes place, at London, at the time when the moon's transit is about 2h., or her age about 2 days and a half from new or full.

This is also the time when the tides are highest; and since, by the theory, both the mean interval and the highest tides ought to correspond to new and full moon, we may suppose that this mean ordinate *corresponds* to the new and full moon, but that it does not *occur* till two days and a half after that time, in consequence of the length of time which is required to transmit the moon's effect upon the ocean to the port of London.

The length of time required for this purpose I have called the *Age of the Tide.* Mr. Lubbock, following Laplace, calls it the *Retard.*

2. The time which is required to transmit the moon's effect to different places is different. Thus, if we calculate it as we have done for London in the last article, it is a day and a half at Brest, and two days at Sheerness.

It appears also, that the tide-hour is later and later at these places in the same order: thus, on the same half-day the tide is at 0h. 28m. at Brest, at 9h. at Sheerness, and at 10h. 9m. at London.

We may therefore suppose the tide to *travel* from Brest to London, and that the time of transmitting the moon's effect to

each place depends on the time of the tide thus travelling to that place.

On this supposition, the tide would be earlier, and the time in which the effect of full-moon reaches it would be smaller, as we go further back in the direction in which the tide-hours are earlier. Thus, the tide at the Cape of Good Hope appears to be about 12 hours earlier than at Brest; we should expect, therefore, that the greatest tides, and the mean interval of tide and transit, would, at that place, occur only one day after new and full moon, instead of a day and a half, as at Brest, or two days, as at London.

3. But our information with regard to this transit in the phenomena of the tides, is not sufficiently extensive and exact to enable us to reason upon it with confidence and accuracy. A good series of tide observations, continued for a few years, at any place in the southern hemisphere, would, on this account, be of singular value and interest.

4. The effect of the age of the tide upon the curve of the semimenstrual inequality is, not at all to alter the form of the curve itself, but to make the points B, C,* of intersection with the axis slide further and further from the new and full moon, as the age of the tide is greater. This change is apparent, if we draw the curves for Brest, Sheerness, and London, (as Mr. Lubbock has has done in the Philosophical Transactions for 1833,) and then draw their axis.

5. A consequence of the different age of the tide for different places is, that the tide-tables which are good for one place cannot be applied to another, merely by addition or subtraction of certain hours and minutes, at least if much accuracy be wanted. The London and the Liverpool Tide-tables do not differ on the same day by a constant quantity; and neither of them apply exactly to other places on the coast.

(To be continued.)

IX.—An Examination of Dr. Kelly's "Introduction to Spherics and Nautical Astronomy," *Section XII. page* 200.

To the Editor of the Nautical Magazine.

Sir—Having had frequent occasion to consult Dr. Kelly's Spherics on the Projection of the Lunar Problem, in a long series of nautical practice, it has occurred to me, that, however careful I was in performing my operations, the results were always widely different to my expectations; and even the results obtained from the examples

* See figure in last number.

there given, never would agree with the author's conclusions. Continual failure and disappointment in this way has eventually induced me to make the following examination of the section, the results of which, by your kind permission, I beg to submit to your readers.

INVESTIGATOR.

Put M = moon's apparent altitude,
S = sun or star's apparent altitude, and
D = Apparent distance.

Figure 53, page 205.

Then, by placing u at the intersection of $n * m$ with A ☽ B, we have, per trigonometry, in the triangle A u *, rightangled at *,

$$\text{As cos. D (sin. A } u * \text{)} : \text{sin. S (A *)} :: 1 \text{ (Radius)} : \frac{\text{sin. S}}{\text{cos. D}} = \text{A } u;$$

$$\text{And A } u - \text{A ☽} = \text{☽ } u = \frac{\text{sin. S}}{\text{cos. D}} - \text{sin. M} = \frac{\text{sin. S} - \text{sin. M cos. D}}{\text{cos. D}}.$$

In the triangle ☽ u D, rightangled at ☽, we have,

$$\text{As sin. D (sin. } u \text{ D ☽)} : \frac{\text{sin. S} - \text{sin. M cos. D}}{\text{cos. D}} (\text{☽ } u) :: \text{cos. D (sin. ☽ } u \text{ D)}$$

$$\therefore \frac{\text{sin. S} - \text{sin. M cos. D}}{\text{sin. D}} = \text{☽ D} = \frac{\text{sin. S}}{\text{sin. D}} - \frac{\text{sin. M}}{\text{tan. D}}.$$

Whence, by taking Dr. Kelly's *First Example*, we obtain,

$$\text{☽ D} = \frac{\text{sin. S}}{\text{sin. D}} - \frac{\text{sin. M}}{\text{tan. D}} = \frac{\text{sin. } 21' 35''}{\text{sin. } 119° 20' 34''} - \frac{\text{sin. } 22° 15''}{\text{tan. } 119° 20' 34''} = \cdot 42199 + \cdot 21284 =$$

·63483 = chord of 37° 0′ 48″ = (reckoning each degree a minute, &c.) 37′ 0″ 48‴.

	°	′	″
Therefore 37′ 0″ 48‴ × 58′ ÷ 62′ = ...		34	38
Apparent distance	119	20	34
True distance, according to the Doctor's method..	118	45	56
True distance, as found by the Doctor	118	46	54
Error of his solution, according to his own method			58
True distance, as found by spherical trigonometry..	118	46	48
Error of the method, when performed with the greatest accuracy			52

	°	′	″
☽ D as found by Dr. Kelly	36	0	00
True length of ☽ D	37	0	48
Error of his measurement on the scale of chords	1	0	48

Example 2.

Here $\frac{\text{sin. S}}{\text{sin. D}} - \frac{\text{sin. M}}{\text{tan. D}} = \frac{\text{sin. } 78° 18'}{\text{sin. } 65° 27' 30''} - \frac{\text{sin. } 15° 21'}{\text{tan. } 65° 27' 30''} = 1{\cdot}07647 - {\cdot}12087 = {\cdot}95560$ = chord of 57° 5′ 2″ = (reckoning each degree a minute, &c.) 57′ 5″ 2‴.

	°	′	″
Whence 57′ 5″ 2‴ × 60¼′ ÷ 62′ = ...		55	37
Apparent distance	65	27	30
True distance, according to the Doctor's method	64	31	53
True distance, as found by the Doctor	64	32	57
Error of his solution, according to his own method.....		1	4
True distance, as found by spherical trigonometry.....	64	33	2
Error of the method when performed with the greatest accuracy		1	9

	°	′	″
☽ D as found by Dr. Kelly....	56	0	0
True length of ☽ D.....	57	5	2
Error of his measurement on the scale of chords	1	5	2

Example 3.

By the formula we have $\frac{\text{sin. S}}{\text{sin. D}} - \frac{\text{sin. M}}{\text{tan. D}} = \frac{\text{sin. } 19° 18'}{\text{sin. } 50° 8' 41''} - \frac{\text{sin. } 55° 56'}{\text{tan. } 50° 8' 41''} = {\cdot}43054 - {\cdot}69154 = -{\cdot}26100$ = chord of 14° 59′ 52″ = (by reducing one denomination) 14′ 59″ 52‴.

	°	′	″
Wherefore 14′ 59″ 52‴ × 60¼′ ÷ 53′ = ...		17	3
Apparent distance	50	8	41
True distance, according to the Doctor's method	50	25	44
True distance, as found by the Doctor	50	26	29
Error of his solution, according to his own method			45
True distance, as found by spherical trigonometry.....	50	26	26
Error of the method when performed with the greatest accuracy			42

	°	′	″
☽ D as found by Dr. Kelly	15	40	0
True length of ☽ D.....	14	59	52
Error of his measurement on the scale of chords		40	8

(To be completed in our next.)

X.—Laying out a Bower Anchor.

To the Editor of the Nautical Magazine.

Sir—His Majesty's ship Liverpool, in proceeding from Spithead to the River Thames, in March, 1816, hove to between Dungeness and Dover, to wait daylight. In the course of the night she ran on shore under Shakspeare's Cliff, when in the act of wearing with the wind abaft the beam, and at nearly high water. On the tide falling, she strained so much as to make it necessary to throw the guns overboard, and cut away the masts, and clear the hold. In this state, she lay nearly three days, and at low water was dry under the bows. Had it not been for the assistance of his Majesty's ship Ganymede, Captain M'Cullock, she must have become a total wreck. This ship dropped her bower anchor, and ran out the end of the cable (buoyed) as near to the Liverpool as conveniently safe. The weather moderating, enabled the Liverpool's launch to run out the stream cable, which was spliced to the Ganymede's cable, and at high-water the Liverpool was hove off.

But I am of opinion that the Liverpool might have been got off before, if the following method had been adopted for laying out her bower anchor. As soon as she was on shore guns were fired for assistance, and a pilot-boat of about eight tons burthen anchored a cable-length outside of her, veered in, and put a pilot on board. The same boat could have taken out a kedge-anchor, which would have enabled us to get out a bower-anchor, and to have hove off the next tide.

A block should be lashed to the ring of the kedge, of a sufficient size to take the topmast shroud-hawser, with another rope of the same dimensions bent to it, and then rove, the leading part being marked, that the bend may not be hove into the block when the kedge is down. The hawsers should then be put into the boat, the kedge eased over the stern with a slip-rope, after it has been slung to casks of sufficient buoyancy to float it well up from the ground. If the boat should be riding by her own cable in the direction and distance from the ship required, the distance for letting go the kedge will be known by her cable. When the boat has got to the distance required, she lets go the kedge, and returns with the ends of the hawser. If the wind and sea are both on shore, and it appears doubtful whether the kedge alone will heave out the bower. Then the standing part of the hawser is to be bent to the crown of the stream-anchor, after a block of sufficient size has been fastened to the ring to take a lower shroud-hawser.

The lower shroud-hawser must now be rove through the block, and bent on to the stream-cable, after which the standing part of

the topmast shroud-hawser is to be bent on to the crown of the stream-anchor, and eased over the stern by a slip-rope, and slung to casks of sufficient buoyancy to float it well up. It may be then hove out with the boat in attendance, and when out to the distance required, the hawser that warped it out is to be cast off, and made fast to the boat, the slings of the cask cut, and the stream-anchor goes down. The boat returns with the standing part of the hawser that warped it out, and with the standing-part of the lower shroud-hawser, which is to be bent on to the crown of the bower. After it has been slung in the following manner, a piece of rope of sufficient strength to weigh the bower is to be bent on to the shank, between the ring and the stock, and to be rove through a thimble or block near the crown.

A sufficient number of casks are now to be slung, with the slings snaked, to prevent their slipping off. When done, the leading part of the rope fast at the shank is to be rove through each of the butt-slings, and then through the block or thimble at the crown, and taken back to the stock, a half-hitch taken, and the end seized back for the better convenience of cutting. After the bower has been hove out to the distance required by the stream and kedge, and the stock-lashing cut by the boat in attendance, the casks unreeve. When the bower is down, the stream will act as a backer to the bower, if hove upon at the same time; when the ship has been hove out to the bower, the stream will assist in casting.

2 butts, or 3 puncheons, or 4 hogsheads, or 6 barrels, will float one ton.

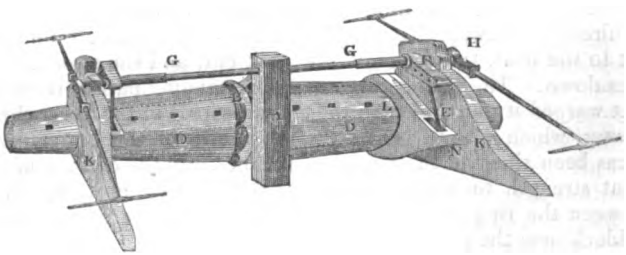
I am, Sir, &c.

EDWARD ROGIER, Lieutenant R.N.

XI.—THE IMPROVED PATENT WINDLASS OF MESSRS. TYZACK, DOBINSON, & Co., *Chain and Anchor Manufacturers of North Shields.*

THE annexed figure is a perspective view of a ship's windlass, fitted with Messrs. Tyzack & Dobinson's improvement at each end. A is the ordinary paul-bit, B the ordinary paul, C the ordinary toothed paul-wheel, and D D the barrel of the windlass, the axis of which turns as usual in the bit-head K K. So far this description is applicable to a common windlass. L is another toothed paul-wheel fastened at the end of the barrel of the windlass, where what is called Garrick-wheels are sometimes placed. The paul-box, with its pauls complete, a crupper for it, has pauls fitted within it, to act upon the toothed paul-wheel L; so that when the end N of the paul-box or crupper is depressed, the pauls drop

down into a fresh set of teeth. The paul-wheel is of course fixed, and remains stationary with the windlass-barrel.



If, after the end N has been depressed, it be again raised, the pauls in the box will act against the teeth of the paul-wheel L, and force the barrel of the windlass round. G G is a bar or axis which is called the main or warping-shaft, passing through, and thus taking a centre bearing in the paul-bit A, and resting at each end on the bit-head. At each end of this bar is a double-armed socket, as shewn at H; and these sockets receive four levers with handles. F is a short arm or lever projecting from the warping-shaft, and connected by means of the rod E to the end N of the crupper, so that, if the lever be worked up and down, the windlass will be drawn round with great force at every up stroke of the crupper. It must be observed, that the main or warping-shaft is placed in an oblique direction with the short arm or lever F, on opposite sides, and at each end of the main shaft, to produce a continued motion.

Ample testimonials have been given of the great power of this windlass, which, on one occasion, has brought up a second anchor, hooked by the arm of that which it was heaving up.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

TABLE DES POSITIONS GEOGRAPHIQUES. *Par M. P. Daussey. Extrait de la Connaisance des Tems de* 1836.

This is a general revision of the latitudes and longitudes which appear annually in the *Connaissance des Tems*, in conformity with modern observations and discovery in various parts of the world. At several periods since Lalande contributed, in 1764, his important additions to this useful division of the Connaissance, it has undergone successive improvements in the hands of Pingrè, Mechain, andt Buache, and now by M. Daussey. The

astonishing progress made in geographical knowledge, of late years, certainly rendered M. Daussey's laborious undertaking highly necessary, and he has executed it with great pains and perseverance. The ordnance surveys, the nautical surveys, by our naval officers, both at home and in foreign parts, the fruits of the Geographical Society, Krazenhoff's survey of Holland and Belgium, the Asiatic researches, the voyages of our own countrymen and the Russians in the Pacific, and several more authorities, have served M. Daussey as the ground-work of his labours. He has given a detailed statement of his authorities, and his work may be considerd the most valuable of its kind in the present day.

METHODE DE CALCULE POUR OBTENIR LA MARCHE DES CHRONOMETRES. Par M. P. Daussey, Extrait de la Connaissance des Tems de 1835.

A valuable little brochure on the management of chronometers, a translation of which we hope to see in our next number.

THE AMERICAN MINES, shewing their importance in a national point of view, with the progress and present position of the Real del Monte Company, &c. By G. H.

Those of our readers, who are desirous of information on this subject, will find much in the little work before us. It is the production of a man of considerable talent and local knowledge of the subject on which he writes, and contains some interesting remarks on that part of the world.

NEW CHARTS.

A CHART OF MAGNETIC CURVES OF EQUAL VARIATIONS, between the latitude 60° N. and 55′ S. from the most recent observations, and A CHART OF MAGNETIC CURVES OF EQUAL VARIATIONS IN THE NORTHERN REGIONS, from the most recent Observations. Corrected for local attraction, 1833. Collated and arranged by Peter Barlow, F.R.S., &c. &c.

A variation chart, with the corrections down to the present day, was decidedly a desideratum; and we are glad to find that Mr. Barlow, with his great knowledge and experience in such matters, has accomplished this task, to which we alluded in a former number* of our work. As we before observed, there can be no doubt of the great utility of these charts to such navigators who really will pay attention to their dead reckoning, and divest it of the deranging effects of local attraction. But, independently of this consideration, it is right that a correct variation chart should be constructed at various periods, in order to shew the changes in the magnetic curves that are gradually taking place, and to remain as records of them for posterity. The chart of the northern regions derives interest from the circumstance of the magnetic curves converging to the magnetic pole, the position of which was also inferred from the observations of Commander James Ross, in his late voyage, and coinciding very nearly with its calculated position according to Mr. Barlow.

* Nautical Magazine, Vol. 2, No. 12, p. 99. See also p. 352 and 415, of Nos. 16 and 17, for an account of his variation globe.

Observations are yet wanted on the northern coast of Asia, or from the north cape of Norway to Bhering Strait, to complete the whole series of the magnetic curves in the northern polar regions. We consider these as two highly useful charts, and the former as possessing peculiar claims to the attention of nautical men.

COUNTY OF LONDONDERRY, IRELAND. Ordnance Survey. In Forty-nine Sheets. Double-Elephant. With an Index Map. 1833.

It affords us no little satisfaction to see the first-fruits of this splendid and important work. We hail the appearance of it, as one fraught with inestimable benefit to Ireland, and as the dawn of day over the face of the sister isle; for as yet it has been hidden from us, as if involved in the darkness of night! Here we can now plainly see, at one view, the correct relative positions of churches, chapels, mills, limekilns, quarries; we can distinguish roads, lanes, rivers, and rivulets, gentlemen's seats and cottages, and can point out the positions of counties and their minutest subdivisions, as well as discriminate between bog and mountain. In fact, when we reflect for a moment on the former maps of this part of the world, the analogy between them and the present survey may be compared to a person emerging at once from a dark room into the broad glare of noon-day. These forty-nine sheets are accompanied by an index map, which we foresee will be the favourite map of the traveller, and who, we can assure, will find no obstacle to possessing it arising from the price. The scale of the various sheets is somewhere about six inches to the mile, and the subdivisions of the survey into so many portions enables the owners of small farms or estates to possess at once a good correct plan of them at a cheap rate, without going to the expense of employing an engineer. The numerous altitudes above the level of the sea given in these maps will be found most useful in laying out roads and drains; but, to the commercial and manufacturing interests of the country, their utility will be still more important.

THE COUNTY OF ANTRIM, IRELAND. Ordnance Survey. In Sixty-eight Double-Elephant Sheets. With an Index Map. 1834.

The same remarks that we have made on the foregoing maps of Londonderry will apply to these, for they are of the same *genus*. But they possess yet more interest from containing the detail of the coast and neighbourhood of the Giant's Causeway, and those splendid basaltic cliffs, which, to the geologist and tourist, are objects of so much curiosity. These, we are happy to find, will shortly become more accessible than hitherto, by a road along the coast, now executing by the Board of Works, at the instance of the gentlemen of the county. This road is shewn on the sheets containing the coast, and the historian, the antiquarian, and the philosopher, may trace on all, the relics of military tenure, of feudal grandeur, and monastic ascendancy, amid the hamlets, villages, and rising towns which mark the present features of civilization. The survey of Captain Mudge has been used for the coast line.

NAUTICAL SURVEYS, AMERICA.—The more we see of the work of our naval surveyors in North and South America, as well as in the West Indies, the less do we find we have been acquainted with the parts under their exami-

nation. The coast about the entrance to the Rio Negro, in South America, and the plan of Berkley Sound, Falkland Islands, by Captain Fitzroy in the Beagle, are instances of this fact, as well as the surveys going on under Captain Owen in the West Indies, and under Captain Bayfield in the St. Lawrence. The former officer has just completed a very interesting survey of the Demerara river, with the boats of that ship; and Lieut. Barnett, in the Jackdaw, has brought to light a nest of dangers on the Mosquito shore, near Cape Gracias a Dios. In the course of his survey, Lieut. Barnett has examined the "Serrana," or Sir Edward Seaward's Island. The advocates for the truth of that pretty and interesting tale, will be disappointed to find that it is nothing more than an extensive coral reef, having five very small cays in different parts of its border, quite uninhabitable. They are composed of the drift from the ocean, sand, and pieces of rock broken from the main reef, washed up by the force of the sea. They are not more than four or five feet above the surface of the water, excepting one which has a sand-bank 30 feet high, and which is the only one that yields fresh water. It may still be said that the "Seranilla" was the scene of Sir Edward's exploits; but this cannot be, as it is even less than the Serrana, as its title implies.

We are happy to find that some Spanish officers have just completed a very good survey of that dangerous reef on the coast of Cuba, known by the name of Colorados; they have also surveyed that nest for pirates the Isle of Pines, and that extensive range of cays on the north coast of Cuba, from Matanzas to Nuevitas. The work of the draftsmen is nearly completed, and it will be immediately sent home for publication at the hydrographic office in Madrid. These surveys have been evidently made with much skill and care, and will save our surveyors much labour and exposure. It appears by them, that the outer edge of the Colorados is much nearer to the coast of Cuba than laid down in the charts, and the channels through the reef are well defined.

In the St. Lawrence, we find Commander Bayfield is daily bringing some new channel and its adjacent dangers to light. Having completed Anticosti, and the shores of the St. Lawrence, inside of it, in which he has changed the features of the whole navigable part of the river, he is carrying his operations through the gulf to the straits of Belle Isle in the north, and towards Prince Edward Island in the south. His work so far has shewn the incorrectness of the existing charts of these parts, to say nothing of their general want of detail, but of more than one part of this coast there has never yet been even a survey made. Captain Bayfield's surveys may be justly considered most important to Canada, as they have already not only opened new channels, and explored parts before unknown, but have determined with precision the proper form and contour of the coast.

Cockburn Sound, Australia.—The last accounts from Swan river state, that all the buoys had been washed away by the violent gales.

Woolwich Dockyard.—Considerable improvements are making in this dockyard. The wall round the western end is now complete, and a new landing-place in progress. We gave in our last the names of the vessels building there. The Trafalgar will be ready for launching in about 18 months. The Boscawen, 80, is to be reduced to a 60-gun frigate, and named the Indefatigable. The Comet shortly goes to Blackwall, to be fitted with the "Quicksilver" steam apparatus, and then proceeds to Ireland.

Lighthouses in the Gulf of Florida.—Our readers are aware that steps have been taken to erect lighthouses on the western side of the Gulf

of Florida, leaving those on the Florida shore to the American government. The Cay Sal bank having been selected for one, it was found, on examining it, that, besides the difficulties of erecting one there, there would be some delay in doing it, from the circumstance of the bank being claimed by the governor of the Havana, as belonging to the Spaniards. The question of right, as far as the value of the bank is concerned, would not be worth disputing, but we hope that, if the Spaniards will not build one themselves, that they will not be allowed to prevent the enterprising spirit of English engineers being employed in so desirable an object. The project of erecting one on Abaco Island will be shortly carried into effect, the exact site of it being only required. H.M.S. Pearl, Commander Gordon, has arrived at Nassau, to determine this important point. It is said, on good authority, that the south-west part of the island is not the best calculated for it.

TRINDELIN LIGHT VESSEL.—A notice has been given that this vessel had broken from her moorings on the 29th November, and put into Fredericks-haven. She will not be replaced till the spring.

IRON STEAM-BOATS.—The importance of these vessels is daily increasing in general estimation, arising from the peculiar advantages they possess, of being not only water-tight and very durable, but, from their cleanliness, peculiarly healthy and desirable vessels. They afford no harbour for vermin, like those of wood, and, in warm climates, the great conducting power of the metal gives off the heat to the water, so that they nearly assume its temperature. It was technically said of the Alburkha,* the first of these vessels that ever went to sea, that she did not make "a cup-full of water," and we know that, in the course of her voyage up the Niger, she was the favourite vessel on this account, as well as from the circumstance of her being the healthier of the two vessels. The Quorra, that accompanied her, very shortly lost two-thirds of her crew, while, in the Alburkha, the sickness was nothing in comparison. We have no doubt that the more they are known, the more general they will become. Messrs. Laird, of Liverpool, have already constructed several, the dimensions of which we gave in a former number;† and we find that another is being built for the purpose of plying between Limerick and the mouth of the Shannon. Her length is 125 feet, breadth 21½, and depth 10 feet. She will have two engines of 36 inch cylinders, and 4 feet stroke, and her draft of water, with these and 30 tons of fuel, will be 4 feet 6 inches.

LIGHT ON THE START POINT.—We are informed, by a letter from the late worthy secretary to Lloyds, that measures are in progress for erecting a light-house on the Start Point.

IMPROVEMENTS IN THE SEXTANT.—The reading lamp, fitted to the limb of the index glass, by Mr. Gray, optician, of East Smithfield, noticed in our 22d Number,‡ has been considerably improved by that gentleman, and is now a very convenient and desirable little appendage to the instrument.

* A spirited lithographic drawing of this little vessel, lying to off the St. Paul's river, from a sketch by the late Mr .G. Harries, the commander of the Quorra, will be found in our 20th Number. Vol. 2, p. 604.

† Vol. 2, Naut. Mag. p. 678, No. 21

‡ P. 740, Vol. 2, Naut. Mag.

TAMPICO.—A company in Tampico are taking measures to procure steam-boats for the purpose of towing vessels over the bar at the mouth of the river. Vessels are often delayed for weeks, in consequence of being unable to get over the bar.—*Times.*

BRIDGE AT HASLAR.—The Admiralty and Ordinance Boards, in giving their sanction to the erection of a Bridge from Gosport to Haslar, have testified their opinion of its fitness, by offering to pay 50*l.* each annually, for the free passage of all military persons, and all persons belonging to the hospital establishment. The Bill will pass through a Committee on Monday next.—*Hants Telegraph.*

FALKLAND ISLANDS.—Extract of a letter from the captain of the SWALLOW, arrived off St. Alban's head on the 9th instant:—"On December the 11th, in lat. 52° 30′ north, and long. 63° 30′ west, spoke the cutter Susan Ann, Capt. Ferguson, on a sealing voyage, and received the following information:—On the 26th of August a party of people were murdered at the Falkland Islands, left there a short time before by H.M.S. Clio. A few of their names I got, viz. Capt. Brisbane, Mr. Dickson, Mr. Seaman, Mr. Ventine, and many others."

The reported massacre of the party left in possession of the Falkland Islands, by H.M. ship Clio, circulated on the authority of the master of a merchant vessel, arrived at St. Alban's Head, who spoke a vessel called Susan Ann, on a sealing voyage, by which he got his information, is liable to considerable doubt; we have ourselves accounts from the flag-ship on the South American station to the 12th December, when the admiral had not heard of any such an occurrence, although it is said to have taken place on the 26th August preceding, and Rio de Janeiro, where the Spartiate lay, is only a month's sail from the Falklands. Captain Brisbane, said to have been one of the party murdered, died at Florence, three or four months since. Lieut. Brisbane is on half pay, and there is no other commissioned officer of that name in the service. These circumstances are sufficiently strong to call in question the truth of the whole story.—*Devonport Telegraph.*

MEDITERRANEAN STEAMER.—A steam-boat, called El Balear, has just been established by a Catalonian company, to ply once a week between Barcelona and the towns of Palma and Port Mahon, in the islands of Majorca and Minorca. She makes her first trip from Barcelona on Sunday next, and is described as a good sea-boat, a fast sailer, and as being provided with excellent accommodations. She is provided with two engines of 50 horse power each, and it is expected that she will be able to make the trip to Palma or Port Mahon respectively in about 16 hours. From the beginning she is to be intrusted with the carriage of the public mails from the continent to the Balearic Islands,—an example of promptitude in adopting improved means of communication, which might be conveniently followed by other governments.—*Times*, Jan.. 18th, 1834.

LIGHTHOUSE COMMITTEE.—Sir James Graham, Hon. Capt. Dundas, Mr. Bonham Carter, Mr. Hutt, Hon. Capt. York, Sir E. Codrington, Mr. Collier, Admiral Adam, and Sir Thomas Trowbridge, are chosen on the committee to inquire into all matters relating to the Trinity House, with its establishments of lighthouses, floating lights, buoys, and beacons, and to inquire if the dues paid by shipping for the support of the same can be reduced.—*Hants Telegraph.*

Capt. Mc. Kerlie, the brave officer who commissioned the President, was brought forward in the service by that genuine discriminator of professional talent, the late Lord Exmouth, under whom he lost his arm in the Indefatigable frigate, when she, with the Arethusa, drove the Droits Homme, of 80 guns, ashore. He was made Commander for his services as first lieutenant of the Spartiate, at Trafalgar, and post captain for capturing two 20-gun corvettes, in the Calliope, sloop of war, assisted by some gun-boats, in the Weser River.—*Hants Tel.*

PURSERS.—We have much gratification in hearing that it has been determined to increase the half-pay of pursers of the Royal Navy, to 5s., 6s., and 7s. per diem, instead of 3s., 4s., and 5s. as at present. The increase will not become a charge upon the Navy estimates, as it is intended to reduce the allowance made to pursers in commission, for the care of provisions, from an eighth to a tenth; by which regulation, in a line-of-battle ship, where eighths amount to 500*l.* a year, it will be only 400*l.* a year. It is also intended, as we are informed, to reduce the entire list of pursers to an effective list; by which all those who hold or have held civil employments, and all those incapable of further servitude from infirmities, will continue to receive their present modicum of half-pay only. It is also said, that the titular term "Purser" will be exchanged for that of "Accountant."—*Hants Tel.*

LORD YARBOROUGH.—We understand the wardens and brethren of the Trinity House have presented to the Right. Hon. Lord Yarborough the honorary brotherhood of that corporation; his lordship, who is well known to have long encouraged the science of navigation, having in the most handsome manner given leave to the corporation to erect certain beacons and seamarks upon his property on the shores of the Humber.

SHIP MASTERS' MARINERS' SOCIETY.—The third anniversary meeting of this most excellent and useful institution, took place lately at Pile's Navy Hotel, Southside-street, Devonport. The object of this Society is to relieve its members, who receive a total or partial loss from shipwreck; and to pay a sum of £25 to widows and orphans, on the demise of a member. The casualties for the last year, notwithstanding the boisterous season experienced, are comparatively few. Only two members suffered a total loss, and were relieved with £50 each; two sustained partial injury, and received £10 each; and three members died in the course of the year—the relatives of each receiving £25. Three total losses were added to the list for this year, and will be relieved according to the rules of the Society. We are happy to add, that the funds are in a flourishing condition; £100 was placed in the Bank, last year, making in stock, £300.—*Devonport Herald.*

STEAM-VESSELS.—We hear that Franklin's idea of propelling vessels has been realized on the Hudson, where a steam-vessel has been built on two cylinders, through which the water is drawn by a wheel working in the middle and a speed attained of twenty-five miles an hour.—*Glasgow Chronicle.*

YACHTS.—The yachts of the Royal Western Yacht Club are privileged to enter the ports of Austria, Prussia, France, and Holland, free of port or harbour duties.—*Plymouth Journal.*

REMARKABLE SUBMARINE DISCOVERY—Among the occurrences which have been transmitted by tradition to our neighbours in Gower, is an account

of a wreck of a homeward bound Spanish galleon, laden with dollars, on Rhooly-sands, near the Wormshead, shortly after the conquest of South America by the Spaniards; that the crew, without giving information of the nature of her cargo, sold the wreck for a trifle to a Mr. Thomas, of Pitton, who, not being aware of the value of his purchase, or from some other cause, took no pains for her recovery, and that she shortly became completely imbedded in the sands. Nevertheless, suspicion always existed in that part of the country, that she must have had on board some valuable articles, and, about twenty-six years ago, in consequence of the sand having drifted very unusually, part of the wreck, in a very decayed state, became visible, and a great quantity of dollars, with some old iron and pewter, were then dug up from some depth in the sand. The late Mr. John Beynon, of Pitton, having failed to prove, by any written document, the purchase of the vessel by his ancestor, (the above-named Mr. Thomas,) Mr. Talbot, of Penrice Castle, as lord of the manor, became entitled to the property; but he generously refused to accept it, consequently many of the inhabitants were much enriched by this fortuitous circumstance. The spot where the vessel struck being only open at four hour's ebb tide, and the sand having returned to its old quarters, the money-hunters were obliged to desist in their attempts, and all hopes were abandoned of any further booty from that source. During the late gales, however, the sand having again shifted out, the spot was once more resorted to, and the recovery of a very large quantity of dollars has been the result, some bearing the date of 1631, others further back. The circumstance has created a very peculiar interest in the neighbourhood, and as it is not likely the present lord of the manor, C. R. M. Talbot, Esq., will deviate from the precedent of his respected father, it is to be hoped the neighbourhood, which is very poor, will be considerably benefited by this occurrence.—*Cambrian.*

Port of London.—Notwithstanding the prognostications of the decay of the trade of the port of London, the amouut of tonnage entering the port of London is on the increase. At the half yearly meeting of the London Dock Company, held on Friday, the 10th inst. at the dock house, the chairman stated that there was an increase in the shipping which entered the port of London in the year just closed, of 385 ships, of the tonnage of 65,900 tons; that the quantity of merchandise in the London Docks is now greater than at any one period for many years past; which, (as the chairman emphatically said,) is a pretty strong answer to the assertions of those who would make us believe that the trade of this, the first port in the world, is on the decline. The facts form a strong and decisive negative to the assertions of many of the speakers at the late shipowners' meeting, "that if Ministers persevere in their present wild and theoretic line of policy, the whole trade of the country will be ruined."—*Times.*

Holyhead Harbour.—We have been favoured, by a gentleman who attended the Hunt Meeting at Holyhead, on Wednesday week, with a list of the vessels then lying in the harbour, wind-bound, which were above eighty sail, cleared for different parts, viz:—The West Indies, South America, Africa, Alexandria, Mediterranean, Spain, and Portugal, as well as coasters and Irish traders. It appears also that he has made himself acquainted with what took place at Holyhead Harbour during the many tempestuous gales of this winter, and the local advantages of the place as an asylum port to the trade of the channel, and finds that the average number which annually take shelter within the pier, is above one thousand sail, exclusive of his majesty's packets, and that their tonnage some years exceed one hundred thousand tons. He further

observes, that the security it affords has been proved, during the present month in particular, when so many disasters have occurred on other coasts generally throughout the channel, no damage whatever has been sustained in Holyhead harbour, or about its entrance. It should be known, to the credit of the commissioners, that no means are neglected for the safety of other vessels, as well as his majesty's packets. A strong chain is laid down across the entrance, which grapples the anchors when they are driving out, and a storm-boat is kept continually afloat, with a most powerful capstan, and warps to assist them in; these have been the means of saving some vessels during the late heavy gales. The pre-eminent advantages of the harbour as a packet station are well known, and it is highly to the credit of those concerned in the post-office establishment, when the efficiency of the packets has been so fully proved, and which also demonstrates the zeal and ability with which the commanders have performed their arduous duty, that the London mail has not been detained more than ten minutes in any one instance throughout the winter, but the packets have invariably started as soon as it was put on board, which is generally at eleven at night, consequently there has not been a storm throughout the present winter, without two of the Holyhead packets being out. exposed to its fury, which they have weathered without any damage whatever, —*Carnarvon Herald.*

THE FISHERIES.—The fishermen of Brighton owe a lasting debt of gratitude to Captain Pechell, for the great attention he has paid in furthering their interests, as, from his exertions alone in their behalf, a great extension of privileges has been bestowed upon them, from the representations made by him to the Lords of the Admiralty and the Commissioners of Customs. Many of our readers may not be aware that all boats used at sea, whether for fishing or pleasure, are required, by the acts 3 and 4 W. 4, cap. 53, to be licensed by the Commissioners of Customs; which licenses, with a view to the prevention of smuggling, are restricted, on an average, to a distance of about eight leagues from the coast, and in extent, from east to west, from twenty to sixty leagues. These prescribed limits were serious obstacles, in many instances, to the success of our enterprising fishermen; added to which, they have been subjected, annually, to considerable depredations committed on their nets by the French fishermen, during the mackerel season. Captain Pechell has, however, from the able manner in which he has advocated the cause of the Brighton fishermen, obtained from the Lords of the Admiralty a promise to afford them protection from the encroachments of the French fishermen, by the employment of a government cruiser for that purpose; and the commissioners of the customs have, at his instance, promised to extend the limits of boats' licenses to within one league of the French and Dutch coasts, thereby placing our fishermen upon the same footing as those of France, who are not permitted, by the treaty of Paris, to approach this coast nearer than one league. With a view of immediately carrying these ameliorations into effect, the collector of customs at Shoreham has received directions from his board to call in all existing licences belonging to persons of good character, in order to their being furnished with fresh ones, in accordance with the new regulations.—*Hants. Tel.*

NAVAL INTELLIGENCE.

THE ROYAL NAVY IN COMMISSION.

*** S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

ACTÆON, 26—Hon. F. W. Grey, 2d Nov. arrived at Vourla. Sailed for Constantinople.

ÆTNA, S. V. 6—Com. W. G. Skyring, 2d Dec. at Santa Cruz, Teneriffe.

ALBAN, St. V.—Lieutenant A. Kennedy, 30th Oct. at Demerara from Berbice.

ALFRED, 50—Capt. R. Maunsell, 20th Dec. at Vourla.

ALLIGATOR, 28—Captain G. R. Lambert; 13th Sept. arrived at Madras from Trincomalee. 29th August sailed on a cruise.

ANDROMACHE, 28—Capt. H. D. Chads, C.B. 7th Feb. sailed for China with Lord Napier and suite. Passenger, Com. E. Younge to join the Melville.

ARACHNE, 18—Com. G. S. Fremantle, 11th Dec. left Barbadoes for Porto Rico.

ARIADNE, 28—Capt. C. Phillips, 5th Nov. at Bermuda. 16th Nov. sailed for Barbadoes. 3d Dec. sailed from Barbadoes for Martinique.

ASIA, 84 — Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus, 28th Dec.

ASTREA, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Karley, 13th Feb. sailed for Cork. 17th Feb. arrived there.

BADGER, 10—Com. G. F. Stowe, Simon's Bay.

BARHAM, 50—Capt. H. Pigot, 8th Dec. at Malta, to convey Vice Admiral Sir Pulteney Malcolm home when relieved by Vice-Admiral Sir Josias Rowley. 27th Dec. sailed from Malta.

BEACON, S. V.—Com. R. Copeland, Surveying service, 4th Dec. at Malta., 6th Jan. at Malta.

BEAGLE, 10, S. V.—Com. R. Fitz-Roy, 25th Oct. Monte Video.

BELVIDERA, 42—Capt. C. B. Strong, Portsmouth, fitting for West Indies. Mr. Chatfield, Consul at Guatemala, takes his passage in her.

BLONDE 46—Capt. F. Mason, C.B. 7th Feb. at Spithead, 14th Feb. sailed for Jamaica, with the Marquis of Sligo and suite.

BRISK, 3—Lieut. Stevens, 25th Oct. at Fernando Po.

BRITANNIA, 120—Vice-Admiral Sir P. Malcolm, Captain P. Rainier, 20th December, at Vourla.

BRITOMART, 10—Lieutenant H. Quin, 21st Nov. at Sierra Leone. Sailed for Gambia.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 17th July at Rio; 21st July sailed for Australia.

CALEDONIA, 120—Captain T. Brown, 20th Dec. at Vourla.

CANOPUS, 84—Hon. J. Percy, Plymouth, fitting.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 21st Dec. off Oporto.

CEYLON, 2.—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 8th Dec. arrived at Rio Janeiro. To proceed to Pacific on or about the 20th instant, calling at the Falkland Islands to land Mr. Smith, late first lieutenant of the Tyne, but now Governor of those islands, he having been appointed thereto by his Majesty's government, with a salary of seven shillings a day, in addition to his pay as a lieutenant in the Navy. He will be accompanied by four seamen, to make up a boat's crew.

CHAMPION, 18—Com. Hon. A. Duncombe, December at Alexandria for the winter.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, Portsmouth, fitting for Africa.

COCKATRICE, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

COCKBURN, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

COLUMBINE, 18—Com. O. Love, 17th October, arr. at Jamaica.

COLUMBINE, St. V.—Lieut. R. Ede, Portsmouth.

COMET, St. V. — Lieut. Com. T Cook, Woolwich.

COMUS, 18 — Com. W. Hamilton, arrived at Port Royal 13th Sept.

CONWAY, 28—Captain H. Eden, 2d Dec. arrived at Pernambuco from Bahia. 3d Dec. sailed on return.

CRUIZER, 18—Com. Jas. M'Causland, 29th Jan. sailed for Jamaica with Major-Gen. Sir Amos Northcote. Detained by foul winds at Falmouth. Sailed 9th Feb.

CURAÇOA, 26—Capt. D. Dunn, 30th Sept. at Madras. Oct. sailed for Calcutta.

CURLEW, 10—Com. H. D. Trotter, October off Cape Lopez.

DEE, St. V. 4—Com. W. E. Stanley (*b*) 6th Feb. sailed for Cork. 13th Feb. returned to Plymouth. 14th Feb. sailed with Thunderer for Cork.

DISPATCH, 18—Com. G. Daniell, 3d Dec. arrived at Barbadoes from St. Thomas.—The slaver captured by the Dispatch on the 25th December, on her passage from Barbadoes to the Spanish Main, was called the Ross, a small Spanish schooner of 75 tons, with 292 slaves on board, being 176 males and 116 females, mostly under twelve years of age; the vessel is only 3 feet 2 inches between decks, so that the slaves were completely packed; she was taken to the windward of Barbadoes, near the Tropic, and was sent to the Havannah for condemnation.

DONEGAL, 78—Capt. A. Fanshawe, 12th Jan. in the Tagus.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Captain C. Hope, 13th Sept. arrived at Lima from Valparaiso. 3d Oct. returned to Valparaiso. Going to Lima.

EDINBURGH, 74—Capt. James R. Dacres, Portsmouth, fitting. 21st Feb. moved for Spithead.

ENDYMION, 50 — Captain Sir S. Roberts, Knt. C.B.; 19th Jan. arrived at Spithead. 21st hoisted the flag of Vice-Admiral Sir Josias Rowley, Bart. K.C.B. 4th Feb sailed for the Mediterranean. Passengers Lieut. H. B. Young, Mr. J. Napier, Master, Messrs. Willoughby, Veitch, Maxwell, Daley, Midshipmen.

ESPOIR—Lieut. Com. C. W. Riley, Portsmouth, fitting.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, African station.

FAIRY, S. V. 10—Com. W. Hewett, 11th Nov. arr. at Woolwich.

FAVORITE 18 — Com. G. R. Mundy, 25th Nov. sailed for Mediterranean, via Cadiz. Stopped at Portland. 10th Dec. sailed. 7th Jan. arrived at Gibraltar, and sailed for Malta.

FIREBRAND, St. Yt., Lieut. W. G. Buchanan, 18th Jan. arrived at Falmouth from Lisbon. 4th Feb. into basin at Portsmouth; when ready, will be ordered to attend the committee of the house of commons, on the rising of parliament, which has been appointed to investigate and inquire into the revenues and management of the lighthouses of the united kingdom.

FIREFLY, 2—Lieutenant J. M'Donnel, 9th July at Jamaica; 21th Aug. sailed from Port-au-Prince.

FLY, 10—Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER — Lieutenant G. Miall, 21st Nov. at Sierra Leone. 22d Dec. arrived at Ascension on way to Cape.

FORTE, 44—Captain W. O. Pell, Barbadoes, 15th Jan.

GANNET, 18 — Com. J. B. Maxwell, 13th Feb. arrived at Spithead. Left Barbadoes 15th Jan. Sailed for Sheerness 14th Feb. to pay off.

GRIFFON, 3—Lieut. E. Parlby, Gold Coast.

HARRIER, 18 — Com. H. L. S. Vassal, 13th Oct. at Trincomalee, refitting.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18 — Com. F. P. Blackwood, Oct. left Madras for Calcutta.

IMOGENE, 18—Captain P. Blackwood, 9th Oct. passed Trincomalee, from New South Wales, on her way to Madras.

INVESTIGATOR, 16, S. V.—Mr. G. Thomas, Woolwich.

ISIS, 50—Captain J. Polkinghorne, 2d Dec. left Sierra Leone for Gambia. The Spanish slaver which she captured, with 342 slaves, was dismasted in a tornado, while chased.

JACKDAW, S.V.—Lieut. E. Barnett, 12th Jan. arrived at Nassau from Egg Island.

JASEUR, 18—Com. J. Hackett, Sheerness, fitting.

JUPITER, *Troop Ship*—Mr. R. Easto, 7th Feb. sailed for Plymouth on her way to the Mediterranean, to convey three detachments of the 57th and 92d regiments. 13th Feb. left Plymouth for Cork. 17th Feb. arrived there.

LARNE, 18—Com. W. S. Smith, 4th Oct. at Jamaica.

LIGHTNING, St. V.—J. Allen, 24th Dec. arrived at Falmouth from Lisbon; 24th Jan. Woolwich; 20th Jan. arrived at Portsmouth, to convey Lord Howard de Walden ambassador to Lisbon. 6th Feb. sailed for Lisbon.

LYNX, 10—Lieut. Com. H. V. Huntley, Portsmouth. 7th Feb. sailed for Africa.

MADAGASCAR, 46—Capt. E. Lyons, 4th Dec. at Nauplia.

MAGICIENNE, 24—Capt. J. H. Plumridge, 13th Sept. left Sincapore for Manilla.

MAGNIFICENT, 4 — Lieut. J. Paget, Port Royal.

MALABAR, 74 — Capt. Hon. J. Percy, 20th Dec. at Vourla.

MASTIFF, 6, S. V.—Lieut. T. Graves, 4th Dec. at Malta. 6th Jan. at Malta.

MEDEA, St. V. 6—Com. T. Austen, Woolwich, fitting.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 4th Aug at Trincomalee. Calcutta, to convey the Governor-General to Madras. 13th Oct. returned to Madras.

METEOR, St. V.—Lieut. Symons, 4th Dec. at Vourla. 29th Dec. arrived at Malta from Smyrna. Ordered home. 6th Jan. at Malta.

MONKEY, — Lieut. ——, 26th May at Jamaica.

NAUTILUS, 10—Lieut. Com. W. P. Croke. Portsmouth, fitting.

NIMBLE, 5—Lieut. C. Bolton, 17th Dec. arrived at the Havana with a prize containing 480 slaves and 34 men, captured off I. Pines, named the Manulita. On 3d of Nov. she captured the Joaquina with 329 slaves and 25 men, and a few days afterwards destroyed the Amistad Havanera. Lieut. Bolton has in less than 9 months captured 3 vessels and upwards of 1000 slaves.

NIMROD, 20—Com. J. Mc. Dougal; 12th Feb. into Plymouth Sound. 15th sailed for Oporto and Lisbon.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

ONYX, 10—Lieut. A. B. Howe, Plymouth station.

ORESTES, 18—Com. Sir Wm. Dickson, Bart. 23d Nov. arrived at Lisbon; 1st December sailed for Oporto.

PALLAS, 42 — Capt. W. Walpole, 9th and 19th July at Jamaica.

PEARL, 20 — Com. R. Gordon, 12th Jan. arrived at Nassau.

PELICAN, 18—Com. J. Gape. Daily expected from Gibraltar.

PELORUS, 18—Com. R. Meredith, 15th Nov. arrived at Ascension.

PHŒNIX, St.V.—Com. R. Oliver.

PICKLE, 5—Lieut. C. Bagot, 29th Nov. at Port Royal.

PLUTO, St. V.—Lieut. T. R. Sulivan. Coast of Africa.

PRESIDENT, 52—Capt. J. M'Kerlie, Portsmouth; fitting, supposed for Mediterranean.

PRINCE REGENT *Yacht*—Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 15th Oct. left Valparaiso for Lima, via Arica and Yco.

PYRAMUS—8th Oct. arrived at Bermuda; sailed for Halifax with Forte; 23d Oct. arr. at Halifax.

RACER, 16—Com. J. Hope, 28th October ar-

rived at Bermuda; 8th Nov. sailed for Jamaica. 12th Dec. sailed for Carthagena.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. Plymouth, fitting. 17th Feb. into dock.

RAINBOW, 28—Capt. Thomas Bennet Portsmouth, fitting.

RALEIGH, 18—Com. A. M. Hawkins, 6th Jan. at Malta to proceed to Gibraltar.

RAPID, 10—Lieut. Com. F. Patten, 10th Dec. arrived at Rio Janeiro.

RAVEN, S. V. 4—Lieut. W. Arlett, 2d Dec. at Santa Cruz, Teneriffe.

REVENGE, 78 — Capt. D. H. Mackay, 21st Dec. in the Tagus. Expected home daily.

RHADAMANTHUS, St. V.—Com. G. Evans, 27th Oct. at Jamaica. 12th Dec. sailed for St. Domingo.

RINGDOVE, 16—Com. W. F. Lapidge, 7th Feb. sailed for Lisbon.

ROLLA 10—Lieut. H. F. Glasse; Plymouth, fitting.

ROMNEY, *Troop Ship*—Mr. R. Brown, 29th Jan. sailed for Cork, returned to Plymouth 1st Feb. 17th Feb. arrived at Cork.

ROVER, 18 — Com. Sir G. Young, Bart., 6th Feb. sailed from Sheerness for the Mediterranean.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, Plymouth station.

ST. VINCENT, 120—Capt. H. P. Senhouse 20th Dec. at Vourla.

SALAMANDER, St. V.—Com. W. L. Castle, 7th Feb. left Chatham for Plymouth, 13th arrived and returned to Chatham.

SAMARANG, 28 — Capt. C. H. Paget, 3d Nov. at Panama on her way to San Blas.

SAN JOSEF, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28—Capt. Hon. W. Trefusis, 15th Jan. at Barbadoes.

SARACEN, 10—Lieut. Com. T. Le Hardy, 7th Feb. sailed for Lisbon.

SATELLITE, 18—Com. R. Smart, 12th Dec. off Rio Janeiro, the Satellite and Snake are both cruizing off this harbour, for the interception of slavers. The former sloop has sent in a brig, without any slaves on board, but accompanied with such proofs as will clearly establish the fact that a cargo had just been landed.

SAVAGE, 10—Lieut. R. Loney, 22d Dec. off Oporto.

SCOUT, 18—Com. W. Hargood, Jan. at Tripoli.

SCORPION, 10—Lieut. N. Robilliard, Plymouth, fitting. 19th Feb. moved into the Sound.

SCYLLA, 18—Com. Hon. G. Grey, 6th Dec. sailed for Nauplia on her way home, touching at Tripoli. Arrived at Malta 27th Dec. sailed 6th Jan. 22d Feb. arrived at Spithead.

SERPENT, 16—Com. J. C. Symonds, 1st Nov. at Barbadoes.

SKIPJACK, 5—Lieut. W. H. Willes, (*act.*) 29th Oct. at Bermuda from Jamaica; 3d Nov. sailed for Nassau.

SNAKE, 16—Com. W. Robertson, captured and carried into Rio de Janeiro, previous to the 18th Dec. the Portuguese brig Maria da Gloria, with 425 slaves on board. 12th Dec. Rio.

SPARROWHAWK, 18 — Com. C. Pearson, 8th Feb. Spithead. 13th Feb. sailed for South America.

SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 12th Dec. at Rio Janeiro.

SPEEDWELL, 5—Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieutenant J. P. Roepel, Portsmouth station.

STAG, 46—Capt. N. Lockyer, 11th Jan. in the Tagus.

SWAN, 10—Lieut. J. E. Lane, 5th Jan. sailed for the Clyde to protect herring fishery.

SYLVIA, 1—Lieut. T. Henderson, Portsmouth station.

TALAVERA, 74—Capt. E. Chetham, 20th Dec. at Vourla.

TALBOT, 28—Capt. R. Dickinson, C. B. 6th Nov. left Mauritius for Cape and England. 24th Nov. arr. at Cape. Daily expected.

THUNDER, S. V.—Commander R. Owen, 29th Dec. at Nassau.

THUNDERER, 84—Capt. W. F. Wise, C.B., 3d Feb. arrived at Plymouth. 14th Feb. sailed for Cork, having received on board 100 tons of iron ballast.

TRINCULO, 18—Lt. Com. Thompson, 31st Oct. Cape of Good Hope, from Ascension.

TWEED, 20 — Com. A. Bertram, 5th Nov. at Bermuda.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie.

UNDAUNTED, 46—Captain E. Harvey, 26th Jan. arrived at Spithead. Left Madras 30th Sept.; Trincomalee 13th Oct.; Mauritius, 13th Nov.; St. Helena 13th Dec; and Ascension 19th Dec. Passengers, Mr. M'Jennan, Surgeon, R.N., and Mr. J. Walkenbury, Master of Harrier. 30th Jan. into harbour. Paid off.

VERNON, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt, 20th Dec at Jamaica.

VESTAL, 26—Capt. W. Jones, 14th Dec. sailed from Barbadoes for Jamaica.

VICTOR, 18—Com. R. Russell, 1st Jan. at Barbadoes.

VICTORY, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

VIPER, 6—Lieut. H. James, 22d Jan. arrived at St. Ubes from Oporto.

VOLAGE, 28—Capt. G. B. Martin, C. B. 6th Jan. at Corfu.

WASP, 18—Com. Jas. Burney, 13th Dec. arrived at Barbadoes. Sailed 14th for Trinidad. 16th Jan. off Barbadoes.

WOLF, 18—Com. W. Hamley, 21st July left Sincapore for Malacca and Penang. In August refitting at Trincomalee. On 30th Oct. was to sail from Colombo for Madras and England.

PAID OFF.

RAINBOW, 28—At Portsmouth, 6th Feb.

UNDAUNTED, 46—At Portsmouth. 10th Feb.

FIREBRAND, St. V.—At Portsmouth, 12th Feb.

COMMISSIONED.

RAINBOW, 28—At Portsmouth, 6th Feb.

PRESIDENT, 52—At Portsmouth, 17th Feb.

FIREBRAND, St. V. At Portsmouth, 13th Feb.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains—T. Mansell.

Commanders—H. Davy, *retired;* W. J. S. Clark, *retired;* T. Henderson.

Surgeons—J. Coulter, P. Thoms.

APPOINTMENTS.

ALLIGATOR, 28—*Lieut.* W. S. Thomas.

ASIA, 84—*Mast. Assist.* J. Sibbald.

ATHOL, *Troop Ship*—*Mate*, R. M. Johnson.

BELVIDERA, 42—*Lieut.* Lord F. Russell; *Mast.* J. Browning, J. W. Drake; *Chaplain*, J. Blenherhasset.

BRISK, 3—*Surg.* H. Barnes.

CALEDONIA, 120—*Lieuts.* E. Stopford, H. Young; *Assist. Surg.* J. Syme.

CANOPUS, 84—*Lieut.* C. Eden; *Chaplain*, Rev. I. Fry.

CEYLON, 2—*Act. Purser*, Mr. M'Lennan.

CHARYBDIS, 3—*Surg.* C. Dickson.

COAST GUARD—*Lieut.* A. Kortright.

COCKATRICE—*Gun.* D. Volume.

COLUMBIA, *St. V.*—*Lieut. Com.* B. Aplin.

COMET, *St. V.*—*Lieut. Com.* T. Cooke.

CRUIZER, 16—*Mate*, Mr. Watson.

ECLIPSE, 4—*Lieut. Com.* W. Forester.

EDINBURGH, 74—*Clerk*, W. Walker.

ESPOIR, 10—*Sec. Master*, G. Grant.

EXCELLENT, 50—*Mates*, E. B. C. Freeze, J. Lavie; *Clerk*, J. W. Sheridan.

FIREBRAND, *St. V. Act. Mast.* Wright; *Surg.* W. Bland; *Purser*, W. Thompson.

FLAMER, *S. V. Lieut. Com.* G. Griffin; *Act. Master*, T. Tyler; *Purser*, W. Cotsell; *Assist. Surg.* M. Moore.

HARRIER, 18—*Lieut.* B. Wilson; *Master*, (*act.*) Mr. Paterson; *Purser*, (*act.*) Mr. Nichols.

HYACINTH, 18—*Lieut.* C. Hope.

MEDEA, *St. V.*—*Com.* H. T. Austin; *Lieut.* A. W. Milward; *Purser*, J. T. Duffel.

MELVILLE, 74—*Lieut.* J. Mottley.

OCEAN, 80—*Master*, J. Read.

PLYMOUTH DOCKYARD—*Lieut.* T. Williams.

PRESIDENT, 52—*Capt.* J. M'Kerlie; *Lieuts.* D. Woodriffe; Ralph Hay; C. T. Hill; *Surg.* G. Glasson; *Purser*, R. Cotter; *Assist. Surg.* J. Brookes; A. Sanderson; *Sec. Mast* J. C. Barlow; *Mates*, W. Morris; J. Maling; *Mid.* J. Bradshaw.

RACEHORSE, 18—*Com.* Sir J. E. Home; *Lieuts.* C. Eden; G. S. Hand; *Master*, W. Junis; *Surg.* J. Burr, M.D.; *Purser*, J. Fiddes; *Assist. Surgeon*, J. Andrew; *Mid.* Drury; *Clerk*, Cummings.

RAINBOW, 28—*Capt.* T. Bennet; *Lieuts.* C. W. Phillott; C. W. H. G. Fitzroy; E. Grey; *Master*, J. T. Dormer; *Surg.* M. Dill, M. D.; *Purser* R. Ellis; *Assist. Surg.* J. Naulty; *Sec. Lieut. Mar.* C. D. P. Marshall; *Mates*, C. Wilcox; J. W. Conway; W. Merewether.

RAPID, 10—*Act. Mast.* E. P. Cole.

ROMNEY *Troop Ship*—*Clerk*, E. Rowe.

ROVER, 18—*Astist. Surg.* W. C. Lamb.

SALAMANDER, *St. V.*—*Com.* W. L. Castle; *Act. Mast.* T. Wemyss; *Surg.* D. King, M.D. *Purser*, E. Long.

SAN JOSEF, 110—*Clerk*, J. Stokes.

SCOUT, 18—*Com.* Hon. G. Grey.

SCYLLA, 16—*Com.* W. Hargood.

SPARTIATE, 76—*Assistant Surgeon*, D. Thompson.

SPEEDY, *Cutter*, 8—*Lieut. Com.* C. H. Norrington.

SYLVIA, *Cutter*, 1—*Lieutenant Com.* B. Shepherd.

TYNE, 28—*Capt.* Rt. Hon. H. J. C. Viscount Ingestrie; *Lieuts.* Hon. H. A. Murray, J. G. D'Urban, J. M. Gladstone; *Surg.* W. Lindsay; *Purser*, E. Blackmore; *First Lieut. Mar.* R. Searle; *Sec. Master*, S. Arundell; *Assist. Surg.* J. Plimsole; *Mate*, T. Woolgate; *Clerk*, Mr. Kelland.

VERNON, 50—*Assist. Surg.* J. Robertson; *Mid.* P. Nettleton.

VICTORY, 104—*Clerk*, J. Mitchell.

The following Midshipmen have passed their examination for seamanship and navition—Joseph H. Kay, Robert D. Fowler, George G. Wellesley, W. H. Gennys, Graham Ogle, Edinburgh; Thomas H. Christian, James M. Strange, Erasmus Omanney, Peter Fisher, John E. Patterson, John C. Hughes, Undaunted.

ABSTRACTS OF ADMIRALTY ORDERS.

RATE OF EXCHANGE.—By a regulation of the Lords Commissioners of the Admiralty, dated November 25, seamen may receive an increased monthly portion of their pay by decreasing the allotments to their families. At present an able seaman allows 18s. per month to his wife; this he may reduce to 12s.; thus increasing his own monthly allowance to 3s. the first six months, 12s. the second six months, and 16s. for the remainder of the time the ship is in commission. The man who makes his full allotment will receive in these periods 4s., 6s., and 10s.; and the seaman who makes no allotment whatever will receive 8s., 12s., and 20s. Ordinary seamen, landmen, and boys, will receive something less than the above sums. If a man misbehave himself, or is dirty, or drunken, the captain has authority to refuse his monthly allowance, specifying his reason on the monthly return. Foreign money is to be issued to the men at the following rates.—The French 5 franc piece, 4s.; Sicilian dollar, 4s. 1d.; Spanish dollar, 4s. 4d.; Calcutta rupee, 2s. 1d.; Bombay rupee, 1s. 11d. No man in debt for slops is to be paid monthly allowance until his debt is cleared off by growing wages; and if he should decline receiving his monthly allowance in any month, he is not to receive the money so declined at any future payment.

HOSPITAL DISPENSERS.—The Lords Commissioners of the Admiralty have been pleased to direct that the Dispensers of the Royal Naval Hospitals at Haslar and Plymouth shall hereafter be styled "Junior Surgeons, and Medical Storekeepers" of these establishments.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
AFRICAN, st.v...	Lt. Com. J. Harvey ..	9 Feb.	———	———	9 March.
CONFIANCE	Lt. Com. J. W. Waugh	20 Jan.	———	———	24 Feb.
PIKE	Lt. Com. A. Brooking	16 Feb.	———	———	23 March.
ROLLA	Lt. Com. H. F. Glasse	9 Jan.	———	———	6 Feb.
LEVERET	Lt. Com. G. Traill....	4 Feb.	———	———	4 March
SEAFLOWER	Lt. Com. J. Morgan ..	28 Jan.	———	———	24 Feb.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

FIREFLY, st.v...	Lt. Com. T. Baldock..	4 Feb.	———	———	27 March.
MESSENGER, st.v.	Mr. J. King	7 Jan.	24 Jan.	Gibraltar.	27 Feb.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

ECLIPSE.....	Lt. Com. W. Forester..	8 Feb.	———	———	21 April.
LORD MELVILLE	Lt. Com. C. Webbe	12 Jan.	———	———	16 March.
THAIS.....	Lt. Com. C. Church ..	12 Dec.	———	———	13 Feb.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

OPOSSUM.....	Lt. Com. R. Peters	25 Decem.	———	———	19 March.
SPEY.....	Lt. Com. R. B. James..	20 January	———	———	14 April.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

LAPWING	Lt. Com. G. B. Forster	7 January	———	———	15 April.
MUTINE	Lt. Com. R. Paule....	12 Feb.	———	———	21 May.
SWALLOW	Lt. Com. J. Griffith ..	12 Decem.	———	———	20 March.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamaica by a Schooner, and returns to meet the regular Jamaica Packet]

DUKE OF YORK..	Lt. Com. R. Snell	23 Novem.	———	———	29 March.
NIGHTINGALE..	Lt. Com. G. Fortescue	25 Decem.	———	———	30 April.
PELHAM	Lt. Com. H. Carey]	30 January	———	———	26 Sept.
PIGEON	Lt. Com. I. Binney....	23 Oct.	———	———	26 Feb.
STANMER	Lt. Com. R. S. Sutton..	20 January	———	———	26 May.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

BRISEIS.....	Lt. Com. G. Downie ..	7 Feb.	———	———	27 Jan.
GOLDFINCH	Lt. Com. E. Collier	8 Nov.	19 Dec.	Bahia.	28 March.
LYRA	Lt. Com. T. St. John ..	28 January	———	———	17 June.
REINDEER	Lt. Com. H. P. Dicken	12 Dec.	———	———	2 May.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

CAMDEN.—Com. Mr. J. Tilley, 13th Feb. arr. at Falmouth. Left St. Thomas Isl. 15th Jan.

CARRON, St. V.—Lieut. Com. J. S. Duffil, 8th Feb. arrived at Plymouth from Falmouth; 19th Feb. returned.

COLUMBIA, St. V.—Lieut. Com. B. Aplin, 1st Feb. arrived at Plymouth; 3d into dock. 21st Feb. to sail for Falmouth.

FLAMER, St. V.—Lieut. Com. R. Bastard, at Woolwich, refitting.

HERMES, St. V—Lt. Com. J. Wright, Jan. arrived from Mediterranean.

PANDORA—Lt. Com. W. C. Croke, 21st Jan. arrived at Falmouth, from Jamaica.

PANTALOON—Lieut. Com. J. C. Dacres, 19th Feb. arrived at Falmouth. Left Vigo 2d Feb.; Lisbon 9th: Oporto 12th.

PLOVER—Lieut. Com. W. Downey, 30th Dec. arrived at Falmouth from Lisbon.

RENARD—Lieut. Com. G. Dunsford, 17th Feb. arrived at Falmouth. Left Pernambuco 15th Nov.; Bahia 21st; Rio Janeiro 19th December.

RINALDO—Lieut Com. J. Hill, 7th January arrived at Falmouth from Halifax.

SHELDRAKE—Lieut. Com. A. R. Passingham, 16th Jan. arrived at Falmouth, from Jamaica.

SKYLARK—Lieut. Com. C. P. Ladd, 28th Dec. arrived at Falmouth, from South America.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 125.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
125	Active	———	Dublin	Whitehavn.	I. Man	13 Jan.	One drowned.
126	Betsey	Of Arran	———	———	Ayre	29 Jan.	
127	Commerce	———	———	———	Coast of Waterford	Feb.	
128	Dove	———	Penzance	Southton	St. Alban's	11 Jan.	Four drowned.
129	Effort	———	Of North Shields	———	St. George's Channel	11 Feb.	Abandoned.
127	Eliza	———	Hull	Hamburgh	Ameland	3 Feb.	Cargo saved.
128	Elizabeth	M'Kinnon	Liverpool	I. Sky	Coleraine	16 Jan.	Crew saved.
129	Elizabeth	———	Antigouist	Newfoundland	Shoe Cove	13 Jan.	Crew saved.
130	Elton	Fanvil	Cadiz	Dublin	Arklow B.	Jan.	Crew saved.
131	Fair Helen	———	Liverpool	Bahia	Bay of Luce	31 Jan.	Cargo saved.
132	Hannah	———	Wilmington	Liverpool	Bat's Head	15 Jan.	Crew saved.
133	Harriette	———	Mauritius	Seychelles	Pepper I.	14 Oct.	Crew saved.
134	Hope	Carricks	Boston	St. John's N. B.	Off C. Cod	22 Dec.	Abandoned.
135	Industry	Combes	Calcutta	Mauritius	Mizen S.	15 Aug.	
139	Ivanhoe	———	Antwerp	Savana	———	3 Jan.	Crew saved.
140	James	Of Exeter	———	———	Sline Head	17 Jan.	All lost.
141	Jane and Mary	Reynolds	Liverpool	Cork	Skerries	15 Jan.	Crew drowned.
142	Lady Munro	———	Bengal	Mauritius	Amsterdam I	12 Oct.	76 drowned.
143	Livingstone	———	Liverpool	Gibraltar	Vieiro	11 Jan.	One drowned.
144	Mary	———	———	Dingle	Off Hollyhd.	3 Feb	Run foul of.
145	Mary Russel	———	London	Newcastle	Near Yarmouth	31 Jan.	
146	Oak	Annal	Leith	Inverness	C. Scotland	11 Jan.	
147	Ridley	———	Stockton	London	Whiting S.	21 Jan.	Crew saved.
148	Rosina	Pritchard	Chester	Cork	Derby Haven	20 Jan.	Two drowned.
149	Stair Stewart	Stevenson	Limerick	Liverpool	C. Wales	———	Supposed.
150	Sappho	Thompson	St. John's N. B.	London	Off C. Cod	22 Dec.	Abandoned.
151	Saxony	———	London	Charente	Off Weymth.	Jan.	
152	Smeaton Castle	———	Liverpool	N. York	———	———	Abandoned.
153	Swift	———	Cork	———	Newfondland	26 Dec.	Crew saved.
154	Telegraph	———	Lynn	London	Off Wells	11 Jan	Crew saved.
155	Thomas	Warham	Newcastle	London	Corton S.	8 Jan.	Crew saved.
156	Triall	Ferguson	Anan	Glasgow	I. Arran	26 Dec.	Crew saved.
157	Unity	———	———	———	I. Man.	21 Jan.	
158	Unknown	———	———	———	Malin Head	14 Jan.	
159	Wellington	———	North America	Cork	———	———	Four drowned.

THE BRIG WELLINGTON.—We sailed from St. Andrew's on Monday, the 23d of December, and on the 25th took our departure from Cape Sable: from that time until the 5th of January we encountered a series of gales from N. W. W., and S. W., with heavy showers of hail and snow: on the afternoon of the 5th a sea struck the stern, which knocked the dead-lights in, and filled the cabin with water; we succeeded in stopping them with spare plank, bedding, &c. From that day the wind increased, and on Wednesday, the 8th, it blew a complete hurricane, so much so that it was impossible to steer the vessel with two of the best men at the wheel, and I thought it advisable to heave the ship to;

therefore at 2 p. m. furled the foresail, and brought her to under a close-reefed main-top sail.

The vessel lay to wonderfully well until seven o'clock the next morning, shipping little or no water. At that hour, just as the men were trying the pumps, a sea suddenly broke over the starboard bow, which carried away the galley, all the boats, and several of the other moveables which were upon deck, at the same time taking all the stanchions off the larboard side, splitting the covering board, and carrying the outer part of it entirely away, and also heaving the vessel on her beam-ends, which put her lame side under water, through which she was rapidly filling. We immediately put the helm a-weather, and endeavoured to get her before the wind, but, owing to her having no headway, and the lee-main-brace going at the same moment, it was some time before she would pay off. I then clapped all hands to the pumps, but on looking below, found the water over the cabin floor. On finding it increase so fast, I saw it was useless to continue the hands at the pumps, so ordered them to knock off, and endeavour to secure some provisions in the tops, while I went to assist a lady passenger out of the cabin.

We succeeded in getting two barrels of bread, two hams, a jar of spirits, and a few other stores, on deck; and whilst in the act of getting these into the tops, the vessel reeled, and suddenly fell over on the larboard side, when all the provisions which we were endeavouring to secure, together with every individual on deck, were thrown overboard, and one of the men, who had got into the main-top with a few pieces of pork, was thrown out, and never afterwards seen. Of those who were thrown off the deck, the lady passenger and the cook met a watery grave; the rest, 14 in number, succeeded in laying hold of the rigging, and getting on the ship's side.

We remained in that state for the space of half an hour, the sea all that time washing over us with great fury, when both top-masts giving way, the vessel righted; on her doing so, she being full of water, the deck burst, and the stern flew out: while standing in the rigging (for we durst not venture on the deck for fear of being washed overboard, as the sea was making a breach over it fore and aft) we had the mortification of seeing all our provisions, beds, bedding, and every article in the cabin washing out of the stern, without the possibility of saving any one thing. We had now no alternative left but to take to the top for the night, with no other shelter than one top-gallant studding sail. I leave it to the reader to judge what we must have suffered during the night, the wind having continued most violent, accompanied with severe showers of hail and snow, and half the main-top having been carried away with the top-masts. The fore-mast was cut away immediately on the ship's righting, in order to stiffen her, she seeming disposed to fall over on the other side.

The next morning, the storm having abated a little, some of us ventured on deck to see if we could obtain any subsistence, when, after the most rigid search, all we could find was one piece of pork about four pounds weight, and a drowned cat, both of which we took into the top. The first two days we were not provident enough, and consumed all the piece of pork; on the third morning, at about 3 o'clock, one of the men, who appeared to be in a state of delirium from the time the accident occurred, left the round top, and was not afterwards seen. He more than once expressed his determination to put an end to his existence, rather than suffer any longer the hardships to which we were exposed, from which it is to be feared he shortened his life by jumping overboard. Our stock of provision was now reduced to the cat, upon which we subsisted for eight days, at the end of which time we were destitute of any food whatever, but still had some brackish water.

Considering our situation, we were, with the exception of two or three, in very good spirits, and stowed ourselves in the top as usual for the night. On the eleventh morning, at break of day, we found that one of our number had got out of the top, by some means or other, and was on the deck calling for assistance. Another of the men went down, to see what was the matter. He found him unable to walk, and quite out of his right mind, and could not tell how or when he left the top. About eight o'clock, a. m., one of the sailors, who was on the watch for a sail, announced the joyful intelligence of a sail right to windward, and bearing down upon us. By nine o'clock she was alongside, and proved to be the brig Micmac, of Halifax, Captain T. C. Tobias, who took us off the wreck, and treated us with the greatest kindness and humanity, doing every thing in his power to restore us to our health and strength, for which I beg leave to take this opportunity of publicly returning my heartfelt thanks to Captain Tobias, in which I am joined by Mr. M'Creery, (a passenger,) and all of the crew who were saved. One of the apprentices, a lad about 17 years of age, suffered so much from the frost while upon the wreck, that, notwithstanding all Captain Tobias's care, he died the second day after our deliverance.

JOHN KELLER,
Late Master of the Brig Wellington.

A vessel, name unknown, sunk near Malin Head, coast of Ireland, on the 14th of January, in fifteen feet water. Her mast can be seen at low water. Some bars, and a basket marked O.B. and a quantity of corn, was washed on shore.

THE LADY MUNRO.—The Lady Munro, from Bengal and the Mauritius to Hobart Town, was wrecked on Amsterdam Island, on the 12th of October, and out of 97 persons on board, only 21 were saved. She was going at 9½ knots an hour, and mistook the land for a cloud. The following were the persons on board:—Captain and two officers; lascars, 40; passengers, 27; convicts, 10; European servants, 4; natives, 13. The following were saved:—Mr. Evatt, chief officer; Mr. M'Cash, of the 34th Regiment; Mr. Forby, of the Bengal Native Infantry; and 18 lascars.

COMMERCE.—There remains no doubt of

the Commerce having foundered, about a mile and a half from shore, off Portally, in the county of Waterford, a little outside of this harbour. Her topmast appears five feet above water. Parts of her materials continue to be picked up. No account of the crew.

THE TRIAL.—*Skibbereen*, Jan. 30.—The Trial, from St. Andrews, New Brunswick, for London, abandoned on the 12th ult. in lat. 23., long. 49., was driven into a cove at the west end of this island this morning.

SEATON CASTLE.—A smack has brought into Dover, George Pile, the second mate, and three seamen and four passengers, belonging to the Seaton Castle, of Whitby, from Liverpool to New York, wrecked in the Western Ocean. They had remained there 28 days.

Births.

The lady of Lieutenant George Morris, R.N., H.M.S. Revenge, of a son.

At Falmouth, the lady of Lieut. Church, R.N. of a daughter.

In George Street, the lady of Capt. Rorie, R.N. of a son.

February 3d, the lady of E. G. Napier, Esq., Purser, of the Royal Navy, of a son and heir.

Of a daughter, at her father's residence, Gunwharf, the lady of Lieutenant G. Rose, commanding H.M.S. Fair Rosamond, coast of Africa station.

At Paris, the lady of Captain Hawker, R.N., of a son.

At Ham Common, on the 19th instant, the lady of Captain George Hope, R.N., of a daughter.

At Verdun sur Meuse, the lady of Captain Strachey, R.N. of a son.

At Portsea, the lady of Lieutenant William Shallard, of H.M.S. Victory, of a daughter.

Marriages.

At Brighton, Captain H. D. C. Douglas, to Anne St. Aubyn, niece of J. W. St. Aubyn, Esq. of Brighton.

At Falmouth, Mr. Air, Assistant-Surgeon, R.N. to Alice Ann, eldest daughter of Mrs. Gibson.

At Eccleshall, Stafford, Lieut. Gretton, R.N. to Sarah, youngest daughter of the late Rev. H. Teach, of Derby.

At Clifton, C. Young, Esq. Com. R.N. to Miss Norton.

Deaths.

At Stonehouse, Com. Bavian, R.N. after a short illness from paralysis.

At Rowley Green, near Barnet, Lt. John Trinder, R.N. (1806.)

On 10th Dec. last, at Barbadoes, Mr. W. Crane, purser, H.M.S. Sapphire.

On the 9th November, on board His Majesty's ship Isis, of consumption, in the Bight of Benin, second Lieutenant, William Macdonald Rea, R.M.

Lately, at Oak Lawn House, near Eye, Suffolk, Rear-Admiral Sir Charles Cunningham, K.C.H. aged 78.

Lately, at Sandgate, Captain George Lucas Rennie, R.N. late of H.M.S. Isis.

January 22, at Nunton House, near Salisbury, in the 37th year of his age, Lieutenant George Markham, R.N. eldest son of the late Dean of York.

Lately, at Fannyvale, near Liskeard, Capt. Lepenotiere, R.N.

On the 4th instant, Lieutenant T. A. Watt, R.N. (1809.)

Lately, at Avranches, Captain J. W. Marshall, R.N.

At Edradour, Atholl, on the 6th of February, John Forbes, Esq. M.D. surgeon, R.N. aged 48.

The remains of the late Commander W. G. Agar, of His Majesty's ship Arachne, (who died of typhus fever, on the 6th ult. at Barbadoes,) were interred on the following day, with full military honours, at the New Chapel of St. Paul, in Carlisle Bay. The Bishop of Barbadoes performed the funeral service.—The Governor, Commandant of the Forces, the Heads of the Public Departments, Officers of the Garrison, detachment of 300 men of the 93d regiment, with the band, the most respectable merchants at the Island, and the officers of the Forte, Sapphire, Vestal, Victor, Ariadne, and Pandora, attended, with numerous sailors, marines, and a vast concourse of people of many shades of complexion.

Mr. John Bennet, the worthy and much respected secretary to Lloyd's, died on 17th Feb. at his house in Woburn-place; and never had any public establishment to regret the loss of a more honourable, more intelligent, or more vigilant servant. Mr. Bennett's health had been declining for some years past, owing, it is to be feared, to his zeal in the constant fulfilment of his very arduous duty. He was only in his 59th year, and had filled the office of Secretary for 30 years.

It is with deep regret that we find that Commander G. Skyring of H. M. surveying vessel, Ætna, was attacked and murdered by the natives, at Cape Roxo, on the 23d of December last. His coxswain, John Ebthorp, fell in his defence.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

Fig. 2.

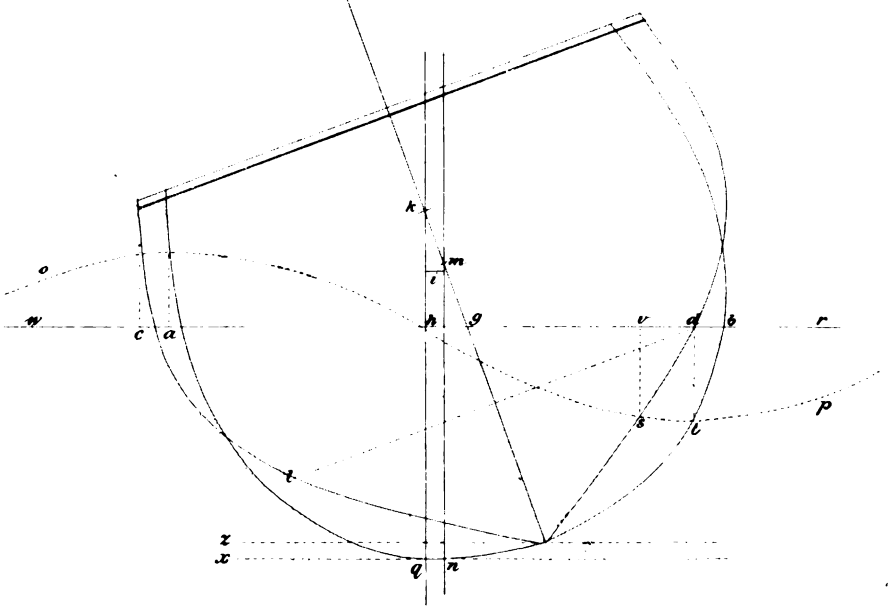
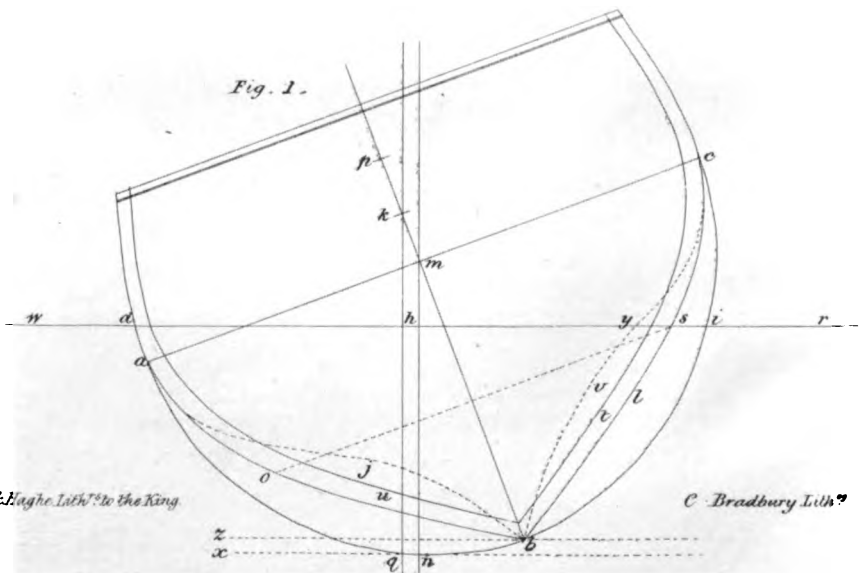


Fig. 1.



Day & Haghe Lith.rs to the King

C. Bradbury Lith.r

Pub.d for the Proprietors of the Nautical Magazine by Simpkin & Marshall 1834.

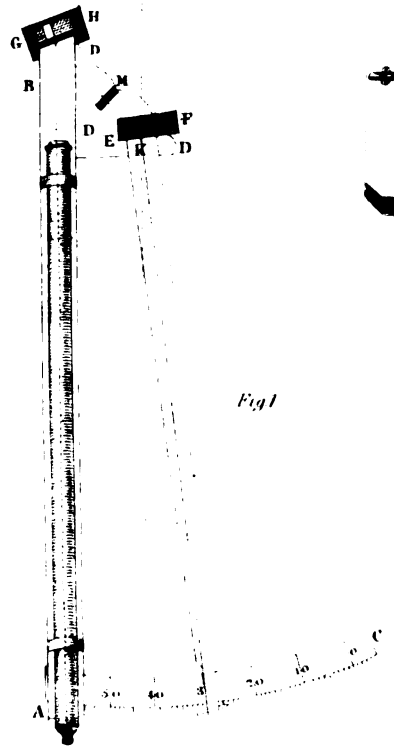


Fig 1

Fig 3

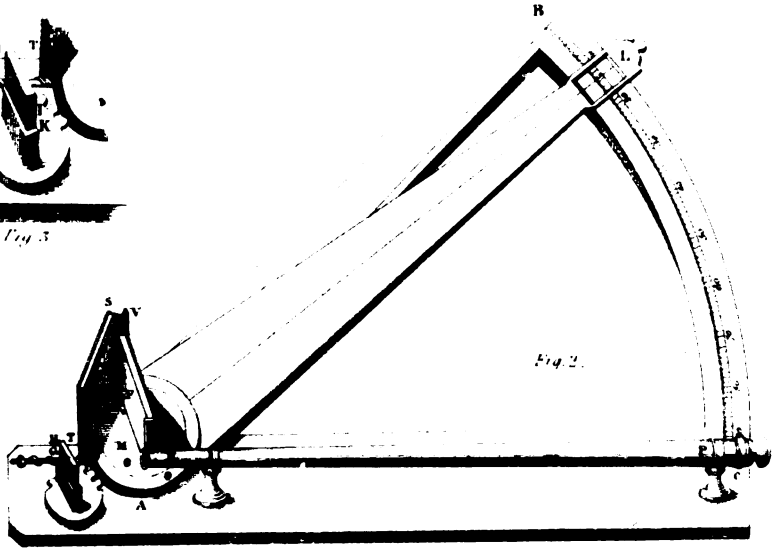


Fig 2

Pub.d for the Proprietors of the Nautical Magazine by Simpkin & Marshall 1854.

THE

NAUTICAL MAGAZINE,

APRIL, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

Description of the North-East Coast of Australia. *By Captain P. P. King, R.N., F.R.S.*

(*Continued from* p. 137, *No.* 25.)

24. *Cleveland Bay* affords good anchorage in all parts, in four, five, and six fathoms: a considerable flat extends for a mile from the shore on the western side of the cape, and is left dry at half ebb; it fronts a sandy beach that commences at a mile and a half to the south of the cape, and extends to the southward for nearly two miles; over this beach, two or three streams of fresh water communicate with the sea; they take their rise from the hills, and probably are seldom dry.

The most convenient watering-place is near the centre of the beach, a little to the northward of the highest hills. Wood for fuel is plentiful, and grows close to the beach, and may be embarked with facility; the best place is at the north end of the sandy beach, since the boat can be brought nearer to the shore to protect the wooding party.

25. *Halifax Bay* extends from Cape Cleveland to Point Hillock; it has several islands in it, and is fronted by the *Palm Islands*, the summit of which is in lat. 18° 43′ 5″ lon. 146° 35′ 15″: this group consists of nineteen islands, one only of which is of large size, being eight miles long and three wide; it probably affords all the conveniences of a sheltered anchorage, and a good supply of wood and water.

In latitude 18° 49′, nine miles from the shore and six miles within the island, No. 2, is a coral reef, that shews at low water: it appeared to be about two miles long; between it and No. 2, is a wide channel with 9 fathoms. The Lady Elliot, merchant ship, in 1815, struck upon a reef in 18° 45′, about 4 miles from the shore; we anchored late in the evening, within 4 miles of its position, but, at daylight, when we got under way, it might have been covered by the tide, for it was not visible.

In 18° 32′ and 146° 41′, is a reef, on which the San Antonio, merchant brig, struck: its position was not correctly ascertained, as the accident happened in the night.

26. *Point Hillock* is in lat. 18° 25′, and lon. 146° 20′; it is a low point projecting to the eastward, under Mount Hinchinbrook.

27. *Cape Sandwich* is the north-east extremity of the sandy land that stretches to the northward from the base of Mount Hinchinbrook, which is so high as to be visible for 18 leagues: the mount is topped with a craggy summit, 7 miles in length from north to south.

There is a reef that extends for nearly a mile and a half off the cape, having a rocky islet at its extremity. The cape is in lat. 18° 13′ 20″, and lon. 146° 16′ 40″. The peak at the north end of Mount Hinchinbrook is in lat. 18° 21′ 30″, and lon. 146° 15′.

28. *Brooke's Islands* lie 4 miles north from Cape Sandwich; they consist of three rocky islets, besides some of smaller size; the whole are surrounded by a coral reef.

From Cape Sandwich the land extends, low and sandy, in a north-west direction for five miles to a point, which is terminated by a hill. Between this and Goold Island there appears to be a navigable strait leading into Rockingham Bay.

29. *Goold Island*, the summit of which, formed by a conical hill covered with wood, in lat. 18° 9′ 35″, and lon. 146° 9′, is about two miles long; the south-west point of the island is a long strip of low land, with a sandy beach; at the eastern end of which there is a run of water; and fuel may be cut close to the shore. High water takes place at full and change at three-quarters past ten.

30. *Rockingham Bay* appears to be a spacious harbour. At the bottom there was an appearance of an opening that may probably communicate with an inlet on the south side of Point Hillock, and insulate the land of Mount Hinchinbrook. There is good anchorage in the bay in 4 and 5 fathoms mud, near Goold Island.

The natives are very friendly here, and will come off and visit the ship.

31. *Family Isles* consist of seven small rocky islets, covered with a stunted vegetation.

32. *Dunk Island* is remarkable for having two peaks on its summit; the south-east summit is in lat. 17° 58′, and lon. 146° 8′ 45″. The variation observed in the offing, to the N.E. was 5° 41′ E.

33. *Barnard Group* forms a group of small rocky islands extending in a straggling direction for 6 miles to the south of Double Point. Three miles to the south of the southernmost island, but nearer to the shore, is a reef of rocks which dry at low water.

34. From *Double Point*, (lat. of its summit, 17° 39′ 50″,) to *Cape Grafton*, the coast is formed by a succession of sandy bays and projecting rocky points. In lat. 17° 31′, in the centre of a sandy bay, is a small opening like a rivulet; and, on the south side of Point Cooper is another; but neither appeared to be navigable for boats.

Abreast of Frankland's Islands, and near the south end of a sandy bay of 6 miles in extent, there is another opening like a river, that, from the appearance of the land behind, which is low and of a verdant character, may be of considerable size. The high mountains to the southward, Bellenden Ker's Range must give rise to a considerable stream; and it appears very probable that this may be one of the outlets, but the most considerable is, perhaps, that which falls into Trinity Bay, round Cape Grafton.

35. *Frankland's Islands* consist of several low islets, one of which is detached, and of higher character than the others, which are very low, and con-

nected by a reef. The largest island may be seen 5 or 6 leagues off; it is in lat. 17° 7′ 45″.

The land between this and Cape Grafton is high, and towards the north has several remarkable peaks. The land of Cape Grafton may be readily known, when seen from the southward, by appearing like three lofty islands; the outermost is Fitzroy Island, but the others are hills upon the main. The easternmost of the latter, Cape Grafton, is conspicuous for having two small peaks, like notches, on the west extremity of its summit; it is joined to the westernmost by low land, which also separates the latter from the other hills behind it; and, as this low land is not seen at a distance, the hills assume the appearance of islands.

There is good anchorage in the strait between Cape Grafton and Fitzroy Island, but, with a northerly wind, the better anchorage would be on the south side of the Cape. The former is exposed to all winds between N. W. and N. E. In the former case the anchor may be dropped in 9 fathoms, at a quarter to half a mile from the beach of the island. The north extremity of Cape Grafton is in lat. 16° 51′ 20″, lon. 145° 53′ 5″; the S.E. extreme is in lat. 16° 54′ 20″, lon. 145° 55′ 15″.

36. *Fitzroy Island* furnishes both wood and water; it has a peaked summit. It affords anchorage in the bay on its western side, off a coral beach, the S. W. end of which is in lat. 16° 55′ 21″, and lon. 145° 56′ 21″. Nine miles to the eastward of Fitzroy Island is a small bare sandy island; and, at about 7 miles N. E. by E. from it, there was an appearance of extensive shoals. Variation 5° 10′ E.

On the west side of Cape Grafton is a bay, in the centre of which is an island. The bottom is very shoal, but good anchorage may be had with the cape bearing S. E. Between Cape Grafton and Snapper Island, the centre of which is in latitude 16° 17′ 35″, and longitude 145° 27′ 40″, is *Trinity Bay;* the shores of which were not very distinctly seen. At the south side, and about seven miles within the cape, there is an opening that appeared to be extensive, and the mouth of a considerable stream, trending in between high ranges of land, in a direction towards Bellenden Ker's Range.

In lat. 16° 23½′ and long. 145° 34′, are the Low Isles, a group consisting of three coral islands; which, being very low, are dangerous to pass in the night.

The offing is said to be strewed with extensive reefs; we saw none beyond Green Island. Those that are laid down on the chart are from Lieut. Jefferys's account.*

37. *Snapper Island* lies off the point which forms the northern limit of Trinity Bay; it is small, and does not supply any water.†

The land behind Cape Tribulation may be seen at a greater distance than twenty leagues. It is here that the outer part of the barrier reefs approach the coast, and there is reason to believe that in latitude 16° 17′ 35″, longitude 145° 27′ 40″, they are not more than twenty miles from it. The cape has a hillock at its extremity, and a small rocky islet close to the shore, that renders it conspicuous: it is fourteen miles beyond Snapper Island. The shore appears to be bold to: at 3 miles off we had 16 fathoms.

Ten miles further to the northward is Blomfield's Rivulet, in Weary Bay.

* Much shoal water was seen to the northward of Green Island, from H.M.S. Tamar's mast head.—Roe MS.

† Ten or eleven miles S. 80° E. from Snapper Island, is the north-west end of a shoal extending to the S. 41° E. for sixteen or seventeen miles; the Tamar anchored under it.—Roe MS.

It is blocked up by a rocky bar, having only 4 feet water over it; the anchorage off it is too much exposed to be safe. The river runs up for four or five miles, having soundings within it from three to four fathoms; its entrance is in 15° 55′ 50″.

The coast then extends to the north to Endeavour River, and forms a few inconsiderable sinuosities; it is backed by high land, particularly abreast of the Hope Islands. These islands open of each other in a N. 39° E. direction, and appear to be connected by a shoal; it is, however, very likely that a narrow passage may exist between them, but certainly not safe to sail through until explored.

Here the number of the coral reefs begin to increase, and great attention must be paid in navigating amongst them; but, with a careful look-out from the mast head, whence their extent is plainly visible, and a quick leadsman in the chains, no danger need be apprehended.

Between reef *a*, and a shoal off the south-west Hope Island, there is a passage two miles wide, with twelve fathoms; *a* is about half a mile in diameter, with a few rocks above water; its centre is in 15° 43′ 20″, two miles from the shore, and three miles N. W. by W. ½ W. by compass, from the south-west Hope.

b is about a mile and a quarter long, and has a dry rock at its north end, the lat. of which is 15° 39′ 20″: it is divided from Endeavour Reef by a channel of nearly a mile wide, and 15 fathoms deep. Abreast of the south end of *b*, on the western edge of Endeavour Reef, there is a dry rock, in lat. 15° 39′ 55″.

38. *Endeavour Reef* is nine miles long; it lies in a N. W. direction; the north end, in 15° 39′ S., bears N. ½ W. by compass from the north-east Hope.

c is covered, and not quite half a mile in length; its lat. is 15° 32′: it lies 4 miles from the shore.

d is rather larger, and has some dry rocks on its north end, in lat. 15° 29′ 30″. Between *c* and *d* and the shore, the passage is from 3 to 4 miles wide, and in mid-channel the depth is 7 and 8 fathoms.

On the south side of Point Monkhouse there is a bay having a small opening at the bottom, but not deep enough for ships: it was this bay that Captain Cook first examined in search of a place to repair his ship.

On steering along the shore between Point Monkhouse and the entrance of Endeavour River, the bottom is of sand and of irregular depth. A spit of sand was passed over with only 2½ fathoms on it, when the summit of Mount Cook bore S. 66° W. (mag.) and the outer extreme of Point Monkhouse S. 18° W. (magnetic.) One mile off shore, the shoal soundings continued with 2½ fathoms, until it bore S. 59° W., (magnetic,) when the depth was 3 and 3½ fathoms.

39. *Endeavour River.* The entrance of this river, in lat. 15° 27′ 4″, and long. 145° 10′ 49″,* forms a very good port for small vessels; and, in case of distress, might be useful for large ships, as it proved to our celebrated

* The situation of the observatory at Endeavour River was found by lunar distances, taken during my visits to that place in 1819 and 1820, as follows:—

	°	′	″
Lat. by meridional altitudes of the sun, taken in the artificial horizon, being the mean of 27 observations	15	27	4
Long. by twenty-five sets of distances, (Sun W. of Moon,) containing 117 sights, with sextant	144	52	16
Long. by thirty sets of distances, (Sun E. of Moon,) containing 150 sights, with the sextant	145	29	23
Mean, of fifty-five sets	145	10	49

navigator Capt. Cook, who, it is well known, repaired his ship there after having laid 23 hours upon a coral reef.

The entrance is formed on the south side by a steep hill, covered with trees growing to the edge of its rocky shore. The north side of the entrance is a low sandy beach, of 2¼ miles in length: at its north end a range of hills rises abruptly, and extends for 6 or 7 miles, when it again suddenly terminates, and is separated from the rocky projection of Cape Bedford, by a low plain of sand.

The entrance of Endeavour River is defended by a bar, on which, at high water, there is about 14 feet; but, at low water, not more than 10 feet. The channel over the bar is close to the south side, for the sand-bank extends from the low sandy north shore, to within 140 yards of the south shore, and at three quarters ebb (spring tides) is dry.

In steering in for the mouth, upon bringing Point Monkhouse in a line with point *a*, (the north point of the bay under Mount Cook,) you will be in three fathoms; steer in until the south extremity of the low north sandy point is opened of the trend round Point *c*, when you may haul a little more in, and when Point *d* (which is the point where the mangroves commence) bears S. 33° W. (magnetic) steer directly for it; this will carry you over the deepest part of the bar, which stretches off from point *c* in a N. 75° W. (magnetic) direction.

Another mark is to keep the trend beyond *d* just in sight, but not open, or you will be too near the spit: the best way is, having opened it, haul in a little to the southward, and shut it in again: you may pass within 10 yards of Point *d*; and the best anchorage is just within it; the vessel may be secured head and stern to trees on the beach, with bow and stern anchors to steady her.

No vessel of a greater draught than 12 feet should enter the harbour; but this vessel may moor in 4 fathoms within her own length of the shore, with the outer trend just shut in by the mangrove Point *a*.

The watering-place is a stream that empties itself into the port through the mangroves, about 200 yards to the south: and if this should fail, there is a good stream at the north end of the long north sandy beach. The latter, although very high-coloured, is of wholesome quality; but in bad weather is inconvenient to be procured on account of the surf. Water for common purposes of cooking may be had on a sandy beach a little without the entrance, but it is of a mineral quality, and of brackish taste. It is high water at full and change at 8 o'clock, and the tide rises from 5 to 10 feet. The variation at the observatory was 5° 14′ E.

40. *Cape Bedford* (lat. 15° 16′ 19″, long. 145° 17′ 19″,) is high, and forms a steep slope to the sea: it appeared to be bold to.* Between it and Cape Flattery is a bay backed by low land, about 5 miles deep; but it is exposed to the wind, unless there is anchorage under the north-west end of Cape Bedford.

41. *Cape Flattery* is 18 miles north of Cape Bedford: its extremity is high and rocky, and forms two distinct hills. The summit of the cape is in lat. 14° 52′ 30″, and long. 145° 16′ 10″.†

42. Eleven miles beyond the cape, in a N. 45° W. direction, is *Lookout Point*, forming a peaked hill at the extremity of a low sandy projection,

* Shoal water extends for nearly a mile round Cape Bedford.—Roe MS.

† There are some dangerous shoals to the eastward of Lookout Point, and to the northward of Cape Flattery, about two miles apart from each other, situated in what was considered to be the fair channel.—Roe MS.

whence the land trends W. by N. ½ N. for twelve leagues to Cape Bowen.

e, a reef nearly 3 miles long and one broad: its north end is 12 miles nearly due east from the entrance of Endeavour River, in lat. 15° 26′ 50″, long. 145° 23′ 30″.

43. *Turtle Reef*, covered at high water, excepting a small spot of sand about the size of a boat at its north end, lies in lat. 15° 23′, and long. 145° 22′ 50″. Its interior is occupied, like most others, by a shoal lagoon; it is entirely of coral, and has abundance of shell-fish; it was here that Captain Cook procured turtle during his stay at Endeavour River, from the entrance of which it bears N. 67° E., (magnetic,) and is distant eleven miles. Its south end is separated from *c* by a channel of a mile wide.

44. *Three Isles*, in lat. 15° 7′ 30″, is a group of low coral islets covered with shrubs, and encircled by a reef, that is not quite two miles in diameter.

Two miles and three quarters to the N. W. is a low wooded island, about a mile long, also surrounded by a reef; and 4 miles to the southward of it is a rocky islet.

Reef *f*, is about 4 or 5 miles E. S. E. from Three Isles; it appeared to be about 3 miles long; its western extreme is in lat. 15° 10′, and in long. 145° 26′.

45. *Two Isles* are also low and wooded, and surrounded by a reef. The largest islet is in lat. 15° 1′ 20″, and long. 145° 22′ 10″.

Reef *g* appeared to be about a mile broad and 2½ miles long. Its south end is in lat. 15° 0′ 15″, long. 145° 26′ 45″.

h is an extensive reef, having high breakers on its outer edge. It is more than 4 miles long, and separated from the north end of *g* by a channel a mile wide.

Reef *i* has several detached rocks about it. On the northernmost are two rocky islands, and to the southward, on a detached shoal, there is a bare islet that is perhaps occasionally covered by the tide: its south-westernmost extremity and summit of Lizard Island are in the line of bearing of N. 5°W., (magnetic,) its lat. is 14° 53′ 40″.

Reef *k*, in lat. 14° 47′, has a dry sand upon it; its submarine extent was not ascertained.

Reef *l*: the position of this reef is rather uncertain; near its western side is a dry key, in lat. 14° 47′ 30″.

m is probably unconnected with the shoal off the south end of Eagle Island. In Capt. Cook's rough chart there is twelve fathoms marked between two shoals, which must mean the above.

46. *Eagle Island* is low and wooded, and situated at the north end of a considerable shoal; its latitude is 14° 42′ 20″, and longitude 145° 18′ 30″.

47. *Direction Islands* are two high rocky islands, so called by Captain Cook to direct ships to the opening in the reefs, through which he passed out to sea; they are high and of conical shape, and might be seen more than five or six leagues off, was it not for the hazy weather that always exists in the neighbourhood of the reefs; the northernmost is in latiude 14° 44′ 50″, longitude 145° 26′ 25″; the southernmost is in latitude 14° 50′, longitude 145° 26′ 45″.

48. *Lizard Island*, about 3 miles long, is remarkable for its peaked summit, the lat. of which is 14° 40′ 20″, and long. 145° 23′: on its south side is an extensive reef, encompassing three islets, of which two are high and

rocky: the best anchorage is on its western side under the summit; with the high northernmost of the Direction Islands in sight over the low land, bearing about S. E. by compass: the depth is 6 and 7 fathoms, sandy bottom. The variation here is 5° 2′ E.

49. *Turtle Group* is 4 miles to the north of Point Lookout; the islets are encircled by a horse-shoe shaped coral reef, and consist of 6 islands, all low and bushy. These islands are not laid down with sufficient accuracy as to their relative position.

n is a low wooded island about 11 miles west from Lizard Island; no reef was seen to project from it; it is in the meridian of the observatory of Endeavour River, and in lat. 14° 40′.

o is a small coral reef; it lies a mile and a half N. 64° W. from the north end of *n*.

p is a coral reef, about a mile in extent, separated from *o* by a channel of a mile wide.

q a reef, on which are two low wooded isles, apparently connected with a shoal extending from Point Lookout along the shore to the W. N. W.; the isles are 7 miles N. 64° W. from Point Lookout.

50. *Coles Islands* consist of four small bushy islets, from a quarter to half a mile in extent; they are from 4 to 6 miles N. E. from Point Murdoch. This group appeared to be merely the several dry parts of the shoal that extends from Point Lookout to Noble Island; between them and the latter island, are two patches of dry sandy keys, but it is probable that they may be covered by the tide. The continuation of the shoal between the islands and Point Lookout was not clearly ascertained.

51. At *Point Murdoch*, which has a peaked hill at its extremity, the hills again approach the coast; at Cape Bowen they project into the sea, and separate two bays, in each of which there is possibly a rivulet; that to the eastward of the cape trends in and forms a deep bight.

On the western side of the hills of Cape Bowen, there is a tract of low land, separating them from another rocky range. The summit of the hill at Point Murdoch is in lat. 14° 40′, and long. 144° 46′.

52. *Howick's Group* consists of 10 or 11 islands, of which No. 1, remarkable for a hillock at its south-east end, is in lat. 14° 32′ 40″, and long. 144° 55′ 20″; it is nearly three miles long; the rest are all less than half a mile in extent, excepting the westernmost, No. 6, which is nearly a mile and a half in diameter.

The passage between 2 and 3 is safe, and has 7 and 8 fathoms: the north-west side of 3 is of rocky approach, but the opposite side of the strait is bold to; the anchorage is tolerably good, The Mermaid drove, but it was not considered to be caused by the nature of the bottom, which is of soft sand, and free from rocks.

The channel between 1 and 2 appeared to be very rocky, and shoal: between 1 and the reef *r* there is probably a clear channel of about a mile wide: the north-east end of 1 has a reef which extends off it for half a mile.

All the islands are low and wooded, and surrounded by a coral reef of small extent.

4 has a small islet off its west end.

5, 8, and 9, did not appear to have any reefs projecting from them. 7 is probably two islands, with a reef extending for half a mile on its western side. 6 is of larger size than the generality of the low islands hereabouts, No. 1 ex-

* Many shoals, partly dry, occupy the space to the northward and eastward of Howick's Group.—Roe MS.

cepted : its centre is in lat. 14° 28′, and long. 144° 45′. The position of No. 10 was not correctly ascertained.

53. The peak of *Cape Bowen* is in latitude 14° 34′, and longitude 144° 35′ 40″.

54. *Noble Island* is a rock, having a sandy, or a coral beach at its north-west end. Although small, it is very conspicuous ; and, when first seen from the southward, has the appearance of a rock with a double rounded top.

The reefs *s*, *t*, and *u*, are unconnected : the north end of *s* lying 6½ miles due east from Point Barrow, was dry for a considerable extent ; *t*, one mile to the north, was covered ; but there is a dry sandy key on *u*, bearing from Point Barrow, N. 32° E. 6 miles : some rocks shewed themselves above the water off its south end.

v and *w* may possibly be connected ; the former was noticed to extend for 3 miles, and the latter for nearly 10 miles ; there was, however, a space of 3 miles between them, where a channel may possibly exist. The channels between *t* and *u*, and between *v* and *w*, appeared to be clear and deep.

The reefs *x*, *y*, and *z*, are probably parts of the barrier reefs, for the sea was breaking very heavily upon their outer edge ; there were, however, considerable spaces where no breakers appeared, some of which being 3 or 4 miles wide, may possibly be as many outlets to sea.

55. *Ninian Bay* is a bight to the west of Point Barrow ;* it is about 3 miles deep, and has a small opening at the bottom ; in crossing it we had not more water than 4 fathoms, and within our course it appeared to be very shoal ; there is doubtless a channel leading to the opening ; but, to the name of harbour or port, it has not the slightest pretension : it was named Port Ninian by Lieut. Jeffreys : off the north end of Port Barrow are two rocky islands.

Between Ninian Bay and Cape Melville the coast is high and rocky, but appeared to be fronted by a reef, which in some places extends for a mile and a half from the shore ; in this interval there are two or three sandy beaches, but I doubt the practicability of landing upon them in a boat. The summit and sides of the hills that form the promontory, of which Cape Melville is the extreme, are of most remarkable appearance, being covered with heaps of rounded stones of very large size.

56. *Cape Melville*, sloping off into the sea to the north, terminates a remarkable promontory in lat. 14° 9′ 30″, and long. 144° 24′ 50″. The coast trends round it to the S. S. W. and S. W., and forms Bathurst Bay, which is 9½ miles deep, and 13 wide, the western side being formed by Flinder's Group.

A reef extends for more than two miles off Cape Melville, in a N. W. b N. direction, on which some rounded stones, similar to those upon the land, are heaped up above the sea. There is also one of these heaps at the extremity of the reef, outside, and within a quarter of a mile of which we had 14 fathoms water. There are two other similar heaps within the outer pile, and between them there are possibly clear passages, but they should not be attempted without great caution. It was remarked, that the breeze always freshened on passing round this cape.

(To be concluded in our next.)

* Off Point Barrow, the shoals lie from half to one mile nearer the shore than they are laid down ; and one mile and three quarters N. 55° E. from the point are two small patches of coral, under water. They bear N. E. and S. W. from each other, and are probably one-tenth of a mile apart —Roe MS.

Rowland's Patent Double Sextant and Circle.

Fig 1.

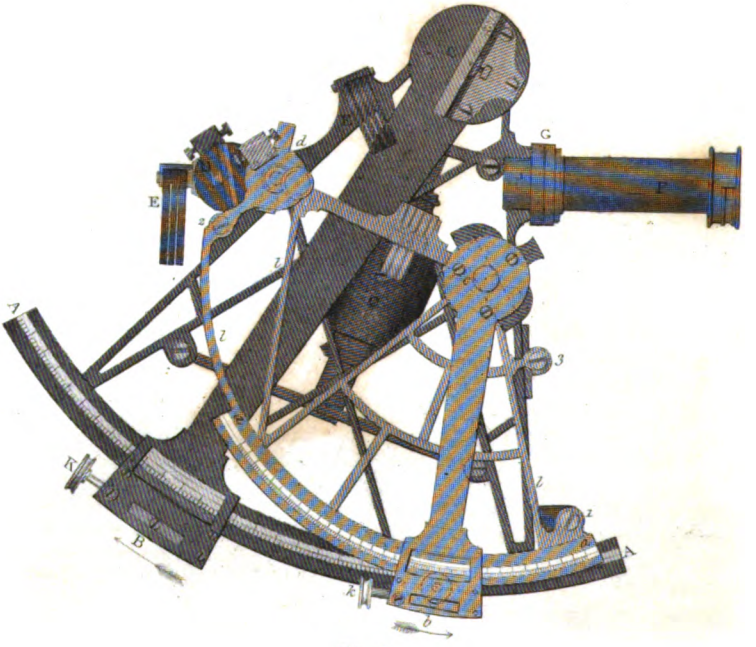
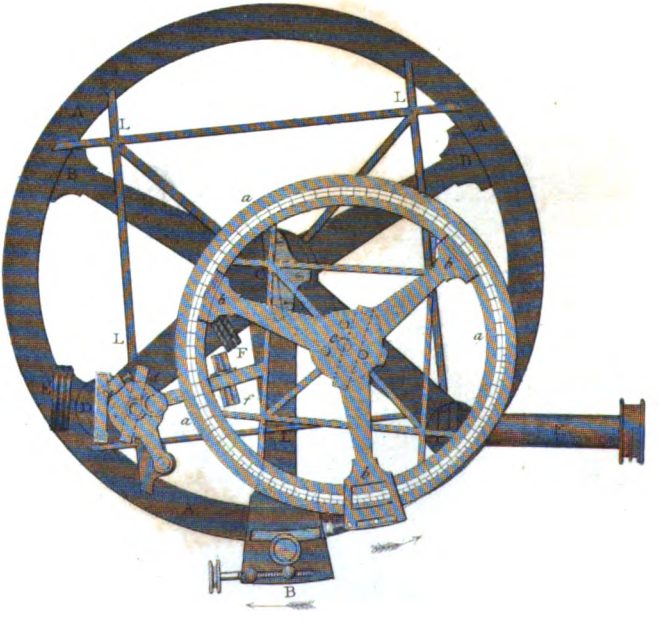


Fig 2



ORIGINAL PAPERS.

I.—History of Hadley's Quadrant.

(Continued from p. 662, No. 21.)

On the 6th of May, 1731, Dr. Halley communicated a paper to the Royal Society, in which he repeated the remarks that he had printed (1710) in his appendix to Streete's Astronomia Carolina. His object was to shew, that the variations in the moon's motions were so regularly periodical, that, from observations of their quantity and direction at given times, allowances might be made for the future situations of the planet after certain intervals, so as to enable us to find the longitude from them within a degree. This he found attainable with the most precision from the well-known period of eighteen years and eleven days; and he states the assiduity with which he had pursued his observations for the accumulation of data, from which, even in this simple manner, the moon's place might in future be very nearly determined. These observations were likewise the foundation for calculations by which the more minute and complex inequalities were to be enucleated, in order that the tables of the moon might eventually be brought to a greater degree of accuracy; but he was impressed with a difficulty in using the lunar distances to their full extent. He mentioned, indeed, "the singular advantages of a true theory of the moon's motions in furnishing the only practicable means of finding the longitude at sea, that is, by the occultations of fixt stars by the moon, which," he added, "from his own experience, are the only phenomena fit for determining the longitude, which can be observed with sufficient accuracy by such a telescope as is manageable on board a ship." * The great desideratum was, however, supplied much sooner than he could have hoped for. At the very next meeting of the society, (May 13,) Hadley gave the account of the instrument which he had been contriving for this especial purpose.

There are circumstances that appear to shew a great probability in the supposition of this second communication having been hastened by the contents of that which preceded it. Hadley having, on the 6th, introduced his brother George to the meeting, gives us, accidentally, a record of both having been present when Dr. Halley's paper was read, and they may have been urged by the remarks which it contained, to break silence, although every thing does not appear to have been as yet fully ready. Hadley found it necessary afterwards to add a postscript,† and he did not

* Journal of the Royal Society.

† Read March 15, 1732, and printed in P. T. vol. xxxvii. p. 352.

exhibit the instrument itself till May 27, 1731. At first he only gave the description of his plan, with drawings to elucidate* its construction. His account will be found in the thirty-seventh volume of the Philosophical Transactions.†

He describes two different methods of accomplishing his object; the second, when we come to consider it, will not detain us long, but the first differs materially from the instrument now in use, and, although it is certainly inferior, still requires a particular description.

"The instrument," he says, (see fig. 2, pl. 2,) "consists of an octant ABC, having on its limb BC an arch of forty-five degrees, divided into ninety parts, or half-degrees, each of which answers to a whole degree in the observation. It has an index ML moveable round the centre, to mark the divisions; and upon this, near the centre, is fixed a plane speculum EF perpendicular to the plane of the instrument, and, making such an angle with a line drawn along the middle of the index, as will be most convenient for the particular uses the instrument is designed for; (for an instrument made according to fig. 2, the angle LMF may be about sixty-five degrees.) IKGH is another smaller plane speculum, fixed on such part of the octant as will likewise be determined by its particular use; and having its surface in such direction, that when the index is brought to mark the beginning of the divisions, (i. e. 0°,) it may be exactly parallel to that of the other: this speculum being turned towards the observer, and the other from him. PR is a telescope fixed on one side of the octant, having its axis parallel to that side, and passing near the middle of one of the edges IK or IH of the speculum IKGH, so that half its object-glass may receive the rays reflected from that speculum, and the other half remain clear to receive them from a distant object. ..... ST is a dark glass fixed in a frame, which turns on a pin V; by which means it may be placed before the speculum EF, when the light of one of the objects is too strong." ‡

In this construction, there is an apparent resemblance to Newton's; but, upon a careful comparison, it will be found that there are many more particulars in which they differ, than there are in their agreement. The telescope in both was fixed along one of the radii of the quadrant. It was necessary that its axis should be coincident with the direction of the ray reflected from the horizon-mirror, and consequently that mirror in both was set at given angles with it; but Newton fixed this at forty-five degrees, and Hadley having taken a much smaller inclination, applied an adjustment by which it might be varied, if occasion required.

* The originals, which are larger than the plates in the Phil. Trans. are preserved in the Registers of the Royal Society, vol. xvii.

† P. 147.

‡ Phil. Trans. vol. xxxvii. p. 150.

Again, the enumeration of the degrees in Newton's construction began from the telescope, half of whose field was occupied by the horizon-mirror. It is clear, therefore, in taking an altitude, that the limb was to be held below the telescope, as the hands at first were most probably applied immediately to the telescope, and employed in directing it: this (unless a stand were used) was indeed the only manner in which a heavy instrument like his could have been kept in a vertical position; but some inconveniences attended it. It is obvious (fig. 2, pl. 1)† that the contact was to be made on the mirror, at the edge which was perpendicular to the plane of the instrument: it must therefore have been brought down so as to impede the sight, by direct vision, of all objects above the horizon. Here was danger of overlapping, and that possibly with some degree of obliquity; and it certainly would be very difficult to make such a coincidence, with any great accuracy at night, or when the horizon was but faintly seen. Let the altitude to be observed be that of the moon's upper limb, and the difficulty will be increased; for the whole of the illuminated disc would become invisible at the moment when the edge of the mirror came into contact with it.* Now, Hadley made the numbers on his limb increase as they approached the telescope. This had a disadvantage, for it required the limb to be held uppermost in taking an altitude; and, although his frame-work was much lighter than Newton's, such a position is evidently objectionable. With respect, however, to the manner of using the horizon-mirror, he introduced a great improvement, for he pointed out that the contact might be made on the edge parallel to the plane of the instrument, as well as on that which was perpendicular to it, ("near the middle of one of the edges IK or IH," fig. 3, pl. 2.) I have endeavoured to mark particular instances of difficulties from using the perpendicular edge. Altitudes have been instanced as more simple for description, but similar cases might likewise have been taken from lunar distances. The general principle is this: it admits of our seeing when, and how far, the contact is not complete; but if we exceed that position, it does not enable us to observe how far we have gone beyond it. When, however, the parallel edge is used, the two objects are made to slide along it, (or one may be kept fixed while the other is made to move,) so that it is easy to distinguish whether there is excess or deficiency in bringing the objects together, and how the index-glass must be moved to produce this desired effect.

Hadley at first entertained a thought of using metallic mirrors. They had an advantage, from forming only single images; but it

* Newton directs, that, for lunar distances the contact should be formed with the moon "not on the outside of the limb, but on the inside." This seems to imply that the moon's limb should just barely overlap the part of the edge of the mirror where the star is brought into contact with it.

† See plate in No. 21 of Nautical Magazine.

was impossible to preserve them from tarnishing, especially when used at sea. Silvered glasses, therefore, were finally adopted.

It appears, therefore, that there was nothing really identical between Newton and Hadley's instruments, excepting the manner of placing the telescope; but this arrangement had been adopted by Hooke, and we shall find the same in the instruments of Grandjean de Fouchy and Godfrey. If this argument, therefore, is to have any weight against Hadley's originality, it must have the same against others; and, instead of Newton's invention having only been imparted (as is most probable) to Dr. Halley, we must suppose it to have been sufficiently known for it to have been copied in France and North America. This can never be admitted: and, in fact, the general similarity is to be attributed in all to one common cause. The telescope in each instance was placed, with respect to the horizon-mirror, in a manner exactly analogous to that in which the sights or telescopes were usually and naturally placed at that time on the portable quadrants.*

Wilson, in his Dissertation† on the Rise and Progress of the Modern Art of Navigation, says, "Mr. Hadley being well acquainted with Sir Isaac Newton, might have heard him say, Hooke's proposal could be perfected by means of a double reflection. However, Mr. Hadley being a very ingenious person, might have hit upon the same thought." ‡ Dr. Hutton‖ adopts the opinions, and nearly the very words, of Wilson; and it is evident, that neither of them thought this possibility of a hint from Newton was conclusive against Hadley's being really the inventor of the instrument. Even if the resemblance which has just been pointed out to exist between the two constructions, had been sufficiently strong to suggest a chance of the one having been derived from the other, still, when fully considered, this circumstance would certainly lead to the directly opposite conclusion. Hadley unequivocally maintained his own claim to the invention, and, without dwelling on the credit which ought to be given in such a case to a gentleman, and a man of honour, it must be seen, that, if he had been at all conscious of Newton's priority, and had wished to conceal it, he would from common prudence have omitted all allusion to what might be supposed to be derived from his suggestions. Newton had indeed been dead several years, but if he had spoken of his plan to Hadley, it was obvious that he might have made a similar communication to others: we know that he did so in great detail to Dr. Halley. Would any man, therefore, of common sense, under such circumstances, have introduced what might tend to his conviction? nay, would he have done so gratuitously, when he had a second and distinct contrivance (as Hadley had) of a

* See Smith's Optics, figs. 578, 580.
† Prefixed to the second edition of Robertson's Elements of Navigation.
‡ P. xxix. ‖ Dictionary Art. Quadrant.

much superior kind, to bring forward? There is nothing, therefore, to impugn his originality in Wilson's supposition of a possible communication, which is acknowledged, after all, to have been unnecessary to such "a very ingenious person."

It is clear, from expressions which are used in the minutes of the Royal Society, that the invention was considered by the members of that body as truly belonging to Hadley. There are, likewise, some remarkable circumstances connected with Dr. Halley's paper on finding the longitude, which bear directly on the present inquiry. It was read the week before, but was not published till some months after Hadley's. The description of the instrument having been inserted in the number of the Philosophical Transactions for Aug. and Sept., when the other stands in those for Oct. Nov. and Dec. Dr. Halley's assertion, likewise, with respect to appulses being all which could be observed at sea, (and which has been copied from the minutes of the Society,) is not to be found in the printed text. On the contrary, a very different conclusion is annexed, in which it is said, that "since our worthy Vice-President, John Hadley, Esq. .... has been pleased to communicate his most ingenious invention of an instrument for taking angles with great certainty by reflection, (vide Transact. No. 420,) it is more than probable that the same may be applied to taking angles at sea with the desired accuracy." There is, however, an intermediate variation which is worthy attention; for the conclusion, as entered in the Register-Book,* is as follows:—"It remains, therefore, to consider after what manner observations of the moon may be made at sea with the same degree of exactness. But I am informed from a very good hand, that a most ingenious and worthy member of this Society has had thoughts, and taken great pains about it, not without a prospect of success, which I heartily wish him. What I have meditated thereon, I hope speedily to lay before you." These words evidently refer to some time previous to Hadley's having fully communicated his ideas on the subject; and as these allusions to them do not appear in the account of the paper which is inserted in the journals, it follows, that when Dr. Halley first drew it up, he was not only unacquainted with the pursuit in which Hadley was engaged, but that no recollection of Newton's instrument was present to his mind. Again, he seems to have made the first alteration in the week intervening between the 6th and 13th of May, and probably in consequence of information which was given him, on his own dissertation being read. No indication appears in it of Newton's prior claim; but he might at the time have had only an imperfect notion of Hadley's plan, and therefore the thought might not have occurred to him. But, lastly, this could not have been the case when he published his final view of the subject in the

* Vol. xvii. p. 452. The transcript is inserted after that of Hadley's paper, but the dates are annexed of the days on which they were read.

Philosophical Transactions, where he unequivocally attributes the invention to Hadley. It must be remembered, likewise, that Dr. Halley's claim for Newton was made on the 20th of May, and it was at a meeting of the Royal Society on the 16th of the following December he "took occasion to say, that he had considered the construction of Mr. Hadley's new-invented instrument for making astronomical observations on board a ship, and was now well satisfied that it was much different from that which Sir Isaac Newton had formerly invented for that purpose, and communicated to the Society." Now, the time of this assertion agrees very nearly with that of the publication: the one therefore corroborates the other, in proving that Dr. Halley's doubts were then finally removed, with respect to Hadley's right to the invention.

We have hitherto been considering the first instrument, which was not without its claims to superiority; but they were much exceeded by those of the second. The description of it need not, however, detain us long, for its principle and arrangement are the same with what subsequently obtained in general use. It will be sufficient to notice the principal improvements which it possessed. The direction of sight was placed across, instead of along the radius of the quadrant. By this means the instrument became more manageable, and much more useful for the back as well as the fore observation. The edge of the object-mirror was placed in the fiducial line of the index: this is not essential to the principle of the instrument, but was more easy to be accurately settled in the original making than any other direction. The horizon-mirror was made of glass, with its silvered half turned towards the plane of the instrument, so that the contacts were to be observed on a line parallel to that plane. The double image which is formed by the two surfaces of glass has been considered as an objection, but, unless the ray falls very obliquely, the reflection from the anterior surface is not very powerful. Light likewise is lost in passing through the substance of the glass; and if it had been practicable to adopt the general use of metallic planes, they might on this account have been thought especially desirable for the horizon-mirror; but even in this case, there is an advantage which more than compensates for the impediments in question: a certain portion of the rays from the index-mirror are reflected even from the unsilvered part of the horizon-glass, and in such a manner as, without overpowering the sight of the object, which is viewed directly, to enable us to judge more accurately of the coincidence.*

* When the objects are near, of which the angular distance is to be observed, an error, though not of great amount, is introduced by the direct ray having to pass through a glass plate. From the nature of the instrument, this plate cannot be set perpendicular to the axis of vision, and a ray therefore falling obliquely on the parallel surfaces will issue in a direction parallel to, but not identical with, that in which it impinges. This, of course, does not affect the apparent angles of heavenly bodies.

Hadley says, towards the end of his paper, "How far an instrument of this kind may be of use at sea, to take the distance of the moon's limb from the sun or a star, in order to find the ship's longitude, when the theory of that planet is perfected, I leave to trials to determine;" and he concludes with a just acknowledgment of the consummate skill and indefatigable diligence with which this object was pursued by the astronomer royal. Now, in the construction of his instrument, it "was intended chiefly for taking altitudes of the sun, moon, and stars from the visible horizon."* It is more than probable, therefore, that the conclusion was introduced in allusion to Dr. Halley's previous remarks; there is an appearance of its being an addition to what had previously been drawn up. However this may be, the instrument promised to be of such general usefulness, that Dr. Halley and Bradley not only expressed their desire for trials of it at sea, but promised to assist in making them. The Commissioners of the Admiralty therefore granted the use of the Chatham yacht for this purpose; and the observations which were made in consequence, will be found in the Philosophical Transactions.† We are indebted for them to Bradley, Hadley, and his brother Henry. The party met the vessel at Sheerness, and sailed out to the Nore on the 30th and 31st of August, and 1st of September, 1732. There was some hard blowing weather, and some difficulty was occasioned by the ship's motion, which "was generally very great and quick, the vessel being only of about sixty tons burthen." The general result, however, was encouraging, and there is a letter‡ subsequently written by Bradley, in which that great astronomer expresses his high opinion of the instrument in terms which can leave no doubt of his persuasion with respect to the individual to whom the world was indebted for so valuable an invention. "I hope," he says, "you have already in some measure shared, and will long live to enjoy, that pleasure and satisfaction which must attend actions and discoveries beneficial to so great a part of mankind; since the result of the experiment sufficiently proves that your invention will be of singular use to all sailors, and instrumental in saving the lives of thousands. ..... As for my own part, though I was extremely pleased at the first sight of your instrument, yet I cannot help receiving fresh and additional satisfaction every time I reflect on it, or look into the results of our observations, since from them

* Phil. Trans. vol. xxxvii. p. 341.

† Ibid. Dr. Halley took no active part in making the observations; though in earlier life he had been much at sea, his limbs might now have wanted the necessary steadiness, when he was 76 years of age. It appears, however, that he was with them, for, although his name is not mentioned in that respect, Hadley says, (p. 342,) that when "his two brothers and himself went on board," they were accompanied by Sir Robert Pye, Mr. Ord, and Mr. Young, "besides the two 'forementioned gentlemen," which must have been Bradley and Dr. Halley.

‡ Bradley's Miscellaneous Works, p. 505.

I am now convinced, that by means of this contrivance we may observe at sea, with a degree of exactness that 'twas before vain to expect, and which will undoubtedly contribute very much towards the perfection of navigation, not only in determining the latitude to great exactness, and thereby correcting the course as usually measured by the log; but if ever the moon's theory is completed, 'twill be of the utmost consequence in determining the longitude likewise." The great object of the lunar distances was one of which, during the course of a long, laborious, and most useful life, Bradley never lost sight; and there is no one possibly to whom we are more indebted than we are to him, for promoting the use of them.

When the trials were made at the Nore, Hadley procured a brass quadrant, to be made by J. Sisson, in a manner which was conceived to be especially adapted "for taking the distance of any kind of objects." But by some mistake, either of the contriver or the executor, this special care defeated its own purpose. Hadley took with him the quadrant which had been exhibited to the Royal Society, which was made of wood, and light, whereas the instrument that Sisson made was a cumbrous machine, obliged to be supported "by a stem screwed on to it on the under side," "with two circular arches fixed on its back," by which it was to be set in the required position.* It is not wonderful that failure should be the consequence of such an ill-digested plan, and should be the cause, at least for the time, that the most important object was abandoned, to which the observations could be applied. From a memoir read before the Royal Academy of Paris in Nov. 1740, by Grandjean de Fouchy, we learn that Hadley "ayant rencontré de la difficulté dans l'execution, il en ota presq' aussitot la lunette, et le reduisit à ne servir qu'avec une pinnule; et comme il avoit dessein de l'employer non seulement à observer des hauteurs du soleil, mais encore des distances d'etoiles fixes à la lune, il en fit construire un de 4 pieds $\frac{1}{2}$ ou 5 pieds de rayon, afin que la grandeur suppleat à ce que la soustraction de la lunette lui faisoit perdre d'exactitude, ce qui pourtant n'a lieu que cette seule fois, parceque depuis ce tems on les a reduit à un mediocre volume, abandonnant entierement les observations des distances des etoiles à la Lune que la grandeur excessive de l' instrument rendoit impracticable." †

Hadley secured his exclusive right by taking out a patent; and "few or no attempts were made towards improving the construction of this instrument, from the time of its discovery .... until after

* Phil. Trans. xxxvii. 342.

† Memoires de l'Ac. p. 469. This account accords completely with the causes which have been suggested as having probably led to Dr. Halley's neglect of the plan communicated to him by Sir Isaac Newton.

the year 1745, about which time his patent ended." This we learn on the authority of Wales,* and, although the following extract from his work may be long, it affords possibly the best means of closing this part of the inquiry:—

"The first persons that I know of,† who applied this quadrant to the actual measuring of distances, were Dr. Bradley, then astronomer royal at Greenwich, and Capt. John Campbell of the Royal Navy. The latter, about the year 1747, having, for his own amusement, measured the distances of several fixed stars with a quadrant of Jackson's‡ making, shewed them to Bradley, who found them to correspond very exactly with their true distance in the heavens. And, after this time, those gentlemen frequently made observations of the moon's distance from the sun and stars, and also from one another, in company at Greenwich. In the course of these transactions, Dr. Bradley shewed Captain Campbell an instrument which had been contrived on purpose for making these observations by Mr. Hadley, and which was something like the Newtonian form; only the small speculum was made to slide in a groove, so as to stand either to the right or the left of the great one, for the convenience of measuring the moon's distance from objects on both sides of her, without turning the plane of the quadrant downwards, as is now done, and which at that time was thought very inconvenient. Dr. Bradley had also by this time greatly improved Dr. Halley's lunar tables, and began to entertain great hopes of effecting thereby the so much wished-for method of finding the longitude at sea, by observations of the moon's distance from the sun and fixed stars; and the rather, as Mr. Bird had now begun to apply himself to improve the Hadley's quadrant, in which the principal defect, then complained of, was its bending when inclined out of a vertical position; and he succeeded so well, that in the year 1750, the late ingenious Mr. Benjamin Robins made those observations with great success, in his voyage to the East Indies, with quadrants of only seven inches radius." ‖

It would carry us on too far, if we attempted to trace out the alterations and improvements which have been since made in this most valuable instrument. Wales tells us§ that the construction of it occurred without their being aware of its having been previ-

* The Original Observations made in his Majesty's ships the Resolution and Adventure in 1772, 3, 4, 5. Introduction, p. xxxiii.

† Reference has been made to a memoir of Grandjean de Fouchy in 1740. Its object was to suggest the improvements which occurred to him as advantageous in this instrument, and he says, that he should not even speak of others "parce que les suffrages de sont reunis en faveur du quartier de M. Hadley, que les marins ont regardé comme le plus expeditif et le meilleur." (p. 470.) He seems particularly desirous of adapting it to the observation of lunar distances, but it is uncertain whether his design was ever acted upon.

‡ "Who made them for Mr. Hadley, under his patent." Wales, p. 34.

‖ Ibid, p. 34-5.

§ Ibid, p. 33.

ously executed, to Joseph Harris, Esq.* of the Mint, to the Rev. Mr. Rowning, and Mr. George Holroyd; but all these were confessedly subsequent to Hadley, and therefore require no further notice on the present occasion: the claims, however, which may, and have been set up, to supersede what justly belongs to him, must not be left unnoticed.

(To be continued.)

II.—Engines in Steam-Vessels.

To the Editor of the Nautical Magazine.

Sir—A more definite opinion would soon be entertained of the relative qualities of different steam-engines, if the usual question, "How many horse-power is the engine?" was altered to "What work has been done by the consumption of each bushel of coal?" This idea is fully comprehended in Cornwall by the technical word "Duty;" and, though it may be impracticable, from so many varying circumstances attending steamers, to trust to a duty-report for a short period, I am convinced the average of one year, or even less, would give a very close approximation of the quality of every engine since.

The Velocity of the Centre of the Floats,
Their Area,
And the Number of Revolutions,
} Are known quantities.

It would probably be advisable, in forming a report, to drop the question of the form of the boat, included in speed through the water. On this point, however, definite information would be of the highest value to naval architects.

The comparison of the results to be obtained from a fixed proving-machine, to which I should propose to attach all steamers, to shew the exact power of each engine employed in moving water, and the different velocity obtained in different boats when in motion, by engines of equal power, would in time accumulate a mass of data unattainable by any other means with which I am acquainted.

The calculations commonly used of horse-power I am inclined to think are worse than useless, being merely an expression of the size of the engine, or what it ought to do, and not of the work actually performed. It answers to the Cornish mode in speaking of the size of their engines by the diameter of the cylinder in inches, but is only worth attention when it is calculated from the work performed. There is no reason why a given number

* Author of a Treatise of Optics.

of square feet of floats, with a given velocity, should not represent a horse-power. This term is too well understood to be altered. Boulton and Watts fixed their horse-power very high, to prevent disputes, at 33,000 lbs. lifted one foot high per minute—and this proportion ought to be kept in view in arranging a horse-power for steam-boat engines on the principle of work performed. The reports of the Cornish mining-engines would have been more generally understood, if the average horse-power at which each engine worked had been inserted every month.

The horse-power would then have represented the work actually performed by each engine, or the power exerted during a given period.

The duty represents the work performed by the coal. Perhaps the following statements, referring to Borlase's engine, may help to explain its meaning:

Number of strokes of the engine and pumps per minute	6 strokes.
Load in shaft lifted each stroke 34 tons, minus 40 lbs...	76,010 lbs.
Lifted each stroke, in feet.....	8 feet.
Weight lifted each minute, in pounds	3,648,480 lbs.
Equivalent to, by Boulton and Watt's rule,.....	110½ horse-power.

Either the time of the consumption of one bushel of coal, or the duty, must be now assumed.

Let the latter be assumed at,.....	91,212,000 lbs.
Then the consumption of coal per day, is.....	57⅞ bushels.
Ditto ditto per minute	3$\frac{26}{100}$ lbs.
The consumption of each bushel in minutes.....	25 minutes.
The duty of each pound of coal	1,085,857.
The consumption of coal for each horse-power, per hour, is	1,81818 lbs. decm.

By increasing the number of strokes to twelve, the power of this engine is 221 horses, calculated from the pump-work. But, as her best rate of working is from five to seven strokes per minute, the duty might be diminished, say to 70,000,000; that is, the effect of a bushel of coal would then be in the proportion of seven to nine; or 147½ bushels of coal would be required for the day, instead of double, or 114$\frac{2}{3}$.

This explanation of duty has been attempted, as I have seen the duty confounded with the power of the engine; it is rather an inverse measure of the rate of expenditure for coal. The expense lessens as the duty increases.

A rest of two seconds between each stroke, to allow the exhausting-valve to be opened one or two seconds before the steam-valve, is said in Cornwall to be useful in effecting a condensation in the cylinder equal to that in the condenser. I believe little is definitely known on this point; if correct, the rapid stroke of steamers' engines acts most disadvantageously in their ever performing a high duty.

In a paper by D. Gilbert, Esq., published in the Philosophical Transactions in 1830, there is an account of the progressive improvements of the steam-engines used in Cornwall. In 1793, Watt's engines exceeded the two standard atmospheric engines in the proportion of 2,78 to 1. The duty done by the two best atmospheric engines on Newcomen's principle, had in 1778 been agreed on as the standard of comparison, their duty being rather more than 7,000,000 lbs. In 1798, a small decrease in the duty of Watt's engines took place. The decrease became very much greater on the expiration of his patent, and previous to the duty-reports in 1813. In Mr. Gilbert's paper, the highest duty in December, 1829, is taken at 75,628,000, and exceeds the average of 1793 in the proportion of 3,865 to 1, and the standard atmospheric engines of 1778 as 10,75 to 1. The average of the engines built since the publication of his paper is about 70,000,000 lbs.; so that, what three years ago was the highest duty is now almost an average of the best engines.

That great improvements are supposed to have taken place in other engines, I am well aware, and, as far as appearances go, it is unquestionable. Is the work now done by the smart polished engines of the present day more than by those erected by Boulton and Watt? I should much like to see this point settled, as in Cornwall, by a reference to figures. The workmanship of the valves is of more consequence than the outside polish of the iron work. In the manufacturing districts, for want of a better guide, the competition is rather in the beauty more than in the quality of their engines. The adoption of the Cornish plan of reporting the duty of steamers, even in a defective form, as it must be, where the work performed cannot be so accurately obtained as when water is lifted, would soon shew at what rate each engine worked best; and data would be gradually obtained for alterations, particularly in the boilers, some of which might be found eventual improvements.

The efforts made by Smeaton in the improvement of Newcomen's atmospheric engine, naturally have had little attention paid to them; they occurred at an unfortunate period, just when Boulton and Watt's patent was taken out. The account of his first failures in erecting engines from plausible calculations, and subsequent improvements, by means of a small trial-engine, pointed out a means of success that had since been little attended to; but I feel no hesitation in asserting, that a duty-report of engines in actual work becomes a series of trials far, very far superior to the limited but enterprising endeavours of one of the first engineers of that day. Steam may be superseded by an engine to work by lowering and raising the temperature of different fluids alternately, similar to that which Ericsson proposes to call, a Caloric Engine. Until they are got into effective working order, I shall be content to urge,

that Smeaton's practicable example be followed as in Cornwall; though, perhaps, duty-reports would be even more valuable, if engines of a different nature were in common use.

Since the duty is partly dependent on the quality of the engine, and partly on the skill and attention of the engineer, the knowledge in figures when the engine has worked well, is evidently the readiest means of giving him the necessary information. In appearance, an engine will work most pleasantly when it is lightly loaded, though the best duty is perhaps done when it feels its work; but the positive information derived from figures alone can determine this point. Other means of judging are idle guess-work, when, by a proper system, direct information can be obtained, and exhibited in such a manner as can be at once understood by mere inspection. These observations are addressed not to civil engineers, but to their employers.

It is in the management of the fires that the greatest difference may be observed between the mining and the steam-boat engines; in the former, the damper is generally found nearly closed, with a clear, bright, close, snug fire, such as the owners of a London chop-house might envy. The deficiency of boiler-room in steamers is undoubtedly felt, and perhaps a freer use of the poker is allowed than is beneficial, and more air than proper admitted over the fires. In the Cornish mines, the price given for boilers generally of ten or eleven tons weight is low—previous to the late rise in iron, from £17 to £18 per ton. The rivets are generally three-quarters of an inch. I should be inclined to *double seam* them with smaller rivets. For the fire-places, and internal tube, I consider this essential; and it is more particularly advisable in the fire-places of steam-boats, (in boilers of all forms,) unless the admission of water is to be considered advantageous. It must be recollected, however, Mr. Rutter proposes to mix the water with oil, &c., to assist in its decomposition. Probably, if £5 per ton more was given in the mines, their boiler-plates could be rolled by a machine true to the segment of the circle required, the edges made straight and scraped, and the holes drilled (not punched) through the two plates together, and riveted before the next holes are bored. If this were done, we should not hear of a boiler from which the water ran, under a pressure of 60 lbs. per square inch, as fast as it could be pumped in.

The trial was intended to have been carried to 100 lbs. per square inch. However, this new variety of safety-valve will put out the fires, should the steam pressure become 60 lbs. per inch; but, with 27 lbs. steam, the performance of the engine is materially injured. What is the price given per ton for the boilers of His Majesty's steamers? These, I understand, are very little, if at all better, *though evidently neater* riveted, than those in Cornwall. The difficulty, I may perhaps say the impossibility, of repairing a

boiler properly on board, shews that the best mode of making them should be alone considered, not expense. When circular boilers are adopted, or tried, I trust the fire-places at least will be *double seamed*. This is known to be the only means by which the makers of kitchen ranges can succeed in making thin plates of iron hold water securely when exposed to great heat. Would it not equally answer with thick boiler-plates?" The additional weight is the greatest objection. In steamers, strong boilers are required for expansive steam. In advocating its cause, I am aware of the prejudices against its employment; perhaps a trial-engine like Smeaton's would be the best means of bringing the question to an issue; but how is the expense of it to be provided, until at least employers of engineers will insist on having accurate data afforded them of the duty of their engines. The trials required are, how far expansion can be carried in engines working with a crank? In the Ring, the effect of sharp quick hitting is well known and understood. In the mines of Cornwall, the start is said to do all the work; and this idea, by a reference to Borlase's engine, seems correct. In that engine, the steam-power employed to start the load exceeds the load itself as four to one, nearly; but at the end of the stroke, the load exceeds the steam-power as two to one nearly. In consequence of the rapid diminution of steam-power in expanding, the velocity of the piston is greatly and visibly diminished. In working a crank, the steam is first admitted on the piston when the crank is in a disadvantageous position, so that it might not be advisable to cut off the steam before one-fourth, or perhaps even one-half of the stroke, instead of one-eighth, as in Borlase's engine, for the above expansion 15 lbs. steam above atmosphere is sufficient; that is, steam of a tension not double that in common use in steamers. The opinion, that expanding steam in short cylinders will not succeed, is not borne out by the only trials with which I am acquainted. I firmly believe, (and nothing but a series of trials can convince me to the contrary,) that the system which, by producing a competition among engineers, has effected so great a reduction of the consumption of coal in the mining engines, would effect a most important reduction of the coal used in steamers. Square, circular, pipe, or boilers of any form, would then depend on their merits, and the advantage of expanding steam would be proved or disproved. My opinions have been formed from what I have seen in the mines, and are favourable to circular boilers; the proposal to try them to 100 lbs. per square inch shews my opinion of their strength. When I find a higher duty done by other means, I will readily alter the opinion of their superiority, since my proposals have invariably been on the principle of fair play to all.

Enys, Nov. 27, 1833. JOHN S. ENYS.

Table II.

For reducing French toises to English feet, and English feet to French toises.

1 French toise = 6·39459259 English feet.
1 English foot = 0·15638212 French toise.

Toises or Feet.	English Feet and Dec. parts.	French Toises and Dec. parts.	Toises or Feet.	English Feet and Dec. parts.	French Toises and Dec. parts.	Toises or Feet.	English Feet and Dec. parts.	French Toises and Dec. parts.
1	6·395	0·156	38	243·095	5·943	74	473·200	11·572
2	12·789	0·313	39	249·389	6·099	75	479·594	11·729
3	19·184	0·469	40	255·784	6·255	76	485·989	11·885
4	25·578	0·626	41	262·178	6·412	77	492·384	12·041
5	31·973	0·782	42	268·573	6·568	78	498·778	12·198
6	38·368	0·938	43	274·967	6·724	79	505·173	12·354
7	44·762	1·095	44	281·362	6·881	80	511·567	12·511
8	51·157	1·251	45	287·757	7·037	81	517·962	12·667
9	57·551	1·407	46	294·151	7·194	82	524·357	12·823
10	63·946	1·564	47	300·546	7·350	83	530·751	12·980
11	70·340	1·720	48	306·940	7·506	84	537·146	13·136
12	76·735	1·877	49	313·335	7·663	85	543·540	13·292
13	83·130	2·033	50	319·730	7·819	86	549·935	13·449
14	89·524	2·189	51	326·124	7·975	87	556·330	13·605
15	95·919	2·346	52	332·519	8·132	88	562·724	13·762
16	102·313	2·502	53	338·913	8·288	89	569·119	13·918
17	108·708	2·658	54	345·308	8·445	90	575·513	14·074
18	115·103	2·815	55	351·703	8·601	91	581·908	14·231
19	121·497	2·971	56	358·097	8·757	92	588·303	14·387
20	127·892	3·128	57	364·492	8·914	93	594·697	14·544
21	134·286	3·284	58	370·886	9·070	94	601·092	14·700
22	140·681	3·440	59	377·281	9·227	95	607·486	14·856
23	147·076	3·597	60	383·676	9·383	96	613·881	15·013
24	153·470	3·753	61	390·070	9·539	97	620·275	15·169
25	159·865	3·910	62	396·465	9·696	98	626·670	15·325
26	166·259	4·066	63	402·859	9·852	99	633·065	15·482
27	172·654	4·222	64	409·254	10·008	100	639·459	15·638
28	179·049	4·379	65	415·649	10·165	200	1278·918	31·276
29	185·443	4·535	66	422·043	10·321	300	1918·378	46·915
30	191·838	4·691	67	428·438	10·478	400	2557·837	62·553
31	198·232	4·848	68	434·832	10·634	500	3197·296	78·191
32	204·627	5·004	69	441·227	10·790	600	3836·756	93·829
33	211·022	5·161	70	447·621	10·947	700	4476·215	109·467
34	217·416	5·317	71	454·016	11·103	800	5115·674	125·106
35	223·811	5·473	72	460·411	11·260	900	5755·133	140·744
36	230·205	5·630	73	466·805	11·416	1000	6394·593	156·382
37	236·600	5·786						

IV.—An Examination of Dr. Kelly's "Introduction to Spherics and Nautical Astronomy," *Section XII. page* 200.

(Concluded from page 173.)

Example 4.

Here $\frac{\text{sin. S}}{\text{sin. D}} - \frac{\text{sin. M}}{\text{tan. D}} = \frac{\text{sin. } 15° 54'}{\text{sin. } 45° 40' 14''} - \frac{\text{sin. } 20° 36'}{\text{tan. } 45° 40' 14''} = \cdot 38298 - \cdot 34371$ $= \cdot 03927 =$ chord of $2° 15' =$ (by reducing one denomination) $2' 15''$.

	°	′	″
Consequently $2' 15'' \times 56\frac{1}{2}' \div 62' =$		2	3
Apparent distance	45	40	14
True distance, according to his own method.....	45	38	11
True distance, as found by the Doctor	45	40	7
Error of his solution, according to his own method		1	56
True distance as found by spherical trigonometry.....	45	40	7
Error of the method when performed with the greatest accuracy		1	56

	°	′	″
◗ D as found by Dr. Kelly	0	0	0
True length of ◗ D.....	2	15	0
Error of his measurement on the scale of chords	2	15	0 !

Example 5.

We have $\frac{\text{sin. S}}{\text{sin. D}} - \frac{\text{sin. M}}{\text{tan. D}} = \frac{\text{sin. } 40°}{\text{sin. } 30°} - \frac{\text{sin. } 20°}{\text{tan. } 30°} = 1 \cdot 28558 - \cdot 59240 = \cdot 69318 =$ chord of $40° 33' 28''$.

	°	′	″
Hence $4' 33'' 28''' \times 60' \div 62' =$		39	15
Apparent distance	30	0	0
True distance, according to the Doctor's method	29	20	45
True distance, as found by the Doctor	29	20	5
Error of his solution, according to his own method			40
True distance, as found by spherical trigonometry	29	20	4
Error of the method when performed with the greatest accuracy			41

	°	′	″
◗ D as found by Dr. Kelly.....	41	15	0
True length of ◗ D	40	33	28
Error of his measurement on the scale of chords	41	32	

In taking a view of these five examples, we find that the error of the method, when performed with the greatest possible accuracy,

in the	1st	will be	′	″	; while, at the same time, Dr. Kelly has determined	
	2d		1	9		
	3d		0	42		
	4th		1	56		
	5th		0	41		

the	1st	within	″	; and has also committed an error	
	2d		6		
	3d		5		
	4th		3		
	5th		0		
			1		

of	°	′	″	in the	1st	in measuring the line ☽ D on the scale of chords. How this can have been effected is not for mathematical investigation to define.	
	1	0	48		2d		
	1	5	2		3d		
	0	40	8		4th		
	2	15	0		5th		
	0	41	32				

The error of the method when performed with the greatest possible accuracy, on an average, of these five examples, is 1′ 4″; and the moon's hourly motion from the stars being, on an average, about 30′: this will give an error of 2 m. 8 s. of time, or 32 miles of longitude. The method, therefore, is not sufficient for nautical practice.

V.—Original Papers on Naval Architecture. *By Commander John Pearse, R.N.*

No. V. On the Action of the Water on Floating Bodies.

Having in the last paper on this subject given an explanation of results derived from experiments made with floating bodies of the most simple kind, we shall now proceed to shew, on the same principles, that similar causes produce like results, when ships are inclined.

Figure 1, in the accompanying drawing, represents sections of two bodies at the same inclination, and whose extreme breadths are equal; the immersed part of one being circular, and that of the other resembling the form of a sharp ship: and, for simplicity, we shall consider all the transverse vertical sections in each of the forms represented. The line *w r* denotes the surface of the water.

In the circular body, the half-breadth *a m* is the radius of the semicircle *a b c*, therefore *m* is its centre; and this is always the axis of rotation in such a body: it is the place of the metacentre or point of stability, also, in consequence of the mean direction of

the vertical effort of the water intersecting it, as represented by the line *m n*; and this proceeds from the immersed part *d n i* of a circular body always retaining the same form, which causes the mean direction of the force of the water to pass through the centre of gravity of displacement, and consequently renders the two parts, *h i n* and *d h n*, equal; and, as the distances *d h* and *h i* are equal, and all the transverse vertical sections are of the same form, the two areas at the surface of the water must be equal also.

In the sharp body represented by the lines *a o b s c*, we have results similar to those derived from the experiments explained in the last paper on this subject; that is, the inclination has caused the contour *b s c* of one side of the bottom to become more vertical, while that of the other *a o b* is more horizontal, and caused the wide part of the former to emerge, while the widest part of the latter has become immersed. And the comparison exhibited of the two forms shews clearly, and at once, why the situation of the metacentre, or point of stability, must be higher in the sharp body than in the circular one. In the latter, the breadth at the line of floatation, when inclined, is *d i*, but in the former it is only *d s*; and as the extreme point of support in both bodies on one side is at *d*, while on the other side the support of the water extends to *i* in the circular body, and only to *s* in the sharp one, it is very evident, and for the reasons demonstrated in the last paper, that the mean direction of the vertical effort of the water which determines the situation of the metacentre, must be nearer to *d* in the latter than in the former, and consequently, that the metacentre must be highest in the sharp body. The situation of this point is at *k*, and which has been found by the method described in a former paper, No. 3; consequently, the vertical line *k q* denotes the mean direction of the vertical effort of the water, and which, as before observed, must evidently be the case, is much nearer to *d* than it is in the circular body.

We thus find, that of two bodies, whose extreme breadths are equal, but differing in the formation of their bottoms, the sharpest, as regards form, possesses the property of generating stability in the greatest degree, or that the action of the water fixes the situation of the point of stability higher in the sharp body than in the circular one. We also find that this property is not dependent on the extreme breadth, but is to be attributed to the narrowness of the body from *o* to *s*, which, consequently, causes a diminution of breadth at the line of floatation, when inclined; the breadth of the sharp body at this part being minus the distance *s i* that of the circular body; and this necessarily causes the mean direction of the vertical effort of the water to approach nearer to the point *d* in the former than in the latter. And if the dotted lines *v j* represented the transverse vertical section of the body, the breadth at the line of floatation would be diminished to *d y*, and consequently

the mean direction of the force of the water would approach still nearer to *d*, and fix the metacentre or point of stability higher; in fact this point would then be at *p*.

This, however, is no new principle in formation; or, making all the transverse vertical sections sharp, does not give to a ship a new property, as it is only enlarging on one which every ship possesses; for, whatever may be the form of the midship section, and those adjoining it, the extremities of every ship possess the properties of generating stability. And it is only necessary to consider the lines *l o* and *t u*, in figure 1, as representing sections of the bow, and the dotted lines *v j* as representing a quarter section, and to refer to the explanation before given, to be convinced on this point, and to see it clearly and at once.

In each of the models used in the experiments explained in former papers, all the transverse vertical sections were of the same form; and which, not being objectionable with regard to the points to be determined, gave assurance also of perfection in moulding them; therefore only one operation was required to find the situation of the metacentre by construction, and as described in a former paper. The two bodies represented by figure 1 have been considered as similarly formed. But in a ship, the transverse vertical sections differ so very materially from each other in form, that, to find the correct situation of the metacentre by construction, it is necessary to perform the operation for each of the various sections, and to take the mean of the whole. In figure 1, for example, the several forms which have been considered, give their respective metacentres at *m*, *k*, *p*, and, consequently, if those, and similarly formed sections, represented the contour of a ship's bottom, the mean height of the three points would represent the correct situation of the metacentre. And when the extremities of a ship are properly formed, and so as to swell above the line of floatation, and the contours of the transverse vertical sections are formed so as to produce a progressive increase of displacement, and consequently of resistance, when the pitching and sending motions cause those parts to descend, then those motions will not be attended with sudden and violent shocks; and therefore the form which combines these desirable qualities is favourable, as regards the easiness and extent of the pitching and sending motions, the sailing of the ship, and the property of generating stability.

Figure 2 represents sections of two bodies at the same inclination, but differing in form. The sharp body is precisely the same form as that in figure 1; and the narrowest, in place of its immersed part being circular, resembles the midship section of a full-bottomed ship: *w r* denotes the surface of the water. We shall in this case, also, for the sake of simplicity, consider all the transverse vertical sections in each of the same form, and as represented in the figure. In the sharp body, the situation of the meta-

centre or point of stability is at *k*; in the narrow full-bottomed body it is at *m*. And we here find, that, although the extreme breadth of the sharp body is greatest, still the breadths of the two bodies are equal at the line of floatation when inclined; and that, if the sharp body was wider from *d* to *l*, which would cause it to be wider at the line of floatation when inclined, the property which form possesses of generating stability would absolutely be diminished, and the situation of the metacentre would then be below *k*.

Now, the moment of stability is the whole weight of the ship multiplied by the sine of the angle of inclination, having for radius the distance of the centre of gravity of the ship from the metacentre; or, it is the weight of the ship multiplied by the horizontal distance of its centre of gravity from the vertical which determines the situation of the metacentre; consequently, the greatness of a ship's stability depends on its weight, and the distance between the two points before named. It has been shewn, that, as regards the situation of the metacentre, or form generating stability, the sharp body possesses this property in the greatest degree; and it will appear evident, that the situation of the centre of gravity of the ship must depend in a great measure on the disposition of the various weights which it contains. It must also clearly appear, that obtaining stability in the greatest degree by form proceeds from reducing the body below, and which, consequently, diminishes the capacity for the stowage of provisions, water, and stores; and this will cause the centre of gravity to be higher in a sharp body than in a fuller one. Nevertheless, it will presently be shewn, that the sharp body has sufficient stability to sustain the same quantity of sail as the full body.

The dotted lines *x z* denote the depths of immersion of the two bodies at the inclination represented, the greatest of which is that of the full body; and this, together with the form of the full body, causes greater resistance to lateral impulse, or lee-way; and, consequently, the tendency of the lateral effort of the water to diminish the stability may be considered greater in the full body than in the sharp one. For simplicity, however, we will leave the consideration of this effort out of the calculation, and, in each, consider the moment of sail equal to the moment of stability.

Let us now suppose the weight of the full body to be 500 tons, and its centre of gravity to be at *g*; then *g h* will be the sine of the angle of inclination, or the horizontal distance by which the weight of the body is to be multiplied. Now, $g\ h = 2{,}1$, therefore the weight of the body $= 500 \times 2{,}1 = 1050{,}0$. Now, *m* is the metacentre of the full body, and it has been clearly proved that this point is the axis of rotation; and as, consistently with the laws of mechanics, the efforts of powers are estimated by the distances from the axes of rotation to the points where those powers are

applied, it is clear that the relative force or moment of sail must be estimated by the distance of the centre of effort of the sail from the axis of rotation. Let us therefore suppose *u* to be the centre of effort of the sail. Now *u m* = 62,7, and as the moment of sail and moment of stability must be equal, for the body to be at rest and in equilibrium in the position represented, the moment of stability must be divided by the distance *u m*, to find the amount of absolute force required at *u*; therefore, moment of stability =1050,0 ÷ 62,7 = 16,7, the absolute force of the wind requisite to produce the inclination represented. Now, the metacentre or axis of rotation of the sharp body is at *k*, and consequently the length of the lever *k u*, to which the power of the wind is applied, is less than in the full body; it is only 56,5: therefore the absolute force of the wind = 16,7 × 56,5 = 943,55, for the moment of sail; and, consequently, as the two relative forces must be equal, a less moment of stability is required than for the full body. The areas of the parts immersed of the two sections represented in figure 2 are very nearly as four to five; and as all the transverse vertical sections in each are of the same form, the displacement, and consequently the weight of the sharp body, is about one-fifth less than that of the full body: therefore, weight of the latter = 500 — 100 = 400 for the weight of the former. Now, the moment of sail, and which is equal to the moment of stability, = 943,55; and as the moment of stability is the weight of the ship multiplied by the horizontal distance of its centre of gravity from the vertical which determines the situation of the metacentre, it is only to divide the moment of sail or stability by the weight of the body, to find the sine of the angle of inclination, or the horizontal distance of the centre of gravity from the vertical of the metacentre. Therefore, moment of sail, or stability, = 943,55 ÷ 400 = 2,35 for the horizontal distance, and which is represented by the line *i*, and shews that the centre of gravity of the sharp body requires to be a little below the metacentre *m* of the full body.

We thus find that stability, which is weight multiplied by distance, may be obtained by diminishing the weight and increasing the distance by which it is multiplied. And it is a point admitted by the most eminent authors on naval architecture, and has been clearly shewn in the present paper, that diminishing a floating body below increases the property which it possesses of generating stability, or, that the action of the water fixes the situation of the metacentre, or point of stability, higher in a sharp body than in a full one. And, supposing, as we have considered in figure 2, that equal surfaces of sail are spread in two ships, and that the centres of effort are at the same height, the point of stability being highest in the sharp body, the length of the lever, to which the power of the wind is applied, and by which its absolute inclining force is

multiplied, is therefore less than in the full body; and consequently, the moment of sail being less, a smaller moment of stability is required than for the full body. And when we consider the great weight of the body, and the small distance necessary to multiply by to produce a sufficient moment of stability, it is obvious that a very small increase of distance will admit of a considerable diminution of weight. And hence it is evident, that, if equal impelling powers can be applied to two bodies, and that one of them finds much less direct resistance from the water than the other, it requires but very little consideration to be convinced of which is most capable of moving with the greatest velocity. It is proper, however, to observe, that the extremities of a ship being badly formed, or a defective system of stowage, will, by causing heavy pitching and sending, greatly impede its progress.

We find, however, that to accomplish this, and to have sufficient capacity for the stowage of water, provisions, and stores, a constructor must not be confined in the dimension of breadth, but, on the contrary, that this must be increased to a considerable extent. And it will be presently seen, that diminishing the body below may be carried to an extreme which would render a ship very laboursome, and cause sudden and violent rolling.

When a ship is inclined by a permanent power, such as the wind, it is in a state of equilibrium, in consequence of the equality of the inclining power and the moment of stability; and the equilibrium can only be disturbed by the application of some new and additional force, such as the stroke of a wave, or by the agitation of the sea, which may increase the moment of stability, and at the same time diminish the relative inclining power of the wind. Consequently it is not in smooth water, or even in a moderate sea, when a ship proceeds steadily under a press of sail, but in a gale of wind only, that a ship's properties, as regards a good sea-boat, can be estimated. For, when a ship proceeds steadily under sail, the inclining power of the wind and the moment of stability being always equal, and the ship in a state of equilibrium, it cannot therefore roll to windward; and the weather-roll can only proceed from the equilibrium being disturbed, and the moment of stability becoming by some means augmented. A wave striking a ship to windward, and acting above the axis of rotation, increases the inclination; and, although the effort is only momentary, and is soon annihilated, still, as the inclination increases, the moment of stability, while acting as a resisting force, becomes augmented, and then acquires the means of becoming the moving power; and which, being greater for the time than the inclining power of the wind, produces the weather-roll. And a wave striking a ship to windward, and acting below the axis of rotation, will, by uniting with the moment of stability, which is constantly labouring to

restore the ship to an upright position, cause it to roll to windward.

The moment of stability is often increased also by the action of the water in a heavy sea, and considerably beyond its ordinary greatness, and to a much greater extent in very sharp ships than in others which retain their fulness to a certain distance below the load water-line; while the same cause which produces the increase of stability diminishes the inclining power of the wind; that is, and as before explained, when the action of the water fixes the point of stability higher, the length of the lever to which the inclining power of the wind is applied, is diminished.

Let us imagine the sea to have assumed a form similar to that represented by the dotted line *o p* in figure 2, and which is a very common occurrence. Now, as the sea assumes that form, the moment of stability increases, and to a much greater extent in the sharp body than in the full one; for, as the support of the water at the moment on the windward side extends only to *s* in the sharp body, and to *t* in the full body, the metacentre or point of stability must, consistently with the principles of fluids before explained, be for the time higher in each; and, as the increase of support on the lee-side, as denoted by the dotted lines *c*, *a*, is equal, while the diminution of support on the weather-side is much greater in the sharp body than in the full one; and, as denoted by the distances *v d* and *d b*, it must appear evident that the momentary increase of height of the point of stability will be greater in the sharp body than in the full one, and, consequently, that the increase of the moment of stability, as well as the diminution of the inclining power of the wind, will be greater also. And when we consider that a small increase of distance produces a considerable augmentation in the moment of stability, and that the momentary diminution of the inclining power of the wind is greater in the sharp body than in the full one, it will appear plain that the tendency to roll to windward must be greatest, and the motion most sudden and violent, in the sharp body. And, although this increase of power proceeds from a momentary cause, still time and resistance is required to exhaust it.

When rolling takes place with the wind aft, there is not the inclining power of the wind to resist motion, as when it acts in a lateral direction, and consequently all the resistance proceeds from the properties which a ship in motion possesses; and therefore the motion is as great one way as the other: the moment of stability acting as a resisting force while the ship inclines, and as a moving power on overcoming the effort which brings it into action, and so on alternately; and which would very soon restore the ship to a state of rest, but for the agitation of the sea.

In a former paper, No. 2, we have shewn that additional keel tends to diminish the stability, or, what amounts to the same

thing, that it increases the inclination; and it must appear very evident, that this proceeds from the vertical effort of the water acting upwards; and, consequently, that keel and dead-wood cause no resistance to inclination, but, on the contrary, that the effort of the water on those parts must oppose the righting of the ship, and continue to act until it has returned to a horizontal position. We may therefore very safely conclude, that the action of the water in this respect is precisely the same when a ship is rolling as when inclination is produced by any other cause. But, with respect to the resistance which the water opposes to the motion of rolling, its effort is so small when compared with the magnitude of the powers which produce motion, that a greater or less effort, which may proceed from difference in form, can make no considerable difference in resisting motion. And, notwithstanding the resistance of the water, we know that, in the same ship, various dispositions of the weights produce a very sensible difference in the extent and duration of its motions.

Stability is the great resisting force to permanent inclination, or to a momentary inclining power; and, whether the weights are concentrated near the middle, or placed as near to the sides of the ship as possible, provided the weights in both cases are in the same horizontal plane, the resistance to a permanent inclining power is the same. Still, the resistance which the former disposition opposes to a momentary inclining power, or to physical vibrations, is relatively greater than that of the latter, and consequently the motions are smaller both in extent and duration: whereas, extending the weights not only increases their momentum, but causes the resistance to a momentary inclining power to be relatively less than that of the former, and therefore the motions are greater in extent and duration.

These facts shew, that the resistance which the water opposes to motion is inconsiderable, when compared with the magnitude of the powers which produce it.

Stability, however, as well as being a powerful resisting force, is also a moving power; for, in resisting and overcoming an effort which brings it into action as an opposing force, its power becomes augmented, and in proportion to the greatness of the effort, or of the inclination, which it may have to resist; and as soon as the effort which produces inclination is exhausted, then the stability becomes the moving power; and when the ship begins to incline the contrary way, the stability is again brought into action, becomes a resisting force, and opposed to the motion which its former effort had produced, and, but for this increasing resistance, the motion produced by the former effort would be much greater. And hence the stability is both a moving power and a resisting force. And, supposing the moment of stability to be considerably augmented by the sea assuming the form represented by the dotted

line *o p* in figure 2, it is clear that the weather-roll would be produced by a power far exceeding its ordinary greatness, while the power which the moment of stability would oppose to it, when again brought into action as a resisting force by the ship inclining to windward, would only be equal to its common effort. It is therefore evident, that the form of the midship section of a ship is a point of the utmost importance, and requires the most mature and deliberate consideration. The form of the aftermost section, and the one at the forepart of the keel, require also to be well considered; as on this must greatly depend the sailing of the ship, the easiness of its pitching and sending motion, and the property of generating stability; for the frames between the midship section and the one at the forepart of the keel should, as soon as they commence deviating from the form of one, begin to assume that of the other; and the same with regard to those between the midship section and the after one.

Plymouth, Dec. 5, 1833.

VI.—On the Protection of Ships from Lightning.

(Continued from page 156, No. 26.)

No. II.

Probable Nature of Electrical Action, and the Principles on which Ships may be secured against Damage from Atmospheric Electricity.

8. Although the meteorological explosions occasioning damage to ships, are in some instances of an anomalous character, and have been usually distinguished by the general term fire-balls, yet such damage is for the most part observed to happen during that state of the atmosphere termed a thunder-storm, the connection of which with ordinary electrical phenomena, will be an immediate subject of our present consideration.

9. The existence of an invisible and extremely subtle principle in the material world, termed electricity, may be inferred from the tendency of bodies toward each other, when subjected to a peculiar kind of excitation, by means of various mechanical, chemical, and other operations, viz. by friction, changes in the temperature and constitution of bodies, mechanical contact, and the like. Many striking facts seem to warrant the conclusion, that this agency consists of an exquisitely subtle form of matter, every where present, and operating between bodies according to certain laws.

10. Different views, however, have been taken of the action of this wonderful agency. Some philosophers have imagined it to consist in a sort of temporary separation of the electric matter into two distinct elements, which having a powerful attraction for each other, constantly tend to recombine and resume their pre-

vious state of neutrality. Others, again, consider it as the result of a tendency in the electric principle itself to a given state of distribution, so that when caused to assume any other state of distribution, an attractive force ensues between the bodies whose electrical condition is thus changed, producing what is termed an electrical discharge. There are others, on the contrary, who have supposed electrical action to be merely a species of vibration in bodies, or to consist of impulses propagated through a universally present medium, and which medium they suppose to pervade all space.

11. But it is not necessary to our present purpose, to discuss the merits of these different views, since every theory may be considered as an artificial creation of the mind, for the purpose of classifying and connecting observed phenomena, so as to eventually arrive at more definite ideas of physical causes; the province of human knowledge, (as is justly observed by a most accomplished writer,) being really "to observe facts, and trace what their relations are."*

We may venture, on this ground of theoretical speculation in science, to resort to the following explanation of the phenomena of atmospheric electricity, which seems, upon the whole, to accord with the facts observed in the numerous instances, in which ships have been damaged by lightning.

12. The active principle of a thunder-storm may be considered as an extremely subtle species of matter pervading all nature, being distributed in bodies in quantities proportionate to their several capacities for it, thereby producing a sort of equilibrium of force in every direction: but, inasmuch as it may become disproportionately distributed, by certain natural processes, so, whenever such new distribution arises, then this subtle principle seems to exert a self-adjusting tendency, by which it endeavours to equalize itself by diffusion, either into the general mass of recipient bodies, or into any particular part of the earth's surface, or atmosphere, which may at the time be deficient of its own equivalent quantity. This act of diffusion is frequently marked by a certain train of phenomena, e. g. a reciprocal action takes place between the overcharged and the undercharged bodies, involving all the consequences of a violent expansive force, the effect of which is so rapid and irresistible, that the most compact bodies, if opposing any considerable impediment to the action of equalization, are immediately shattered by it; at the same time, so great an evolution of heat occurs in the course of this discharge, that other substances become ignited, or fused.

The real nature of this wonderful agent is as yet unknown. It has, however, been occasionally termed the matter of lightning, or more commonly electricity, or the electric fluid, in conse-

* Abercrombie on the intellectual powers.

quence of its identity with the cause of the phenomena observed on exposing vitreous and resinous bodies to a peculiar kind of excitation by friction.

13. The conditions incidental to the operation of this all-powerful agency, on which thunderstorms have been found to depend, become, in relation to our present subject, important points of consideration. To trace the laws which regulate electrical actions, has been the endeavour of many profound and enlightened inquirers, for more than half a century. Nor have their efforts been without success; for a copious induction of facts has led to so much valuable knowledge of these laws, that we may consider the approximations to the truth, in this department of science, sufficiently near for any practical purpose.

14. Some substances oppose but comparatively little resistance to the passage of the electric fluid, whilst, on the contrary, others seem to greatly impede its course. Thus the various bodies in nature have been by electricians considered in relation to their transmitting or resisting properties; and, consequently, substances which oppose but comparatively little resistance to the progress of electrical diffusion, (12,) have been termed *conductors;* whilst, on the contrary, those which obstruct it have been termed *non-conductors*, or *insulators.*

15. The conducting class comprises *all the metals;* more especially, concentrated acids, well-burned charcoal, *wood* in its ordinary state, saline fluids, *hemp*, stones, smoke, steam, and highly rarified air. If any of these substances, whilst touching the ground, be connected with the conductor of an electrical machine during the time at which a current of sparks is passing from it, then the sparks will immediately cease, the electricity being transmitted by them to the earth; an easy and striking experiment.

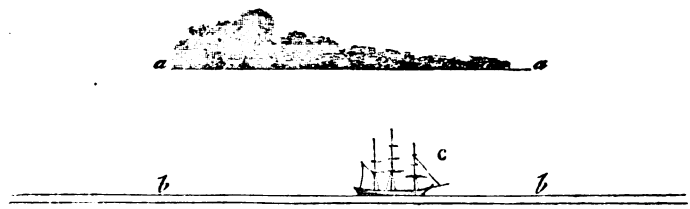
16. In the non-conducting or insulating class, we find all *vitreous* and *resinous* bodies more especially, as also *silk;* dry permanently elastic fluids, such as *air*, baked wood, feathers, paper, oils, wool, hair, and most dry vegetable substances. If whilst a current of electrical sparks is passing, any of these bodies be connected with the conductor of the machine, as in the former instance, (15,) little or no difference will be perceived: the sparks will continue.

17. Although for general purposes the various bodies in nature may be considered as belonging to one or the other of these classes; yet such a gradation of effect is observable in them, that the *conducting* or *insulating* power of some substances, when compared with that of others, may be considered imperfect: hence arises a sort of neutral class, which may be occasionally referred to either of the former. Thus the conducting powers of wood, hemp, stones, and the like, may be considerable in cases of

ordinary electrical accumulation, but of no great consequence to a more powerful one.

18. When accumulations of electricity prevail in the atmosphere, their mode of operation, in producing discharges of lightning, may probably be referred to the following principle: If two substances of the conducting class are directly opposed to each other, and are separated by a substance of the non-conducting or insulating class, one of the opposed bodies being insulated, and the other having an indefinite capacity for electricity, that is to say, being connected with the mass of the earth; then the proportionate state of distribution in the insulated body (12) may become deranged in the greatest possible degree, causing at length an intense electrical force (12.)

19. The above conditions (18) are found in nature, in the relative position of the sea and clouds, and intervening air; so that when, from any cause, an accumulation of natural electricity takes place in the atmosphere, or the contrary, and heavy masses of vapour become evolved, we have immediately an insulated conductor; let a cloud, as *a a*, be opposed to a conductor of indefinite



capacity, as *b b*, the surface of the earth, the air from *a* to *b* being an intervening insulated medium; hence results a charged battery of enormous force, and the attractive tendency of the oppositely charged surfaces becomes at last so irresistible (12) that the accumulated electricity, in endeavouring to regain a state of proportionate distribution, breaks down the intervening air, *a b*, in its weakest point, with a terrific and heavy explosion, falling directly either upon the surface of the sea or land; or otherwise through any elevated body, *c*, which may happen to be immediately within the sphere of action.*

20. The year 1752 constitutes an important era in the science of electricity: from the celebrated discovery of the principle above mentioned, (19,) under the form of the Leyden Jar. The

* When masses of vapour are *not present* so as to form an insulated conductor, the conditions may then be considered to be merely those of a conductor of indefinite capacity in contact with an insulating charged medium, the air; which may be exemplified artificially, by employing a square of glass, previously electrified, to represent the atmosphere, and placing it on an extended surface of tinfoil. If, under these circumstances, certain natural changes occur in the electrical conditions of the respective bodies, (the earth and air,) a quantity of electricity may be caused to pass rapidly upon some given point of the earth's

natural philosopher was from this time furnished with a ready means of concentrating a large quantity of electricity, produced by artificial methods, so as to discharge it upon, or through bodies, with an instantaneous and violent explosion. When, therefore, the cause of lightning became identified with that of ordinary electricity, and the gigantic attempt of Franklin and others, of actually drawing down from the clouds the matter of lightning, had fully succeeded; the effects produced on bodies by these minor electrical discharges, together with the laws of their action, acquired a new interest. Thus most important inquiries into the laws and operation of natural electricity were successfully carried on by artificial means.

21. In the course of these researches it was found:—

First, That in every case of electrical discharge, there are invariably two opposite points of action, *one from which* the electric matter may be considered to proceed, and *another toward which* it may be supposed to tend.

Secondly, At the instant before which the discharge takes place, the stream of electricity in the act of moving to restore the equilibrium of distribution, seems, by a wonderful influence, to *feel its way, and mark out, as it were, in advance*, the course it is about to follow; which course is *invariably through the line or lines of least resistance, between the points of action.*

22. Some further evidence from experience, of damage by lightning, may serve to render these facts evident:—

(p) The Brig Belleisle, of Liverpool, in November, 1811, was lying afloat, abreast of Mr. Evans's yard, at Bideford, in Devonshire, when a vivid flash of lightning shivered her fore-topmast and foremast, tore up the forecastle deck, and struck a hole through her starboard side, starting several butts in the bends, and *from whence it passed into the sea.*[16]

(q) The United States ship Amphion, Blone, master, of, and thirteen days from New York, bound to Rio, was struck by lightning on the 21st of September, 1822; the lightning descended the mizenmast, destroyed the compasses, splintered and tore in pieces the ceilings, bulk heads, and rudder trunk, as well as most of the cabin furniture, it shivered two of the hold beams, and passed out *through the quarter into the sea.*[17]

(r) His Majesty's frigate Palma, commanded by Captain

surface, or reciprocally; thereby producing that peculiar form of meteor, termed more particularly a fire-ball, and which has been observed to occur, although rarely, even in serene weather. In a similar way, the luminous appearances frequently observed on the pointed extremities of a ship's masts and yards, are referable to the gradual process of electrical equalization, and which may sometimes occur, even without the presence of clouds: whatever form, however, these phenomena assume, they may be all considered as originating in the same source, the tendency of the electric agency to a state of proportionate distribution, until an equilibrium of force in every direction is attained.

16. From the late Mr. Pyke, of Bideford.

17 Extracted from the log of the brig Mirabiles, and given to W. Lockery, Esq., comptroller of the customs at Plymouth.

Worth, was struck by lightning in 1814, in the harbour of Carthagena, Spanish America; the fore-topmast was knocked over the side; the lightning descended beneath the hoops of the mast without hurting them, as far as the main deck; here it fell upon the wet cable, which had been just shortened in, and which was lying against the after beam; in doing this, it knocked out a piece of the beam, and *finally passed by the wet cable out of the hawse-hole into the sea.* It was perfectly calm at the time; and the lightning, besides striking the ship, was also observed to *strike down upon the sea,* directly, several times, at a *distance from the ship.*[18]

(s) In January, 1830, H. M. ship Etna was struck by lightning, in the Corfu channel, in the Adriatic: in this instance, three terrific explosions fell upon a metallic chain attached to the mainmast, and *passed into the sea,* without damage to the vessel.[19]

(t) The packet ship New York, in her passage from New York to Liverpool, was struck by lightning twice in the same day, April 19, 1827.

The first explosion shattered the main-royal-mast, and masthead, penetrated the deck, demolished the bulk-head and fittings below, then dividing, one part fell on a lead pipe, which it traversed as far as the side of the ship, and from there *passed out into the sea,* after starting the ends of three four-inch planks.

The other portion entered one of the after-cabins, where it shivered in pieces the plate of a large mirror, without damage to the frame; it fell upon a piano-forte, which it touched with no very delicate hand, leaving it dismounted and out of tune; thence it passed through the whole length of the cabin floor, which was at the time wet with water, and out of the *stern windows into the sea.*[20]

(u) The second explosion fell upon a spike and chain, subsequently attached to the mast, and, after partly fusing, and disjointing the chain, *passed into the sea,* without further damage to the vessel.[21]

23. We may observe in these, as well as in the instances of damage by lightning, given in the former paper—

1st. That the points *to* and *from* which the electric matter is passing, may be considered as being *out of the ship,* i. e. (19,) in the sea and atmosphere. Accordingly, all the cases just given, particularly prove this fact;—that the ship is merely an intervening object.

2d. That the points through which the explosion is experienced, are invariably in the *line* or *lines* of *least resistance* between the points of action, that is, through the best conducting lines; cases

18. Captain Worth, R.N.
19. Extract of a letter from Captain Lushington, then commanding the Etna.
20. Liverpool Chronicle.
21. Idem.

(r) (s) (u) more especially illustrate this, and a similar result may be traced in all the others.*

24. If we examine still further, the circumstances attending these and all other cases of damage by lightning, on ship board, we may remark, that the greatest mischief always occurs where good conductors of electricity cease to be continued, as if whilst occupying the good-conducting substances the electric matter was transmitted in a low state of action, and again concentrated with intense force at the instant of leaving them, thereby producing all the disastrous consequences of an expansive agent. The damage, therefore, happens usually, *not where good conductors of electricity happen to be placed*, but *where they are not present.* Hence the mariner has to contend with a constantly exploding principle, which continues its devastations in all those points where it ceases to be freely transmitted, and which, by providing for itself a passage between the points of action, invariably pursues the track which, upon the whole, opposes to it the least resistance.

25. Such effects being constant, not only on ship-board but on shore, it becomes a great question in science, how far it would be prudent to provide for the electric matter an efficient line of conduction between the points of action, which line by affording the least possible resistance to the progress of the electric matter, would allow the process of equalization to proceed without damage to the mass of the vessel, on the principle that persons dreading an inundation would provide a capacious channel for the water to flow through; an idea as is well known first suggested by the celebrated Franklin, and since carried into effect with considerable success, the conducting line being denominated a *lightning rod.*

26. The mere application, however, of a metallic rod to a building, or to a ship's mast, might not, alone, be of any considerable moment: there are many other conditions to be fulfilled, without which, such a rod would be altogether useless. In defending a ship more especially from lightning, the general principles which suggest themselves are,—to perfect, first, the conducting power of the masts, which, together with that of the rigging, is comparatively small, but which having some power of conduction, (15,) and constituting at the same time the most prominent points, would, from their necessary position, transmit the electric matter with damage to the hull:† this being accomplished, it is further requisite to connect, by efficient conductors, the masts thus defended, with the copper expanded over the bottom of the vessel, or with the sea; and, finally, to connect in a similar way, all the detached metallic bodies in the ship, both with each other

* The only electrical force which can be conceived to belong to the vessel itself, is that depending on the opposite electrical state of the general mass. The ship can only, however, be regarded as a mere point of the great surface influenced, and which, disconnected with the vast capacity of the surrounding sea, is evidently of no great consequence.

† See all the foregoing cases.

and with the general system, wherever such can be effected. In this way we complete the conducting power of the whole mass, and remove, as it were, all resistance to the process of electrical diffusion.

27. If we reflect on the conditions under which ships are placed, in respect of atmospheric electricity, it will appear evident, that of all artificial elevations, they are the most open to damage by lightning; at the same time, however, by a judicious employment of the above principles, they may be the most effectually guarded against its devastations. Unlike buildings on shore, which are frequently surrounded by other projecting bodies, and sometimes by trees, hills, and the like, whose irregular forms greatly facilitate electrical diffusion, ships are placed on what may be considered as a vast conducting plane. Thus as they offer the only pointed projections, which extend sometimes above two hundred feet into the air, they are necessarily and directly exposed to the operation of atmospheric electricity, (fig. art. 19,) without being in a condition to palliate its fury. Nor is this all: they are destined to be placed under a variety of new circumstances, and, laden with rich cargoes, to traverse latitudes in which lightning is very prevalent.

By completing the conducting power, however, throughout, we may place ships in a state of greater security even, than can be usually obtained for stationary elevations on shore.

28. In the application of lightning-rods to buildings, it is quite essential to preserve to the rods a perfect freedom of action; this is usually effected by connecting the rods with deep wells of water; these acting as uninsulated conductors, obviate in a great degree the obstruction arising from the imperfect conducting power of the ground. When this is not attended to, and the ground is at all dry, the advantage likely to be derived from a conducting rod is somewhat uncertain; and damage to the mass of the building may possibly still ensue.

This imperfect conducting power of the ground is well illustrated in the case related by Mr. Kinnersley, of a conductor struck by lightning on the house of a Mr. West, at Philadelphia, where, notwithstanding the continued rain, the electric light was seen at the foot of the conductor breaking over the pavement. The point of the conducting-rod on which the lightning fell was partially melted.

29. Now, a body which actually floats in a uniformly conducting substance, such as sea-water, may be defended with a great degree of certainty. The circumstances, also, under which many of the separate metallic bodies in a ship are placed, tend still further to increase the security. Thus, all the metallic bolts, together with the iron knees, and which enter so abundantly into the construction of his Majesty's ships, may be all considered as tied together in one vast conducting mass, by the copper expanded on the bottom, or at least sufficiently so. We have therefore only to connect the masts, when made good conductors of electricity, with

these masses, by means of adequate metallic bands, passing in appropriate directions, and we immediately provide the most effectual security against the extensive damage from lightning so frequently occurring on ship-board.

30. It will further appear, on due consideration of the principles above stated, that the removal of resistance to the electrical diffusion in all directions, is the only principle on which we can rely with safety, in our attempts to defend buildings and ships in thunder-storms. Many persons, however, have been led to suppose, that the ill consequences arising from lightning would be best avoided, by placing balls of glass, and other non-conducting bodies, on the mastheads, or on the most exposed points; a notion which, although entitled to investigation, seems altogether fallacious; indeed, it will be found quite at variance with all experience, as will be explained in the course of these papers. Surely, the obstacle, or other assumed influence of any insulating substance of this kind, could have no appreciable value in resisting an agency such as the matter of lightning, the action of which, depending on an overwhelming force, exerted perhaps between 100,000 acres of electrified clouds and the surface of the sea, (19), is so powerful as to break through a mile or more of dense air; the most perfect, if not the most compact of all insulating bodies.

(To be continued.)

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

NOTES ON THE STATE AND PROSPECTS OF SOCIETY IN NEW SOUTH WALES, *with an Historical, Statistical, and Topographical Account of Manilla and Singapore, by* ALICK OSBORNE, *dedicated to the Medical Officers of his Majesty's Navy.*

THAT the state and prospects of society in every part of the world, have become objects of intense interest to all enlightened minds, the avidity with which travels, voyages, and all works promising information relative to them, are sought after, is a sufficient proof. The philosopher and the philanthropist find in them fresh subjects for contemplation, and ever-fruitful incitements to action. It will doubtless be urged, that curiosity is often the sole impulse to the perusal of these publications; but curiosity thus directed is, in itself, commendable, as implying a thirst for truth and useful knowledge; and when this is satisfied, other and nobler feelings warm the heart;—a sympathy with the distresses of the less favoured portions of the human race, an earnest desire for their amelioration, and a virtuous and energetic co-operation with all those who devote themselves to that noble object.

To trace the progress of nations from their infancy to their maturity, to observe on what unpromising materials were laid the foundations of the mightiest empires; and yet, that, as they grew, their power became consolidated by virtue, by magnanimity, by heroism, and by judicious laws, will always form one of the most delightful employments of the enlarged and philosophic mind. On these accounts the histories of Rome and Greece are recommended to the study of youth; and, with great propriety, form the basis of their historical knowledge. If the progress of society in nations passed away be interesting; if we think it important minutely to examine the records of ancient states that have no longer existence, and never were associated with our own; yet, more interested, assuredly, should we feel in the growth of communities cotemporaneous with us, and of which we ourselves have laid the foundation. Thus, every new delineation of American society is received with eagerness. The experiments of our transatlantic brethren in agriculture, in naval art, and, above all, in *legislature*, become the subjects of intense thought, and interesting speculation, to all reflecting Englishmen; and, though the associations of punishment and degradation, mingle their gloom with our contemplations of the embryo Australian nation; yet, because we planted the germ, it becomes our duty to watch its expansion, and to take a benevolent pleasure in seeing it yield fruits that are free from the poison which imbued its root.

For a very long period, our possessions in the immense insulated tract of New South Wales were considered, by the greater part of the people of England, as a *den of thieves*. The name of *Botany Bay*, so far from conveying any pleasing ideas of ocean-scenery, adorned by the choicer beauties of vegetation, among which the votaries of one of the most useful and innocent of sciences might delight to indulge their researches, excited in the mind only images of the most revolting character. The haggard countenance of confirmed guilt, looking sullenly forward to the end of its banishment, with the demoniac determination of committing new crimes; or the bitter tears of hopeless exile, unpitied and unseen; the clank of chains, or the deeply-breathed curse of impotent revenge at their infliction; were the only sights and sounds which presented themselves to the imagination, when casting a glance towards this remote colony. We forgot its extent, or looked upon it but as an immense moral desert, sustaining only the upas of crime. We inquired not if its climate were salubrious or pestilential; the air was breathed by guilt, cut off for ever from civilized society, and therefore to our ideas it was polluted and baneful.

Thanks to a few recent enlightened and intelligent visitants of this abode of the condemned, the deep shades of the social picture have been relieved by many gentle lights. It has been proved, that virtue has not quite forsaken the banished; that, when far

from their native country, conviction has visited their minds, repentance has followed, opportunities of shewing amendment of principle have been afforded, correct and steady conduct has given testimony to its existence, and the degraded criminal has advanced himself from contempt, thraldom, and misery, to respect, freedom, and comparative comfort.

Amongst the writers to whom we are thus indebted, stands foremost Mr. Campbell, whose highly interesting narrative of his two years' residence in the colony, besides its animated delineations of that portion of Australian society which owes its origin to the source just alluded to, contains a great variety of important and curious information, which cannot be too highly valued by those who contemplate emigration. Amongst these writers, too, though his book is not so large, we must rank Mr. A. Osborne. Both these gentlemen are members of the medical profession, and both honour it by the humanity of their sentiments towards their fallen fellow-creatures. Mr. Osborne's work occupies no more than ninety-six pages altogether, and thirty-two only of these are devoted to New South Wales; but in this small space is contained much intelligent and pleasing observation. In proof of the philanthropic spirit in which it is written, as well as because it declares two or three facts worthy of consideration by those who possess the power of influencing the fate of the unhappy convicts, we extract the following passage:—

"In my humble opinion, the condition of the prisoners is sufficiently penal. With small farmers, emancipated prisoners, &c., they are tolerably comfortable; but with the *more opulent* farmers they receive the government ration, which is sufficient to subsist them, but not comfortably: they live in a wretched hut, neither wind-tight nor water-tight, (the climate indeed is mild and genial;) their beef and flour is weighed out on Saturday morning; the meat will speedily get noisome from ants, cockroaches, &c., and, having no place of safety to keep it in, they are obliged to boil it all at once, eat away as long as it lasts, and live Thursday and Friday on short commons. There is a certain allowance of clothing annually, which is of course sufficient; yet it is melancholy to meet, in remote places, carters, labourers, &c., in all the squalid nakedness of abject poverty. This picture is not overcharged, and I regret to say, far too general. Servants are frequently sent some distance from home with carts, cattle, &c., and are absent perhaps a day or two: it is not usual to make any extra provision for them, and they subsist on the elemosynary supply of some poor cottager, who is probably obliged to borrow or steal the master's fatted calf, to feast his hungry servants. It is much to be wished, that some plan could be devised, to induce the master to issue provisions daily; and where there is a certain number of servants, one might be excused work till dinner time, to cook for the rest: this with a patch of ground *enclosed* at the huts, for pumpkins, onions, cabbages, &c., would greatly ameliorate the condition of the servants, without entailing the slightest extra expense on the masters; besides the sweet satisfaction it must be to a well-regulated mind to witness the unfortunate beings comfortable, whether they deserve it or not. They may be, and frequently are, thankless, careless, reckless, and improvident; but it is wonderful what a change might be effected by steady, unremitting perseverance in an uniform

course of kindly benevolence; they must be less than human, who would not quickly feel and appreciate it."

To these sentiments, from which none possessing a particle of christian charity can dissent, Mr. Osborne adds, with appropriate animation—

"At all events, it is worth the trial; the very exercise of humanity will add twenty years to a man's life; and I can fancy I see the venerable octogenarian with smiles usurping the place of wrinkles, spending his last days in the comfortable retrospect of having endeavoured to alleviate human misery, and at length, like a child wearied with play, descend with cheerful resignation to the everlasting sleep, accompanied by the prayers and benedictions of the bondman and the unfortunate."

None, assuredly, can object to this admirable mode of attaining longevity, and yet retaining the graces of youth: we have only to express our regret, that Mr. Osborne should suggest the idea that a life *so* spent would be closed by an "*everlasting sleep*," when the dispositions it displays are so fit to awake to *everlasting activity*, in a world of happiness. We must cherish the hope that this is an error of the pen, not a *belief* of the mind. The preceding observations relate, as will be seen, to the male convicts only:

"Of the female prisoners," says Mr. O., "I have little knowledge; they are only required to labour two years in one place, to entitle them to a 'ticket of leave.' The unassigned servants are kept in the factory of Paramatta, and generally amount to between five and six hundred; they are regularly employed in spinning wool, and from hence, also, after a certain period of good conduct, they obtain the 'ticket of leave;' and many have the good fortune to get married, and comfortably settled from the factory. It is gratifying to record, that their subsequent conduct makes some amends to society for their former life; most of them pursuing a steady, exemplary course of conduct, in the various relations of wife and mother; a strong proof, in my mind, that very many of these unfortunates are the victims of circumstances, which they could neither resist nor control, and not habitually so profligate and depraved as they are generally supposed to be."

Mr. Osborne's situation as surgeon of a convict ship, gave him the best opportunity of observing the various characters of the exiles, and we find him thus comparing the English with the Irish criminal:—"The former polished, artful, and vicious; the latter simple, *innocent*, and as tractable as a child." The following anecdotes, it must be confessed, afford a favourable specimen of poor Pat's kindly dispositions in the midst of his unhappy circumstances, of his practical philosophy in enduring them, and his grateful recollections of kindness:—

"In one of my voyages from Cork, there happened to be among the rest, a father and two sons, for sheep-stealing. Old Murtagh was advanced in life, the sons fine athletic young men. Two days after embarkation, I observed Rory, the eldest, eyeing me very wistfully, but apparently unwilling to trespass. I beckoned him aft, and desired to know what was the matter, hoped the old

man kept up his spirits, &c. Emboldened by my manner, he simply begged, 'if your honour would be pleased to divide the bolts between me and Dennis, for the ould man's getting tender, God help him! and I'm afeard he wont get to the end of his journey any way.' I felt ashamed of having overlooked the old man so long," adds Mr. Osborne, "and instantly removed the old man's irons, amidst the prayers and benedictions of the party."

In an excursion made by Mr. O. from Campbell Town to Appin, he was gratified with the following instance of Irish gratitude:—

"On approaching the door of the inn to alight, I observed a rough, round, bush-headed Hibernian ready to take the horse, and scrutinizing me rather earnestly at the same time, I recognized him instantly. 'Riley, is that you?' 'It is, your honour, me sure enough; but, och, Doctor jewel'—and, bolting off to the rear of the premises, hollowing out with might and main, 'Miky, Miky, bad luck to you, run man, its our own doctor come again!' Returning promptly with Michael, they were overjoyed to see me, and I was well pleased to see the poor fellows so comfortable; they had been transported from Ireland in 1825, went out under my superintendence, served out their time, and were now working for themselves. 'Well, Riley, how have you got on since I left you?' 'Bless'd be God, your honour, I hadn't much cause to complain; I sarv'd all my time with two masters, and, barring the want of the blanquit in could weather, and the belly often very light, I got on pritty well; sometimes it was hard enough, but I nivir went before the gintlemin to complain; for, being no scholar, your honour, I didn't want to come under any rigulation, good or bad; and now I've got the rin of the house here, and if it wasn't for the thoughts of the woman and child at home, your honour,' (scratching his head, and turning half round, to hide the moisture gathering in his eyes,) 'I believe I'd be comfortable enough.' He had been a soldier in the 87th, and wounded at the battle of Barossa; he heard the regiment had got into trouble at home, which gave him great concern. This native unsophisticated Hibernian had neither envy, hatred, nor malice, against any one. Sometimes, he said, when the master would be cross, there would be a kind word put in by the mistress; and if it wasn't that the *women* have all *their own way* here, it would be a *very bad country*, your honour."

Should any lady, by extraordinary good taste, and good fortune, happen to glance at this number of the Nautical Magazine, she will hardly forget the compliment thus artlessly paid to the influence of her sex.

The capital of the territory, Sydney, is described

"To be rapidly increasing in size and splendour, and its fair proportions to excite the pleasing astonishment of all strangers, who had formed their ideas of it from examples of European colonies in the 'olden time.' In forty-five years," observes Mr. Osborne, "has a magnificent city sprung up in a wilderness; good roads branching off in all directions, the sails of commerce from all parts of the world furled in the harbour, woods and forests giving way to golden harvests, sheep and oxen brousing where formerly the kangaroo could scarcely find space for its salient perambulations. The shops in George-street and Pitt-street vie with the most fashionable magazin des modes in Regent and Bond streets; and immediately in the vicinity of the town are some very pleasant walks and drives. The pedestrian will be delighted with the promenade round the government demesne to Mrs. Macquarie's seat; the scene is highly picturesque and beautiful; the path leading along the shore, past the garden,

(which is always courteously open to all respectable persons,) affording splendid views of the shipping, Garden Island, the various sheltered islets on the northern shore, and in the extreme distances the precipitous bold cliffs of 'The heads of Port Jackson,' surrounded by a light and rather elegantly-constructed beacon. This light-house on the south head is an attractive object, about seven miles from Sydney; the road to it is excellent, and is the frequent, nay, general resort of equestrians of all orders.

"The road to Botany Bay is not so good, but it also possesses its attractions in a very neat monument, erected to the memory of La Perouse by Monsieur Bougainville, in 1825. There is also a tablet erected to the memory of Captain Cook, by Governor Brisbane, on the spot where that distinguished navigator first landed in 1784."

To General Darling, Sydney, it appears, is indebted for that invaluable benefit, a plentiful supply of excellent water, brought from a lagoon near Botany Bay. The engineer, who, under the auspices of this public-spirited governor, accomplished this most important object, was a Mr. Busby. The value of this service may be estimated by the fact, that, previously four-pence a bucket was paid for muddy water, and that not always to be obtained; yet, strange to say, the General is stated to have met with violent opposition to his design, and to have carried it forward contrary to the "expressed opinions of nine-tenths of the population."

The commercial prospects of the Australian capital are represented to be highly encouraging, but to be in danger of becoming overcast by a recent order issued from the government at home, for the future sale of all lands.

This, Mr. Osborne very justly concludes, will greatly check the tide of emigration, and he therefore proposes to obviate the evil

"By granting lands in fee, subject to a nominal quit-rent after seven years, and making a very low charge for prison servants: for example, for every male servant assigned, where less than five, £1 sterling per annum; for more than five, and under ten, £1. 10s.; for more than ten, £2 each; and tickets of leave, £2 per annum; and, finally, all mechanics, artisans, &c, to be hired by tender to the best offer." This last proposition, from the instances given of their power to increase the revenue of their employers, seems highly worthy of attention. "Few," adds Mr. Osborne, "will question the justice or expediency of some such measure, though, no doubt, a mighty clamour would be raised, and objections started, particularly by those who find the present system work well, and happen to have the number of servants they require; but many are not so fortunate; and I do think the present proposal would not be altogether unpopular."

Many other useful observations on the all-engrossing subject of emigration might be extracted from this little work, but our limits oblige us to content ourselves with referring inquirers interested in it, to the book itself; and hasten to close our notice of it with a few passages from the "Account of Manilla."

"On the 21st of November, 1832, Mr. Osborne embarked in the Planter, (the vessel in which he had sailed from Portsmouth on the 15th of June of the same year,) for the capital of the Philippines, and eight days after got sight of

Norfolk Island, the 'ultima thule' of Australia. Norfolk Island is thirty miles in circumference, and two thousand feet in height, covered with a species of beautiful pine, different from those known either in Europe or America; the coast is rugged and precipitous, and landing at all times difficult, is frequently dangerous, and even impracticable. It is at present the settlement where incorrigible offenders are sent from Van Diemen's Land. No free settlers are consequently allowed to establish themselves there; but the island is governed with judgment and benevolence by Lieut.-Colonel Morisett.

"At daylight on the 7th December, the Island of Tucopia was discovered; it is small and high, in the form of a compressed cone, with precipitous cliffs round the eastern side, and some lofty trees thinly scattered on the ridge at the southern extremity. As the bearings of the ship were altered by compass to south, the island assumed the shape of a saddle; the north-east end much the highest, and extending longitudinally to the south-west. Its altitude is computed to be three thousand feet, and its circumference twenty miles: it is clearly visible at the distance of eight leagues.

"This island is placed on the charts nearly a degree east of its true position; lying in latitude 12° 15′ S., and 168° 35′ E.

"The following morning, before daylight, the Planter hove to, close to Duff's group, consisting of ten or more small rocky islets, the centre one being the largest, about five or six miles long; they extend in a chain from south-east to north-west, about eight or nine leagues. We perceived," remarks Mr. O., "no broken water, or appearances of reef, so that probably there may be deep water, and channel between them. These islands form the northern boundary of the New Hebrides, or Charlotta Archipelago, and are remarkable for the shipwreck and destruction of the French navigator, La Perouse, and his unfortunate companions, in 1788."

Harper's Islands are in latitude 6° 45′ north, and longitude 157° 50′ east; the largest is described to be twenty miles long, extending in an elevated ridge from south-east to north-west, about two thousand feet, and sloping gradually towards the sea, covered with wood; the others small and low, situated at the north-west extremity of the larger one. At seven, on the 1st of January, the Planter made Cape Espirito Santo, the northern extremity of the Island of Samar, and at seven in the evening, entered the Straits of San Bernardino, which separate Samar from Luconia. Five days were occupied in working down these straits, and on the 6th of January, at 11 A.M., she anchored off the town, in the bay of Manilla.

"The first aspect of the city from the sea is by no means prepossessing; the town and adjacent country being barely above the level of the ocean. It is built on the eastern shore of a magnificent bay, about ninety miles in circumference, which receives, besides many other larger rivers, the Passig, on the south side of which stands the city, or citadel; but the town of more considerable extent occupies the northern side, and communicates with the city by one bridge only, a little to the eastward, outside the walls of the city.

"The streets cross each other at right angles, are flagged at the sides, and kept in very tolerable repair. The houses (the Moorish quadrangle of two stories) have balconies, verandas, and sliding sashes, set with oyster-shell in place of glass, which effectually excludes the burning sun, and admits on the upper story a softened light, though nothing of course can be distinguished through it.

The saloon or front room is furnished, in addition to the usual sofas, with five or six handsome globe lamps, depending from the ceiling, and lighted every night. The servants have no apartment appropriated to them, and generally sleep on the balconies, or on a mat on the floor. The market is held daily, (Sunday not excepted,) and most abundantly supplied with fish, meat, poultry, game, fruit, and vegetables of all kinds at a cheap rate. Frogs (the hind quarters are the delicacies) and unhatched ducks, and chicks, are in high estimation, particularly amongst the Chinese. There are no vexatious tolls or market-dues of any description.

"The Captain-General and Governor of the Philippine Islands is solely an executive officer; he possesses neither the control nor management of the finances, but receives a salary of thirteen thousand dollars, something under three thousand pounds per annum. His patronage is extremely limited; nothing can be done, no appointment made, without the authority of the 'Counsel for Affairs of India' in Spain: consequently delay, and a thousand obstacles are presented to improvement or change.

"Murder and sacrilege are the only crimes punished with death; other crimes, working in chains for a certain period, or for life. The most extraordinary delay frequently occurs in passing sentence in criminal cases. One instance is mentioned: a criminal convicted of murder eighteen years previously, became useful to the jailer, and was employed by him to go to market and cater for the other prisoners; a thousand chances of escape presenting themselves. One Friday morning, on his return, the jailer told him to go to the 'chapella,' as sentence was pronounced, and he was to be executed on Monday following."

The ladies of Luconia are described with much vivacity, and certainly form a very interesting part of the traveller's picture of Manillan society.

"A rather broad, angular face, olive colour; large, black, clear eye, long fine eyelashes, thickish lips, and teeth, when not blackened with the betel-nut, white and even; beautiful long black hair, turned back from the forehead, and rolled up in a knob behind, are their characteristics. Beautiful hands and feet; graceful, erect, easy carriage, with gentle swing of the arms, symmetrical figure, and modest demeanour. Most of the ladies play the guitar, very few the harp or piano, and many add with considerable effect to the soft tones of that simple instrument, the dulcet intonations of a voice naturally soft, sweet, and plaintive. There is little of what with us is termed society in Manilla; no set parties, rarely public balls; but it is usual for the ladies to call on their intimate acquaintances in the evening, enjoy an hour or two's conversation, partake of chocolate, or 'dulce,' (a variety of sweet-meats,) and their husbands call about ten o'clock to accompany them home. The children generally accompany mamma; they are never invited, but always welcome: this visiting is called the 'Tertulia.'"

We extract the account of the Cemeterio, and with it must bid adieu to this very intelligent little book:—

"The Cemeterio stands about a mile from the city, off the road, on the left, as you go to Santa Anna. It is enclosed by a high, broad, circular wall, and laid out in walks, and ornamented with flowering shrubs and evergreens. The wall contains niches, or rather cavities, for 568 coffins, thirty-six of which are reserved for the exclusive occupation of the clergy. At the lower end of the walk, fronting the entrance, stands a beautiful circular chapel, surmounted by a cupola and cross. The interior of this little chapel is chaste and tasteful;

walls pure white, with gilt cornice and moulding, and the floor tesselated with white and green tiles. On one side of the altar, on the right, is a mausoleum for any governor who may depart this life in office, and a similar one on the left, for the archbishop: the one pointed out by the emblems of power and justice, the sword and scales; the other ornamented with the sculptured mitre, missal, and crozier. This chapel is solely for the performance of funeral solemnities. Behind the chapel is a small cemeterio for children, and behind that the 'Ossario,' where the bones are deposited, after having lain the accustomed time in the tomb, or been removed for a new occupant. There is something repugnant to our nature in thus exposing the last frail remnant of mortality to the light of day, and the gaze of idle curiosity. Some of the skulls had the hair still attached, and the hollow sightless orbits seemed to my imagination to carry a silent reproof to the disturbers of the charnel-house. Still there was no disagreeable smell, no mouldering flesh, to impress one with the idea of premature exhumation. When the body is deposited in the wall, the coffin is filled with quick lime, and also the space around it; it is then firmly built up for two or three years, or till the space be again required. One of these resting-places costs sixteen dollars for the accustomed time, but may be procured for an *indefinite* period at a *commensurate* expense."

What expense can be *commensurate* to an *indefinite* period is not easily ascertainable; but if this be an approach to a *Paddyism*, it is found in company with another which throws it into the shade.

"A Scotchman of our party," says Mr. Osborne, "complaining of the hardship of being ejected so soon, declared he would rather pay ten times the sum, and *have it for life*."

Mr. Osborne is fully sensible of his companion's unintentional joke, for he has marked it in italics; but he is not aware of his *own*, and indeed it is *no* joke to pay, for an *indefinite* period, a *commensurate* sum. But, to proceed—

"The people in attendance present a bouquet to the visiters: we received one, and made a small pecuniary acknowledgment. Whilst there, we saw a man coming down the avenue, with a tray upon his head, accompanied by a pensive-looking young woman. He deposited the tray at the door of the chapel, and we were surprised to see the body of an infant, apparently about a fortnight old, dressed-out in tinsel and flowers, and wrapped in a fine muslin napkin: the mouth and eyes of the poor little emaciated figure were open, and it appeared the image of pain, of sorrow, and suffering mortality, in melancholy contrast with the finery of its apparel. The clerical functionary soon made his appearance—a fat, vulgar, round-faced personage, below the middle stature. He took up his position in the porch of the chapel, facing the body, and hurried over the short formulary of sepulture without a book. It was then taken and deposited in the earth, on a terrace outside the wall, about one foot beneath the surface. The female, she might be about twenty-two years of age, holding by the hand a dusky cherub, of about three years, knelt beside the grave, looked wistfully in, and requested them to pull the napkin over the mouth, to keep out the clay. She breathed no sigh, ejaculated no prayer, but remained fixed in the same attitude about five minutes, then crossed herself devoutly, and moved slowly away after her husband."

We must here close this unpretending, but amusing and useful, little volume.

SOME DESCRIPTION OF THE METHODS USED IN POINTING GUNS AT SEA. By Captain John Harvey Stephens, *Royal Marine Artillery*. Dedicated by permission to Sir J. R. G. Graham, Bart. &c. Murray. 1834.

This little work is intended as an introduction for *young* officers to the science of naval gunnery. It commences with an explanation of the various sights applied to guns; the angle of dispart, and the method of ascertaining it; the line of metal, &c.: principles which an officer should be thoroughly acquainted with as soon as possible. The author next treats on "hull" and "chase firing," and "the firing of shell from guns;" and concludes with observations on Congreve rockets and "Ricochet firing." The different subjects are illustrated by diagrams, and are dealt with in a clear and concise manner. It is an unassuming and valuable little work—one which should be in the possession of every young naval officer.

BUBBLES FROM THE BRUNNENS OF NASSAU. By an Old Man. Murray. 1834.

Dr. Johnson's definition of the word "Bubble," (from the Dutch word "Bobbel,") as we find in the title-page of this little work, is "any thing which wants solidity and firmness:" but of such, most assuredly, are not the "Bubbles from the Brunnens," or mineral waters of Nassau, as they come to us from "an old man," for he has contrived to fill them with much interesting material, in the shape of solid information, and useful remarks on people, their manners, and customs. And, as these little bodies bear their treasure over some hundreds of leaves, which compose his work, they reflect with their wonted lustre the brilliant lights of rich entertainment that lie in their way. In other words, to those who are meditating an excursion up the Rhine, we cordially recommend this volume: it abounds with information and amusement. The humble village of Langen-Schwalbach, it is easy to foresee, will become the resort of English visitants, and will have to date its future celebrity from the work before us; for surely it has remained in its own quiet corner of Nassau unseen, and even unheard of, by many a pilgrim of the Rhine. In our next number we shall accompany the author of the "Bubbles" on his interesting excursion.

ON THE EDUCATION AND CONDUCT OF A PHYSICIAN. By Sir Henry Halford, Bart., M.D., President of the Royal College of Physicians. Murray. 1834.

A little essay, the eleventh of the present series, replete with excellent advice, conveyed in elegant language; having for its object the formation of that valuable member of society, a physician as he should be. That inestimable man, who commands "not only a consummate knowledge of the resources of his art—but a gentleness of manner; a sacred reserve as to the affairs of families into which he may be admitted; a delicacy and a chastity proof against all temptation;" the foundations for which are true religion and extensive learning. But the worthy president's essays are well known, and we need make no further observation than, that this adds in no small degree to his high reputation. It concludes with a well-merited eulogium on the late Lord Granville.

MEMOIRE SUR LES ATTERAGES DES CÔTES OCCIDENTALES DE FRANCE, et Précis des opérations Hydrographiques et Astronomiques faites en 1828 et 1829. Sur les Bricks la Badine et l'Alsacienne, par M. le Saulnier de Vauhello Capitaine, &c. Paris, 1833.

"They order this matter better in France," was once the exclamation of Sterne. Now, although the author of the inimitable "Journey" was not thinking of sea charts or coast surveys, when he arrived at the conclusion which led to his "Sentimental Tour," if for a moment we compare the series of beautiful charts of the coast of France with any thing of the kind that we can produce, in spite of all our patriotism, or the love of what is English, we must even then add our testimony to its truth. The "Pilote Français," to which this memoir belongs, contains a collection of charts which, for their elegance of execution and minuteness of detail, stand unrivalled: they are, in fact, specimens of hydrography, such as we should be glad to produce. Compiled under the auspices of M. Beauprè, the enlightened companion of the celebrated D'Entrecasteaux, they reflect equal credit on his talents and abilities, as they do on the government under whose care they are ushered into the world.

To European navigators, nothing can be more important than a correct knowledge of the "attérages," or approaches by sea to western Europe. Until the other day, important as this knowledge is to the navigator, we knew nothing of the deep-water soundings to the west of our own islands, and there yet remains much to be done there. The French, however, have set us an example worth following in the work before us; they have amply completed for their navigators what we hope to see done before long for ours. But the present volume is one which equally concerns them. We have not room to point out all its important features, and we regret it because it is our peculiar province so to do. It contains, in addition to the particulars of the various dangers between Ushant and Cape Finisterre, a voluminous table of soundings, and a general chart of the bay of Biscay, shewing the whole space of M. de Vauhello's operations. The memoir and the chart should be in the possession of every captain commanding a vessel out of England; and we consider ourselves as doing them a service, by telling them that such a valuable work is within their reach.

THE ARCHITECTURAL DIRECTOR, being an approved Guide to Builders, Draughtsmen, Students, and Workmen in the Study, &c. of Architecture. Part I. By John Billington, Architect. Bennet, London. 1834. Second Edition.

The first number of a series, to be completed in twelve monthly parts, on the theory and practice of architecture. We shall have further opportunity of speaking of it, but take the present, to recommend it cordially to those of our readers who delight in this sublime and noble art, as a work containing in a cheap form all they can require. It is illustrated by a great variety of beautifully executed plates, and a complete glossary of architecture.

CHARTS.

DOVER HARBOUR. Surveyed by Mr. John Tucker. 1833. Admiralty. No. 7.

A particular plan of Dover harbour appears to have been beneath the notice of former surveyors, notwithstanding its real local importance, and its being

the grand point of communication between us and our neighbours on the other side of the channel. On other accounts, it was most desirable; and we have now before us a distinct representation of the outlet to the little river Dour, with its adjacent buildings, cliffs, and castle, so renowned in the history of our country. The plan is on the scale of about eleven inches to the nautical mile, and includes the coast from Shakspeare's Cliff, on the west, to about a quarter of a mile eastward of the castle, with the necessary directions and pilot-signals for entering the harbour. It is a very desirable and useful little plan.

THE HARBOUR OF SEVASTOPOL* or AKHTIAR, Black Sea. Admiralty. No. 504. Size 20½ by 10 inches.

With the assistance of the notes of Captain E. Lyons, of H.M.S. Blonde and a Russian MS., this plan has been compiled. It includes Cape Khersonese on the west, and the little village of Belbeck on the east; the scale being an inch and three quarters to the geographic mile.

THE GULF OF BOURGHAZ, Black Sea. Admiralty. No. 500. Size half double Elephant.

This is "after" M. L'Apie, with additional soundings from Captain Lyons. It is illustrated with views, as well as the foregoing, from the pencil of Mr. Tyers, late midshipman of the Blonde, of whose taste and skill we gave a specimen in a former number,†

THE NORTH-WESTERN ANGLE OF THE BLACK SEA, including Odessa, Kherson, &c. Admiralty. No. 502. Size half double Elephant.

The details of the coast in this chart are from one published by the Spanish Government, adapted to the valuable observations of M. Gauttier. It contains, besides, an enlarged plan of the harbour of Odessa from a Russian chart. Our Black Sea traders would do well to look after this and the foregoing plans. We know of no others of that part of the world.

THE PRINCE'S ISLANDS AND ENTRANCE TO THE BOSPHORUS, Sea of Marmara. By Mr. C. J. Tyers, H.M.S. Blonde. Admiralty. No. 497. Size 16 by 17 inches.

The information of Captain Middleton, relating to the shoal of Point Stephano, has been of service in constructing this chart, and navigators would do well to bear in mind to hug the Constantinople shore, when making for the Bosphorus. (See his letter, p. 23, No. 8.) The scale is an inch to a mile.

CAPTAIN ROSS.—A select committee of the House of Commons has been appointed, to inquire into the circumstances of the expedition to the Arctic seas, commanded by Captain John Ross of the Royal Navy, with a view to ascertain whether any, and what reward may be due, for the services rendered on that occasion. Among the names of the gentlemen appointed, we observe that of Sir James Graham and Sir Robert Peel.

PORT WILLIAM.—"A British Seaman," who complained so bitterly in one of our last numbers, of the opposition of the Ship Owners' Society to this harbour, and the friends of it in general, will be glad to learn that that opposi-

* See Vol. ii. p. 183, No. 14, for directions; and a View of Sebastopol, by Mr. Turton, master of the Blonde.
† Vol. ii. p. 161, No. 14.

tion has been removed on the most satisfactory grounds; and that, at a meeting on the 20th March, some resolutions, in favour of the harbour, were proposed by men of high influence, from whom, and the numerous gentlemen by whom they were seconded, we anticipate a speedy realization of this truly national benefit. We cannot now find room for these resolutions.

United Service Museum.—By the third annual report of the committee for conducting the affairs of this institution, we find it in the most flourishing condition. An increase of 330 members during the last year has raised the whole number to 3750; a tolerable proof of the favourable light in which it is considered by military and naval officers. We are also glad to find that the services of the Director, Commander H. Downes, towards its success, have been marked by the council with that approbation they so justly merit. In the report of the anniversary meeting, we observe a proposal by Captain M. Montague, R.N. to substitute the name of United Service Museum for its present title; a proposal, of which we highly approve.

Felipe Bauza.—The memory of Bauza justly claims a tribute from us; for he was devoted to the advancement of our own peculiar calling, Hydrography. As the companion of Malaspina in the celebrated voyage of the Spanish frigates *Descubierta* and *Atrevida*, Bauza laid the foundation of his future fame. Misfortunes of a political cast compelled him to leave Spain, and seek an asylum in this country, where, forsaken by his family, he passed the last ten years of his life. Deprived of those resources which he ought to have enjoyed in the "cold evening of life," Bauza found, in the pursuit of his favourite study, hydrography, an employment which diverted his mind from sorrow. He was preparing to return to those by whom he was forsaken, when he was suddenly carried off by a fit of apoplexy on the 3d of March, leaving them to bewail their neglect in useless lamentation. He died beloved by those around him, who knew his excellent qualities, and his kind and affectionate disposition.

The late Captain Skyring.—Our readers have learnt from the papers the particulars of the brutal murder of Commander Skyring, on the coast of Africa. We refrain from repeating the details of an event only calculated to open afresh the wounds inflicted by it on the heart of his unhappy widow. But they will be pleased, with ourselves, to know that the Lords Commissioners of the Admiralty have granted to this lady a handsome pension, surpassing that to which she was entitled, and have also placed her two children on the compassionate fund; thus marking their sense of the high opinion they entertained of her husband, as a good officer, and (that invaluable gift to society) *a good man*.

Burden's New Steamer.—We announced some time since, that Mr. Burden, a distinguished machinist of Troy, was constructing a steamer on an entirely new plan, from which great advantages were anticipated; it was to be some 300 feet long, with two hulls, shaped thus ⋚ (as nearly as we can define it by four parenthesis types,) or not very unlike two cigars placed parallel to each other, on which the boat rests, with the paddles between the two. By this arrangement the whole force is retained, as the water cannot escape at one side; and as the boat draws less water than others of the same size, it incurs less resistance from the same: those who have observed the Brooklyn Ferry steam-boats will readily understand us, as the plan is much the same.

The boat is now complete, and the first experiment was made on Wednesday week, of which the Troy American thus treats:—

After a sufficient quantity of steam had been generated, the boat was put in motion, came up to this city, turned and went down a mile or two below the city of Albany, and returned to its starting place. Its speed was at the rate of fifteen miles an hour, with but seven revolutions of the water-wheel per minute.

The engine is calculated to make twenty-five revolutions per minute, when necessary. All who were on board the boat were astonished at the ease and rapidity with which it passed through, or rather over the water. Mr. Burden admitted it surpassed his own expectations.

The Troy Daily Press gives the following additional facts, which are not uninteresting at this time.

She has but one engine, and her cylinder is twenty-four inches in diameter. The Novelty has two cylinders, thirty inches diameter each; and the relative power applied to the two boats are as 452 to 1413. We state this, to give an intelligible idea of the quantum of power used by Mr. Burden.

The engine, at the first experiment, on Wednesday, made from eight to ten revolutions per minute; and in an experiment made yesterday, she made sixteen revolutions per minute: the revolutions are capable of being increased to twenty-eight. The number of revolutions per minute gives the boat's speed in miles per hour.

The rudder is a temporary one, and yet the boat turns in less space than ordinary boats. The reason is, that this boat turns upon her centre, that is, in a circle, the centre of which is at the centre of the boat; a common steamboat turns upon her stern, that is, in a circle, the centre of which is the helm. Mr. B.'s boat can be steered with the greatest ease, upon any given line or point. There is no such thing as sheering. Most of the accidents which happen with ordinary boats, in running aground or afoul of other boats, arise from the fact of their sheering; they are not obedient to the helm, (though of the dimension of eighteen feet by five,) and get the advantage of the pilot. Mr. B.'s furnace to his boat will exhaust but eight cords of wood to the trip. These, let it be remembered, are the result of experiments while the boat is yet incomplete, and the machinery in an unfinished state.

The same paper of a late date (Saturday evening) says—

Mr. Burden has been delayed in the construction of his boat three months, owing to the non-delivery of his engine according to contract. It was to have been delivered in August, but did not arrive till a few days since. Fearing the setting of winter, he has fitted up his boat so as to make an experiment, and this morning, at half-past six, starting for New York, where he intends to winter and finish her.

Notwithstanding the unfinished condition of the boat and machinery, the result of the experiments made is, that Mr. Burden has thus far fully realized his expectations. He has not the least doubt, from what has been already demonstrated, that a speed of twenty-five miles an hour could be attained, and that with half the power applied to boats in common use, and with less than half the expense.

We consider the result of this very partial trial as of the first consequence, as it must settle the question, we think, of the success of this improvement, in the mind of every intelligent witness; and it "now can scarcely be doubted, that Mr. Burden's new boat will run from Troy to the city of New York in less than six hours."

She is now lying at the foot of Beach-street, and we advise our readers to visit her; for a greater curiosity, or a more odd-looking craft, in the shape of a "Marine monster," has not been presented them since the arrival of the whale last season at Castle Garden. Figaro says she is to be ycleped the "Sea Serpent."

By the way, some one in Louisville, Kentucky, advertises that he has discovered the fulcrum of Archimedes; and, by studying chemistry and mechanical philosophy, has arrived at the conclusion, he can not only out-do Mr. Burden, but every other mechanical genius of the age, who, he says, have been on

the wrong scent for power. As for himself, he offers to give security that he will move a common steam-boat fifteen miles an hour, on rivers; move a steam-battery of sixty guns in twelve feet water, at twelve miles per hour; cross the Atlantic in ten days, in a power-packet, without stopping for fuel; and ascend the Mississippi at an average of thirteen miles and a half per hour. [Here our friend Colonel Crockett would beat him, for he wades the Mississippi, with a steam-boat upon his back, with more speed;] navigate the Mississippi or Ohio without freight, at eighteen miles an hour; and do divers other enormous feats in that line. We are afraid this gentleman will raise the devil with this fulcrum of his! For our part, we wish Archimedes had kept it to himself.—*Montreal Paper, Dec.* 24.

We learn from Canada, that Captain Brush had been despatched to New York, to examine and report on the plan and capabilities of this boat; some of the steam-boat companies of the upper province being desirous of adopting them. The captain's report is not so favourable as had been anticipated: he states, that, although the passage of the boat through the water is without the slightest disturbance thereof, yet her speed is not above thirteen and a half miles an hour.

It was considered, that, with certain changes and modifications, the contemplated speed might be obtained.

Mr. Burden himself being sanguine of success, had sold the patent, subject to the condition that she should sail at the rate of twenty-five miles per hour.

Although several splendid steam-vessels have lately been launched in the river Thames, we are sorry that we do not hear in any one instance of the adoption of the American plans of steering from the fore-part of the vessel, or of working the paddle-wheels separate, as recommended by our correspondent in our number for January last.—(Ed. N. M.)

Naval Intelligence.

The Royal Navy in Commission.

*** S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 2d Nov. arrived at Vourla. Sailed for Constantinople.

Ætna, S. V. 6—*Act.* Com. W. Arlett, 21st Dec. left the Gambia; 23d Dec. off Cape Roxo.

Alban, St. V.—Lieut. A. Kennedy, 30th Oct. at Demerara, from Berbice.

Alfred, 50—Capt. R. Maunsell, 20th Dec. at Vourla.

Alligator, 28—Captain G. R. Lambert, 26th Oct. arrived at Batavia, from Sincapore.

Andromache, 28—Capt. H. D. Chads, C.B. 7th Feb. sailed for China with Lord Napier and suite. Passenger, Com. E. Younge to join the Melville.

Arachne, 18—Com. G. S. Freemantle, 11th Dec. left Barbadoes for Porto Rico.

Ariadne, 28—Capt. C. Phillips, 5th Nov. at Bermuda. 16th Nov. sailed for Barbadoes. 3d Dec. sailed from Barbadoes for Martinique.

Asia, 84—Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus 9th Feb.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, sailed with 64th regiment for West Indies.

Badger, 10—Com. G. F. Stowe, Simon's Bay.

Barham, 50—Capt. H. Pigot, 8th Dec. at Malta, to convey Vice Admiral Sir Pulteney Malcolm home when relieved by Vice-Admiral Sir Josias Rowley. 13th Jan. at Malta from Smyrna. 18th Feb. remained there.

Beacon, S. V.—Com. R. Copeland, Surveying service, 4th Dec. at Malta., 6th Jan. at Malta; 18th Feb. remained.

Bragle, 10, S. V.—Com. R. Fitz-Roy, 25th Oct. Monte Video.

Belvidera, 42—Capt. C. B. Strong, 22d March, sailed from Spithead. Mr. Chatfield, Consul at Guatemala, and Lord Sussex Lennox, for Jamaica, take their passage in her.

Blonde 46—Capt. F. Mason, C.B. 7th Feb. at Spithead, 14th Feb sailed for Jamaica, with the Marquis of Sligo and suite.

BRISK, 3—Lieut. Stevens, 25th Oct. at Fernando Po.

BRITANNIA, 120—Vice-Admiral Sir P. Malcolm, Captain P. Rainier, 13th Jan. arrived at Malta from Nauplia; 18th Feb. remained there.

BRITOMART, 10—Lieutenant H. Quin, 21st Nov. at Sierra Leone. Sailed for Gambia.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 17th July at Rio; 21st July sailed for Australia.

CALEDONIA, 120—Captain T. Brown, 11th Jan. arrived at Malta; 18th Feb. remained there.

CANOPUS, 84—Hon. J. Percy, Plymouth, fitting.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 9th Feb. in the Tagus.

CEYLON, 2—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 8th Dec. arrived at Rio Janeiro. To proceed to Pacific, on or about the 20th instant, calling at the Falkland Islands to land Mr. Smith, late first lieutenant of the Tyne, but now Governor of those islands, he having been appointed thereto by his Majesty's government, with a salary of seven shillings a day, in addition to his pay as lieutenant in the Navy. He will be accompanied by four seamen, to make up a boat's crew.

CHAMPION, 18—Com. Hon. A. Duncombe, 14th Feb. arrived at Malta, having experienced severe weather, and been on shore on the coast of Alexandria. 18th Feb. remained there.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, Portsmouth. 8th Feb. moved to Spithead; 10th March sailed for Falmouth, and Lisbon, and Africa.

COCKATRICE, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

COCKBURN, 1 — Lieut. Com. C. Holbrook, Kingston, Lake Ontario.

COLUMBINE, 18—Com. O. Love, 25th Feb. arrived at Portsmouth. Left Jamaica 4th Dec. 28th Feb. sailed for Woolwich, to pay off.

COLUMBINE, St. V. 2—Lieut. R. Ede, Portsmouth.

COMET, St. V.—Lieut. Com. T. Cook, Woolwich.

COMUS, 18—Com. W. Hamilton, 4th Dec. at Jamaica; 27th Dec. arr. at Port au Prince; 29th sailed.

CONWAY, 28—Capt. H. Eden, 2d Dec. arrived at Pernambuco from Bahia. 3d Dec. sailed on return.

CRUIZER, 18—Com. Jas. M'Causland, 29th Jan. sailed for Jamaica, with Major-Gen. Sir Amos Northcote. Detained by foul winds at Falmouth. Sailed 9th Feb.

CURAÇOA, 26—Capt. D. Dunn, 10th Nov. arr. at Calcutta.

CURLEW, 10—Com. H. D. Trotter, 7th Dec. off the Bonney R. Daily expected home.

DEE, St. V. 4—Com. W. E. Stanley (*b*) March at Woolwich, from Cork, to repair.

DISPATCH, 18 — Com. G. Daniell, 3d Dec. arrived at Barbadoes from St. Thomas.—The slaver captured by the Dispatch on the 25th December, on her passage from Barbadoes to the Spanish Main, was called the Ross, a small Spanish schooner of 75 tons, with 292 slaves on board, being 176 males and 116 females, mostly under twelve years of age; the vessel is only three feet two inches between decks, so that the slaves were completely packed; she was taken to the windward of Barbadoes, near the Tropic, and was sent to the Havannah for condemnation.

DONEGAL, 78—Capt. A. Fanshawe, 9th Feb. in the Tagus.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, (the statement of Capt. Hope having succeeded Lord Townshend is incorrect,) 13th Sept. arrived at Lima from Valparaiso. 3d Oct. returned to Valparaiso. Going to Lima.

EDINBURGH, 74—Capt. James R. Dacres, Portsmouth, fitting. 24th Feb. moved to Spithead: 11th March sailed from Spithead; 12th Mar. arr. at Plymouth.

ENDYMION, 50 — Captain Sir S. Roberts, Knt. C.B.; 19th Jan. arrived at Spithead. 21st hoisted the flag of Vice-Admiral Sir Josias Rowley, Bart. K.C.B. 4th Feb. sailed for the Mediterranean. Passengers Lieut. H. B. Young, Mr. J. Napier, Master, Messrs. Willoughby, Veitch, Maxwell, Daley, Midshipmen.

ESPOIR—Lieut. Com. C. W. Riley, Portsmouth, fitting. 11th March undocked.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, African station.

FAIRY, S. V. 10—Com. W. Hewett, 11th Nov. arr. at Woolwich.

FAVORITE, 18—Com. G. R. Mundy, 15th Feb. arr. at Malta; 27th sailed.

FIREBRAND, St. Yt.—Lieut. W. G. Buchanan, 18th Jan. arrived at Falmouth from Lisbon. 4th Feb. into basin at Portsmouth; when ready, will be ordered to attend the committee of the house of commons, on the rising of parliament, which has been appointed to investigate and inquire into the revenues and management of the light-houses of the united kingdom.

FIREFLY, 2—Lieut. J. M'Donnel, 9th July at Jamaica; 24th Aug sailed from Port-au-Prince.

FLY, 10 — Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER — Lieut. G. Miall, 21st Nov. at Sierra Leone. 22d Dec. arrived at Ascension, on way to Cape.

FORTE, 44—Captain W. O. Pell, Barbadoes, 15th Jan.

GANNET, 18 — Com. J. B. Maxwell, 13th Feb. arrived at Spithead. Left Barbadoes 15th Jan. Sailed for Sheerness 14th Feb. to pay off.

GRIFFON, 3—Lieutenant E. Parlby, Gold Coast.

HARRIER, 18 — Com. H. L. S. Vassal, 13th Oct. at Trincomalee, refitting.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, 19th Oct. arrived at Calcutta.

IMOGENE, 18 — Captain P. Blackwood, 9th Oct. passed Trincomalee, from New South Wales, on her way to Madras.

INVESTIGATOR, 16, S. V. — Mr G. Thomas, Woolwich.

ISIS, 50 — Capt. J. Polkinghorne, 5th Jan.

arrived at Sierra Leone. Flag of Rear-Admiral S. Warren.

JACKDAW, S. V. — Lieutenant E. Barnett, 12th January arrived at Nassau from Egg Island.

JASEUR, 18—Com. J. Hackett, Sheerness, fitting.

JUPITER, *Troop Ship*—Mr. R. Easto, sailed for Gibraltar with the 92d regt.

LARNE, 18—Com. W. S. Smith, 4th Oct. at Jamaica.

LIGHTNING, St. V. — J. Allen, 24th Dec. arrived at Falmouth from Lisbon; 24th Jan. Woolwich; 20th Jan. arrived at Portsmouth, to convey Lord Howard de Walden ambassador to Lisbon. 6th Feb. sailed for Lisbon.

LYNX, 10—Lieut. Com. H. V. Huntley, Portsmouth. 7th Feb. sailed for Africa.

MADAGASCAR, 46—Capt. E. Lyons, 11th Jan. arrived at Malta from Nauplia. 18th Feb. remained there.

MAGICIENNE, 24—Capt. J. H. Plumridge, 13th Sept. left Sincapore for Manilla.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74—Capt. Hon. J. Percy, 13th Jan. arrived at Malta from Vourla; 18th Feb. remained there.

MASTIFF, 6, S. V.—Lieut. T. Graves, 4th Dec. at Malta. 6th Jan. at Malta.

MEDEA, St. V. 6—Com. H. T. Austen, Woolwich, fitting.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 4th Aug. at Trincomalee. Calcutta, to convey the Governor-General to Madras. 13th Oct. returned to Madras.

METEOR, St. V.—Lieut. Symons, 2d Feb. at Malta. 18th Feb. remained.

NAUTILUS, 10—Lieut. Com. W. P. Croke, 19th March sailed from Portsmouth for Falmouth, to join the Packet service.

NIMBLE, 5 — Lieut. C. Bolton, 17th Dec. arrived at the Havana with a prize containing 480 slaves and 34 men, captured off I. Pines, named the Manulita. On 3d of Nov. she captured the Joaquina with 329 slaves and 25 men, and a few days afterwards destroyed the Amistad Havanera. Lieut. Bolton has in less than nine months captured three vessels, and upwards of 1000 slaves.

NIMROD, 20—Com. J. Mc. Dougal; 20th Feb. arrived at Cadiz from Plymouth.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

ORESTES, 18—Com. Sir Wm. Dickson, Bart. 23d Nov. arrived at Lisbon; 1st Dec. sailed for Oporto.

PALLAS, 42—Capt. W. Walpole, 4th Dec. at Jamaica.

PEARL, 20—Com. R. Gordon, 12th Jan. arr. at Nassau.

PELICAN, 18—Com. J. Gape, 23d Feb. arr. at Spithead. Left Gibraltar 2d Feb. 26th sailed for Chatham, to pay off.

PELORUS, 18—Com. R. Meredith, 7th Dec. arrived at St. Helena, from Cape, on way to Ascension; 5th Jan. at Sierra Leone.

PHŒNIX, St. V. — Com. R. Oliver, Woolwich.

PICKLE, 5—Lieut. C. Bagot, 29th Nov. at Port Royal.

PLUTO, St. V.—Lieut. T. R. Sulivan. Coast of Africa.

PRESIDENT, 52 — Capt. J. M'Kerlie, Portsmouth; 25th Feb. taken into dock.

PRINCE REGENT *Yacht*—Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 15th Oct. left Valparaiso for Lima, via Arica and Ylo.

PYRAMUS—8th Oct. arrived at Bermuda; sailed for Halifax with Forte; 23d Oct. arr. at Halifax.

RACER, 16—Com. J. Hope, 28th October arrived at Bermuda; 8th Nov. sailed for Jamaica. 12th Dec. sailed for Carthagena.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. Plymouth, fitting. 5th March undocked.

RAINBOW, 28—Capt. Thomas Bennet, Portsmouth. 25th Feb. taken out of dock.

RALEIGH, 18—Com. A. M. Hawkins, 15th Feb. arrived at Gibraltar.

RAPID, 10—Lieut. Com. F. Patten, 10th Dec. arrived at Rio Janeiro.

RAVEN, S. V. 4—Lieut. H. Kellet, 2d Dec. at Santa Cruz, Teneriffe.

REVENGE, 78—Capt. D.H. Mackay, left Lisbon 9th Feb.; arrived at Spithead 26th Feb.; 27th Feb. moved into harbour, paid off, and re-commissioned by Captain W. Elliott, C.B.

RHADAMANTHUS, St. V.—Com. G. Evans, 27th Oct. at Jamaica. 12th Dec. sailed for St. Domingo.

RINGDOVE, 16—Com. W. F. Lapidge, 7th Feb. sailed for Lisbon.

ROLLA 10—Lieut. H. F. Glasse; Plymouth, fitting.

ROMNEY, *Troop Ship*—Mr. R. Brown, sailed for West Indies, with 64th regt.

ROVER, 18 — Com. Sir G. Young, Bart., 6th Feb. sailed from Sheerness for the Mediterranean.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, Plymouth station.

ST. VINCENT, 120—Capt. H. F. Senhouse, 18th Feb. arrived at Malta. Smyrna.

SALAMANDER, St. V.—Com. W. L. Castle, 17th March on her way to Portsmouth.

SAMARANG, 28—Capt. C. H. Paget, 3d Nov. at Panama, on her way to San Blas. Expected home in August.

SAN JOSEF, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28—Capt. Hon. W. Trefusis, 15th Jan. at Barbadoes.

SARACEN, 10—Lieut. Com. T. Le Hardy, 15th Feb. arrived at Lisbon.

SATELLITE, 18—Com. R. Smart, 12th Dec. off Rio Janeiro, the Satellite and Snake are both cruizing off this harbour, for the interception of slavers. The former sloop has sent in a brig, without any slaves on board, but accompanied with such proofs as will clearly establish the fact that a cargo had just been landed.

SAVAGE, 10 — Lieut. R. Loney, 22d Jan. Vigo Bay.

SCOUT, 18—Com. Hon. G. Grey, Jan. at Tripoli.

SCORPION, 10—Lieut. N. Robilliard, Plymouth, fitting. 19th Feb. moved into the Sound.

SCYLLA, 18—Com. W. Hargood, 24th Feb. sailed for Sheerness.
SERPENT, 16—Com. J. C. Symonds, 4th Dec. at Jamaica.
SKIPJACK, 5—Lieut. W. H. Willis, (*act.*) 29th Oct. at Bermuda, from Jamaica; 3d Nov. sailed for Nassau.
SNAKE, 16 — Com. W. Robertson, captured and carried into Rio de Janeiro, previous to the 18th Dec., the Portuguese brig Maria da Gloria, with 425 slaves on board. 12th Dec. Rio.
SPARROWHAWK, 18 — Com. C. Pearson, 8th Feb. Spithead. 13th Feb. sailed for South America.
SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Captain R. Tait, 12th Dec. at Rio Janeiro.
SPEEDWELL, 5 — Lieut. Crooke, 20th Oct. at Rio.
SPEEDY, *Cutter*—Lieut. C. H. Norrington, Portsmouth station.
STAG, 46—Capt. N. Lockyer, 19th Feb. in the Tagus, from Cadiz.
SWAN, 10 — Lieut. J. E. Lane, 5th Jan. sailed for the Clyde to protect herring fishery.
SYLVIA, 1—Lieut. Com. B. Shepherd, Portsmouth Station.
TALAVERA, 74 — Capt. E. Chetham, 13th Jan. arr. at Malta, from Nauplia; 18th Feb. remained there.
TALBOT, 28—Capt. R. Dickinson, C.B., 6th Nov. left Mauritius for Cape and England. 24th Nov. arr. at Cape. Daily expected.
THUNDER, S. V.—Commander R. Owen, 29th Dec. at Nassau.
THUNDERER, 84—Capt. W. F. Wise, C.B., 3d Feb. arrived at Plymouth. 14th Feb. sailed for Cork, having received on board 100 tons of iron ballast.
TRINCULO, 18—Lieut. Com. Thompson, 1st Jan. arr. at Sierra Leone.
TWEED, 20—Com. A. Bertram, 4th Dec. at Jamaica.
TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, Portsmouth, fitting.
VERNON, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 20th Dec. at Jamaica.
VESTAL, 26—Capt. W. Jones, 14th Dec. sailed from Barbadoes for Jamaica.
VICTOR, 18—Com. R. Russell, 15th Jan. left Barbadoes for Jamaica.
VICTORY, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.
VIPER, 6—Lieut. H. James, 22d Jan. arrived at St. Ubes from Oporto.
VOLAGE, 28 — Capt. G. B. Martin, C. B., 6th Jan. at Corfu.
WASP, 18—Com. Jas. Burney, 13th Dec. arrived at Barbadoes. Sailed 14th for Trinidad. 16th Jan. off Barbadoes.
WOLF, 18—Com. W. Hamley, 28th Oct. arr. at Madras.

PAID OFF.

REVENGE, 78—13th March, Portsmouth.
COLUMBINE, 18—13th March, Sheerness.

COMMISSIONED.

REVENGE, 78—14th March, Portsmouth.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commanders—W. H. H. Carew; Sir P. Parker.
Lieutenants—H. Harvey; G. Skipwith.
Surgeons—P. Thoms.

APPOINTMENTS.

BEACON, *Surv. Ves.—Act. Purser*, J. Clerk.
BELVIDERA, 42—*Chaplain*, R. Wilson.
CANOPUS, 84—*Lieut.* G. Bott; *Mate*, A. Bental.
CHARYBDIS, 3—*Surg.* A. Lawrence.
COMUS, 18—*Act. Purser*, E. Little.
DEVONPORT DOCKYARD—*Superint. Police*, Lieut. T. Williams.
DONEGAL, 78—*Purser*, T. Simpson.
EDINBURGH, 74—*Mate*, T. Evans.
EXCELLENT, 58—*Lieuts.* J. W. Williams, W. G. B. Estevurt; *Mate*, A. Jeffreys.
GANNET, 18—*Com.* J. B. Maxwell; *Lieut.* H. Wright.
ISIS, 50—*Assist. Surg.* T. Brenan.
MADAGASCAR, 46—*Purser*, H. Tucker.
OCEAN, 80—*Mate*, J. A. Pritchard.
ORDINARY—CHATHAM, *Com.* R. Scallon.
DEVONPORT, *Lieut.* D. Kay.
PORTSMOUTH DOCKYARD—*Direc. of Police*, Lieut. W. H. Hall.
PRESIDENT, 52—*Lieuts.* C. Festing, Hon. J. R. Drummond; *Master*, P. Parker; *Capt. Mar.* T. Scott; *2d Lieut. Mar.* W. O. L. Bellairs; *Surg.* J. Campbell; *Mates*, H. F. Rynes, J. Mayling, T. Byes; *Mids.* F. A. Campbell, R. Duncan, C. Ogle, W. K. Vaux; *Clerk*, S. Lord.
RACEHORSE, 18—*Lieut.* W. Pearse.
RAINBOW, 28 — *Surg.* W. H. Rudland; *Purser*, J. Gain; *Schoolmstr.* A. Pressick.
RAPID, 10—*Act. Mast.* S. Cole.
REVENGE, 78 — *Capt.* W. Elliott, C. B.; *Com.* W. Hillyar; *Lieuts.* G. Morris, C. Spettigue, R. H. Elliott, W. Louis, Hon. J. R. Drummond, E. Bevan; *Mast.* J. Thomas; *Capt. Mar.* J. M. Pilcher; *2d Lieut. Mar.* R. M. Mekena; *Surg.* J. Campbell, (*b*); *Purser*, W. Holman; *Chaplain*, M. Beebee; *Assist. Surgs.* J. Watson, D. R. G. Walker; *Mates*, G. A. Hina, P. D. White; *Sec. Master*, J. Brown; *Mid.* J. Dolling; *Clerk*, R. Martin.
ROYAL GEORGE, *Yacht—Mate*, F. Ommany.
SALAMANDER, *St. V.—Purser*, N. Lach.
SCORPION, 10—*Surg.* W. Martin; *Assist. Surg.* R. Holden.
TALAVERA, 74—*Purser*, M. J. Tilby.
TYNE, 28—*Mast.* J. Underwood; *Mates*, T. S. Murray, T. Inskip.
VERNON, 50 — *Lieut.* R. Dowse; *Assist. Surg.* J. Shaw.
VICTORY, 104 — *2d Lieut. Mar.* R. C. Spalding.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
PIKE.....	Lt. Com. A. Brooking	21 March	———	———	18 April.
CHARYBDIS	Lt. Com. S. Mercer....	15 March	———	———	12 April.
SCORPION	Lt. Com. N. Robilliard	10 March	———	———	7 April.
PANTALOON	Lt. Com. S. C. Dacres	28 Feb.	———	———	28 March.
CARRON.....	Lt. Com. S. Duffil	24 Feb.	2 Mar.	Lisbon	24 March.
AFRICAN, st.v...	Lt. Com. J. Harvey ..	9 Feb.	15 Feb.	Lisbon	— March.
LEVERET	Lt. Com. G. Traill....	4 Feb.	13 Mar.	Lisbon	— March.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

COLUMBIA, st.v.	Lt. Com. B. Aplin....	6 March	———	———	26 April.
FIREFLY, st.v...	Lt. Com. T. Baldock..	4 Feb.	22 Feb.	Malta	27 March.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

THAIS.....	Lt. Com. C. Church....	12 Dec.	———	———	13 Feb.
SHELDRAKE....	Lt.Cm.A.R.Passingham	10 March	———	———	12 May.
ECLIPSE.....	Lt. Com. W. Forester..	8 Feb.	17 Feb.	46°N.25°W	21 April.
LORD MELVILLE	Lt. Com. C. Webbe	12 Jan.	———	———	16 March.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

PANDORA	Lt. Com. W. C. Croke..	22 March	———	———	14 June.
OPOSSUM.....	Lt. Com. R. Peters	25 Decem.	———	———	19 March.
SPEY.....	Lt. Com. R. B. James..	20 January	———	———	14 April.
SKYLARK	Lt. Com. C. P. Ladd ..	24 Feb.	28 Feb.	47°N.13°W	18 May.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

CAMDEN.....	Com. Mr. J. Tilley	8 March	———	———	14 June.
MUTINE.....	Lt. Com. R. Paule	12 Feb.	———	———	21 May.
LAPWING	Lt. Com. G. B. Forster	7 January	———	———	15 April.
SWALLOW	Lt. Com. J. Griffith ..	12 Decem.	4 Feb.	Jamaica	20 March.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamaica by a Schooner, and returns to meet the regular Jamaica Packet.]

RENARD.....	Lt. Com. G. Dunsford..	22 March	———	———	26 July.
PLOVER	Lt. Com. W. Downey ..	22 Feb.	———	———	28 June.
STANMER	Lt. Com. R. S. Sutton..	20 January	———	———	26 May.
PELHAM	Lt. Com. H. Carey	30 January	31 Dec.	Tampico	26 Sept.
NIGHTINGALE..	Lt. Com. G. Fortescue	25 Decem.	———	———	30 April.
DUKE OF YORK..	Lt. Com. R. Snell	23 Novem.	———	———	29 March.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

RINALDO	Lt. Com. J. Hill	7 March	———	———	25 July.
BRISEIS.....	Lt. Com. J. Downey ..	7 Feb.	———	———	27 June.
LYRA	Lt. Com. J. St. John ..	28 January	———	———	17 June.
REINDEER	Lt. Com. H. P. Dicken	12 Dec.	———	———	2 May.
GOLDFINCH	Lt. Com. E. Collier	8 Nov.	19 Dec.	Bahia.	28 March.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

CONFIANCE, St. V.—Lt. Com. J. W. Waugh, 1st March arrived at Falmouth. Woolwich.

FLAMER, St. V.—Woolwich.

HERMES, St. V.—Lt. Com. J. Wright.

MESSENGER, St. V.—Mr. J. King, 2d March arrived at Falmouth. Woolwich.

PIGEON—Lt. Com. J. Binney, 24th Feb. arr. at Falmouth.

SEAFLOWER—Lt. Com. J. Morgan, 24th Feb. arrived at Falmouth. Portsmouth.

STEAM COMMUNICATION TO SWEDEN.—The St. George Steam-Packet Company have contracted to convey his Majesty's mails between Hull and Gothenburg, leaving Hull every Saturday, and Gothenburg every Friday. The St. George steam-packet is appointed to take the mail from Hull on Saturday the 5th of April, immediately after the arrival of the London mail.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 192.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
160 Ann	———	Londonder.	Clyde	Run down	2 Mar.	Crew saved.
161 Asia	———	Quebec	London	48 N. 27½W.	Dec.	Seven drowned.
162 Bee	———	China	Australia	China C.	20 Aug.	One drowned.
163 John Stewart	Rimington	Demerara	London	Barbadoes	17 Jan.	Crew saved.
164 Meteor	Waye	———	———	Malta	15 Feb.	Blown up.
165 Ocean	Clay	Wreck driv	en on shore	at Stromstadt	3 Feb.	
166 Robert	———	Newfndld.	Bilboa	C. Spain	30 Jan.	Crew saved.
167 St. Aubyn	M'Mullin	Galway	Liverpool	Off Liverpool	22 Feb	Crew saved.
168 Symmetry	———	Liverpool	New York	37 N. 46 W.	———	Abandoned.
169 Tyne	———	Newcastle	Leith	Newton R.	26 Feb.	Crew saved.

FURTHER PARTICULARS OF WRECKS.

The brig BEE, foundered on the 30th Aug.—the cargo lost. The following letter gives the particulars:—

"*September* 11, 1833.

Dear Sirs—I am sorry to inform you of the total loss of the brig Bee, with all her cargo; she having foundered with us on the morning of the 30th August, at 5 A.M. about fifteen miles off the Island of Hueling, on the south coast of China, in lat. about 21° 30′ N., and long. 112° 50′ E. All the crew were saved, with the exception of one man, upon pieces of the wreck, and upon boxes of the tea, which drifted towards the shore, after having been five hours on the wreck, until we got driven into the surf, from which we swam to the shore.

"We were immediately seized by the natives for plunder, they lining the beach in hundreds; most fortunately for us, we all only escaped with a shirt or frock to the shore, or else they would have murdered us to get what we had: one man they cut down, because he would not willingly give them a handkerchief which he had round his head. In fact, we were obliged to give them what we had, to escape with our lives; seven or eight of them almost strangled me to get a piece of blue silk I had round my neck, which I had got from one of the men on shore. In fact, they drove us from the beach like a parcel of sheep to the mountains. When they saw the boxes of tea drifting on shore, they left us. We travelled, naked as we were, for fifteen miles, to a place called Choppawa, where a Mandarin resides, on the Island of Hueling. He gave us some rice to eat; and, by persuasion, got some clothes for my officer and myself. After detaining us there two nights and one day, he gave us a boat to take us to Yuenkong, where another Mandarin lived. We reached that place the same day, and were detained there five days, for nothing, I could suppose, but as a spectacle to the inhabitants, who came in crowds to see us from morning to night: they gave us rice and eggs to eat, and one day a few fowls; we also got a China jacket and trowsers for each of the crew, and a pair of shoes for myself and officer. We were better treated here than at any other part of the country we passed through. On the fifth day we got a boat to carry us to Yuenshan, with some provisions, and a soldier to go with us as far as Canton. We got there in two days and a half. From thence we got two small boats to carry us further up the river, to a place called Onewang, where we arrived in one day and a half, in company with about fifteen condemned criminals in chains, and their guards.

"From Onewang, next morning, we had to travel across the mountains, in a burning hot sun, with nothing to cover us, for twenty-eight miles, to a place called Houtan, where we arrived at 4 P.M., completely knocked up and worn out: we there got a boat, which came with the stream to a place called Singhing, and from thence to Siwang; from thence to Samshuo, and, at last, down through Fashan to Canton, where we arrived this evening, thank God, in pretty good health, although being nearly starved the latter part of our journey, and obliged to go in the fields searching for something to eat. We got some sweet potatoes, and cooked

them; that and rice conjee was the principal part of our food from the time we left Yuen-kong to Canton.

"I am, dear sirs,

"Your most obedient servant,

"W. WARDEN.

"Messrs. Whiteman & Co."

The ADELAIDE steamer, from Londonderry to Liverpool, while off the Mull of Galloway, was struck by a tremendous sea, which swept Captain Shannon, her commander, over-board, and he was never seen afterwards. It was with great difficulty that the vessel got into Douglas, in the Isle of Man, very much damaged.

LOSS OF THE LADY MUNRO.*—Extract of a letter from J. M'Cosh, Esq., Assist.-Surgeon 34th Bengal Infantry, one of the passengers:

"The Lady Munro, Captain John Aiken, sailed from Calcutta on the 27th of June, 1833, for Van Diemen's Land. After completing her cargo at Madras and the Isle of France, she stood for Hobart Town. On the night of the 11th of October we anticipated to make the Island of Amsterdam; it was uncommonly dark and foggy, with a drizzling rain and a strong breeze. At midnight I asked the boatswain (who was a native of India) if he saw land? He said no. I went to bed again, but had not remained twenty minutes when I heard the ship strike with violence. I rushed naked upon deck, and, to my horror, saw the bold rocky shore within fifty yards of the ship, the sea breaking fairly over, washing every thing off the deck, and filling the hatches with water. The masts went overboard—and the ship reeling from rock to rock, and labouring like a dying thing, gave one last lurch, and went all to shivers. Few of the passengers had time to get upon deck. I was among the breakers before I knew of it, and succeeded in gaining the shore with only a few bruises on my hands and feet. When daylight came, all we mustered were—the chief officer and myself, an European convict, four servants, and fourteen of the Lascar crew; in all twenty-one. There were lost, twenty-eight passengers and officers, nine convicts, thirteen servants, and twenty-eight of the crew; in all, seventy-six. The following are among the names of those drowned, viz.: Captain Aiken, his brother, and Mrs. Aiken and child; Mrs. Montford, and Miss Hayliwood, of Madras; Mrs. Captain Brown, and four children, his Majesty's 57th; Captain and Mrs. Lardner, and three children, Madras 53rd; Captain and Mrs. Knox, 6th Madras Cavalry; Lieut. Clarke, and two boys of Dr. Radford, his Majesty's 39th; and Mr. Fisher. The cargo and every thing on board totally lost. We continued to subsist on birds and eggs, and a little soaked rice, for fourteen days, (for there is no inhabitant on the island,) when we set fire to the jungle, and that attracted the attention of a small American schooner, fishing off the island, and about to sail for the Isle of France. She was then lying ten miles distant. We got all on board of her, and saved nothing but what we could carry such a distance on our backs, over mountains, and through a jungle of reeds higher than our heads. We are now arrived in safety at Port Louis."

* No. 142 of tables.

Extract of a letter from Captain Williamson, of the ship THOMAS KING, dated 24th February, 8 A.M., off Portsmouth:—

"I am sorry to have to communicate the total loss of the bark JOHN STEWART, Capt. Rimington, from Demerara to London, she having unfortunately struck on the Cobler's Rock, off the windward side of Barbadoes, at 5 A.M. on Friday the 17th of January last. About two hours after, I saw a ship ashore, and with the glass made her out distinctly. It was blowing fresh from E.N.E. The only assistance I could render was to make all sail for Carlisle Bay, and make known the sad event to Commodore Pell, of his Majesty's ship Forte, who instantly sent the Sapphire and Vestal frigates to give assistance. In less than one quarter of an hour they were under way; but before they even reached sight of the place, she had gone to pieces, and not a vestige of ship or cargo was visible, Captain Rimington and his crew escaping with great difficulty, saving only the clothes they had on.

"The John Stewart sailed from Demerara on Monday evening the 13th of January, with 556 hogsheads, 3 tierces, and 31 barrels of sugar, 100 puncheons and 10 hogsheads of rum. I sailed next morning, and experienced strong currents, N. by W., thirty or forty miles in twenty-four hours, the haze being very heavy about the horizon, and before daylight we could not see two miles in any direction.

"Surely, sir, this additional wreck will induce either Government or the authorities in this island to erect a lighthouse for the protection of ships bound to, or passing by Barbadoes, as the currents vary so much in their direction and strength as to perplex the most experienced navigator. The south end of the island is difficult to make at night. A light placed on that point would keep ships clear of every danger. Material for building is abundant on the spot, and, if necessary for its support, I believe all ships from Demerara would willingly contribute to it. I think I am right in stating, that within the last two years four ships (viz. the Wanderer, transport, with 250 troops, all saved, but vessel lost; the Paragon, from Demerara to Glasgow, total loss; the Isabel, from Demerara to Liverpool, cargo partly lost, I believe, and a heavy expense incurred; the John Stewart, from Demerara to London, total loss, exceeding 350 tons) have got on shore near the same spot, and only one saved out of that number, and that at an enormous expense. Here then must have fallen 60,000*l.* or 70,000*l.* sterling.

"Captain Rimington arrived at Bridgetown on Friday evening, nearly exhausted, and in a sad distressed state of mind. The following morning, after noting his protest, he returned to the spot, to render every assistance to his distressed crew."

On the 15th of February, the METEOR schooner was blown up at Malta, by which unhappy event several Maltese labourers, her

captain and crew, lost their lives. The following is an extract from the Coroner's report:—

"And after having laid before the jury the fullest evidence that I could procure, and every circumstance that could tend to their information, they came to the conclusion recorded in their verdict, 'That the above individuals came to their deaths by the accidental blowing up of the schooner Meteor, occasioned by the negligence of the captain in allowing a fire to be lighted on board, knowing that there was mixed with his cargo a considerable quantity of gunpowder, which had escaped from the barrels, in consequence of their having been broken during his voyage. A degree of blame must be imputed to the guardian on board in having allowed that fire, notwithstanding the positive orders to the contrary he had received from the office of the Marine Police.'"

The ground on which this verdict was founded, as appears in the evidence annexed to the inquest, are as follows:—

"It appeared by a survey held on board, upon the arrival of the vessel in the Great Harbour, and while she was stationed at the buoy, that a quantity of gunpowder (from 300 to 400 pounds weight) had, during a boisterous passage from England, escaped from the barrels in which it was contained, in number 180, great and small, and forming the uppermost part of the cargo; and that the greatest part of the powder which had so escaped had found its way between the packages of the cargo underneath, consisting of casks, bales, &c., most of them bound with iron hoops. It appeared, also, by a report of the 180 barrels received into the powder-magazine, that a considerable portion of their contents was deficient; but the master, having got a receipt for the delivery of 180 barrels, was, on the morning of the 14th of this month, allowed to approach the wharf with his vessel, for the purpose of discharging the remainder of his cargo.

"On that morning, one of the surveyors, seeing the vessel close to the wharf, and curious to know how the powder had been disposed of, went on board, and observing a fire in the cook-house, remonstrated warmly with the mate upon the imprudence and folly of keeping fires on board, when he must be conscious that a considerable quantity of powder was still in the ship, although out of sight; but he was answered, both by the master and the mate, that they had discharged all the powder, and that there was none on board. Finding his remonstrances to be of no avail, he went on shore, and deemed it his duty to cause the circumstance to be made known to the marine police. Officers were immediately sent, who demanded of the master if he had any gunpowder on board; but the same answer was given to them, namely, that he had landed his powder, and had none on board. In the mean time the intendant of marine police arrived, and, after making inquiries, gave peremptory orders that the fire should be put out, and that no fire should be made on board during the discharge of the vessel, ordering them to cook on shore, and sending an officer on board, to see that the regulations were in every way complied with.

"It appeared, however, in evidence, that, notwithstanding the warnings, and the positive orders given to him, the master, undervaluing the danger, although he confessed to a witness that he knew there was powder in the ship, nevertheless permitted fires to be lighted on board up to the very time of the explosion.

"Why the officer on board did not enforce the orders did not appear, he having been killed by the explosion, and blame imputed to him by the jury.

"Neither could it be found out by what immediate means the powder was fired; but when the jury considered the continual and imminent danger, they could come to no other conclusion, but that the accident of the blowing up of the schooner was principally, if not wholly, to be attributed to the imprudence and foolhardiness of the master.

"I have the honour to be, &c.

"WILLIAM ROBERTSON,
"Acting Coroner."

ADMIRALTY ORDERS.

MEMORANDUM.

Admiralty, 12th Feb. 1834.

The Lords Commissioners of the Admiralty having been pleased to allow chaplains acting as schoolmasters, and schoolmasters, to draw bills at the end of every six months, for the sums which they may be entitled to receive from the wages of young gentlemen under their tuition, (viz. at the rate of £5 per annum for each young gentleman, allowed by Article 29, page 21, of His Majesty's regulations,) it is their Lordships' direction that, on the chaplain or schoolmaster of any of His Majesty's ships becoming entitled to such allowance, the captain shall sanction the chaplain or schoolmaster drawing a bill for that amount; taking especial care that the proper notations of the time under instruction are placed on the ship's books against the names of the respective young gentlemen.

For the purpose of furnishing the means of official check, the particulars are to be inserted upon the general and pay slop books, in the annexed form: and on the discharge of the officer, there shall be written on the back of his ticket, or at the foot of one of the pay lists, (if in the case of a schoolmaster removed at home to another ship,) a similar account for the time for which a pay slop book shall not have been lodged in office, care being taken that such account be also shewn in the slop book when made out.

The sum so drawn for will be placed to the officer's debit, and the sums charged or chargeable upon the pay books will be placed to his credit, in the books of the office of the

Accountant-General of the Navy, and the balance paid with the residue of his wages.

By command of their Lordships,
GEORGE ELLIOT.

To Captains, Commanding Officers, Chaplains, and Pursers, of His Majesty's Ships and Vessels.

Whereas, on the 27th of last month we apprized the respective Commanders-in-Chief on the foreign stations, that it was our intention to direct payment of their wages to be made by the naval storekeepers to such seamen as may volunteer to continue their services abroad, on the ships to which they may belong being ordered home, We desire and direct that the following regulations be observed in carrying our intentions into effect:—

The calculations on the tickets to be paid by the naval storekeepers are to be made on board the ship from which the men may volunteer, under the immediate responsibility of the captain, where also their tickets for any former ships are to be prepared for payment, the table of pay in the Naval Instructions being used as a guide for this purpose: and, with a further view of ensuring accuracy in this respect, a table for the calculation of allotments is sent herewith.

In cases of men who have made allotments, the amount of which may be affected by the parties being disrated, perfect correctness in the amount of the payment to be made cannot be attained, as the persons in whose favour such allotments have been made, must continue to receive them at the higher rate, until information of the disrating shall have reached this office; the captains of his Majesty's ships are therefore, in calculating the allotment, to make ample allowance for the same, by charging the higher rate of allotment for such period of time, from the date of the disrating, as in their opinion will secure the public from any loss; and the men are to be informed that any overcharge of their allotment on this account will be refunded on their return to England.

If no notation of allotment should appear on a man's ticket for a former ship, he is to be strictly questioned as to any allotment being in force, and to abate the amount accordingly.

In order to prevent overpayment abroad, in consequence of a seaman having granted a power of attorney to an agent to receive his wages in England, directions have been given to the Accountant-General not to pay any wages to agents without the production of the man's ticket.

A commissioned officer from the ship into which men may volunteer, is to be directed to attend the payments, and to attest the same by his signature to each ticket.

Given under our hands this 14th day of February, 1834,

T. M. HARDY,
S. J. BROOKE PECHELL.

To all Flag Officers, Commanders-in-Chief, Captains, and Commanding Officers, of His Majesty's Ships and Vessels.

By command of their Lordships,
GEORGE ELLIOT.

MEMORANDUM.

Admiralty, 17th Feb. 1834.

The Lords Commissioners of the Admiralty having deemed it expedient for the good of His Majesty's service, that those seamen only who have been instructed on board the Excellent, and received from the captain of that ship a first class certificate, shall be considered eligible for promotion to the situation of gunner; the commanders-in-chief on the several stations are therefore, from time to time, to obtain from the commanding officers of the ships and vessels under their orders, lists of such men as may be most intelligent, and the best calculated for the purpose, from which lists they are to make selections for promotions to gunners' warrants. But this regulation is not to affect those who, at the receipt of this order, may be acting as gunners by the order of any commander-in-chief, and who, on their return to England, will be considered eligible for confirmation on qualifying themselves on board the Excellent.

The examination of a candidate for a gunner's warrant, directed by the instructions relating to his Majesty's service at sea, is to be discontinued, and in lieu thereof he is to undergo an examination before a captain and three masters of his Majesty's ships, who are to satisfy themselves that he is in all respects a good practical seaman, and a certificate thereof, and of his service in the Royal Navy, is to be transmitted for their Lordships' information, according to the form, No. 28, in the appendix to the general printed instructions.

By command of their Lordships,
GEORGE ELLIOT.

To all Flag Officers, Commanders-in-Chief, Captains, &c.

MEMORANDUM.

Admiralty, 25th Feb. 1834.

The captains' clerks of his Majesty's ships being occasionally in want of assistance in the execution of their duties, the Lords Commissioners of the Admiralty are pleased to allow of a person being borne for this service on the books of his Majesty's ships, with the rating of able seaman, but such rating is to be included in the established complement.

By command of their Lordships,
GEORGE ELLIOT.

To all Flag-Officers, Commanders-in-Chief, Captains, &c.

MILITARY AND NAVAL OFFICERS.—The following official document has just been issued from the Colonial Office:—"Downing-street, Colonial Department. Sir,—I am directed by the Secretary of State to acquaint you, in reply to your letter of the ———, that grants of land are no longer made to military or naval officers proceeding as settlers to North America, but on producing to the governor of the province testimonials of unexceptionable character from the General Commanding-in-Chief, or from the Board of Admiralty, they will be entitled to a remission of the purchase-money in buying land, according to the undermentioned scale:—Field Officers of 25 years' service and upwards, in the whole 300*l.*; Field Officers of 20

years' service and upwards, in the whole 250*l.*; Field Officers of 15 or less years' service, in the whole 200*l.*; Captains of 20 years' service and upwards, in the whole 200*l.*; Captains of 15 years' service or less, in the whole 150*l.*; Subalterns of 20 years' service and upwards, in the whole 150*l.*; Subalterns of 7 years' service or less, in the whole 100*l.*; They will be subject to the usual conditions of actual residence and cultivation of the land purchased by them within a limited period. The expense of the passage to the Colonies is not defrayed by the Government in any case.—I am, Sir, your most obedient servant."

PAINTING GUNS, &c.—The Lords Commissioners of the Admiralty have ordered, that the third or last coat of paint shall be given to guns and gun-carriages after they have been received on board his Majesty's ships, and that the work shall be performed by the respective ships' companies; and, that when guns and carriages are shipped in the first instance, or landed, for examination or repair, they will be painted with two coats of paint by the Ordnance Department, leaving the third coat to be given on board from the ship's store, for which purpose the established quantity of paint will be increased.

Births.

On the 2d March, the lady of Capt. Campbell Lock, of her seventh son.

Marriages.

At St. George's, Hanover Square, on the 18th March, Lieut. E. Rogier, R.N. to Mary, daughter of the late Rd. Waring, Esq. of St. Mary Cray, Kent.

At St. George's, Hanover Square, Lieut. J. Parson, R.N. to Miss A. R. Read, of Norfolk-street, Southsea.

Deaths.

At Freshfield, near Bath, 21st Feb. Mark Robinson, Esq., Admiral of the White Squadron, aged 80. This officer was the son of the late Rear-Admiral Robinson, who lost a leg in the action off Cape Henry, Sept. 5th, 1781. The subject of the present biography was made a commander in 1783, and commanded the Trimmer sloop, in the ensuing peace for three years; was made captain in 1790. In the year 1793, he was appointed to the Brilliant, 28, stationed in the North Sea, and subsequently at the reduction of Calvi, in Corsica. In 1795, he commanded the Arethusa, 38, attached to the expedition against Quiberon. In 1804, he commanded the Swiftsure, 74, and accompanied Lord Nelson to the West Indies, in pursuit of the combined fleets of France and Spain. He afterwards commanded the Royal Sovereign, 110, and the Gibraltar, 80; was advanced in 1808, to the rank of Rear-Admiral; Vice-Admiral in 1812; and Admiral 1825; although it was not his good fortune to be in any general action, yet his services were diligent and zealous.

On the 25th February, at North Yarmouth, Lieut. George D. Barclay, Royal Navy, aged 51; he was a midshipman of the Mars, at the battle of Trafalgar.

At Malta, on the 8th of February, Alexander Brown, Esq., Purser of H. M. S. Talavera.

At Stoke, suddenly, aged 69 years, Lieut. J. Harrison, R.N.

At Chatham, Lieut. Charles Serjeantson, Royal Navy, fourth son of the Rev. James Serjeantson, Kirby Knowle, Yorkshire.

At Haslar hospital, Mr. Purcell, Royal Navy, the last surviving officer of His Majesty's ship Bounty, and who was turned adrift, in an open boat, by the mutinous crew of that ship, in the middle of the Pacific Ocean.

In Bugle-street, Southampton, Com. Peter Mouat, the oldest Commander in the Navy, (1787,) aged 83.

At Florence, on 14th Feb. aged 72, Robert Plampin, Esq. Vice-Admiral of the White Squadron. This officer, in 1793, was a lieutenant on board the Syren frigate, in which ship H.R.H. the Duke of York went to Holland; he was employed in a gun-boat at the defence of Williamstadt, and was presented by the Prince of Orange with a medal, value 500 guilders, for his eminent services. On his return to England, he was promoted to the rank of Commander; in 1795, to that of Captain, and appointed to the Ariadne, 20; from that ship he was removed into the Lowestoffe, 32, and proceeded to the West Indies. On his return to Europe with a convoy, he was wrecked, on the 10th of August, 1801, on Great Heneage, and was fully acquitted by a court-martial of all blame with respect to the loss of the Lowestoffe; he subsequently commanded the Antelope, 50, and, in the autumn of 1805, removed into the Powerful, 74, and accompanied Sir John Duckworth to the Leeward Islands; from thence he was despatched to the East Indies. In 1806, he captured La Henriette, 20 guns, 124 men, and La Bellone, 30 guns, 194 men. In the summer of 1809, he was appointed to the Courageux, 74, and commanded a division under Sir Richard Strachan, in the expedition to the Scheldt. In 1812, he was appointed to the Ocean, 98, and served in the Mediterranean during the remainder of the war; and advanced to the rank of Rear-Admiral in June, 1814. In 1817, he hoisted his flag in the Conqueror, 74, and proceeded as Commander-in-Chief, to St. Helena, where he continued three years. He was subsequently appointed Commander-in-Chief on the Irish station, where he continued for three years; he was advanced to the rank of Vice-Admiral, in 1825.

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NORTH POLAR REGIONS.

Degrees of Lat. 10
Geographical Miles 500
English Miles 500

✠ Capt. Phipps 27th July 1773
80° 43′ N. about 15° E.
✠ Mr. Scoresby 1806 — 81° 30′ N. in 19 E.
in a Voyage to Spitzbergen.
⊙ Sir Edward Parry 25th July 1827
82° 45′ in about 19° E.

Ten Degrees of Long.
In Lat. 50 51 52 53 54 55 56 57 58 59 60

Ten Degrees of Long.
In Lat. 80 79 78 77 76 75 74 73 72 71

Ten Degrees of Long.
In Lat. 70 69 68 67 66 65 64 63 62 61

Parry's boats hauled up on the ice for the Night.

Parry travelling over the ice. in 1827

Published for the Proprietors of the Nautical Magazine by Simpkin & Marshall May 1st 1834.
J. & C. Walker Sculp.t

THE

NAUTICAL MAGAZINE.

MAY, 1834.

By Captain F. P. King, R.N., F.R.S.

THE

NAUTICAL MAGAZINE,

MAY, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

Description of the North-East Coast of Australia.

By Captain P. P. King, R.N., F.R.S.

(*Concluded from* p. 200, *No.* 26.)

57. *Pipon Islands*, two small islets, of which the easternmost is the largest, are in latitude 14° 6′ 40″, longitude 144° 26′ 5″; they are surrounded by a reef, lying two miles and a half from the cape. Between them and the reef that extends from the cape, there is a safe and deep passage of more than a mile wide.

The south-east side of Bathurst Bay is shoal. At the bottom are two openings, with some projecting land between them, at the extremity of which there is a peak. These openings are doubtless rivulets of considerable size, and take their rise from the high land at the back of Cape Bowen.

58. *Flinders's Group* forms the west head of Bathurst Bay. They are high and rocky, and consist of four islands, two of which are three miles long. The peak of the largest island, in lat. 14° 11′ 5″, and longitude 144° 12′ 5″, is visible from a distance of twelve or thirteen leagues; and the higher parts of the islands may be seen generally at seven or eight leagues.

On the eastern side of the northernmost island there is a bay fronted by a coral reef, but it is too exposed to the prevailing winds to be safe. It is here that the Frederick (merchant ship) was wrecked in 1818.

59. *Cape Flinders*, in latitude 14° 8′, longitude 144° 10′ 20″, is the north extremity of the island. It may be passed close to with twelve fathoms. The best anchorage is under the flat-topped hill, at a quarter of a mile from the shore, in ten fathoms mud. The variation is 5° 20′ E. It is high water at full and change at a quarter past nine.

In the offing is a low wooded island of more than a mile in diameter.

60. *Clack's Island* is a high rock, situated at the south-east end of reef *b*, in latitude 14° 4′ 45″, and longitude 144° 11′ 45″, and, being a bare black rock, with no apparent vegetation, is a conspicuous object. There is another rock on its north-east end. The reef is of circular shape, and three miles in diameter.

The shoal marked a was not seen by us. H. M. sloop Satellite struck upon

it in June, 1822, on her passage to India. The following marks for it were obligingly communicated to me by Captain M. J. Currie, of H. M. sloop Satellite, who sent a boat to examine it upon her second voyage the following year:—

"In crossing the northern part of Bathurst Bay, and nearly in mid-channel, between Cape Flinders and the low wooded island, there is a small patch of sunken rocks, lying north and south, not more than a cable's length in extent, the least water being one fathom. The Satellite grounded on them in two fathoms, in June, 1822. I sent a boat to examine this shoal in making the same passage in August, 1823, and found it to be under the following bearings (by compass); viz. Cape Flinders, S.W. b. W. ½ W.; the high peak on the south-east part of Flinders's Group, S. ¼ W.; the highest of Clack's Islands, N.W. ½ W., and Cape Melville, E. ½ S. It is a dangerous shoal in running for Cape Flinders, but may be easily avoided by steering near the low wooded island, to the north-east of the cape, or by keeping the shore of Flinders's Group on board, which is perhaps preferable. The variation is 5° 40′ East."*

61. *Princess Charlotte's Bay* is an extensive bight in the coast, twenty-two miles deep, and thirty-one broad; its shores are low, and at the bottom, in latitude 14° 29′, there is a mangrove opening.

62. *Jane's Table Land*, in latitude 14° 29′ 15″, and longitude 144° 4′ 45″, is a remarkable flat-topped hill at the bottom of the bay, rising abruptly from the surrounding low land. It is about five miles from the coast; its summit, by the angle it subtended, is about a mile in length. Excepting this hill, no other high land was seen at the bottom of the bay.

On the western side the land rises to a moderate height, and forms a bank of about ten miles in extent, but this was not visible for more than three or four leagues. To the north of this no part of the interior can be seen until in latitude 13° 55′, when the south end of a ridge of hills commences at about seven miles behind the beach, which it gradually approaches until it reaches the coast in 13° 35′, and is terminated by a round hill. The coast then extends with a low sandy beach for eleven miles to Cape Sidmouth.

c is a covered reef of coral, extending N E. b. E. and S.W. b. W. for seventeen miles. Its south-west end bears N. 75° W., twelve miles and a half, from Cape Flinders.

d, *e*, and *f*, are three coral banks, having dry sandy keys on each; they are of circular shape, and from a mile to a third of a mile in diameter. *d* is the largest, and bears nearly due west from Cape Flinders, from which it is distant twelve miles and a half.

g and *h* are two coral reefs; but it was not ascertained whether they are connected to each other or not. They may also be joined to *c*, and indeed this supposition is very likely to be correct, for we found the water quite smooth, and little or no set of tide on passing them. On the south-west extremity of *g*, in latitude 14° 1′ 20″, longitude 143° 50′, there is a dry sandy key, as there is also upon h, but on the latter there are also rocks, and the sand is dry for four or five miles along its north-west side. The south-west end of *h* is in latitude 13° 59′, longitude 143° 49′.

i is a circular coral reef, of a mile and a quarter in diameter, and has a dry sandy key at its north-west end; it is two miles N.N.W. from the south-west end of *h*.

k is a small reef with a sandy key upon it, four miles to the east of Pelican Island.

* The shoal is in a line with, and half way between, the flat topped hill on the north island of Flinders's Group, and the centre of the low wooded island, and is nearly joined to some shoal water that extends for two miles from the latter island.—Roe MS.

63. *Pelican Island* is on the north-west side of a reef of more than a mile and a half long; it is very small, but remarkable for having two clumps of trees, which at a distance give it the appearance of being two small islets; it is low, and, like the other islands of its character, may be seen at ten miles from the deck; its latitude is 13° 54′ 45″, and longitude 143° 46′.

l is a long narrow coral reef, extending in a N.N.E. direction; it is 13 miles in extent, but generally not more than one-third of a mile wide; its greatest width is not more than a mile and a half; its south-west end is five miles and three-quarters north from Pelican Island.

m is an extensive coral reef, extending for fifteen miles in N.E. b. N. direction, parallel with *l*, from which it is separated by a channel of from one to two miles wide. At its south-west end, where there is an extensive dry sandy key, and some dry rocks, it is two miles wide; but towards its northern end it tapers away to the breadth of a quarter of a mile. The south trend of its south-west end lies seven miles N. 44° W. from Pelican Island, and four miles from Island 2 of Claremont Isles.

n is another extensive reef, which may possibly be connected with *m*. At its westernmost end, about four miles N. b. E. ½ E. from the west end of m, is a dry sand of small extent.

It was considered probable that there was a safe passage between the reefs *l* and *m*. We steered so far as to see the termination of the latter, upon which the sea was breaking, which afforded a proof of its not being connected with the former, which also the dark colour of the water sufficiently indicated.

The Mermaid was nearly lost in attempting to cross the latter reef.

64. *Claremont Isles* consist of five small islets, numbered from 1 to 5; they are of coral formation, and are covered with small brushwood; they are from six to seven miles apart, excepting 4 and 5, which are separated by a channel only a mile and a half wide: off the east and south-east end of 5, a coral reef extends for a mile and a half to the eastward, having two dry rocks on its north-east end.

	Latitude.	Longitude.
Claremont Isle, No. 1, in	13° 56′ 20″,	143° 40′ 30″
2	13 51 30,	143 37 30
3	13 46 45,	143 33 20
4	13 40 00,	143 36 20.

Reef *o* extends in an east and west direction for a mile and a half, and at a mile farther there is another reef, that may be connected to it; *o* has a dry sand near its western extremity, in latitude 13° 34′, and longitude 143° 38′ 45″.

Islet 6, in latitude 13° 29′, longitude 143° 38′ 26″, is a very small, low, woody islet, with a reef extending for three quarters of a mile off its north and south ends.

A reef lies two miles and one-third N. 72½° W. from islet 6, and S. 59° E. from the summit of Cape Sidmouth; this reef is not more than a quarter of a mile in extent, and has a rock in its centre that is uncovered at half tide; it is a brown looking shoal, and therefore of dangerous approach.

65. Off *Round Hill* there is a sand-bank covered by the sea; it lies about two miles from the shore, and about E.N.E. from Round Hill summit.

q is a small, brown, rocky shoal, that is not visible until close to it; it bears S. 60° E., four miles from the extremity of Cape Sidmouth.

66. *Cape Sidmouth* is rather an elevated point, having higher land behind it; and at about nine miles in the interior, to the W. N. W., there is a rounded summit: at the extremity of the cape there are two remarkable lumps on the land, in latitude 13° 24′ 20″, and longitude 143° 30′. The cape is fronted by several rocky shoals, and ought not to be approached within four miles.

r is a sand-bank, on which we had two and a half fathoms; but from the nature of the other neighbouring reefs, *s* and *t*, it is perhaps rocky also, and may be connected with them. It lies four miles and a quarter N. 32° E. from Cape Sidmouth, and W. ¼ N. from islet 7.

6½ and 7 are two bare sandy islets, situated at the north ends of reefs extending in a N. N. W. direction; the reef off the islet 6½ is four miles and a half in length, and that off 7 is two miles and a half long: 6½ is in latitude 13° 23′ 20″, longitude 143° 39′ 30″; 7, in latitude 13° 21′ 20″, and longitude 143° 36′ 10″.

8 and 9 are two low, woody islets, of about a mile and a quarter in diameter. Some shoal marks on the water were observed opposite these islands, but their existence was not ascertained. Both the islets are surrounded by coral reefs of small extent.

67. *Night Island*, its north end in latitude 13° 13′ 8″, and longitude 143° 28′ 40″, is a low woody island, two miles long, but not more than half a mile wide; it is surrounded by a coral reef, that does not extend more than a quarter of a mile from its northern end. On the south side, and within it, the space seemed to be much occupied by reefs, but they were not distinctly made out on account of the thickness of the weather. There was also the appearance of a covered shoal, bearing N. 55° E. from the north end of the island, distant four miles.*

u and *w* are two reefs; the former, which was dry when we passed, lies six miles N. 18° W. from the north end of Night Island; there is also a small rock detached from it, which is not visible until close to it.

v is a covered coral reef, of about a mile and a quarter in extent; its centre is in 13° 1′ latitude.

68. *Sherrard's Islets* are low and bushy, and surrounded by a rocky shoal extending for a mile to the S. E.; the south-westernmost is in 12° 58′ 10″ latitude, and 143° 30′ 15″ longitude.

10 is a low wooded islet, in latitude 12° 53′ 10″, on a reef of small extent; abreast of it is a rocky islet, lying about a mile and a half south from *Cape Direction*. Off its east end is a smaller rock.

The coast between Cape Sidmouth and Cape Direction is rather high, and the shore is formed by a sandy beach. Ten miles N. W. from the former cape is an opening in the hills. The high land then continues to the northward to Cape Direction, which has a peak near its extremity, close off which are two small rocks, but the depth at a mile and a half off is thirteen fathoms. The peak is in latitude 12° 51′ 55″, and longitude 143° 26′ 10″.†

x. The position of this reef was not precisely ascertained. It appeared to be about two miles to the N. N. W. of the extremity of the cape.

y and *z* are two covered reefs, of not more than a mile in extent; they are separated from each other by a channel a mile wide: *y* is four miles and a half N. 51° E. from Cape Direction.

a and *b* are also covered reefs. The former is a mile and a quarter in length; the latter extends for two miles in an east direction, and is a mile broad: *a* bears nearly east, nine miles, from a peaked hill on the shore, and is five miles to the south of Cape Weymouth.

69. *Lloyd's Bay* was not examined. It appeared to have a considerable opening at its south-west end, where the land was very low; the hilly country

* Observed many shoals to the N. W. of Night Island, one bore E. N. E., two miles and a half from its north point. We saw much shoal water to seaward.—Roe MS.

† Shoal water extends for about six miles round the north side of Cape Direction.—Roe MS. And for a mile to the eastward of it.—P. P. K.

to the south of Cape Direction also ceases, and there is a considerable space of low land between them and the south end of Cape Weymouth range.

70. *Cape Weymouth* is an elevated point, sloping off from a high summit; its extreme is in latitude 12° 37′ 15″, and longitude 143° 20′ 35″. Restoration Island, off the cape, is high and of conical shape. About a mile E. S. E. from it is a small rocky islet. The coast then extends towards Bolt Head and forms several sinuosities, one of which is Weymouth Bay of Captain Cook. The shores of the bay were not well examined.*

71. *Fair Cape*, so named by Lieutenant Bligh, is a projection of high land, in latitude 12° 25′, longitude 143° 11′ 15″. It has a reef off it, according to Lieutenant Jeffrey's account, but its situation does not appear to have been correctly ascertained: we did not see it.

72. *Bolt Head* is the north-west end of the high land at the south end of Temple Bay. It is here that the high land terminates, the coast to the northward being very low and sandy, with the exception of Cape Grenville, which is the rocky projection that forms the north extremity of Temple Bay. A little to the south of the cape is Indian Bay of Lieutenant Bligh. The latitude of Cape Grenville's east trend is 11° 57′ 30″, its longitude 143° 8′.

c is a coral reef, with a dry sandy key at its northern end, in latitude 12° 35′ 20″, longitude 143° 25′ 15.′ It is about two miles long.

d, a small oval-shaped reef in the channel between *c* and *e*. It is covered, and has perhaps twelve feet water over it.

e is an extensive coral reef, fourteen miles long, commencing in latitude 12° 32½′, and extending to 12° 24′, and in long. 143° 16′. It is entirely covered, except a few dry rocks at its north-west end. The south-eastern extremity of the reef is perhaps three or four miles wide, but its eastern termination was not clearly distinguished.

f is a small reef, about three miles S. W. from Quoin Island, which is a small wedge-shaped rock. It is in the neighbourhood of this reef that the merchant ship, Morning Star, was lost. Quoin Island is in latitude 12° 24′, and longitude 143° 23′ 50″.

g is a coral reef, ten miles long, and from one to two broad, having a dry rock upon it (in latitude 12° 18′ 20″, and long. 143° 14′ 35″,) about three miles from its north end.

73. *Forbes's Islands* are high and rocky, but appeared to be clothed with vegetation. The group occupies a space of about two miles. The summit of Forbes's Island is in latitude 12° 16′ 35″, and longitude 143° 18′ 50″.

h, a coral reef, with some dry rocks near its north end, is about one mile long, and separated from *i* by a narrow pass. The south end of *h* bears from the summit of Forbes's Island W. ¼ S. seven miles.

i and *k*, coral reefs, lying N. W. having a very narrow channel between them. The former is covered, but the latter has a dry sandy key at its north-west end, in latitude 12° 12′ 20″, and longitude 143° 10′ 5″.

74. *Piper's Islets* are four low bushy islets upon two circular reefs, with a passage separating them of a quarter of a mile wide. The reefs have each two islets upon them, and a dry rocky key round their western edge; the centre of the narrowest part of the channel between them is twelve and a half fathoms deep, but abreast the south end of the south-easternmost shoal there is ten and a half fathoms.

l, a circular coral reef, a mile and a half in diameter, with a dry rock at its east end, in latitude 12° 9′ 5″, and longitude 143° 11′.

75. *Young Island*, a small islet on a coral reef of about half a mile in extent, in latitude 12° 6′ 50″, and longitude 143° 7′.

* There is a dry sand four or five miles N. W. from Cape Weymouth.—Roe MS.

m, a coral reef, about two and a half miles long, having a dry rock at its north end. It bears S. 40° W., three miles from the summit of Haggerston's Island.

n, an extensive, irregular-shaped coral reef, seven miles long, and from one to four broad. It is separated from *o* by a narrow tortuous channel, but not safe to pass through: both *n* and *o* are covered. There is a safe passage between these reefs and Haggerston's Island, of a mile and a half wide; but there is a small reef detached from the north-west end of *n*, which should be avoided, although there is probably sufficient depth of water over it for any ship. It was seen from the summit of the island, from whence another coral patch was observed at about one mile to the westward, of which we saw no signs.

p is a small reef, of about a mile and a quarter in extent; it was seen from the summit of Haggerston's Island, as was also another reef, seven miles S. b. E. from it. The positions of these reefs are doubtful.

76. *Haggerston's Island* is high and rocky; the summit is in latitude 12° 1′ 40″, and longitude 143° 12′. It is situated at the S. S. W. extremity of a coral reef of nearly two miles in length; its northern side is furnished with some trees and a sandy beach. At the north end of the reef are two dry patches of sand and rocks. It is separated from the islands of Sir Everard Home's Group by a channel nearly three miles wide, quite free from danger; but in passing through it, the tide or current sets to the N. N. W. round the reef off Haggerston's Island.

77. *Sir Everard Home's Group* consists of six islands. The two south-westernmost are rocky, and one of them has two peaks upon it, which, from the southward, have the appearance of being upon the extremity of Cape Grenville. The south-easternmost has a hillock, or clump of trees, at its south-east extremity, in latitude 11° 57′ 40″, and longitude 143° 11′. The outer part of this group is bold to, and the islands may be approached, but the space within them appeared to be rocky. There is a passage between the group and Cape Grenville. The merchant ship, Lady Elliot, in passing through it, found overfalls with eighteen fathoms.

Round Cape Grenville is *Margaret Bay*, fronted by Sunday Island, elevated and rocky, but not so high as Haggerston's Island, with good anchorage under its lee.

q is a covered reef, of about a mile in extent, in latitude 11° 55′, five or six miles to the E. N. E. of Sir Everard Home's Group.

78. *Sir Charles Hardy's Islands* are high and rocky, and may be seen five or six leagues off. The summit is in lat. 11° 53′ 20″, and long. 143° 23′ 40″.

r is a covered reef; and *s*, a reef, with a dry sandy key upon it.

79. *Cockburn Isles* are rocky, and may be seen four leagues off.*

t and *u* are two reefs that were seen at a distance, and appeared to be detached from each other.

80. *Bird Isles* (the Lagoon Islands of Lieutenant Bligh) consist of three low bushy islets encompassed by a reef. The islands are at the outer verge of the reef, and may be passed within a quarter of a mile. The north-east island is in lat. 11° 44′ 15″, and long. 142° 58′ 45″.

81. *Mc.Arthur's Isles* consist of four low bushy islets, of which two are very small. They are encompassed by a reef of more than three miles long, and are separated from the Bird Isles by a channel three miles and a half wide.

82. *Hannibal's Isles* are three in number, low and covered with bushes.

* There is a dry sand bearing S. W. b. W. ½ W., two miles and a half from the southernmost Cockburn Island, and there are many shoals of great extent to the northward of the group.—Roe MS.

The easternmost is near the extremity of the reef encircling the whole, and is in latitude 11° 34′ 15″, and longitude 142° 51′ 20″.*

v and *w*; these shoals are separated by a safe channel of a mile and a quarter wide; *v* is circular, and has a dry sand at its north-west edge, and a rocky key at its south-west end; the channel between it and Hannibal's Islands is two miles and a half wide: *w* is nearly four miles long, and is entirely covered. The course between them is west; but by hauling close round the east end of *v*, a W. b. b. N. ½ N. course will carry a vessel a quarter of a mile to leeward of the west end of *w*. The north-west extreme of *w* is three miles and a quarter S. 35° W. from Islet 1.

The islets 1 and 2 are contained in a triangular-shaped reef, of about a mile and three quarters in extent; they are covered with low trees. Islet 1 is in latitude 11° 28′ 45″. No. 3 is a sandy islet crowned with bushes at the north-west end of a coral reef of about a mile and a half in length. Between the two latter reefs there appeared to be a channel of a mile wide in the direction of about N. W. 4, 5, and 6, are sandy islets covered with bushes, on small detached reefs, with, apparently, a passage between each; 4 is in latitude 11° 22′ 30″. 7, a small bushy island,† is separated from Cairncross Island by a channel two miles wide. The latter is a small woody island, situated at the north-west end of a coral reef, more than two miles long and one broad; the north-west point of the reef runs off with a sharp point for about a quarter of a mile from the islet. There is good anchorage under it, but the depth is fifteen fathoms, and the sea is rather heavy at times with the tide setting against the wind. The latitude of its centre is 11° 33′ 30″, and its long. 142° 50′ 35″.

8, 9, and 10, are low, woody islets: 8 is five miles to the eastward of Cairncross Island; 9 and 10 are to the northward of 8.

11 is also low and woody, but its position was not clearly ascertained.

83. *Orfordness* is a sandy projection of the coast under Puddingpan Hill (of Bligh), the shape of which, being flat-topped, is very remarkable. The hill is in latitude 11° 18′ 30″, and longitude 142° 43′ 35″.

The country between Cape Grenville and Cape York is low and sandy, with but few sinuosities in its coast line: it is exposed to the trade wind, which often blows with great strength from S. E. and S. E. b. E.

84. *Escape River*, in 10° 57½′, is an opening in the land of one mile in breadth, trending in for two or three miles, when it turns to the north, and is concealed from the view; the land on the north side of the entrance is probably an island, for an opening was observed in Newcastle Bay, trending to the south, which may communicate with the river. The entrance is defended by a bar, on which the Mermaid was nearly lost. The deepest channel may probably be near the south head, which is rocky. The banks on the south side are wooded, and present an inviting aspect.

85. *Newcastle Bay* is nine miles in extent by six deep; its shores are low, and apparently of a sandy character. At the bottom there is a considerable opening bearing W. ¼ N., eight miles and a half from Turtle Island.

Off the south head of the bay is *Turtle Island*, a small rocky islet on the east side of an extensive reef, in latitude 10° 54′, and longitude 142° 38′ 40″. It is separated by a channel three miles wide from reef *x*, which has a dry sand at its north end, in latitude 10° 53′, and longitude 142° 42′. It has also some dry rocks and a mangrove bush on the inner part of its south end.

Four miles to the north of *x* are two shoals, *y* and *z*, both of which are covered; *y* is two miles and a half long, and *z* three miles and a quarter;

* There is a dry sand at one mile and three quarters, and another at two miles and a half N. N. W. from the northern Hannibal island.

† A rocky reef extends for two miles to the southward of Islet 7.—Roe MS.

neither of them appeared to be a mile in width; the north-west end of *z*, when in a line with Mount Adolphus, bears N. 19° W.

Off the north head of Newcastle Bay, which forms the south-east trend of the land of Cape York, is a group of high rocky islands, Albany Isles; and immediately off the point is a reef, which extends for about a mile. Half a mile without its edge, we had ten fathoms.

The islets 12, 13, and 15, were only seen at a distance.

86. *The Brothers*, so called in Lieutenant Bligh's chart, are two high rocks upon a reef.

87. *Albany Isles* contain six islands, of which one only is of large size; the easternmost has a small peak, and a reef extends for less than a quarter of a mile from it. The peak is in latitude 10° 43′ 45″, and longitude 142° 35′ 5″.

88. *York Isles* is a group about seven miles from the main land; the principal island, which is not more than two miles long, has a very conspicuous flat-topped hill upon it, Mount Adolphus,* in latitude 10° 38′ 20″, and longitude 142° 36′ 25″. Off the south-east end of this island are two rocky islets, the southernmost of which is more than a mile distant; the northern group of the York Isles are laid down from Captain Flinders.

89. *Cape York*, the northernmost land of New South Wales, has a conical hill half a mile within its extremity, the situation of which is in 10° 42′ 40″ S., and 142° 28′ 50″ E. of Greenwich. There is also an island close to the point, with a conical hill upon it, which has perhaps been hitherto taken for the Cape; from which it is separated by a shoal strait half a mile wide; the latitude of the summit is 10° 41′ 35″, and longitude 142° 28′ 25″. From this island a considerable shoal extends to the westward for six miles towards a peaked hill on the extremity of a point. In the centre of this shoal are some dry rocks.

At the distance of nearly five miles from the above island is the rocky islet *a*, in latitude 10° 36′ 50″, and longitude 142° 27′ 45″; it is of small size, and surrounded by deep water; and, being easily seen from the strait between Cape York and the York Isles, serves to direct the course.

90. *Possession Isles* consist of nine or ten islets, of which 2 and 7 only are of large size, and neither of these are two miles long; they are also higher than the others. No. 1, is a small conical hill; 2 is hummocky; 3, 4, and 6, are very small; 5 makes with a hollow in its centre, like the seat of a saddle. The passage between 2 and the small islets 3 and 4 is the best; there are six and seven fathoms water; but in passing this, it must be recollected that the tide sets towards the islands on the northern side.

91. *Endeavour Strait* is on the south side of Prince of Wales's Islands: a shoal extends from Cape Cornwall (latitude 10° 45′ 45″, longitude 142° 8′ 35″,) to the westward, and is probably connected with a strip of sand that stretches from Wallis's Isles to Shoal Cape. We crossed it with the cape bearing about East, when the least depth was four fathoms; but on many parts there are not more than three fathoms. Variation 5° 38′ W.

92. *Prince of Wales's Islands* are much intersected by Straits and openings, that are very little known; there was an appearance of a good port, a little to the S. W. of Horned Hill, (latitude 10° 36′ 35″, longitude 142° 15′,) which may probably communicate with Wolf's Bay, the strait to the south of Wednesday Island also offers a good port in the eastern entrance of some rocky islands, and without them is the rock *b*, with some sunken dangers near it.†

* There is a bay on the west side of Mount Adolphus, but it appeared shoal.—Roe MS.

† A few miles to the eastward of Cape Cornwall, within some islands, is an anchorage discovered by Capt. Lihon, R. N. There is a bar on the west side of the islands, but to the eastward of them the passage is both wide and safe. This harbour, in case of stress of weather,

93. *Wednesday Island;* its north end, in latitude 10° 30′ 10″, and longitude 142° 15′, may be approached close, but a considerable shoal stretches off its western side, the greater part of which is dry.

Off Hammond's Island is a high conspicuous rock, bearing W. ¾ S., and five miles and three-quarters from the north end of Wednesday Island. Captain Flinders passed through the strait separating Wednesday Island from Hammond's Islands, and had four, five, and six fathoms.

Abreast of the strait separating Good's Island from the latter is the reef *c*, on which are several dry rocks, but abreast of it, and one mile and one quarter from it, is the reef *d*,* which is generally covered; the latter bears S. 75° W. three miles and a quarter from the rock off Hammond's Island, and about N. 45° W. two and a quarter miles from the opening between Good and Hammond's Islands; the marks for avoiding it are given in the sailing directions at p. 71.

94. Abreast of Wednesday, Hammond, and Good's Islands is the *North-west Reef*, an extensive coral bank, many parts of which are dry; it is ten or eleven miles long; the channel between it and the islands is from one mile and three quarters to two miles and a quarter wide.

95. *Booby Island* (latitude of its centre 10° 36′, longitude 141° 52′ 50″) is a small rocky islet of scarcely a third of a mile in diameter; its south-west end has a shoal projecting from it for half a mile, but its other sides are bold to. In a N. 70° E. direction from it, at the distance of two miles and three quarters, is a sand bank with three fathoms; it was discovered by the ships Claudine and Mary, on their passage through Torres's Strait, when it was named Larpent's Bank.†

Notice to Mariners.

The buoy of the Rundlestone has been replaced, and is now moored in thirty fathoms W.S.W. from the Stone, and in sixteen fathoms at low-water.

Elsinore, April 8.—The Trindelen floating light parted from her moorings during a heavy gale last night from N.W., and has arrived in these roads. The gale continues, and it is feared some of the vessels in these roads must have lost anchors and cables.

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21. The Tarbert Rock Light-House.

The Lantern on the beautiful tower built by the Ballast Board, on Tarbert Rock, in the river Shannon, was lighted for the first time on Monday evening; and its splendid illumination was hailed with joy by all the mariners in the Shannon, and every one connected with the navigation of the river. The arrangements of every part of it command admiration; nothing has been omitted—the illumination was splendid—the ventilation admirable—the building beautifully designed, and beautifully executed—and every arrangement had been made for comfort in the interior. The particulars in our next.

or to repair a ship, may be serviceable; but for a night's anchorage it is out of the way, and therefore of little consequence.

* *d* consists of three small detached patches, that extend farther off than is at first observed. There is also a narrow strip of rocks extending for a short distance off the north-east end of the reef off Hammond's Island.—Roe MS.

† It is near the west end of a shoal of five miles in length, extending in an east and west direction, a few feet only below the surface of the water.—Roe MS.

ORIGINAL PAPERS.

I.—Arctic Expeditions from England.

With the following tabulated statement, and the notes accompanying it, an attempt has been made to lay before the reader a complete view of the principal Arctic expeditions, from the discovery of Newfoundland down to the present time. When the importance of a quick passage to China is considered, it is no matter of surprise, that, in the absence of that knowledge and experience we now possess, so much concern should have been manifested in all ages, since the discovery of the new world, to effect it by the north, in preference to the tedious passage by the south. And, in contemplating the features of the globe in those regions where the object of so much solicitude lay, now that the discoveries of former voyages are collected, how true a picture have we of what can be effected by the daring firmness and perseverance of man, who, as old Purchas says, has penetrated "where the Tritons, and Neptune's selfe, would quake with chilling feare, to behold such monstruous icie ilands renting themselves with terrour of their own massines, and disdaining otherwise both the sea's sovereigntie and the sunne's hottest violence."

At the same time, now that the connection of the Atlantic and Pacific by the north is placed beyond all doubt, and its inutility to commerce is by experience established, it is interesting to contemplate the successive attempts that have been made to ascertain it, and the simple obstacles by which the most strenuous exertions to effect the passage by it have been defeated. But, in acknowledging this inutility, we must not forget that these expeditions have tended to promote that spirit for enterprise in a profession which it should be our first care to preserve in all its vigour. And the present, like other intervals between the voyages, will, we trust, be followed hereafter by an attempt that will prove finally successful. It may now be seen, that the only way of reaching Bhering Strait from the Atlantic, is either by passing directly to the north of Greenland, or by following the track of Parry, by Melville Island. But, as it is evident that the greatest flow of water from the polar to the equatorial regions is between Greenland and Norway, the most certain way of effecting the passage would be to commence it from Bhering Strait.

Although, strictly speaking, not an arctic expedition, we have commenced our table with Cabot's voyage, as the first of the kind that was made from our country. The numbers against the ships refer to the notes following the table.

Reigning Sovereign.		*Vessels.*	*Tons.*	*Commanders.*	*Sailed.*	*Where from*	*Returned.*	*By Whom Sent.*
Henry VII.	1	Five ships		John Cabot, & Sons	—— 1497	Bristol*	Uncertain	A Compan.
Ditto.....	2	Six ships	200	Sebastian Cabot	May, 1498	Ditto	Ditto	Govern.& a Company.
Henry VIII.	3	Dominus Vobiscum, & another		Uncertain	May, 1527	Thames	1527	Probably a Company.
Ditto.....	4	Trinitie & Minion		John Hore	April,1536	Thames	Uncertain	Ditto.
Edward VI.	5	Bona Esperanza	120	Sir H. Willoughby	May, 1553	Ditto	Perished	Company.
		Edw. Bonadventure	160	Richrd. Chancelor			1554	
		Bona Confidentia	90	Cornel. Durfoorth			Perished	
Philip&Mary	6	Edw. Bonadventure	160	Richrd. Chancelor	—— 1555	Ditto	Lost	Ditto.
		Philip and Mary		Uncertain			1557	
Philip&Mary	7	Serchthrift		Stephen Burough	May, 1556	Thames	1557	Ditto.
Elizabeth ..	8	Michael	30	Martin Frobisher	June, 1576	Ditto	Oct. 1576	Ditto.
		Gabriel	35	Uncertain			Sept1576	
		A Pynasse		Ditto			Lost	
Elizabeth ..	9	Ayde	180	Martin Frobisher	May, 1577	Ditto	Nov. 1577	Ditto.
		Michael	300	Uncertain				
		Gabriel	30	Edward Fenton				
Elizabeth ..	10	Fifteen ships		Martin Frobisher	May, 1578	Harwich	Oct. 1578	Govern.&a [Com.
Elizabeth ..	11	George (Barques)		Arthur Pet	May, 1580	Ditto	Nov1580	Company.
		William (Barques)		Charles Jackman			Lost	
Elizabeth ..	12	Five ships—one the Squirrel	10	Sir Humphr. Gilbert	June, 1583	Cawsand B	4 lost	Governmt.
Elizabeth ..	13	Sunshine	50	John Davis	June, 1585	Dartmouth	Sept. 1585	Company.
		Moonshine	35					
Elizabeth ..	14	Mermaid	120	John Davis	May, 1586	Ditto	Oct. 1586	Ditto.
		Sunshine	50					
		Moonshine	30					
		North Star	10					
Elizabeth ..	15	Elizabeth		John Davis	May, 1587	Ditto	Sept. 1587	Merchants
		Sunshine						
		Helena						
Elizabeth ..	16	Discovery	70	George Weymouth	May, 1602	Thames	Aug. 1602	Ditto.
		Godspeed	60					
Elizabeth ..	17	Grace	50	Stephen Bennet	—— 1603			
James I. ..	18	Hopewell	40	John Knight	April,1606	Thames	Sept. 1606	Ditto.
James I. ..	19	A small barque		Henry Hudson	May, 1607	Ditto	Sept. 1607	Ditto.
James I. ..	20	Same		Henry Hudson	April,1608	Ditto	Aug. 1608	Ditto.
James I. ..	21	Discovery	55	Henry Hudson	April,1610	Ditto	Sept. 1611	Ditto.
James I. ..	22	Resolution		Sir Thos. Button	May, 1612	Uncertain	Sept. 1613	Ditto.
		Discovery	55	—— Ingram				
James I. ..	23	Patience		James Hall	—— 1612	Thames	Sept. 1612	Ditto.
		Hearts Ease						
James I. ..	24	Discovery	55	—— Gibbons	—— 1614	Uncertain	—— 1614	Ditto.
James I. ..	25	Ten ships		Robert Fotherby	—— 1614	Uncertain	—— 1614	Ditto.
James I. ..	26	Richard	20	Robert Fotherby	—— 1615	Uncertain	—— 1615	Ditto.
James I.....	27	Discovery	55	Robert Bylot	April, 1615	Thames	Sept. 1615	Ditto.
James I.....	28	Discovery	55	Robert Bylot	Mar. 1616	Thames	Sept. 1616	Ditto.
Charles I. ..	29	A ship		—— Hawkbridge	Between 1616 & 31	Uncertain	Uncertain	Supposed.
Charles I. ..	30	Charles	80	Luke Fox	May, 1631	Thames	Oct. 1631	Governmt.
Charles I. ..	31	Maria	70	Thomas James	May, 1631	Bristol	Oct. 1632	Company.
Charles II...	32	A ship		Zaccharian Gillam	Sum. 1668	uncertain		Governmt.
Charles II...	33	Speedwell		John Wood	May, 1676	Thames	Lost	Govern.& a Company.
		Prosperous	120	William Flawes			Aug. 1676	
George I....	34	Albany		George Barlow	1719	Thames	Lost	Huds B Co.
		Discovery		David Vaughan				
George I....	35	Whalebone		John Scroggs	June, 1722	Churchill	1722	Ditto.
George II. ..	36	Furnace		Chris. Middleton	1741	Thames supposed	1742	Governmt.
		Discovery		William Moor				
George II. ..	37	Dobbs	180	William Moor	May, 1746	Thames	Oct. 1747	Company.
		California	140	Francis Smith				
George III. .	38	By land		Samuel Hearne	1769			
George III. .	39	Racehorse		Hon. C. J. Phipps	June, 1773	Thames	Sept. 1773	Governmt
		Carcass		Skef. Lutwidge				
George III. .	40	Resolution		James Cook	July, 1776	Thames	October	Ditto.
		Discovery		Charles Clerke	Aug. 1776	Plymth.	1780	
George III. .	41	Lion	brig	Richard Pickersgill	May, 1776	Thames	Sept. 1776	Ditto.

* Supposed, as the Cabots resided at Bristol, and, by their patent, were obliged to return thereto.

Reigning Sovereign.		*Vessels.*	*Tons.*	*Commanders.*	*Sailed.*	*Where from.*	*Returned.*	*By Whom Sent.*
George III. .	42	Lion		Walter Young . .	Mar. 1777	Thames	Aug. 1776	Merchants
	43	By land		Alex. M'Kenzie .	1789			
George III. .	44	Beaver	84	Charles Duncan .	May, 1791	Thames	1792	Huds B Co.
George III. .	45	Isabella	382	John Ross . .	April, 1818	Thames	Oct. 1818	Governmt.
		Alexander	252	Wm. Ed. Parry				
		Dorothea	370	David Buchan				
		Trent	250	John Franklin				
George III. .	46	Hecla	375	Wm. Ed. Parry	May, 1819	Thames	Sept. 1820	Ditto.
		Griper	180	Mathew Liddon				
	47	By land		John Franklin .	May, 1819		July, 1822	Ditto.
George IV. .	48	Hecla	375	Wm. Ed. Parry	May, 1821	Thames	Oct. 1823	Ditto.
		Fury	327	Geo. F. Lyon ,				
	49	Baffin	321	Scoresby . . .	Mar. 1822	Liverpool	1822	Ditto.
George IV. .	50	Hecla	375	Wm. Ed. Parry	May, 1824	Thames	Oct. 1825 / Lost	Ditto.
		Fury	327	Hen. P. Hoppner				
George IV. .	51	Griper	180	Geo. F. Lyon . .	June, 1824	Thames	Nov. 1824	Ditto.
George IV. .	52	By land		John Franklin .	Feb. 1825	Liverpool	Sept. 1827	Ditto.
George IV. .	53	Blossom		F. W. Beechey .	May, 1825	Thames	Oct. 1828	Ditto.
George IV. .	54	Hecla and boats	375	Wm. Ed. Parry .	Mar. 1827	Thames	Sept. 1827	Governmt.
George IV. .	55	Victory		John Ross . . .	1829	Thames	Oct. 1833	Private.
William IV.	56	By land		George Back . .	Feb. 1833	Liverpool		Gov.& Sub.

1. JOHN CABOT, and his three sons, Lewis, Sebastian, and Sanchez, were empowered by a patent, in 1495, to sail under the royal flag, to make discoveries in the eastern, western, and northern seas. It was not until the spring of 1497 that the expedition sailed. The account of it is vague and indeterminate, but that Newfoundland was discovered is evident from the following passage, in Latin, extracted from a chart drawn by Sebastian Cabot, and quoted by Hackluyt.

"In the year of our Lord 1497, John Cabot, a Venetian, and his son Sebastian, dicovered that country, which no one before his time had ventured to approach, on the 24th June about five o'clock in the morning. He called the land *Terra Prima Visa*, because, as I conjecture, this was the place that first met his eyes in looking from the sea. On the contrary, the island which lies opposite the land he called the island of St. John, as I suppose, because it was discovered on the festival of St. John the Baptist. The inhabitants wear beasts' skins and the intestines of animals for clothing, esteeming them as highly as we do our most precious garments. In war, their weapons are the bow and arrow, spears, darts, slings, and wooden clubs. The country is sterile and uncultivated, producing no fruit; from which circumstance it happens that it is crowded with white bears and stags of an unusual height and size. It yields plenty of fish, and these very large, such as seals and salmon; there are soles above an ell in length, but especially great abundance of that kind of fish called in the vulgar tongue baccalaos. In the same island also breed hawks, so black in their colour that they wonderfully resemble ravens, besides which there are partridges and eagles of dark plumage."

2. SEBASTIAN CABOT.—These six ships are stated to have been about 200 tons burthen, and two of them fitted at the king's expense. The first land seen was *Prima Vista*, (Newfoundland) and the part supposed to have been seen is now Cape Bona Vista. From thence it is stated that they sailed to the southward, to about the latitude of the Chesapeake, and returned home.

3. THE DOMINUS VOBISCUM, and ANOTHER.—Of these two ships very little appears to be known. They were sent out at the instance of "Master Robert Thorne, of Bristol." One of them was lost between Newfoundland and Labrador. The other shaped her course for Cape Breton, and explored the coast, the crew frequently landing. This vessel afterwards returned safely to England.

4. TRINITIE AND MINION.—This voyage is little better known than the preceding. It was "set forth by Master Hore of London, a man of goodly stature and of great courage, and given to the studie of cosmography." The ships arrived at Cape Breton, and named Penguin Island on the south coast of Newfoundland. They afterwards put into Newfoundland, and appear to have been reduced by want of provisions to the dreadful resource of casting lots for who should become food for the rest. Happily a French ship arrived, and they seized her, and found their way home in her. It is related of this expedition, that "one came behind another, who was digging roots from the earth, and killed him, with a view to prepare himself a meal from his fellow-creature's flesh."

5. SIR HUGH WILLOUGHBY.—Sebastian Cabot, supposed to have been the son of John Cabot, after having made discoveries in the service of Spain, during the remainder of Henry the Seventh's reign, and that of Henry the Eighth, returned to England in 1548, and was appointed *Grand Pilot* of England, with a salary of 166l. 13s. 4d., "in consideration of the good and acceptable service done, and to be done, by him." He was placed at the head of an association of merchants, whose object was to make discoveries of unknown countries, for the purposes of trade; and Sir Hugh Willoughby was sent out by them, owing to the representations of Cabot, who endeavoured to prove that it was possible to find a way by the NE to Kathay (China) and India. The island of Seynam was seen in this voyage, and the ship passed round the north Cape to Nova Zembla. The Edward Bonaventure, which had separated from the Admiral in a storm, went to Archangel, and Captain Chancelor visited Moscow, and returned the following year. Willoughby and Durfoorth, with their crews, are supposed to have perished in a harbour called Arzina, in Lapland, between Kola and Swjatoi Noss.

6. RICHARD CHANCELOR.—The company, encouraged by the reception of Chancelor at Moscow, sent him again to trade, and plenipotentiaries accompanied him from the coast. He went to

Archangel with the two ships. Chancelor, in the Bonaventure, departed from Archangel for England in July, accompanied by the Philip and Mary, the Bona Esperanza, and the Confidentia, the two latter being the ships of Willoughby. The Confidentia was lost on the coast of Norway, with her crew; the Bona Esperanza wintered at Drontheim, and was lost on her way home; and the Edward Bonaventure was wrecked on the coast of Scotland. Richard Chancelor, and most of the crew, were drowned, but the ambassador he brought arrived safely in London.

7. Stephen Burough—in the Serchthrift, (pinnace) went to the coast of Norway, passed the north Cape to Cola, and reached Nova Zembla; wintered at Colmagore, and on his return was made Comptroller of the Navy.

8. Martin Frobisher—saw, probably, the southernmost Cape of Greenland. He visited Labrador, and was visited by one of the natives. On their landing him, the crew of the boat, consisting of 5 men, went to the natives, contrary to orders, and were never heard of more: on this account, Frobisher caused a native to be seized, and taken on board his ship. This man was brought to England, but died soon after his arrival. Some particulars concerning this voyage will be found in our 18th number; among them, a statement of all the expenses attending the "strange man of Cathay," including even his picture, painted by a "Ducheman" for the "Queen's Majesty." A list of the instruments will also be found there, that were taken out by Frobisher.

9. Martin Frobisher.—In this voyage, Frobisher appears to have first followed his former track from the Orkneys till he came to Frobisher strait. He then went to the place where he had lost his men in the preceding year, and found their clothes. He, and his crew, had skirmishes with the natives, and brought home a man, woman, and child. No further discovery was attempted, and they returned with ore, as in the previous voyage, that was supposed to contain gold.

10. Martin Frobisher.—This expedition of 15 small vessels, was fitted out with the view of collecting the ore, specimens of which had been brought home from the newly discovered land, called, by desire of Queen Elizabeth, *Meta Incognita*, which most probably was Labrador, although some writers supposed it to have been Greenland. The persons embarked consisted of 40 seamen, 30 pioneers, and 30 soldiers, among which were bakers, gold-refiners, &c. They passed up Frobisher Strait. The object of the expedition was not accomplished; and the vessels, excepting one, returned the same year, having lost 40 men.

11. Arthur Pet.—The ill-success to the westward was the occasion of this trial to the eastward to find a way to Cathay. The vessels passed the north Cape, and penetrated as far as Waygatz Strait, Nova Zembla, but did not pass through it. Pet's

ship got safe back to Ratcliff, (Thames,) and the William, being separated from her in a fog, wintered in a harbour in Norway, from whence she sailed in February with a Danish ship for Iceland, and was never heard of more.

12. Sir Humphrey Gilbert.—This voyage is full of interest, from the circumstance of Newfoundland being taken possession of, the discovery that was made by it, and the fatal events by which it was attended. The ships arrived at Penguin, (now Fogo,) island, and went on to Concepcion Bay, and afterwards to St. John Bay. Sir Humphrey Gilbert took possession of Newfoundland, and received presents from all the vessels he found there, particularly those of the Portuguese. Mutiny and sickness broke out in his fleet, while in St. John Bay, by which many were lost. He sailed in search of Sablon (Sable) island, on which he was told that the Portuguese had landed cattle thirty years previously. His ship struck on a sand bank, (probably off Sable island) and several of her crew were lost. The admiral was saved, and went on board a small vessel of his fleet, (the Squirrel, of 10 tons!) and shaped his course for England. But, having passed the Azores in September, they were overtaken by a storm; and the small vessel, in which the admiral had embarked, foundered, with all on board. Mr. Barrow, in his valuable Chronological History of Voyages into the Arctic Regions, quotes the following passage concerning Sir Humphrey Gilbert, from Prince's Worthies of Devon. "He was an excellent hydrographer, and no less skilful mathematician; of an high and daring spirit, though not equally favoured of fortune; yet the large volume of his virtues may be read in his noble enterprises; the great design whereof was to discover the remote countries of America, and to bring off those savages from their diabolical superstitions to the embracing the gospel of our Lord and Saviour Christ; for which, his zeal deserves an eternal remembrance." The day before his vessel foundered she, having recovered from being nearly overwhelmed by a great sea, Sir Hugh was seen sitting abaft, with a book in his hand, and was heard calling out to his crew, 'Courage, my lads! we are as near to heaven by sea as by land!'"

13. John Davis.—The first land made by Davis was named the "Land of Desolation," probably Desolation Island in the chart. Exeter Sound, Mount Raleigh, Dyer Cape, and Cape Walsingham, were successively named on the coast of West Greenland, the latter after the secretary of state, Sir Francis Walsingham. He sailed up the strait bearing his name, but, the wind being unfavourable, he returned to Desolation Island, and afterwards got safe home to Dartmouth.

14. John Davis.—On his second voyage, Davis passed Cape Farewell into Davis Strait. He met with the natives at Good Haab, and, in consequence of their repeated thefts, Davis seized

the ringleader, and carried him off. He went to Cumberland Strait, and afterwards to Nain, on the coast of Labrador, from whence he returned to England. Two of the four ships were to seek the passage between Greenland and Iceland. They touched at Iceland, and, crossing over to the coast of Greenland, stood to the southward, passed Cape Farewell, and Desolation Island, to Gilbert Sound, which Davis had appointed as the rendezvous. Finding him gone, they sailed for England soon after, and arrived at Ratcliffe.

15. JOHN DAVIS.—The third voyage of Davis proved to be the most important of all that he made. He proceeded to West Greenland, and, leaving two of the ships in 64° N. to fish, he pursued his course to the north and north-west, and arrived off Disko Island. Continuing to the north, he named the west coast of Greenland London Coast, and penetrated as far as 72° 12′ N. Northerly winds obliged him to return to the south; he descried Mount Raleigh in Cumberland Island, and named Lumley Inlet after Lord Lumley, Warwick Foreland, Cape Chidley, Darcy Island, after Lord Darcy, and returned to Dartmouth.

16. GEORGE WEYMOUTH.—The voyage of Capt. G. Weymouth appears to have been determined on in compliance with the general opinion which prevailed of there being a passage to the northward, and the sanguine ideas of the merchants composing the Russian and Turkish company, were considerably influenced by the report of Capt. James Lancaster, who had then returned from a voyage to India by the south. The two ships went round by the Orkneys, and saw the south coast of Greenland; passing Warwick Foreland, they came to Lumley Inlet, and penetrated to the northward as far as 68° 55′. There the crew mutinied, but were quieted. Capt. Weymouth then stood to the southward, and put into an inlet on the coast of Labrador in 56° N. From thence he returned to Dartmouth, without making any discovery.

17. STEPHEN BENNET.—This expedition was sent out at the sole expense of "the worshipful Francis Cherie." The island which bears his name, in 74° 55′ N, was seen in this voyage, but had been previously discovered by Barentz, the Dutch navigator. Besides, the several other trading voyages were made under the patronage of private individuals to Cherie Island and the coast of Lapland, without being productive of any further discovery.

18. JOHN KNIGHT—had performed a voyage before to the north, in the year 1605, by the appointment of the king of Denmark, as the English mariners were considered the most experienced. Knight, in the present voyage, passed the Orkneys, and "came to land" in 56½° N. An accident happened there, by which his ship was driven on shore, and became full of water. After doing all they could to stop the leak, he went in his boat in search of a harbour in which to repair her. Leaving two men in

the boat, he went with his brother and two others, to examine the island on which they had landed. They waited in vain for his return, for they were never heard of more. The crew did all they could to repair their ship, and set up their pinnace, but they were driven away by the natives, and obliged to put to sea, their ship leaky, and the new pinnace neither caulked nor payed. They arrived safely at Newfoundland, from whence they returned to Dartmouth. The land they touched at must have been the coast of Labrador.

19. HENRY HUDSON.—Although several voyages had been performed to India by the English, the hopes of getting there by the north were not yet abandoned. Henry Hudson, an experienced seaman, was considered to possess the resolution that was thought only necessary to make it. He reached the coast of Greenland in 73° N, and named an opening "Hold with Hope." He had entertained the idea of Greenland being an island, and attempted to sail round it. He landed his mate and boastwain in 80° 23′ N, on the coast of Greenland. He penetrated to 82° N, but could get no further, on account of the ice, and returned to the "Hold with Hope." It was his wish to have passed through this into Davis Strait, and return home, but the ice prevented him; after which, he reached Gravesend.

20. HENRY HUDSON.—The second voyage of Hudson was directed to the passage between Nova Zembla and Spitzbergen. He reached Nova Zembla, but returned unsuccessful.

21. HENRY HUDSON.—In the year 1609, Hudson had made a voyage to America, in the service of the Dutch, and had discovered Hudson river. Released from his engagements with them, he entered again the service of the English company. It is related of Hudson, in this voyage, that his employers put on board his ship one Coleburne, in whose skill they had great confidence. This excited Hudson's jealousy, and, when on his way down the river, he deliberately landed this person at Lee, with a letter informing the proprietors of his reasons for so doing; which, no doubt, much annoyed them. Hudson passed the Orkneys and Fero islands, Greenland, and Desolation. He named the islands of God's Mercy in 62° N, and Good Fortune, and saw the northern part of the coast of Labrador, which he named Magna Britannica. He also named Salisbury Foreland, Cape Diggs, and Cape Wolstenholm. He passed through the strait formed by those capes, and observed a wide sea to the westward, now Hudson Bay. Hudson's narrative here terminates. The rest of this voyage is supplied by a seaman. They sailed to the southward, with the land on the left hand, and penetrated to 53°, where they had the land on each side of them. Hereabouts Hudson found himself beset by the ice, and obliged to lay up for the winter. They had only taken six months' provisions, and a series of dissensions and

mutiny broke out. They were reduced to great privation, being compelled to subsist on moss and frogs, and the buds of spruce fir, with whatever fish and birds they could kill, several died in consequence. On the opening of the next season, as they were leaving their winter-quarters, the crew again mutinied, and put Hudson, with his son, (a boy,) and seven others, into the sloop, with a gun, and a scanty supply of provision, and left them to their fate. The ship reached the strait, taking birds and moss where they could. They were afterwards attacked by the natives, who killed four of them, but they succeeded in getting clear of the strait. They made for Newfoundland, but, after the severest sufferings from want of provisions, they reached Ireland, where they obtained some with much difficulty, and finally arrived at Gravesend. The southern and eastern shore of Hudson Bay was thus discovered.

22. Sir Thomas Button.—The command of these two ships was given to Captain, afterwards Sir Thomas Button, and the voyage was partly undertaken with the view of discovering Hudson and his companions who had been left by the mutineers. The ships entered Hudson Strait and passed Diggs Island, and afterwards named an island further west, which they called Carey's Swan's Nest. They wintered in Port Nelson, in latitude 57° 10′ N., so called after the first mate of the Resolution. Mansfield Islands were named the following season, and Button Bay, probably Hudson Bay, the western coast being named New Wales. Without finding Hudson and his companions or effecting any particular discovery, they returned to England.

23. James Hall, had already been to the north in the Danish service, but his present voyage, which was his fourth, was as unfortunate as that of Knight. He reached the coast of Greenland in 65° 20′ N., where, in July, he was killed by the spear of a Greenlander. One of the crew was also killed afterwards, but there is no doubt that the atrocities committed by the early discoverers was the cause of this hostile disposition evinced by the natives. Without visiting any other land, the ships returned safely to Kingston-upon-Hull.

24. Gibbons.—Having entered Hudson Strait, Gibbons was driven back by ice into Nain on the coast of Labrador, called in derision by his crew, "Gibbons his Hole," where he was detained five months. The season being too far advanced when he escaped from it, he returned direct to England.

25. Robert Fotherby was accompanied by William Baffin, made for Spitzbergen, and arrived at Red Beach on the north-east point of it. They afterwards made an unsuccessful attempt to get to the north of Spitsbergen, and returned to England. Baffin, as a pilot, had made voyages to the north in the two preceding years.

26. Robert Fotherby.—The Richard, in which Fotherby again went out, accompanied by Baffin, was a pinnace, but he did not attain a higher latitude than in the preceding year; and the Russia Company did not make any further attempts at discovery in the north.

27. Robert Bylot, who had been three successive voyages to the north under Hudson, Button, and Gibbons, was accompanied by Baffin in the same ship, Discovery, which had made three former voyages. He arrived at Resolution Island, and the Salvage (Savage) Islands in 62° N. He afterwards saw Salisbury Island, and named the Mill Isles in 64° N. He named Cape Comfort in 65° N., the highest northern latitude that he attained. He returned to Salisbury and Nottingham Island, and sailed from Diggs Island for Plymouth, where he arrived in safety.

28. Robert Bylot.—In this interesting and important voyage, by which the northern shores of Baffin Bay were discovered, William Baffin served as pilot, having also served as mate of the same ship in preceding voyages. The company by which the Discovery was sent out, consisted of Sir Thomas Smith, Sir Dudley Diggs, Mr. John Wolstenholme, and Mr. Alderman Jones. The first land seen was in 65° N. in Davis Strait. Women Isles were named from the voyagers meeting so many women. Horn Sound, from horns brought to the voyagers by the natives. Cape Dudley Diggs was named, and Wolstenholme Sound—Whale Sound, from the number of whales found in it. Hackluyt Island, Sir Thomas Smith Sound, Carey Islands, Alderman Jones Sound, James Lancaster Sound were successively discovered. The ship continued to the southward along the ice on the west shore of Baffin's Bay to Cumberland Straits; crossed over to Cocking Sound, 65° in Greenland, and afterwards returned to Dover Roads.

29. Hawkbridge entered Lumley Inlet, Salisbury Islands, Diggs Island, Mansfield Island, Resolution Islands, and afterwards returned home; but there is much uncertainty about the whole voyage.

30. Luke Fox.—The ship for this voyage was equipped by command of the King, under the direction of Sir Thomas Rowe, Sir John Wolstenholme, and the Trinity House Mr. Barrow says of Fox, that "he was a keen shrewd Yorkshireman, and evidently a man of considerable talent, but conceited beyond measure; and the style of his journal is so uncouth, and the jargon so obscure and comical, as in many places to be scarcely intelligible." He had facetiously assumed the name of the "*North-West Fox*," and commences his journal thus, "Gentle reader, expect not heere any florishing phrases or eloquent tearmes; for this child of mine, begot in the north-west's cold clime, (where they breed no schollers,) is not able to digest the sweet milke of Rethorick," &c. He passed the Orkneys, Cape Farewell, Lumley Island,

(now Marble Island,) Dun Fox Island, a group of islands called Brigg's Mathematics, King Charles Promontory. A promontory of land called Fox's furthest, about the entrance of Hudson Bay, was seen, after which he returned to the Downs.

31. THOMAS JAMES, in the Maria, passed Cape Farewell, Resolution Islands, Hudson Straits. He met Fox near Port Nelson. His ship at the end of the season was run aground on Charleton Island, where they wintered, and suffered much from the scurvy. By the end of the following summer they contrived to get the ship home, and arrived at Bristol. James appears not to have been qualified for this voyage.

32. ZACHARIAH GILLAM went out under the immediate patronage of Count Rupert. It is stated that he stood into Davis Strait as far as 75° N., and then into Hudson Bay, and entered Rupert River at its southern extreme. Fort Charles was first built here by him, and the country called Rupert Land.

Previous to the conclusion of this voyage, King Charles the Second granted to Prince Rupert, and to "divers Lords, Knights, and Merchants" a charter, dated the 2d of May, 1669, by which His Majesty styled them, "the Governor and Company of Adventurers trading from England to Hudson's Bay." Hence the origin of the Hudson Bay Company.

33. The Speedwell, JOHN WOOD,—was accompanied by the *Pink*, Prosperous, which was purchased by the Duke of York and Lord Berkley, Sir Joseph Williamson, Sir John Banks, and some gentlemen, to effect a passage to China between Spitzbergen and Nova Zembla. The land they saw was the north cape of Lapland, afterwards Nova Zembla, where Captain Wood's ship was lost in the ice, in June. Point Speedwell, in Nova Zembla, was named after her. Having saved all they could, they returned to England in the Prosperous, and arrived at the Nore.

34. GEORGE BARLOW, and VAUGHAN—were sent out by the Hudson Bay Company, under the orders of Captain James Knight, to find the Straits of Anian. But nothing is known of them, as they never returned.

35. JOHN SCROGGS—was sent in a small sloop by the Hudson Bay Company to search for Knight and Barlow. He saw Cape Fullerton. It was stated that he had entered Sir Thomas Rowe's Welcome, but he was supposed only to have reached Marble Island, and returned unsuccessful to England.—He reached the parallel of 62° 30′, where he found some islands, probably in the north part of Hudson Bay.

36. CHRISTOPHER MIDDLETON.—The Furnace and Discovery, under the command of Captain Christopher Middleton, passed the first winter at Churchill, from whence they sailed in July, 1742. The land he saw was Marble Island; and, passing through the "Welcome," he entered the inlet to the west, which he called Wager

River, after Sir Charles Wager, and which he explored. He named Savage Sound and Dear Sound, in Wager River; Cape Hope; explored Repulse Bay; and returned to southward by Cape Dobbs and Marble Island, and thence to England. Captain Middleton, after his return from this voyage, was accused by a Mr. Dobbs, at whose instance he had performed it, on the faith of an anonymous letter, of having stifled the discovery of the north-west passage, thereby furthering the interests of the Hudson Bay Company at the expense of Government. Middleton did all he could to refute the charge, but did not succeed even with the Lords of the Admiralty; and in the following year (1743) the act of parliament was passed, offering the reward of £20,000 to any person, being a subject of his Majesty, who should discover a north-west passage through Hudson Strait to the western and northern ocean of America. How completely has time proved that Middleton was an injured man!

37. William Moor.—The California and Dobbs galley, under the command of Mr. Francis Smith, were equipped by a company, at the instance of a Mr. Dobbs. Saw Marble Island; wintered at Port Nelson, and fitted their long-boat, naming it the Resolution. They proceeded on in July, 1747, and looked into Chesterfield Inlet, and Wager Water, and returned to Yarmouth roads.

38. In the year 1769, Mr. Samuel Hearne was sent by the Hudson Bay Company to make discoveries to the north, in America, by land. He set out in November of that year, and in the following reached Copper-mine River, which he traced to the sea.

39. Hon. John Phipps.—The Racehorse and Carcass, the former under the command of Captain the Hon. Constantine John Phipps, afterwards Lord Mulgrave, were sent out by Government, at the request of the Royal Society, while Captain Cook was absent on one of his voyages. They proceeded to the east of Spitzbergen, and attained the lat of 80° 48′; from thence to Nova Zembla, and soon arrived at Waygat Strait. They then endeavoured to penetrate to the westward, but, being stopped by the ice, returned home.

40. Cook.—We now arrive at the memorable voyage which deprived England of her great and justly admired circumnavigator. It is remarkable also, that Captain Clerke, who accompanied him in the same voyage, in command of the Discovery, died after he had succeeded him as the chief of the expedition. Forster relates the following anecdote of this officer:—"Clerke, a man of a noble disinterested spirit, had been security for the debts of his brother, Sir John Clerke, at the time that he went on board a king's ship to the East Indies. He having died in India, his creditors would have come upon Captain Charles Clerke for payment. Some people of rank, who wished him well, advised him to go into the

King's Bench, as the sum that Sir John owed was pretty considerable, and much more than his brother Charles was able to pay. An act of grace, which came out soon after, set many thousands of prisoners at liberty; and, among others, Captain Clerke regained his freedom towards the end of July, and set sail in the Discovery, from Plymouth."

Respecting the premium for the discovery of the north-west passage, Mr. Barrow observes—"It has been mentioned, that a reward of £20,000 was held out to the ships belonging to any of his Majesty's subjects which should make the passage; but it excluded his Majesty's own ships: the reward was, moreover, confined to such ships as should discover a passage through Hudson's Bay. This act was therefore, on the present occasion amended, and so framed as to include his Majesty's ships, and to appropriate the reward for the discovery of "any northern passage" for vessels by sea, between the Atlantic and Pacific Oceans; and it also awards the sum of five thousand pounds to any ship that shall approach to within one degree of the north pole."

The vessels visited Table Bay, Van Diemen Land, New Zealand, the Friendly Islands, Otaheite, Turtle Island, Nootka Sound, in 49½° N., from whence they commenced exploring their way to Behring Strait. The west coast of America was passed from thence to Prince William Sound, Cook Inlet, Oonalashka, and the coast of America to the northward; they then crossed to the coast of Asia in 66½° N. The northernmost extent that Cook reached on the coast of America was lat. 70° 45′ N., and the cape he saw received the name of Icy Cape. From thence, after again crossing to the Asiatic coast, he returned to the Sandwich Islands, where he met his untimely end. The command of the expedition having devolved on Captain Clerke, he proceeded to Behring Strait in the following season, and was prevented by the ice from penetrating so far as the ships had been under Captain Cook. Having determined to put into the harbour of St. Peter and St. Paul, in Kamtschatka, he died in sight of the entrance, in the thirty-eighth year of his age. The command of the expedition now devolved on Lieutenant Gore. On their way home, they touched at Macao, Simon Bay, the Orkneys, and arrived in England, after an absence of four years, two months, and twenty-two days.

41. R. Pickersgill—was sent to penetrate to the north-west by Davis Strait. He ranged along the coast of Greenland and Muskito Cove. The furthest north latitude he attained was 68° 14′, in Davis Strait; after which he stood to the southward, to the coast of Labrador, and returned to England.

42. Walter Young—who succeeded Pickersgill in the command of the Lion, was sent out to explore the western shore of Baffin Bay; and if he should discover an outlet to the westward, affording any probability of a passage to the Pacific, his orders

directed him to attempt it. He succeeded in reaching the latitude of 72° 42′ in Baffin Bay, but returned to the Nore without having made any discovery.

43. In the year 1789, Mr. ALEXANDER M'KENZIE departed from the Lake of the Hills, in North America, with the view of penetrating to the polar sea. He passed down the M'Kenzie River to Whale Island, which he placed in lat. 69° 14′, and which was afterwards corroborated by Franklin.

44. CHARLES DUNCAN, a master in the Royal Navy,—has added his name to the list of polar voyagers, in conducting an enterprize as little productive of the desired object as any of his predecessors. He encountered much ice in Hudson Strait, and only reached Charles Island in August. He wintered at Churchill, in Hudson Bay, and in July of the following year entered Chesterfield Inlet, where his crew mutinied, and the voyage was afterwards abandoned.

45. JOHN ROSS.—The first expedition of Capt. Ross was certainly made on a grander scale than any other that had gone before it. Not only were the ships employed in it larger, but they were fitted in a manner "as strong as wood and iron could make them," and were supplied with a plentiful stock of instruments, such as the advanced state of science demanded, with "divers cunning men," as old Hackluyt would have expressed it, to use them. This expedition had two objects—one, the north-west passage, to be attempted by the Isabella and Alexander; the other, the voyage across the pole, to be attempted by the Dorothea and Trent: the four ships to find their way through Behring Strait. No pains nor expense were spared in their equipments, and most sanguine were the expectations of the result. The Isabella and Alexder passed Cape Farewell in May, and in August they had penetrated to lat. 75° in Baffin Bay, where, of course, a vast quantity of ice was found. The northern shores of Baffin Bay were passed as near as the ice would permit; and the description of that able navigator (who, it will have been seen, accompanied Bylot) was concluded to be as nearly correct as could have been expected. Still, however, they were not explored; and it is the opinion of experienced men, that channels will yet be found leading out of Baffin Bay, at its northern extreme. Captain Ross, being satisfied that no outlet could be found through Lancaster Sound, passed down the western shore of Baffin Bay, and returned to England.

The Dorothea and Trent made direct for Spitzbergen, and were much beset by the ice on the shores of that island. In July, they penetrated as far as 80° 32′, but were driven by a violent gale to seek shelter in the harbour of Smeerenburgh. The Dorothea was so much injured by the ice, that it was with much difficulty she reached it. In October following they returned to England.

46. William Edward Parry.*—The foregoing expedition may be considered to have been the first of that recent series of polar voyages which have contributed so much to our knowledge of that part of the globe; and this, commanded by Lieutenant Parry, as is well known, was the immediate consequence of it. The Hecla and Griper passed up Davis Strait, and were in Lancaster Sound by the end of July. On the 3d of August the ships, having been detained by a foul wind, penetrated through the sound to the westward, and discovered the strait which is justly distinguished by the name of Barrow, the enlightened secretary to the Admiralty, to whom the science of geography stands deeply indebted. The shores on either hand, as far as Melville Island in 110° W. long. were discovered, and named in this voyage, and the ships by the commencement of September had gained to the westward of it. The ice forming round them obliged Lieutenant Parry to seek a harbour in Melville Island, in which to pass the winter. The islands on the north, among which was Melville Island, were called the North Georgian Islands. The month of August had arrived before the ships could be moved from their winter's position, when they returned to England by the same route they had so successfully adopted.

47. In connection with the foregoing expedition of Lieutenant Parry, a journey by land was performed by Lieutenant Franklin,† which, in point of severe and protracted suffering, has not been surpassed either before or since. In May, 1820, he left England with Dr. Richardson, of the navy, and, descending the Coppermine River, arrived at its mouth in July following. With the view of reaching Repulse Bay, the party proceeded eastward along the coast in light boats which they had with them. The shore of the Arctic sea between the mouth of that river and Point Turnagain was explored, from whence the party returned to their winter quarters, not without the loss of some of their companions. In a former number we laid before our readers the account of this journey from the pages of the Edinburgh Cabinet Library, a little work signalized among others of the present day by the very able manner in which it is conducted.

48. William Edward Parry.—Commander Parry,‡ in this his third voyage to the polar regions, attempted to penetrate to the westward in a lower latitude than Melville Island, in consideration that the shores from Wager River to the northward not having been closely examined, a passage might be found there. In July the two ships were in Hudson Strait, and in August had reached Fox Channel. Being disappointed in not finding a passage through Repulse Bay, as Middleton had been before them, the navigators succeeded in gaining the northern part of Fox Channel, where they passed the winter. In July following they

* Now Sir Eduard Parry † Now Sir John. ‡ He was made Captain in Nov. 1820.

continued to the northward, and in August reached the strait which was named after their ships the Fury and Hecla. A journey on the ice was performed by Commander Parry, who, when he had reached the western extreme, considered the sea to the westward to be the Polar Sea, but which, by the information brought home by Captain Ross, is proved to be no other than the Gulf of Boothia, forming the termination of Prince Regent Inlet. By the end of October the ships were safely moored in a harbour at the entrance of this strait, where another winter was passed. It was in the beginning of August before the ships could be moved. Determined to leave nothing undone by which he might succeed in finding a passage to the westward, Commander Parry had meditated leaving one of his ships, after removing the crew from her, and passing another winter in the polar regions. Symptoms of scurvy among his men obliged him to relinquish this plan, and to make the best of his way to England, where the two ships arrived in safety. In this expedition, the shores of Melville peninsula were explored by Commander Lyon.

On the 3d May, 1823, Commander Clavering, in H.M.S. Griper, made a voyage to Greenland, Spitzbergen, and Hammerfest, for the purpose of performing some experiments with the pendulum in high latitudes; and, although it was highly useful to science, was not remarkable for any geographical discovery.

49. Scoresby.—Although not a voyage expressly undertaken with the view of discovery, the extent of coast laid down by Scoresby entitles his voyage to notice here. On the 27th April the Baffin had reached Hackluyt Headland of Spitzbergen, in nearly 80° lat., without having experienced any frost. She was compelled to turn to the southward the next day, having encountered the edge of the ice, notwithstanding that in a former voyage he had reached the lat. of 81° 30′, in long. 19°E. The coast of Greenland was seen between the latitudes of 74° and 70°, and the various points, bays, and islands were laid down and named by Mr. Scoresby. It must, however, be conceded, that this coast had been previously discovered, and was not unknown to the old navigators. Hudson (19) had penetrated even to the latitude of 82°, but owing to the want of some depository for such documents, his charts and observations are lost to us. It is much to be regretted, for the sake of geography, that our ancestors, in their zeal for extending our knowledge of the globe, had not first formed a geographical society, or even a hydrographical office, in which such valuable and important documents might have been preserved to posterity.

50. William Edward Parry.—The plan adopted by Capt. Parry on this fourth voyage was to pass through Barrow Strait and down Prince Regent Inlet, from whence, if possible, to gain the coast of America, and to continue along it to Bhering Strait.

By the middle of June the ships had reached Davis Strait, but it was not till September that they could get into Lancaster Sound, and the 28th of that month found them in their winter quarters, named Port Bowen, in Prince Regent Inlet. In July following the ships left Port Bowen to make the grand attempt on which was founded all his hopes. The result was, however, at hand. Having gained the latitude of 72° 42′ and longitude 91° 50′ on the 11th of August, the Fury was nipped by the ice, so as to become leaky, and not even sea-worthy. The provisions and stores were landed, with the view of repairing the ship, but the damage she had sustained proved to be too severe, and having taken her crew and part of her stores on board the Hecla, Capt. Parry found himself compelled to abandon her, and return to England, where he arrived in safety.

51. George Frederick Lyon.—The voyage of Captain Lyon in 1824, in the Griper, was productive only of disappointment. The first object of the voyage was to gain Repulse Bay. Having passed up Hudson Strait, the Griper was nearly lost on Southampton Island: the place was named by Captain Lyon "the Bay of God's Mercy." The Griper experienced further bad weather in the Welcome, and, being fairly driven from her anchors, made for England. It has been stated that the Griper was a vessel but ill calculated for this voyage.

52. A similar journey to that which he had performed before, became again the duty of Commander Franklin.* He was also, as before, accompanied by Dr. Richardson, and measures were adopted, by establishing provision posts, to prevent the possibility of a recurrence of those severe hardships which they had endured in their first journey. Provided with boats of a peculiar construction, by Lieut. Col. Pasley, of the Royal Engineers, they left Liverpool in February 1825. The party wintered on the banks of the Mc Kenzie River, at Fort Franklin, near the great Slave Lake; Commander Franklin having previously employed a short interval between their arrival there, and the setting in of the winter in visiting the mouth of this river. In the month of June following, they embarked on the Mc Kenzie river, and, arriving at its mouth, one party, under Commander Franklin, proceeded along the western shore, while another, under Dr. Richardson, directed their course to the eastward. Having reached the meridian of 150° W. in the lat. 70° and named Point Beechey, Commander Franklin was compelled, on the 18th August, to retrace his way to the Mc Kenzie River, in order to secure his arriving at winter-quarters before the season was over. Dr. Richardson and his party, in the mean time, explored the coast between the Mc Kenzie and Coppermine rivers, and both parties met at Fort Franklin in September.

* Now Sir John

53. Frederick William Beechey.—In connexion with the foregoing expeditions was the voyage of Captain Beechey in the Blossom. And considering them all as directed to one object, that of settling the question of the north-west passage, while they afford a splendid instance of the exertions of an enlightened nation to ascertain, by well-planned and well-combined operations, the natural boundaries of sea and land, they are no less remarkable for individual exertion and perseverance, than as affording an instance of the uncertainty of human enterprise, and how the best laid plans of man may be rendered abortive. While Commander Franklin was using his best exertions to get to the westward from the Mc Kenzie River, casting many an anxious look to seaward for the ships of Commander Parry, we have seen that an accident lost the Fury, one of his ships; and, indeed, that if this had not happened, Ross has since shewn us that he never could have got to the westward from Prince Regent Inlet! At the same time that this occurred, the Blossom was off Icy Cape, and, being unable to proceed further to the east, her barge, under the command of Mr. Elson her master, was despatched, to meet if possible Commander Franklin and his party. The very day before the latter turned back to retrace his steps, Mr. Elson departed on his interesting voyage, and having reached Cape Barrow, distant only 146 miles from Point Beechey, was obliged to set out on his return to his ship.

But, although each party may be said to have separately failed in achieving their object, yet the question of a connexion by sea between the Atlantic and Pacific oceans by the north pole was satisfactorily established; and many miles of sea-coast, before entirely unknown, was delineated on the map.

54. William Edward Parry.—We now arrive at the remarkable attempt of Captain Parry to reach the pole by means of boats from Spitzbergen. They were constructed with thin planks and waterproof canvass, with stout felt between them, by which means they united strength, lightness, and pliability. They were moreover supplied with wheels, to be used when crossing the ice. The idea, we believe, originated with Capt. Sabine, and the plan certainly required all the energy and firmness of Captain Parry to put it into execution. The Captain proceeded to Spitzbergen with these boats, in the Hecla, his former ship, calling first at Hammerfest, in Norway, where he took on board eight reindeer to draw the boats. Owing to the state of the ice, it was the 20th of June before he could leave the ship on his perilous expedition. Having secured her in Treurenburg bay, in Spitzbergen, he took seventy-one days' provisions, and, leaving the reindeer and wheels as useless, in consequence of the state of the ice, he set out on the 22d of June, to arrive, if possible, at the pole. It was not long before the party reached a loose mixture,

that was neither ice nor water, but which was to be passed. Having the sun in their faces, they soon converted night into day, as, from being lower, the glare was not so powerful. Their progress was slow and most laborious, having to unload the boats frequently to carry them over small floes of ice, which were separated from each other by lanes of water.* They were also much annoyed and delayed by the hummocks of ice, and, occasionally, it was so rugged and sharp, that their feet suffered considerably. The party continued on their arduous and difficult journey, sleeping by day in their boats, until the 24th of July, at which time it was found that, in consequence of a fresh northerly wind that had been blowing for some days, they were losing ground; and although in the course of three days they had travelled over ten miles to the northward, they found themselves four miles to the south of the place from whence they had started. This circumstance, with the great difficulties they had met with in penetrating so far as they had done, determined Captain Parry to relinquish the attempt to proceed any further northward. Great efforts had been latterly made by the party, to reach the lat. 83°; but in vain, 82° 45′ being the furthest that they could attain. In returning, to the south the same difficulties were experienced, and it was the 21st of August before they rejoined the Hecla at Spitzbergen.

55. John Ross.—Captain John Ross, who had made a previous voyage in command of the Isabella, fitted out a small steam-boat, the Victory, with the generous assistance of Felix Booth, Esq. and departed with the intention of following up the plan of Captain Parry, by passing down Prince Regent Inlet. An account of this voyage has been already given in a former number —the narrative of Captain Ross, we believe, will shortly be before the public. The result of it has proved that Prince Regent Inlet has no outlet to the westward, and that it terminates in the gulf represented in the map, and named Boothia.

56. George Back.—The circumstances under which Commander Back, the companion of Franklin in both his journeys, went out to America, are known to all the world. And, as one of the objects of his journey has been accomplished by the return of Captain Ross, there is no doubt that the directions forwarded out to him when this occurred, will enable him so to proceed, that his future exertions may be directed with the greatest efficiency towards adding to former discoveries in the polar regions.

* See the views on the Map.

Table III.

For reducing Spanish varas to English feet, and English feet to Spanish varas.

1 Castilian vara = 2·742523995 English feet.
1 English foot = 0·364991881 Castilian vara.

Varas or Feet.	English Feet and Dec. parts.	Castilian Varas and Dec. parts.	Varas or Feet.	English Feet and Dec. parts.	Castilian Varas and Dec. parts.	Varas or Feet.	English Feet and Dec. parts.	Castilian Varas and Dec. parts.
1	2·743	0·365	38	104·216	13·870	74	202·947	27·009
2	5·485	0·730	39	106·958	14·235	75	205·689	27·374
3	8·228	1·095	40	109·701	14·600	76	208·432	27·739
4	10·970	1·460	41	112·443	14·965	77	211·174	28·104
5	13·713	1·825	42	115·186	15·330	78	213·917	28·469
6	16·455	2·190	43	117·929	15·695	79	216·659	28·834
7	19·198	2·555	44	120·671	16·060	80	219·402	29·199
8	21·940	2·920	45	123·414	16·425	81	222·144	29·564
9	24·683	3·285	46	126·156	16·790	82	224·887	29·929
10	27·425	3·650	47	128·899	17·155	83	227·629	30·294
11	30·168	4·015	48	131·641	17·520	84	230·372	30·659
12	32·910	4·380	49	134·384	17·885	85	233·114	31·024
13	35·653	4·745	50	137·126	18·250	86	235·857	31·389
14	38·395	5·110	51	139·869	18·615	87	238·600	31·754
15	41·138	5·475	52	142·611	18·980	88	241·342	32·119
16	43·880	5·840	53	145·354	19·345	89	244·085	32·484
17	46·623	6·205	54	148·096	19·710	90	246·827	32·849
18	49·365	6·570	55	150·839	20·075	91	249·570	33·214
19	52·108	6·935	56	153·581	20·440	92	252·312	33·579
20	54·850	7·300	57	156·324	20·805	93	255·055	33·944
21	57·593	7·665	58	159·066	21·170	94	257·797	34·309
22	60·336	8·030	59	161·809	21·535	95	260·540	34·674
23	63·078	8·395	60	164·551	21·900	96	263·282	35·039
24	65·821	8·760	61	167·294	22·265	97	266·025	35·404
25	68·563	9·125	62	170·036	22·629	98	268·767	35·769
26	71·306	9·490	63	172·779	22·994	99	271·510	36·134
27	74·048	9·855	64	175·522	23·359	100	274·252	36·499
28	76·791	10·220	65	178·264	23·724	200	548·505	72·998
29	79·533	10·585	66	181·006	24·089	300	822·757	109·498
30	82·276	10·950	67	183·749	24·454	400	1097·010	145·997
31	85·018	11·315	68	186·492	24·819	500	1371·262	182·496
32	87·761	11·680	69	189·234	25·184	600	1645·514	218·995
33	90·503	12·045	70	191·977	25·549	700	1919·767	255·494
34	93·246	12·410	71	194·719	25·914	800	2194·019	291·994
35	95·988	12·875	72	197·462	26·279	900	2468·272	328·493
36	98·731	13·140	73	200·204	26·644	1000	2742·524	364·992
37	101·473	13·505						

III.—History of Hadley's Quadrant.

(Continued from p. 210, No. 26.)

It is very remarkable, that an idea which has lain dormant for ages, will sometimes occur almost simultaneously to more than one individual. This may be accounted for, when the previous advance of science has led to a certain point, which may at the same time arrest the attention of different persons; but, in the present instance there does not appear to have been any such pre-directing cause, and yet the years 1730 and 1732 have become memorable not only for Hadley's invention, but for reflecting quadrants having been devised (indisputably without any knowledge of what had been done in England) by Godfrey of Philadelphia, and Grandjean de Fouchy at Paris.

The construction of the latter will not require any long disquisition, and therefore may be first dismissed. It is described among the Machines Approuvées par l'Ac-Roy. des Sciences;* but it had only one mirror for reflection, and ought therefore to be ranked with Hooke's, rather than be put in competition, as M. Magellan† would contend, with Hadley's. M. Magellan's hostility seems indeed to have grown on him as he advanced: possibly the mistaken idea of his having discovered more than was known by preceding writers may have led him too far, so as even to lose sight of consistency. In the beginning of his treatise, he thinks that Hadley‡ might not have had any notion of what Newton communicated to Dr. Halley; and yet, afterwards, he asserts that neither Hadley nor any of his friends could have been ignorant at the time of publication, that the invention in no way belonged to him. This bold accusation is said to be evident from circumstances, all of which have been fully and fairly detailed in the course of the present investigation, and each I trust has been shewn to bear a very different interpretation; but it is singular that our author, with all this feeling, has entirely omitted to notice Godfrey, who was, after all, the closest competitor for the honour of being, after Newton, the first inventor of this valuable instrument. Indeed, there was no question of priority to be maintained for de Fouchy, who only communicated his ideas on the subject to the Academy in 1732.‖

The earliest account which we have of the other extraordinary man, and of his quadrant, is preserved in a letter§ from James

* Vol. vi. p. 79. The mirror was fixed to the frame, and the telescope was made to revolve.

† Description des Octans Anglois, p. 2.

‡ Ibid, p. 2 and 118.

‖ Mem. de l'Ac. 1740, p. 468.

§ This letter, as well as Godfrey's, may be seen in Miller's Retrospect of the Nineteenth Century, vol. i. p. 468. They appear to have been first printed in the American Magazine for July, 1758. The originals, however, have been consulted, which are preserved in the letter-books of the Royal Society.

Logan, Esq. to Dr. Halley, which is dated at Philadelphia, 25th of May, 1732.

Thomas Godfrey was a glazier of Philadelphia, and, although his opportunities were much more limited, the history of his acquirements in some measure resembles that of Edmund Stone. He "had no other education than to learn to read and write, with a little common arithmetic. Having, in his apprenticeship with a very poor man of the trade, accidentally met with a mathematical book, he took such a fancy to the study, that, by the natural strength of his genius, without any instructor, he soon made himself master of that, and of every other kind he could borrow or procure in English; and, finding that there was more to be had in Latin books, under all imaginable discouragements, applied himself to the study of that language, until he could pretty well understand an author on these subjects. After which," Mr. Logan goes on to say, "the first time I ever, to my knowledge, saw or heard of him, he came to borrow Sir Isaac Newton's Principia of me." This was no mean effort for a man under such circumstances, and at a time when assistance was not to be obtained from any regular commentaries on the work; but Mr. Logan was soon persuaded that the loan would not be lost on him, and appears to have become his firm and zealous friend. Franklin, in the Memoirs of his own Life,* speaks of having let off a part of his house to Godfrey, with whom he at one time boarded, and with whom (about 1727) he was in the habit of associating at a club which was frequented by himself and his friends. Franklin describes him as "a self-taught mathematician, great in his way," but adds, "he knew little out of his way, and was not a pleasing companion, as, like most great mathematicians I have met with, he expected precision in every thing, and was ever denying and distinguishing upon trifles, to the disturbance of all conversation." † A writer who spent a long life, and employed the most acute talents in examining the operations of the human mind, gives a very different account of the manner in which he found mathematicians were inclined to converse.‡ Franklin's excellence lay in strong natural sense, and simple, well-conceived experiments: may not the discordance, therefore, have had its origin in some measure in the disinclination of the hearer, rather than in the fault of those whom he was inclined to blame? If poor Godfrey wanted the qualifications for a social member of the club, it may have arisen from other causes than the nature of his studies. He soon, however, by leaving the society, ceased to offend, and all the further notice which Franklin takes of him is to mention that he kept open "a shop for

* Vol. i. p. 89. (ed. of 1818.)
† Ibid, p. 92.
‡ D. Stewart's Philosophy of the Human Mind, vol. iii. p. 290.

his glazier's business, though he worked little, being always absorbed in his mathematics."*

In 1730, to obviate the difficulties in using Davis's quadrant, he made some improvement in the mariner's bow,† and afterwards devised the double-reflecting quadrant. The ingenuity and scientific combination‡ which he exhibited in these instruments make it remarkable, that we have no account of any thing else which was produced by him, and this is possibly to be attributed to the habits which he unfortunately indulged of intemperance.‖ Without venturing to palliate such conduct, we may, without injustice, attribute it, at least partially, to the circumstances in which he was situated. A wife and family, for whose maintenance he was bound to exert himself, might still, to an unregulated mind, appear, like the business which he neglected, as impediments to the studies that he wished most to pursue; and intoxication, though it only increases the evil, is too often the fatal resource by which the thoughts of penury and distraction are endeavoured to be drowned. He died in December, 1749.

Mr. Logan speaks of him as a young man in 1732, and says, "about eighteen months since, he told me he had for some time been thinking of an instrument for taking the distance of stars by reflecting speculums, which he believed might be of service at sea; and not long after he shewed me a common sea-quadrant, to which he had fitted two pieces of looking-glass in such a manner as brought two stars at almost any distance to coincide." The instrument, as we shall find, was tried at sea, where it was found to answer. When brought back, it was put into Mr. Logan's hands, in Feb. 1731,§ and it remained with him above a twelvemonth. Occupied with other business, he neglected to take any steps for making it known, till Godfrey, in 1732, being inclined to publish an account of his invention, his friend thought it would be more effectually for his benefit to make the communication immediately to the scientific men in London; he therefore, in the

* P. 105.

† Philosophical Transactions, vol. xxxviii. p. 441.

‡ There is a most ingenious idea which he incidentally mentions in his letter for the Royal Society, and which deserves well to be noticed. In using instruments for taking the sun's altitude, he found that the shadow of the index, which ought to coincide with the slit of the horizon-vane, was often very indistinct. To remedy this, he suggested that a cylindrical transparent glass should be used, so that being set at the proper focal distance, it might throw a well-defined light upon the horizon-vane. It may be recollected, that this is the very contrivance which Captain Kater has applied to the variation-compass; and any one who has seen it will be convinced, not only of the advantage which he has so ably derived from it, but will be struck with regret for such an idea being suffered to be forgotten for more than a hundred years. Godfrey made two apertures with rectilinear sides in the horizon-vane of his bow, and the sun's image was to be brought between them, through a spherical lens fixed in the index-vane. This was no more than what Dr. Halley had himself adopted in 1678. Godfrey, however, after describing the apparatus, says:—"N.B. If the glass of the glass-vane was ground to the segment of a cylinder, the spot on the horizon-vane might easily be made the length of the space between the holes, having parallel sides, and well defined, and therefore I think it better than a round or oval spot."

‖ Encyclopædia Americana, vol. v. p. 537.

§ Phil. Trans. vol. xxxviii. p. 448.

month of May, wrote the letter which has before been mentioned, to Dr. Halley. Fig. 1, pl. —,* is a copy of the rough drawing which he gave in it, to shew the general principle, and the kind of arrangement which it was thought most desirable to adopt. The description of the most essential parts was as follows:—"To a straight ruler or piece of wood AB of about three inches in breadth, and from forty to forty-five in length, (or of any other that may be thought convenient,) with a suitable thickness, an arch or limb, AC, of about thirty degrees to the radius KL, is to be fixed. To the upper end of the piece AB a piece DD is to be mortised, and in it the centre K taken, so that OP may be about six inches, and the angle KOP about forty degrees. O, P, and L, are not inserted in the figure, the place of O we consider at the vertex of the angle formed by the broken lines from K and the telescope; that of P at the object end of the telescope, and L at the end of the ruler K on the arc AC. On this centre K, the ruler or index KL is to move, having a fiducial edge below, answerable to the central point, to cut the graduation on the limb. On the upper end of the index, a speculum of silvered glass, or rather metal,† exactly plane EF, of about three inches in length, and two in height, is erected perpendicular to the plane of the index, and also nearly at right angles with its sides; the plane of the reflecting surface standing exactly over the central point. At the end B of the piece AB, another speculum of glass is in the same manner to be erected, which may be somewhat less than the other, with a square or oblong spot in it unsilvered, that a star by a direct ray may be seen through it; and the back of this speculum should be guarded with a thin brass plate, with an aperture in it equal to the unsilvered part of the glass, the edge of the aperture towards H to be exactly straight, dividing between the silvered and unsilvered parts of the speculum, and standing in the line of the axis of the telescope. This speculum is to be set at an angle of about twenty degrees with the square of the piece AB, or at one hundred and ten degrees with the side of it."

"The instrument, as above described, will not take an angle of much above fifty degrees, which, for the purpose intended, may be fully sufficient; but if the speculum EF be made to take off and put on, and the end of the index at K be so notched as to turn that speculum from its first perpendicularity to make an angle of about twenty-five degrees, it will then take any distance to one hundred degrees." ..... "There must be a place at M made for a darkening glass."

* For plate, see plate of two quadrants in last number.

† Mr Logan, however, in a subsequent part of his letter, says, that the transparent part of a glass mirror "will often reflect the moon's image sufficiently for the telescope to take it," and even by this means to enable the observer to form the coincidence without using the silvered part of the mirror. The same seems to have occurred to Hadley. (Phil. Trans. xxxvii. p. 155.)

The resemblance between this and Hadley's first quadrant is very striking; and it must be freely owned, that, if there were nothing else to be considered, the better instrument might be fairly supposed to be the later and improved construction: but this is a part of the subject on which it is as yet premature to enter. With Hadley's second quadrant there can be no comparison; its superiority was felt even in America;* and the first will also afford some instances of difference. For accommodation to particular observations, the required alterations are produced on it by varying the angle of the horizon-mirror; but on Godfrey's, it is the index-mirror whose inclination is to be changed. There is a difference likewise in the angles at which the mirrors are at first to be set. But neither of these particulars involves any thing of essential importance to the instrument. The part in which Godfrey seems to have most failed is in the form which he gave to his horizon-mirror. Following too closely the idea of the backstaff, he has opened a space in it which is nothing but the slit† in the horizon-vane of the older instrument, and retains all the inconvenience of it. The two edges, between which the observation is to be taken, narrow the view, and retain an impediment which the other constructions avoided, while the objection is increased by the line for coincidence being set perpendicular to the plane of the instrument.

Mr. Logan's letter was evidently intended to be read before the Royal Society; and in November, 1732, Godfrey wrote himself for the same purpose. After describing his bow, he goes on to say, that, "succeeding so well ..... encouraged me to undertake what appeared a more difficult task, the finding some way to take the altitude of the stars at sea, when the horizon may be seen, better than by the forestaff, which I happily effected by reflection: for I concluded it must be by bringing the two objects, horizon and star, together. I first considered one reflection, but the fault of Davis's quadrant was here enlarged, which is, the flying of the objects from each other, on a small motion of the instrument: I then examined what two reflections would do, which perfectly answered my desire; being equally useful in taking the distances of stars from each other, and also from the moon, and I believe practicable at sea; for I found that when one star was made to coincide by two reflections with another, the distance of those stars would be double the inclination of the reflecting planes to each other, as may be easily demonstrated. I see but one fault in this instrument, and that is, that one of three

* In the Phil. Trans. vol. xl. p. 119, there is a letter from Dr. Kearsly of Feb. 1739, giving an account of some observations made at Philadelphia; and the distance of a comet from Venus is specifically mentioned to have been taken "by a reflecting instrument of Mr. Hadley's make."

† See Sir Jonas Moore's New System of the Mathematics, vol. i. p. 248.

feet has the graduation no longer than a quadrant of eighteen inches."*

At what time in 1732 Mr. Logan's letter reached Dr. Halley, would be difficult to conjecture; but no reply to it had reached Philadelphia when Godfrey wrote; for he finishes by expressing a hope that it had been received; and it is very possible that the anxiety of delay induced him to renew the communication. Hadley's paper having been printed in the Philosophical Transactions for 1731, might have induced Dr. Halley to think that a second account of an identical invention need not be immediately read. Other causes, however, of hesitation, had evidently occurred, for, in the archives of the Royal Society there are two affidavits, both sworn on the 27th of March, 1733, "before Sam. Hasell, Esq., one of the justices of the peace for the city and county of Philadelphia, and mayor of the said city," which seem to indicate, that if Godfrey was not absolutely called upon to substantiate his claim to the invention, doubts of it had at least been thrown out, which he thought it necessary to obviate. The first of these documents was sworn by Edmund Wooley, a house-carpenter, who states in it, that, in or about the month of November, 1730, he had been employed by Thomas Godfrey on a sea-quadrant, to make additions, which he particularly describes, and which agree with the instrument mentioned in the other affidavit. This second is the more important of the two. It was sworn by George Stewart of Philadelphia, mariner, and states, that about the latter end of October, 1730, Thomas Godfrey told him of an instrument which he had contrived, to take the altitude of the sun at sea, or the distance of any one star from another, or from the moon, by the help of two reflections, and shewed him the manner of it drawn on paper. Upon this, the deponent delivered his sea-quadrant to Godfrey, to fix two pieces of looking-glass and a moveable index to it, which was accordingly done. On the 28th of November following, he took his quadrant so fitted up on board the sloop Truman, John Cox, master, (the deponent being mate,) bound for Jamaica; and in this voyage he made use of the instrument in several observations of the sun's altitude, as also of the moon's distance from stars. He returned to Philadelphia on the 19th of the following February, when he left the quadrant with Godfrey, till about the middle of August, 1731, when he took it with him again on a voyage to St. John's, in Newfoundland. It is added, that Cox, also, on the voyage to and from Jamaica, made several observations with this quadrant; that, by Godfrey's direction, each degree on the limb was always reckoned double, and that both the navigators, as far as they could judge, were persuaded that the instrument was very correct.

* This obvious consequence was probably the reason for the quadrants being at first made of a larger size than was either convenient or necessary.

In this instance, as before, we have no means of estimating the time when these documents were received in London; but, on the 31st of January, 1734,* Mr. Jones brought forward Godfrey's letter of November 9, 1732, which, together with Mr. Logan's to Dr. Halley, and the affidavits, (which have been just mentioned,) were read before the Royal Society. It appears, therefore, that Godfrey's claims were fully and deliberately investigated, and the decision which is entered on the minutes of the Society on this occasion seems to be perfectly just—no reason appeared for doubting the independent originality of either party. Hadley's paper having been published in 1731, no occasion was now seen for inserting either Mr. Logan's full description, or Godfrey's own letter, in the Philosophical Transactions. The notice, however, of the invention was not suppressed. In June, 1734, Mr. Logan sent to Mr. Peter Collinson another statement, which gave a particular account of the improvement in the mariner's bow. This was printed by the Royal Society,† and it contains a short statement‡ of Godfrey's other and more important invention. The reference in it to what had "been abundantly proved by the maker" of the instrument, "and those who had it with them" when it "was taken to sea," is now quite clear (which it was not before) from the affidavits of Woolley and Stewart. This last communication of Mr. Logan was read in January, 1735, and as it was probably made with all convenient speed, we may see how tardy the intercourse then was between this country and America. Keeping this in mind, as well as the intermediate inquiry which appears to have been instituted, we shall have less difficulty in understanding what would now appear the long delay between the date of Mr. Logan's first letter and the time when it was submitted by Dr. Halley to the Royal Society.

(To be concluded in our next.)

IV.—The Revenge of Heecho—A Tale of New Zealand.

The Zebra returned to Sydney on the 6th of December, 1831, and refitted there. Her commander (whose health had been gradually declining) invalided on the 28th of February, 1832, and the command in consequence devolved on Lieutenant Macmurdo. The natives and European traders at Tarranaka, a village under Cape Egmont, New Zealand, being in danger from the meditated attack of the Wycatta tribe, the Zebra was directed to proceed to

* It may be right to mention, that in the extracts from the minutes printed in the Nautical Mag. vol. i. p. 349, the date is made one year earlier, the circumstance having been overlooked of the transaction taking place in Jan. 1733-4.

† Phil. Trans. vol. xxxviii. p. 441.

‡ Ibid, p. 448.

that place, for their protection; and, accordingly, on the 1st of March we sailed, and made Cape Egmont on the 11th of that month.

New Zealand is composed of two islands, extending from latitude 34° to 48° south, and separated by Cook Straits, from fifteen to twenty miles wide. The southern island is called Tavai Poenamoo or the Land of Green dale, with which it abounds, but it is in many places mountainous and barren. The northern island is more favoured by nature, as the soil is extremely rich, and well watered, in an excellent climate, where all our European grain, fruits, &c., would grow and flourish abundantly. The natives are well known to be a fine race of people, the men generally six feet high, and of commanding appearance, and the finest symmetry; the women are also well formed, and very handsome.

On our arrival, it appeared that an attack had been made by about 1600 warriors, but, in consequence of the strength of the Hippah, the natives, 240 in number, aided by 17 Europeans and three carronades, had succeeded in keeping them at bay, and finally starving them from their position. It was not, however, before they had destroyed all the yam and potatoe plantations, devoured the pigs, poultry, &c., and committed many atrocities, that they retreated. One of their atrocious deeds was that of ordering a female prisoner to make an oven, after which they killed her, baked her in it, and ate her.

The European traders of Tarranaka informed us, that this tribe had previously plundered a large village, and that they had proceeded to Capati Island, in Cook Straits, (or Entry Island of Cook,) for the same purpose. As there was much European property there, we sailed immediately for Capati, and on our arrival found it nearly deserted. The principal chief, E. Heécho, (the son of E. Paey, who was in England,) with E. Roonpourha, E. Rangy Hyitta, and Tourmea, with about 900 warriors, (many of them from the main,) had gone down to attack the natives of Banks' Peninsula.

Capati or Entry Island is about seven miles long, with a population of 1100 souls. There are also twenty-four Englishmen employed in the flax establishment of Messrs. Harvey, Bush, and Ferguson. After remaining a few days there, and having ascertained that the Europeans were perfectly safe, we proceeded through Cook Straits, which divide the islands, and directed our course for Tahiti.

The New Zealanders are unhappily always at war with each other. The two principal chiefs of Capati are Heécho and Ryarooporá. Prayie, the father of Heécho, having been killed by the Marinewie chief of Banks Peninsula, in 1822, the son prevailed on Robulloh to accompany him, with all the force they could collect, to exterminate the Marinewie chief, and his party. It

happened at this time, that the English brig Elizabeth, a fine vessel of 800 tons, was at Capati, on a trading voyage, and the master of her actually consented to convey them to Banks Peninsula. Accordingly, on the 20th of October, 1831, the expedition sailed; the two chiefs, and about one hundred picked warriors, being on board the brig, and the others, amounting to about four hundred and fifty more, in their war canoes. On their arrival at Banks Peninsula, about the end of the month, the chief Heécho caused all his warriors in the brig to be concealed below decks. The Marinewie chief, as is usual, sent a few followers on board, to negociate for the trading, which he naturally supposed was the object of her visit. He demanded, as a tribute from the brig, a double-barrelled gun, which was sent him, with an invitation to repair on board. With full confidence in the honour of the British flag, (now so mournfully disgraced,) and unsuspicious of harm, he went on board. Trading was commenced, and all seemed going on well: but the unwary chief of Banks Peninsula had been seated only a few minutes, when the revengeful Heécho and Robulloh sprang from their concealment, like the tiger from his lair, seized and bound the unhappy victim of their fury hand and foot, at the same time rending the air with horrid yells and imprecations.

The scene which followed would be more readily imagined than described, but the cruelties which were perpetrated on this melancholy occasion are scarcely to be conceived. Suffice it to say, that the whole of the population, excepting the chief, his wife and daughter, and fifty-four prisoners, who were preserved to grace the bloody banquet of triumph when they returned, were deliberately murdered the same day. At daylight their bodies were cut up into junks, salted, and packed in baskets, to be conveyed to Capati. Among the victims which fell on this dreadful occasion, was a fine young woman near her confinement. Without hesitation, she was cut open, and the infant was torn from her, after which her head and part of the body was cut up, and salted. The infant, with the remainder, was given to pigs.

On the 11th of November, the Elizabeth returned to Capati, with her cargo of human flesh, living and dead, and preparations were made for a triumphant landing. On the arrival of the brig, a peculiar feature in the character of the New Zealand female was exhibited. Férocious as appears to be the male character of the the New Zealander, that of the female appears to be tinctured with humanity. No woman was on the beach to receive either husband or lover, (for the New Zealanders are known to be eminently susceptible of the tender passion;) no child was there, to welcome a parent; nor was there even a father to welcome the return of his son. All was as if deserted, and nought, save the gloomy woods, responded in echoes the exulting yells of the cannibal warriors

over their prisoners, and the mutilated remains of their slaughtered victims. The prisoners were landed, and seated on the beach; and the baskets, each containing the remains of one person, were placed there also. Of these, according to Captain Briggs, who was present in the Dragon cutter, there were about one hundred!

Presently the war dance was commenced. It is the most frightful exhibition that the human frame can possibly convey. The warrior is entirely naked; his long black hair, matted with human gore, loose, and flowing in the wind, by the effect of his sudden and extraordinary movements; in the left hand is a human head, and in the right hand a bayonetted musket, held by the middle of the barrel. Thus, with a song, hurried forth with a vehemence of expression which in itself is perfectly appalling, and a countenance distorted by the most hideous grimaces, he dances round his wretched victims; every now and then approaching them with gestures threatening death and torture.

But, on the present occasion none of the prisoners were killed. All were apportioned among the conquering warriors as slaves, one old man and a boy excepted, who were particularly selected (for what reason I know not) to die! The feast was then prepared, at which these two unhappy creatures were to be slain and devoured. About a hundred baskets of potatoes, and a green vegetable of delicate flavour, were prepared, with equal quantities of whale blubber and human flesh from the baskets! Every thing being arranged, the poor old man was brought forth, accoutred for death in the most fantastic but disgusting manner. And now, for the first time, a few of the women made their appearance. These were, some few wives, or mothers, whose husbands or sons had been in their time the feast of their conquerors. Without hesitation, they approached the old man, and plucked the hair of his head and his beard, pricking him at the same time with the teeth of some animal or fish, so as to torture him, while their demoniacal countrymen, by their horrid grimaces and threatening gestures, were doing their utmost to agonize his mind.

At this stage of the proceedings, Captain Briggs, who had witnessed what had been going forward, determined to save this poor man's life, and that of the boy, if it could be effected by any means in his power. The poor boy was already brought forth to die. A native had already lifted the fatal axe above his head, and the next moment would have seen it descend, when Captain Briggs, at the hazard of his own existence, rushed forward, and seized the wretched youth in his arms. At such a risk, and at such a time, the danger of which he cannot contemplate now without shuddering, half by threats, and half by entreaties, he succeeded in obtaining the release of the boy, and a short respite for the old man. But the latter was only for death. The next day he was

taken to another place, where he was put to death in the most atrocious and horrible manner. Captain Briggs paid the ransom of the boy's life in muskets and gunpowder, conveyed him in safety to his ship, and afterwards landed him at Hobart Town, grateful to the worthy man who had saved him from a cruel death.

In the mean time, the bloody banquet went on; Heécho, Robulloh, and the rest, devouring the contents of the baskets with a kind of ferocious delight which no words can describe. The manner in which the flesh had been salted, at nearly the hottest season of the year, was too imperfect to prevent the process of decomposition from proceeding to so considerable an extent, that worms literally crawled away from the putrid substance as it was devoured by the savages. It was a painful sight, the very thoughts of which make one shudder. Captain Briggs had the curiosity to open one of the baskets which was near where he had stationed himself. It contained the head and body of a beautiful young female. One of the officers of the ship who was with him had resolution enough to cut the breast away with his penknife. He wrapped it up in a handkerchief, took it on board the Dragon, and preserved it in spirits till he reached Hobart Town, where he presented it to a friend, in whose possession it now is.

While this dreadful scene was going forward on shore, the Marinewie chief of Banks Peninsula remained a prisoner in irons, in the fore cabin of the English brig, the Elizabeth, which, with HER FLAG, had been hired for the brutal purpose of assisting these savages in such warfare. On the passage from Banks Harbour to Cook Straits, this unfortunate chieftain, and his wife, well knowing the dreadful torture which awaited all, from their diabolical enemies, took an effectual method of preventing their daughter from undergoing the sufferings to which she was destined, by strangling her. As soon as this was known, the Marinewie's wife was confined in irons, to prevent her from destroying herself also.

On the 12th of November, the day after the Elizabeth had arrived, when the principal repast had taken place, these unhappy victims were taken on shore by Robulloh, and conveyed away from the coast to a short distance in the interior. After they had been despatched with all the torture usual in such cases, the heart of Marinewie was eaten by the Heécho's mother, the widow of the Payie, (who had been eaten by the Marinewie,) his brains were given to Robulloh, and his eyes to Heécho, and his tongue to the sister of the latter, and the rest of his body was distributed among the chiefs in the interior.

We had an opportunity of knowing that the whole of the above arrangements were carried fully into effect; and one of our officers conversed, and procured a mat from the female who had eaten the heart, while yet warm and covered with gore, from the Marinewie chief. On the circumstance being mentioned to her, she did not

deny it: she seemed to wish not to be told of it, or indeed to hear any thing of the subject.

It appears that Captain Stewart, who commanded the Elizabeth, and Mr. Cowell, the supercargo of her, were induced, by the promise of a cargo of flax, to comply with the wishes of the Capati chief, and lend the vessel to take him and his party to Banks' Peninsula. Certainly, it would appear that this part of the contract was performed to admiration; but the chiefs were not so punctilious in repaying the price of blood. The Elizabeth, after the completion of her foul purpose, received only about thirty tons of very inferior and dirty flax, and a hint, that if the captain was not contented, he had better be off. Knowing the description of people he had to deal with, the hint was sufficient. On the charge of the master of a trading vessel, who had more respect for the honour of his country's flag, Captain S. was tried in a court of justice at Sydney for this disgraceful act: but, as it appeared that he was merely an instrument in the hands of the supercargo, who was not forthcoming, he was acquitted; and it remains for his countrymen, if they can do it, to remove the ill effects of this act from the minds of the natives of Banks' Peninsula.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

THE CABINET ANNUAL REGISTER, and Historical, Political, Biographical, and Miscellaneous Chronicle for 1833. H. Washbourne, Salisbury Square.

Chronology in any shape is always useful, and the more full and the more accessible it is made, the more valuable it becomes. An annual devoted, like this, to the register of passing events, deserves being placed foremost in the rank of those beautiful little volumes which mark the good taste and refinement of the present generation. The idea of the Cabinet Register was an excellent one; the real merits and utility of the work require only to be known, to render it an indispensable one, both in the library and drawing-room. The biographical notices alone form a considerable portion of the work, interesting to most classes of society.

THE POETICAL WORKS OF THE REV. GEORGE CRABBE, with his letters and journal, and his life. By his Son. Murray, London. 1834.

Crabbe, the admired of all who knew him, no less for his virtues than his talents, died at Trowbridge in February, 1832; and the compilation of a complete edition of his numerous poems, so justly esteemed for their beauty and excellent morality, has now fallen to the duty of his son. How well he

has commenced the grateful task, we have evidence in the three volumes before us, forming a portion of the eight which are to complete the work. The first contains the life of the poet, affording an admirable picture of genius contending with the frowns of fortune, stedfast in virtue and religion. In the others we recognize many favourite poems long since appreciated before they were known to be the productions of Crabbe. The fame of Crabbe stands high in our literature; he was, no doubt, one of our first-rate poets. And there are many of our readers who will be glad of this opportunity to obtain a uniform edition of his works. The present volumes are well got up, and, besides having extensive notes, are embellished with the most finished engravings of Finden: indeed, the skill of the poet and the artist have been most happily combined by a man of letters and good taste, to render this little work a perfect treasure.

BUBBLES FROM THE BRUNNENS OF NASSAU. By *an Old Man*. Murray. London. 1834.

WE now proceed to make good our promise of returning to this work. As we have selected an extract for our readers, we will state the *argument* of the "Bubbles" in as few words as we can. The author, an old man and a valetudinarian, sets out in the Rotterdam steam-boat, to "tinker up his frame," as he says, with the assistance of the mineral waters of Nassau. On his way up the Rhine, in another steamer, from Cologne to Coblentz, he finds two *compagnons de voyage* in the shape of a young London couple, fashionable of course, "who, having had occasion, a fortnight before, to go together to St. George's church," (Hanover Square, we presume,) "had, like dogs suffering from hydrophobia or tin canisters, been running straight forwards ever since." The picture of this interesting couple is admirably drawn, and as it is any thing but creditable to their country, it is not to be expected that they will find the old man's observations on them very palatable. But this is as it should be. The advantage which most foreigners have over John Bull is too often painfully conspicuous at home as well as abroad; and he has yet to receive many a lecture of this kind before he will learn how to "muzzle his feelings," or even to do as he would be done by when in their company.

From Coblentz the author proceeds to the little village of Langen-Schwalbach, in the Duchy of Nassau, where he becomes quietly domiciled in a hof, or lodging-house. From thence, after sojourning some time, he wanders about the woods and visits Schlangenbad, Neider, Selters, and other equally attractive places, and finally arrives in Wiesbaden, the capital of Nassau. His chief amusement is to compare every thing German with every thing English, and from which comparisons we might derive some advantage.

Although we have expressed our satisfaction with the "Bubbles" generally, as a work which would well repay the reader, there is

one of them, which, like the black sheep of a flock, is not so fair to behold as the rest. Its colours are tinged with a shade of prejudice, which is unpardonable in an old man like the author, but which proves that infirmities of the mind accompany those of the body, where we should least expect to find them.

We allude to an attempt to raise the fame of Mr. Burges's patent paneidolon at the expense of the camera lucida, that beautiful and invaluable little gem of art bequeathed to us by Dr. Woollaston. Nay, the author of the "Bubbles," not content with the powers of this paneidolon, which his views by the way give us no favourable impression of, and which we presume is nothing more than a modification of the camera obscura, must condescend to speak of the crystal gem in terms of ridicule. Our readers, who know the value of the latter, will turn up their noses, as we did, when they meet with these remarks; and those who are not acquainted with the merits of the crystal, will find them, by experience, far greater than Mr. Burges's paneidolon.

He thinks that the power of sketching in a shower of rain is a recommendation. He may sketch away as long as he pleases in rain, hail, or snow, but for our parts, for the sake of our paper and a dry jacket, we prefer fine weather and the camera lucida to all the paneidolons we have yet heard of; and we recommend the "old man," when he next brings forward an invention, to try and displace some other less valuable instrument with it, than the camera lucida.

We shall now proceed with our promised extract, in which our readers will find a concise history of the Knights of Malta:—

"In the history of this little sea, (the Mediterranean,) in what melancholy succession has nation and empire risen and fallen, flourished and decayed; and if the magnificent architectural ruins of these departed states mournfully offer to the traveller any political moral at all, is it not that homely one which the most common tombstone of our country churchyard preaches to the peasant who reads it?

"As I am now, so you will be,
Therefore prepare to follow me!"

However, fully admitting the truth of the lesson which history and experience thus offer to us—admitting that no one can presume to declare which of the great Mediterranean powers is doomed to be the next to suffer, or what new point is next to burst into importance, yet, if a man were forced to select a position, which, in spite of fate or fortune, feuds or animosities, has been, and ever must be, the nucleus of commerce, he would find that in the Mediterranean Sea, that point, as nearly as possible, would be the little island of Malta; and the political importance of this possession being now generally appreciated, it is curious rapidly to run over the string of little events which have gradually prepared, fortified, and delivered this valuable arsenal and fortress to the British flag.

In the early ages of navigation, when men hardly dared to lose sight of the shore, ignorantly trembling if they were not absolutely hugging the very danger

which we now most strenuously avoid, it may easily be conceived that a little barren island, scarcely twenty miles in length or twelve in breadth, was of little use or importance. It is true, that on its north coast there was a spit or narrow tongue of land (about a mile in length and a few hundred yards in breadth), on each side of which were a series of connected bays, now forming two of the most magnificent harbours in the world; but in the ages of which we speak, this great outline was a nautical hieroglyphic which sailors could not decipher. Accustomed to hide their Lilliputian vessels and fleets in bays and creeks on the same petty scale as themselves, they did not comprehend or appreciate the importance of these immense Brobdignag recesses, nor did they admire the great depth of water which they contained; and, as in ancient warfare, when warriors used javelins, arrows, and stones, scalding each other with hot sand, the value of a position adapted to the present ranges of our shot and shells would not have been understood, in like manner was the importance of so large a harbour equally imperceptible; and that Malta could have had no very great reputation is proved by the fact, that it is even to this day among the learned a subject of dispute, whether it was upon this island, or upon Melita in the Adriatic, that St. Paul was shipwrecked. Now, if either had been held in any particular estimation, the question of the shipwreck would not now be any subject of doubt.

As navigators became more daring, and as their vessels, increasing in size, required more water and provisions, &c. Malta fell into the hands of various masters. At last, when Charles V. conquered Sicily and Naples, he offered it to those warriors of Christendom, those determined enemies of the Turks and Corsairs—the Knights Hospitallers of St. John of Jerusalem. This singular band of men, distinguished by their piebald vow of heroism and celibacy, had, after a most courageous resistance, been just overpowered by an army of 300,000 Saracens, who, under Solyman II. had driven them from the island of Rhodes, which had been occupied by their order 213 years. Animated by the most noble blood of Europe which flowed in their veins—thirsting for revenge—yet homeless and destitute, it may easily be conceived that these brave, enthusiastic men would most readily have accepted almost any spot on which they could once again establish their busy hive; yet so little was the importance of Malta, even at that time, understood, so arid was its surface, and so burning was its rock, that after minutely surveying it, their commissioners made a report to Charles V., which must ever be regarded as a most affecting document; for although the knights of Malta were certainly in their day "the bravest of the brave," although by that chivalric oath, which bound them together, they had deliberately sworn "never to count the number of their enemies," yet, after the strong, proud position, which they had held at Rhodes, it was only hard fate and stern necessity thar could force them to seek refuge on a rock upon which there was scarcely soil enough to plant their standard. But though honour has been justly termed "an empty bubble," yet to all men's eyes its colours are so very beautiful, that they allure and encourage us to contend with difficulties which no other advocate could persuade us to encounter; and so it was that the knights of Malta, seeing that they had no alternative, sternly accepted the hot barren home that was offered to them, and in the very teeth, and before the beard of their barbarous enemy, these lions of the cross landed and established themselves in their new den.

When men have once made up their minds to stand against adversity, the scene generally brightens, for danger, contrary to the rules of drawing, is less in the foreground than in the perspective—difficulties of all sorts being magnified by the misty space which separates us from them; and accordingly the knights were no sooner established at Malta, than they began to find out the

singular advantages it possessed. The whole island being a rock of freestone, which could be worked with peculiar facility, materials for building palaces and houses, suited to the dignity of the order, existed every where on the spot; and it moreover became evident, that if they would merely quarry out the rock, ascording to the rules of military science, they would not only obtain materials for building, but that, in fact, the more they excavated for their town, the deeper would be the ditch of its fortress. Animated by this double reward, the knights commenced their operations, or, in military language, they "broke ground;" and, without detailing how often the rising fortress was jealously attacked by their barbarous and relentless enemies, or how often its half-raised walls were victoriously cemented with the blood of Christians and of Turks, it will be sufficient merely to observe, that before the island had been in possession of the order one century, it assumed very nearly the same astonishing appearance which it now affords—a picture and an example, proving to the whole world what can be done by courage, firmness, and perseverance.

The narrow spit or tongue of barren rock, which on the north side of the island separated the two great harbours, was scarped in every part, so as to render it inaccessible by sea; and on the isthmus, or only side on which it could be approached by land, demi-lunes, ravelins, counter-guards, bastions, and cavaliers, were seen towering one above another on so gigantic a scale, that, as one single datum, it may be stated, that the wall of the escarp is from 130 to 150 feet in height, being nearly five times the height of that of a regular fortress. On this narrow tongue of land, thus fortified, arose the city of Valetta, containing a palace for its Grand Master, and almost equally magnificent residences for its knights, the whole forming at this day one of the finest cities in the world. On every projecting point of the various beautiful bays contained in each of the two great harbours, separated from each other by the town of Valetta, forts were built flanking each other, yet all offering a concentrating fire upon any and every part of the port; and when a vessel labouring, heaving, pitching, and tossing, in a heavy gale of wind, now suddenly enters the great harbour of Malta, the sudden lull—the unexpected calm—the peaceful stillness which prevails on its deep unruffled surface, is most strongly contrasted in the mind of the stranger with the innumerable guns, which, bristling in every direction from batteries one above another, seem fearfully to announce to him that he is in the chamber of death—in a slaughter-house, from which there is no escape, and that, if he should dare to offer insult, although he has just escaped from the raging of the elements, the silence around him is that of the grave!

It was from the city and harbour of Valetta, in the state above described,—it was from this proud citadel of Christianity, that the knights ot Malta continued for some time sallying forth to carry on their uncompromising hostility against the Turks, and against the corsairs of Algiers and Tripoli; but the brilliant victories they gained, and the bloody losses they sustained, must be passed over, as it is already time to hurry their history to a close.

The fact is, the Knights Hospitallers of St. John of Jerusalem gradually outlived the passions and objects which called them into existence, and their order decayed for want of that nourishment which, during so many ages, it received from the sympathy, countenance, and applause of Christendom. In short, as mankind had advanced in civilization, its angry, savage, intolerant passions had gradually subsided, and thus the importance of the order unavoidably faded with its utility. There was nothing premature in its decay—it had lived long enough. The holy, or rather unholy, war, with all its unchristian feelings, having long since subsided, it would have been inconsistent in the great nations of Europe to have professed a general disposition for peace, or to have entered

into any treaty with the Turks, while at the same time they encouraged an order which was bent on their extermination.

The vow of celibacy, once the pride of the order, became, in a more enlightened age, a mill-stone round its neck; it attracted ridicule—it created guilt—the sacred oath was broken; and although the head, the heart, and the pockets of a soldier may be as light as the pure air he breathes, yet he can never truly be reported "fit for duty," if his conscience, or his stomach, be too heavily laden. In short, in two words, the order of St. John of Jerusalem was no longer suited to the times; and Burke had already exclaimed—"The age of chivalry has fled!"

In the year 1798, this order, after having existed nearly 700 years, signed its own death-warrant, and in the face of Europe died ignominiously—"felo de se." On the 9th of June, of that year, their island was invaded by the French, and although, as Napoleon justly remarked, that to have excluded him it would have been only necessary to have shut the gates, Valetta was surrendered by treachery, the depravity of which will be best explained by the following extract from a statement made by the Maltese deputies:—"No one is ignorant that the plan of the invasion of Malta was projected in Paris, and confided to the principal knights of the order resident at Malta. Letters in cyphers were incessantly passing and repassing, without, however, alarming the suspicions of the deceased Grand Master, or the Grand Master Hompesch."

As soon as all the French were in possession of the city, harbours, and impregnable fortresses of Valetta, they began as usual, to mutilate from the public buildings every thing which bore the stamp of nobility, or recalled to mind the illustrious actions which had been performed. The arms of the order, as well as those of the principal knights, were effaced from the palace and principal dwelling-houses; however, as the knights had sullied their own reputation, and had cast an indelible blot on their own escutcheons, they had but little right to complain that the image of their glory was thus insulted, when they themselves had been guilty of the murder of its spirit. The order of St. John of Jerusalem being now worn out and decayed, its elements were scattered to the winds. The knights who were not in the French interest were ordered to quit the island in three days, and a disgraceful salary was accepted by the Grand Master Hompesch. Those knights who had favoured the French were permitted to remain; but, exposed to the rage of the Maltese, and unprotected by their false friends, some fled, some absolutely perished from want, but all were despised and hated.

In the little theatre of Malta the scene is about to change, and the British soldier now marches upon its stage! On the 2d of September, 1798, the island was blockaded by the English, and the fortifications being absolutely impregnable, it became necessary to attempt the reduction of the place by famine.

For two years most gallantly did the French garrison undergo this most horrid suffering and imprisonment. Steadily and cheerfully did they submit to every possible privation—their stock of spirits, wine, meat, bread, &c. doled out in the smallest possible allowances, gradually diminished until all came to an end. Sooner than strike, they then subsisted upon the flesh of their horses, mules, and asses; and when these also were consumed, and when they had eaten not only their cats, but the rats which infested the houses, drains, &c. in great numbers—when, from long-protracted famine, the lamp of life was absolutely expiring in the socket; in short, having, as one of their kings once most nobly exclaimed, "lost all but their honour," these brave men, with nerves unshaken, with reputation unsullied, and with famine proudly painted in their lean, emaciated countenances, on the 4th of September, 1800, surrendered the

place to that nation which Napoleon has since termed "the most powerful, the most constant, and the most generous of his enemies."

During the long-winded game of war which France and England lately played together, our country surely never made any better move than when she thus laid hold of Malta. Even if the island had been in the rude state in which it was delivered to the Knights of Jerusalem, still to a maritime power like England, such splendid harbours in the Mediterranean would have been a most valuable conquest; but when we not only appreciate their noble outline, but consider the gigantic and expensive manner in which this town has been not only impregnably fortified, but furnished with tanks, subterraneous stores, bomb-proof magazines, most magnificent barracks, palaces, &c. it is quite delightful to reflect on the series of events which have caused such a well-assorted alliance between two of the strongest harbours in the world, and the first maritime power on the globe.

If, like the French, we had taken the island from the knights, however degraded, worn out, and useless their order might have become, yet Europe in general, and France in particular, might always have reproached us, and, for ought we know, our own consciences might have become a little tender on the subject. But the delightful truth is, that no power in Europe can breathe a word or a syllable against our possession of the island of Malta—it is an honour in open day-light we have fairly won,—and I humbly say, long, very long may we wear it!

EXCURSIONS IN THE NORTH OF EUROPE, through parts of Russia, Finland, Sweden, Denmark, and Norway, in the years 1830 and 1833. By John Barrow, Junior. Murray, London.

This is both an interesting and a useful little volume. The author, holding an official station in the Admiralty, the duties of which afford but faint hopes to any one there of visiting such distant places, has, with the aid of steam and plenty of horses, contrived to reach not only the capital of Russia, but that outlandish and almost Laplandish place, Drontheim in Norway. A desire for travelling is common enough; but it is only when accompanied by observation and inquiry, the results of which are committed to paper for the benefit of future travellers, that it can be called useful in the full meaning of the word. Mr. Barrow seems to have been quite aware of this, and has well employed the little time he has had at his command. Notwithstanding that with a rapid step he passes through Hamburgh, Lubeck, Travemunde, Cronstadt, and Petersburgh to the Russian capital, he gives us interesting information of each place; and we return with him through Abo, the capital of Finland, to Stockholm, Gottenburg, and Copenhagen, equally gratified with the bits of intelligence he picks up in his way.

The second excursion, which led him to Drontheim, whether from the remarkable tract of country through which he passed, or from its being less frequented than the foregoing, is still more interesting. But Norway, with her splendid mountains of primeval rock, and her magnificent lakes of glassy form, their margins embowered with stately trees, must always win the admiration of the traveller, and the natural simplicity of her people will ever captivate the heart. Leaving Christiania, Mr. Barrow passes the great chain of mountains to Bergen, from whence he keeps the border of the coast to Drontheim, crossing the numerous fiords that lie in his way. Being the first English traveller who has adopted this route, we obtain some interesting particulars of those extraordinary half-salt and half-fresh water inlets, with

which the coast of Norway abounds. From Drontheim Mr. Barrow returns through the heart of the country to Christiania, reluctant to leave the land of his pilgrimage. The work is neatly got up; it is embellished with some elegant wood-cuts, and will prove a valuable source of information to the future traveller.

RECOLLECTIONS OF A NAVAL LIFE, by Capt. James Scott, R.N. 3 vols. 8vo. Bentley, London. 1834.

Recollections of a naval life! What a strange medley of joys and sorrows do they heap on the mind! First, there are pleasant cruises, and then tedious cruises; long watching, and no watching; fine weather, and foul weather; terrific seas, and seas smooth as duck-ponds; heavy gales, and light gales, the former "blowing great guns, and small arms with their bayonets fixed and pointed downwards;" then come calms, and hurricanes; furious squalls, and gentle zephyrs; wet jackets and wet beds, and the luxury of dry ones; and last, though not the least, of these comforts and discomforts, there is fasting and feasting, the former at sea, the latter in harbour. Such are the recollections we have of a naval life, and a long list of others we might mention, to say nothing of taking prizes, and losing them; and visiting foreign lands, for the pleasure of being wrecked on them. But, after all, if a naval life has its hardships, (and what path of life is not strewed with thorns?) there is more on the sunny side of it than most people are aware. The opportunity it affords of seeing the world to its remotest corners—for even there will ships be found—the excitement of being plunged piping hot, as Captain Hall expresses it, into new scenes, incessantly one after the other, and gaining knowledge at every step—all this amply compensates for the inconveniences, nay, the hardships of a naval life, and renders the profession of the sea, "the deep, deep sea," the most glorious and, to noble minds, the most advantageous of all others. But we have been led away by our own "recollections" from those of Captain Scott, which we find here, in three comfortable octavo volumes. We like to see naval men incorporating their ideas with their recollections—although it has been the fashion to run them down—and more particularly so, when it is done in the plain and unassuming manner in which Captain Scott has gone to work. Much useful historical matter is thus recorded, many points are cleared up, and set in their proper light, which can be only done by that best of all arguments, practical experience—we allude, for instance, to members of parliament being imposed on by certain sea worthies, or rather unworthies, and false notions of discipline in men-of-war getting abroad, fraught with danger to the state—these are matters of real utility; they instruct the uninstructed, and, as for amusement, what source is more prolific than the sea in anecdote and incident? Captain Scott's "Recollections" are of this instructive and amusing kind; they embrace the whole period of the long war, down to the eventful 1815, and will be read with universal interest. Indeed, the whole work derives importance from the numerous historical events which it relates, and abounds with interesting anecdote from the stirring scenes which these events produce. In another number we shall endeavour to give our readers a sample of Captain Scott's "Recollections."

Proposed Light-house on the Beeves Rocks on the Shannon.

" • • • • in a pillar of fire to light them, and guide them ————
" And the children of Israel went into the midst of the sea."—*Exodus* xiii. 21; xiv. 22.

I now come to the subject of the improvements I recommend; and the exposition which follows, is very nearly *verbatim* the same that I gave* when I brought the matter forward at a meeting of the Directors of the Chamber of Commerce of Limerick. Adhering to the same methods which I adopted in speaking before the Directors, I shall not here mention first in order, the most important improvements which could be effected on the river, speaking of it absolutely, but that which could be of the greatest importance, in proportion to its cost: that which would give the maximum of advantage on the minimum of expenditure. I shall preserve the same method in speaking, not only of this first improvement, but of all the others, in their order. I say, therefore, that the improvement decidedly of the greatest utility, in proportion to the expenses of carrying it into execution, would be the establishment of a light during the winter months in the Beacon tower, on the rocks called the Beeves. This would cost little or nothing in the first instance; not more than the expense of the oil, the reflectors and lenses, and fitting up in a little room in the Beacon tower.—The pilots, who must be good authority in this case, assure me, that they know very well the owners of vessels would joyfully contribute the sum necessary for paying the person who should have the care of the light, and all the other necessary expenses.

" Vessels now, in the long winter nights, often lose a passage, both above and below the Beeve rocks, by being obliged to come to anchor:" not daring to risk the passage in the dark in that vehement tide. Now this is solely for want of a light to direct them; and the loss even of a single tide in the Shannon, to vessels outward bound, is considered a matter of no light importance by their owners, if they happen to observe the setting in of a westerly wind.

The pilots tell me that if they had such a light as I recommend, and urge the necessity of establishing, instead of being constrained to anchor, they could pass down the river at any one time of the night, without apprehension of being drifted on the Herring rock, of which, in the dark, they are at present in terror in the rush of the ebb: and then, after passing the point of Tarbert, they would have the light at Carrigaholt, and finally the light at Loophead, and so get out to sea.

I have lately heard of a natural light which has burst forth upon the shores of Lake Erie, in America. The flame ascended through a chasm of the rock, and burned uselessly upon the ground. A hollow pedestal was reared over it, that the flame might ascend through it, and gleam from its summit, as a beacon

* MEMORANDUM.

Limerick, September 14, 1832.

" I this day give the Directors of the Chamber of Commerce, a detailed exposition of the nature of my Plan for the improvement of the Navigation of the Shannon, below this City. I made a request that the best pilots on the river should be called in, to be present while I was speaking.—The Directors did not think this necessary; but I requested it as a personal favour; for, as what I had to say was not on a matter of abstract science, but of practical Navigation, the pilots, for their experience, were the best judges who could be found in the world. They were then called in. As soon as they were present, I went methodically and in detail into the subject; and the three pilots agreed with me upon every point of it. The Resolution I required was then passed by the Directors; namely, that " if the improvement I recommended were to be carried into execution, the Trade of the Port of Limerick would be materially benefited." T. S.

light for vessels. They had the light and wanted the pedestal—now we only want the light, for we have the pedestal ready formed in the Beacon tower.

I strongly recommend placing a buoy upon the Herring rock, below the Beeves; because I know that it would be an advantage (although by no means absolutely necessary), that the pilots should have a fixed mark on which to rest their eye by day, when sailing on a current so vehement as that which sets on the Herring rock from the Beeves.

Notwithstanding the vehemence of this current, and the extent of the tail of the Herring rock, there is such good sea room in this part of the river, that even though I do recommend putting down this buoy, I affirm, in direct opposition to a very generally received opinion, that there is no danger of passing the Beeves by day, except the danger arising from bad piloting or bad seamanship.

A hermaphrodite schooner was wrecked upon the Herring rock in October 1822. I heard the pilot (Picket) upon whose judgment, in the navigation of the river, I have the greatest confidence, one day talking on the loss of this vessel, with one of the fishermen—"I suppose," said the fisherman, in speaking of the pilot of the schooner, "that the tide dragged him upon it." "What's anchors for?" was Picket's decisive reply. I say decisive, for here there is such deep water, that there is no danger of an anchor running through the ship's bottom when dropped from her bows.

I have said, and I repeat it, the danger here by day is not in the rocks, nor in the current, though it sometimes drifts with so much violence as it does. The danger is in the pilots; if they do not acquaint them with the force and direction, and variation of the currents, and act promptly and decisively upon that knowledge.

"If they," said Picket, as he one day stood by me at the helm, instructing me how to steer through this passage, "will not have a knowledge of the tide, and be beforehand with the tide, what must they expect, sir?"

To pass here with security they must both "mind the run of the tide, and keep the rock of the Beacon tower close aboard;" and if the vessel does not answer her helm, to keep her off the Herring rock, I ask "what's anchors for?"

The camel is called in the East the ship of the desert; and a ship was called by the ancient Scandinavians, the horse of the ocean. Now, what should we say if any one who called himself a foxhunter, and who, if he found his horse running away with him, and drifting him towards a gravel pit, or a crag, or the verge of a cliff, should choose to forget that he had a bridle in his hands? And in the same manner, if a pilot, finding the horse of the ocean running away with him in a current, towards some shoal ground, or a rock, or another vessel—what should we say of him, if finding himself in this situation, and being without wind to command his vessel, he should choose to save himself the trouble of remembering that there was an anchor at the bows?

I introduce here, for its practical force, a precept given me by the same pilot; an admirable one in practical navigation, and not less admirable as a metaphor in the navigation of a certain tide of "ruffian billows" mentioned by Shakspeare—the "the tide in the affairs of men;" "You must take the tide beforehand, sir: it is no use to be a pilot, even though you know the rocks, unless you have the knowledge of the tide beforehand, and to be beforehand with it."

The importance of the light, for giving an increased security at night at this part of the river, will be more manifest by a single glance at the chart; for although the tide in the Narrows be so vehement in the ebb, that the ebb tide at the Beeves is still more so; and the tide sets down directly upon the Herring rock. The reason is this: some miles above them, opposite Grass

Island, the two rivers, the Ougarnee and the Maig, empty themselves into the Shannon: and the channel of the Fergus is above them too. I say *the channel* of the Fergus, which is between the Horse rock, Moylan's rock, and Moylan's children.

It is to be further observed, that the mouth of the channel of the river Fergus being on the north side of the Shannon, there is consequently here a cause not only of the increase of the force of the current, by the additional body of water of the three rivers, but an additional impulse of that current towards the Herring rock on the south side.

I have purposely let my boat drift through the passage by the Beacon tower, to ascertain for myself the direction of the current, and its velocity; and although I should have no more apprehension for the security of a vessel passing here by day light, with any of the pilots who were in the habit of attending me, than I should feel if she were at anchor in the Pool of Limerick, I again urge the necessity of a light in the tower, during the long and dreary winter nights.

"But chiefly spare, O King of Clouds,
The seaman on his airy shrouds."
CAMPBELL—*Ode to Winter.*

THOMAS STEELE.

PRESERVATION AT SEA.

WE have much pleasure in finding a place for the following. The Rival is No. 137 in our tables:—

To the Editor of the Nautical Magazine.

SIR, not having observed in your list of wrecks of British shipping any particulars respecting the manner in which the crew of the Rival were saved by His Majesty's ship Firebrand, I take the liberty of requesting you will do me the favour of inserting the following in your next Number.

I am, Sir, your most obedient servant
GRATITUDE.

Further particulars of the Loss of the Brig Rival, M'Kenzie, Master, of London, from Liverpool to Charlestown, South Carolina, with a cargo of salt on the 14th January, 1834.

"We had been three weeks from Liverpool, and had met with a series of tremendous gales, in one of which we were completely dismasted, and our decks cleared from stem to stern; our utmost exertions were now required to keep her above water, from the butts and seams having started considerably; the starboard bow was stove in at the time the foremast and bowsprit went. In this distressed condition, on the third day, an English bark attempted to render us assistance, but, in consequence of the heavy sea, we had the mortification to find it was impracticable. The weather having moderated a little on the 14th, we endeavoured to get up a jury-mast, and about one P.M. when we supposed ourselves about 230 miles S.W. of the Lizard, His Majesty's steam-vessel, Firebrand, hove in sight, and we had the inexpressible happiness of observing her alter her course, and approach us. Though we still feared from the state of the weather, that we might again be doomed to disapointment, Providence was with us, and a boat was soon hoisted out to our assistance, and our hopes were again raised that a period was arriving to our sufferings. Such proved to be the case, and we all happily met on board the Firebrand. To achieve this,

however, the little boat had to make three trips, and each man had to jump overboard and be hauled in and up by ropes' ends; as, from the high sea and tremendous rolling of the vessels, she could not approach either one. And here we have not only to be grateful to the brave fellows who risked their lives to save ours, but to the coolness and judgment of the officers in command of the boat; and I understand it is not the first nor second time, Mr. Wright, the above officer and master of the Firebrand, has voluntarily and by his intrepidity been instrumental in saving the lives of his fellow-creatures. His conduct on this occasion, alone, completed our preservation, and can never cease to be remembered by all who witnessed our removal; a task rendered *doubly dangerous* and *nervous*, by a knowledge of its being the *only* boat between both vessels; for I should have observed, that, the Firebrand was almost a wreck herself.

"We had scarcely got on board, when a heavy gale came on, in which the Rival must have gone down. If the gratitude of thirteen individuals, saved from certain destruction, and the general feeling of respect and admiration for his intrepidity be any gratification to Mr. Wright, he, most assuredly, might feel proud. Among the passengers on board the Firebrand, was Mr. Mathews, late Consul-general at Lisbon, who, I am sure, will ever bear testimony that the feeling of gratitude, which dictates this statement, is not misplaced. The greatest attention and kindness was exhibited by every officer, and, indeed, every one on board vied in their attention to our comforts, for we lost nearly every thing.

"And, although Mr. Wright's name has not appeared, it is due to him, and to merit in general, to particularize such deeds as the above.

"GRATITUDE."

"*Devonport, April, 2d.* 1834."

CHRONOMETERS.

WITH the view of recording the progress in the art of making chronometers at the present time, as regards their price as well as their quality, we have admitted the following advertisement of Messrs. Arnold and Dent into the pages of the Nautical Magazine. It is with much satisfaction that we invite the attention of our nautical readers to it—they will know how to appreciate its importance, while we shall look on it as a new era in the history of chronometers.

"Mr. Editor,

"We feel great pleasure in being enabled thus early after our experiments, which, under the sanction of the Lords Commissioners of the Admiralty, were recently made at the Royal Observatory, to present you with the following satisfactory statement. It will be remembered that the immediate object of the inquiry by us extended not only to the simplification and consequent improvement, of chronometers, but also to the important consideration of the reduction which would be effected in the actual price of those machines. Up to the present time we have done more towards the settlement of these great questions than could possibly have been expected, and we feel it a duty we owe ourselves and our friends, to request you will give publicity to our endeavours to reform this branch of scientific research. The first question, relative to the improvement of the chronometer itself, will be more effectually answered by a reference to the subjoined rates of four chronometers which have recently been purchased from us by the Lords Commissioners of the Admiralty for the use of the Royal Navy. The second, regarding the price, will be considered as satisfactorily answered, when we state that the price of each was 40 Guineas.

The following are the RATES of the Chronometers:—

Daily Rate of Messrs. ARNOLD and DENT'S *Chronometers at the Royal Observatory.* 1834.

Date.	No. 818	Date.	No. 818	1834.	No. 719	No. 669	No. 707
	s.		s.		s.		
Jan. 27	+ 0, 3	Mar. 1	+ 0, 1	Feb. 26	— 9, 7		
28	— 0, 3	2	+ 0, 1	27	— 9, 6		
29	— 0, 6	3	+ 0, 1	28	— 9, 8		
30	— 0, 4	4	— 0, 1	Mar. 1	— 9, 0		
31	— 0, 2	5	— 0, 4	2	— 9, 8		
Feb. 1	— 0, 4	6	— 0, 1	3	— 9, 7		
2	+ 0, 1	7	— 0, 1	4	—10, 5		
3	+ 0, 1	8	+ 0, 2	5	— 8, 5	s.	
4	— 0, 3	9	0, 0	6	— 9, 7	— 0, 1	
5	— 0, 1	10	0, 0	7	— 9, 5	— 0, 3	s.
6	— 0, 2	11	+ 0, 2	8	— 9, 4	— 0, 5	— 5, 2
7	— 0, 1	12	— 0, 4	9	— 9, 2	— 0, 3	— 5, 2
8	0, 0	13	0, 0	10	— 9, 2	— 0, 4	— 5, 2
9	+ 0, 5	14	+ 0, 2	11	—10, 0	— 0, 2	— 5, 2
10	+ 0, 4	15	+ 0, 7	12	— 9, 2	— 0, 9	— 5, 3
11	0, 0	16	+ 0, 7	13	— 9, 9	— 0, 7	— 5, 7
12	0, 0	17	+ 0, 8	14	— 9, 3	— 0, 6	— 5, 6
13	+ 0, 1	18	+ 0, 7	15	— 9, 4	— 0, 5	— 5, 9
14	+ 0, 5	19	+ 0, 6	16	— 9, 6	— 0, 6	— 5, 4
15	+ 0, 2	20	+ 1, 2	17	— 9, 7	— 0, 5	— 5, 4
16	+ 0, 2	21	+ 0, 6	18	— 8, 9	— 0, 4	— 5, 5
17	+ 0, 2	22	+ 0, 9	19	— 9, 7	— 0, 5	— 5, 9
18	+ 0, 8	23	+ 0, 6	20	— 8, 9	— 0, 6	— 6, 2
19	+ 0, 3	24	+ 0, 5	21	— 9, 7	— 0, 7	— 6, 3
20	+ 0, 5	25	+ 1, 2	22	— 9, 6	— 0, 3	— 5, 9
21	+ 0, 4	26	+ 1, 0	23	— 9, 5	— 0, 4	— 5, 9
22	+ 0, 1	27	+ 1, 0	24	— 9, 5	— 0, 3	— 6, 0
23	+ 0, 2	28	+ 0, 7	25	— 8, 8	— 0, 3	— 5, 7
24	+ 0, 2	29	+ 0, 6	26	— 8, 8	+ 0, 1	— 5, 2
25	+ 0, 0	30	+ 0, 4	27	— 9, 0	— 0, 5	— 5, 8
26	+ 0, 5	31	+ 0, 3	28	— 9, 6	— 0, 3	— 5, 8
27	+ 0, 3	April, 1	+ 0, 5	29	— 9, 6	— 0, 3	— 5, 9
28	— 0, 1	2	+ 0, 7	30	— 9, 6	— 0, 5	— 5, 9
		3	+ 0, 4	31	— 9, 5	— 0, 5	— 5, 9
				April 1	— 9, 2	— 0, 1	— 6, 0
				2	— 9, 0	— 0, 8	— 5, 2
				3	— 9, 7	— 0, 3	— 5, 8

J. POND, *Astronomer Royal.*

The above rates are obtained from the public documents at the Royal Observatory, where the chronometers had been for some time in a state of probation, previous to their being purchased.

We are, Sir, &c.
ARNOLD & DENT.

ROYAL HUMANE SOCIETY.—The anniversary dinner of this Society has just taken place at the City of London Tavern. There were above two hundred gentlemen present, and among the company were—the Right Hon. the

Vice-Chancellor in the chair; Lord Alford, General Sir S. Hawker, Sir E. Cust, Sir F. Ommaney, the Sheriffs, the Hon. Justice Gaselee, the Hon. Baron Gurney. In the course of the evening, medals and rewards were given to Capt. Aldridge, R.N., Lieut. Liarden, R.N. Lieut. Leigh, R.N., Mr. J. Elliott, R. N., M. W. Carruthers, Esq. R. Sumner, Esq., J. Hunt, Esq., Mr. H. W. Hyland, Richard Hoodlass, Mr. R. Richmond, John Baldock, C. Dunlop, W. Field, T. Forbes, Pierre Antoine Henin, Thomas Sacks, Patrick Newell, and Joseph Dobson, for having saved the lives of their fellow-creatures; and after dinner those persons who had been rescued from a watery grave through the efforts of the Society (to the amount of 27,) walked through the room for the inspection of the subscribers. The feelings of all present were much affected, so much so as to prevent many of the intrepid individuals from saying more than thanks—but the following remarks of Mr. Hyland are worthy of being preserved.

"As I believe the object of this society is to prevent the loss of human life, as well as to restore suspended animation, I beg to advert to the great loss of shipping, property, and human life, within the last year. I presume, that, in the memory of the oldest man living, there is not a period in which so many lives have been lost by shipwrecks, as within that time. I have paid the most minute and particular attention to ascertain the cause of it, the result of which is—First, that a great number of the masters and mates of merchant vessels are entirely ignorant of the use of a sextant or chronometer, and many of them in their station, through interest, are nearly equally ignorant of seamanship. The second cause of the great loss of human life by shipwreck is the difficulty and danger in obtaining exact perpendicular soundings in dark tempestuous nights, or thick foggy weather. At such times, the true depth of water, and the quality of the ground, is the only correct guide for the seaman to go by. Not being able to discern the land, light-houses, or the sun, moon, or stars, all his astronomy and navigation are entirely useless: he requires an instrument with which he can observe under water; and numerous instruments were invented for that purpose, all of them deficient in the main object, until Mr. Edward Massey invented his justly celebrated patent sounding machine, which, in the words of Captain Basil Hall, may be considered under water what the sextant is above it—the only infallible guide to the navigator."

A DISTRESSING CASE.—Since the establishment of the Nautical Magazine, we have not made one appeal to the charitable feelings of our readers; when we do so, they may be assured that we are the advocates of real distress. We, therefore, enter our first application to them with the following case, which, unsolicited, we have copied from the Hants Telegraph:—

"To those who, together with the disposition, have the means of alleviating "distress, this Appeal is addressed, in behalf of the CHILDREN of the late "Lieut. BUTCHER, R.N. Lieut. B. died recently, after severe illness; in the "short space of nine weeks, his Widow has followed him; and they have left "behind them FOUR utterly destitute Orphans, two of whom are almost in "Infancy. It would be impossible for any who knew him, to speak of "Lieut. Butcher except in terms of affection and esteem. He was distinguished "as an Officer, zealous in the discharge of his duty: as ever mindful of the "comforts of those under his command; as a truly honourable man, and an "intrepid seaman; and though prudent in his worldly affairs, of a nature so "generous, that, confined as his circumstances were, he would sooner have "endured want himself than have remained insensible to such a case of calamity "as is here placed before the Public."

We have already the gratification of announcing the following subscriptions received:—

Captain F. Beaufort, R.N.	£1	0	0	The Nautical Magazine,	£1	0	0
Captain J. Mangles, R.N.	1	0	0	Lieut. A. B. Becher, R.N.	0	5	0

But in a case like this, where we find four orphan children left *utterly destitute*, without pension or relief from government, and without the fostering affection of a parent to rear them, and nothing to look for either now or hereafter—these little helpless creatures, we say, are literally thrown on the hands of the benevolent; and we sincerely trust that they will meet with that attention which their case really deserves. It is with much satisfaction that we find this case has already met with some attention, and that exertions in behalf of these little *orphans* are making in several places. We have opened a list for the names of those who are disposed to assist us in their relief, at our Publisher's, No. 21, Poultry, and cheerfully undertake to assist their cause all in our power.

It has been a matter of some surprise to us, that a widow's fund has not yet been established by a very numerous class of officers, namely, the Lieutenants of the Royal Navy, from which such cases as the above might be relieved. We are aware of the existence of the Annuitant Society, the benefits of which are great; but when we consider the Captain's club of 1765, and the flourishing state of its finances, notwithstanding the numerous donations it affords to soothe the widow's grief in secret, we cannot help thinking that there should be such a fund for the widows of Lieutenants, who, for the most part, stand more in need of relief than those of Captains. These hints are thrown out for the consideration of any of our readers; and we will readily assist in forwarding any well-digested plan for such an object.

NAVAL INTELLIGENCE.

THE ROYAL NAVY IN COMMISSION—*continued from p. 250.*

*** S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

ACTÆON, 26—Hon. G. Grey, March at Constantinople.

ÆTNA, S. V. 6—*Act.* Com. W. Arlett, 21st Dec. left the Gambia; 23d Dec. off Cape Roxo.

ALBAN, St. V.—Lieut. A. Kennedy, 30th Oct. at Demerara, from Berbice.

ALFRED, 50—Capt. R. Maunsell, 23d March at Smyrna.

ALLIGATOR, 28—Captain G. R. Lambert, 30th Oct. left Batavia, for Sincapore.

ANDROMACHE, 28—Capt. H. D. Chads, C. B. 17th Feb. arrived at Madeira; 19th sailed for China.

ARACHNE, 18—Com. J. S. Foreman, 9th Feb. arrived at Barbadoes.

ARIADNE, 28—Capt. C. Phillips, expected home daily. 10th Jan. left Port Royal on her way home.

ASIA, 84—Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus 27th March.

ASTREA, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Karley, 5th March arrived at Lisbon, on her way to Barbadoes.

BADGER, 10—Com. G. F. Stowe, Simon's Bay.

BARHAM, 50—Capt. H. Pigot, 19th April arrived at Spithead, with the flag of Vice-Admiral Sir P. Malcolm. Left Gibraltar 3d April, and Malta 23d March. The flag was struck in the evening.

BEACON, S.V.—Com. R. Copeland, 23d March at Malta.

BEAGLE, 10, S. V.—Com. R. Fitz-Roy, 25th Oct. Monte Video.

BELVIDERA, 42—Capt. C. B. Strong, 24th March, sailed from Weymouth. Mr. Chatfield, Consul at Guatemala, and Lord Sussex Lennox, for Jamaica, take their passage in her.

BLONDE 46—Capt. F. Mason, C.B. 7th March touched at Madeira; to sail next day for Jamaica, with the Marquis of Sligo and suite.

BRISK, 3—Lieut. T. Stevens, Gold Coast.

BRITANNIA, 120—Vice-Admiral Sir Josias Rowley, Captain P. Rainier, 5th March sailed from Malta; 23d March at Malta.

BRITOMART, 10—Lieutenant H. Quin, 21st Nov. at Sierra Leone. Sailed for Gambia.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 10th Nov. left Sydney for New Zealand.

CALEDONIA, 120—Captain T. Brown, 5th March sailed from Malta; 23d March at Malta.

CANOPUS, 84—Hon. J. Percy, 3d April moved into the Sound.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 18th March off Oporto; 24th March at Vigo; 14th April in the Tagus.

CEYLON, 2—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 8th Dec. arrived at Rio Janeiro. To proceed

to Pacific, on or about the 20th instant, calling at the Falkland Islands to land Mr. Smith, late first lieutenant of the Tyne, but now Governor of those islands, he having been appointed thereto by his Majesty's government, with a salary of seven shillings a day, in addition to his pay as lieutenant in the Navy. He will be accompanied by four seamen, to make up a boat's crew. 21st Dec. sailed for the Falkland Islands.

CHAMPION, 18—Com. Hon. A. Duncombe, March at Barcelona.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, Portsmouth. 8th Feb. moved to Spithead; 10th March sailed for Falmouth, and Lisbon, and Africa.

COCKATRICE, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

COCKBURN, 1—Lieut. Com. C. Holbrook, Kingston, Lake Ontario.

COLUMBINE, St. V. 2—Lieut. R. Ede, Portsmouth.

COMET, St. V.—Lieut. Com. T. Cook, Woolwich.

COMUS, 18 — Com. W. Hamilton, 14th Feb. arrived at Barbadoes, from Jamaica.

CONWAY, 28—Capt. H. Eden, 31st Dec. arrived at Rio, from Bahia; 1st Feb. expected to sail for Pacific Islands.

CRUIZER, 18—Com. Jas. M'Causland, 29th Jan. sailed for Jamaica, with Major-Gen. Sir Amos Northcote. Detained by foul winds at Falmouth. Sailed 9th Feb.

CURAÇOA, 26—Capt. D. Dunn, 10th Nov. arr. at Calcutta.

CURLEW, 10—Com. H. D. Trotter, 7th Dec. off the Bonney R. Daily expected home.

DEE, St. V. 4—Com. W. E. Stanley (*b*) 3d April arrived at Sheerness.

DISPATCH, 18—Com. G. Daniell, 24th Jan. arrived at Antigua, from Barbadoes.

DONEGAL, 78—Captain A. Fanshawe, 27th March and 14th April in the Tagus.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, (the statement of Capt. Hope having succeeded Lord Townshend is incorrect,) 13th Sept. arrived at Lima from Valparaiso. 3d Oct. returned to Valparaiso. Going to Lima.

EDINBURGH, 74—Capt. James R. Dacres, 20th March sailed for Malta. Lieut.-Col. Packe, C.B., took his passage in her. 3d April passed Gibraltar.

ENDYMION, 50 — Captain Hon. F. W. Grey, Knt. C.B.; 5th March arrived at Malta from Plymouth. 23d March at Malta.

ESPOIR — Lieut. Com. C. W. Riley, 16th April sailed for Falmouth.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, African station.

FAIRY, S. V. 10—Com. W. Hewett, surveying in the North Sea.

FAVORITE, 18—Com. G. R. Mundy, March at Valparaiso.

FIREBRAND, St. Yt.—Lieut. W. G. Buchanan, 8th April left Portsmouth for the river.

FIREFLY, 2 — Lieutenant J. M'Donnel, Bahamas.

FLY, 10 — Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER — Lieut. G. Miall, 21st Nov. at Sierra Leone. 22d Dec. arrived at Ascension, on way to Cape.

FORTE, 44—Captain W. O. Pell, 27th Jan. left Barbadoes.

GANNET, 18 — Commander J. B. Maxwell, Sheerness.

GRIFFON, 3—Lieutenant E. Parlby, Gold Coast.

HARRIER, 18 — Com. H. L. S. Vassal, 13th Oct. at Trincomalee, refitting.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, 19th Oct. arrived at Calcutta.

IMOGENE, 18 — Captain P. Blackwood, 9th Oct. passed Trincomalee, from New South Wales, on her way to Madras.

INVESTIGATOR, 16, S. V. — Mr. G. Thomas, surveying the Shetland Islands.

ISIS, 50 — Capt. J. Polkinghorne, 5th Jan. arrived at Sierra Leone. Flag of Rear-Admiral S. Warren. 17th Jan. expected at Ascension, on her return to the Cape.

JACKDAW, S. V. — Lieutenant E. Barnett, 12th January arrived at Nassau from Egg Island.

JASEUR, 18—Com. J. Hackett, Sheerness, fitting.

JUPITER, *Troop Ship* — Mr. R. Easto, 9th March arrived at Gibraltar.

HASTINGS, 74—Capt. H. Shiffner, Chatham, fitting.

LARNE, 18 — Com. W. S. Smith, 6th Feb. arrived at Jamaica, from Cuba.

LIGHTNING, St. V. — J. Allen, 11th April arrived from Lisbon. Passenger, Lord W. Russell.

LYNX, 10—Lieut. Com. H. V. Huntley, Portsmouth. 7th Feb. sailed for Africa.

MADAGASCAR, 46 — Capt. E. Lyons, March coast of Greece.

MAGICIENNE, 24—Capt. J. H. Plumridge, 5th Nov. arr. at Macao, from Manilla; 19th Nov. there.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74 — Capt. Hon. J. Percy, 9th March left Malta; 23d March at Malta.

MASTIFF, 6, S. V.—Lieut. T. Graves, 23d March at Malta.

MEDEA, St. V. 6—Com. H. T. Austen, Portsmouth and Plymouth, conveying seamen.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 11th Dec. arrived at Bombay.

METEOR, St. V.—Lieut. Symons, 9th March arrived at Gibraltar; 11th April arr. at Plymouth; 14th left for Woolwich.

NIMBLE, 5 — Lieut. C. Bolton, 18th Jan. arr. at Jamaica, from Nassau.

NORTH STAR, 28 — Capt. O. V. Harcourt, Portsmouth, fitting. See pages 548 and 549 of vol. ii. Naut. Mag., and preceding, numbers, for her services.

NIMROD, 20 — Com. J. Mc. Dougal, 24th March, north coast of Spain.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

ORESTES, 18—Com. Sir Wm. Dickson, Bart. 22d March sailed for north coast of Spain.

PALLAS, 42—Capt. W. Walpole, 4th Dec. at Jamaica.

PEARL, 20—Com. R. Gordon, 12th Jan. arr. at Nassau.

PELORUS, 18—Com. R. Meredith, 7th Dec. arrived at St. Helena, from Cape, on way to Ascension; 5th Jan. at Sierra Leone.

PHŒNIX, St. V. — Com. R. Oliver, Woolwich.

PICKLE, 5—Lieut. C. Bagot, 29th Nov. at Port Royal.

PINCHER, 5—Tender to flag-ship, 18th Jan. arr. at Jamaica, from Carthagena.

PLUTO, St. V.—Lieut. T. R. Sulivan. Coast of Africa.

PRESIDENT, 52 — Capt. J. M'Kerlie, Portsmouth; 25th Feb. taken into dock; 25th March undocked. Major-General Sir Colin Campbell, K. C. B., Governor and Commander-in-Chief in Nova Scotia, with Lady Campbell and family, will take their passage to Halifax in the President, when ready to proceed to that station.

PRINCE REGENT *Yacht*— Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 15th Oct. left Valparaiso for Lima, via Arica and Ylo.

PYRAMUS—8th Oct. arrived at Bermuda; sailed for Halifax with Forte; 23d Oct. arr. at Halifax.

RACER, 16—Com. J. Hope, 30th Jan. arrived at Port au Prince; sailed 2d Feb.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. 31st March moved into the Sound.

RAINBOW, 28 — Capt. Thomas Bennet, 3d April moved to Spithead. Lieut. Dowse, and Messrs. Cunningham and Mahon, Assistant-Surgeons, take their passage to join the Vernon at Jamaica. 15th April sailed.

RALEIGH, 18 — Com. A. M. Hawkins, expected home daily. 20th March sailed from Gibraltar.

RAPID, 10—Lieut. Com. F. Patten, 10th Dec. arrived at Rio Janeiro.

RAVEN, S. V. 4—Lieut. H. Kellet, 2d Dec. at Santa Cruz, Teneriffe.

REVENGE, 78—Capt. W. Elliott, C.B., undocked 26th March.

RHADAMANTHUS, St. V.—Com. G. Evans, 27th Oct. at Jamaica. 12th Dec. sailed for St. Domingo.

RINGDOVE, 16—Com. W. F. Lapidge, 24th Feb. left Lisbon for Madeira; 21st March returned to Lisbon; 14th April in the Tagus.

ROLLA, 10—Lieut. H. F. Glasse, 24th March at St. Ubes.

ROMNEY, *Troop Ship*—Mr. R. Brown, sailed for West Indies 14th March, with 64th regiment.

ROVER, 18 — Com. Sir G. Young, Bart., 3d March arr. at Malta, from Sheerness; 23d March at Tripoli.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, 18th March off Oporto; 24th March in the Douro.

ST. VINCENT, 120—Capt. H. F. Senhouse, daily expected. Left Malta 5th March; 23d March, Malta.

SALAMANDER, St. V.—Com. W. L. Castle, 16th March arrived at Portsmouth; 20th March arr. at Plymouth; 8th March sailed for Lisbon; 19th April returned to Portsmouth.

SAMARANG, 28—Capt. C. H. Paget, 3d Nov. at Panama, on her way to San Blas. Expected home in August.

SAN JOSEF, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28 — Capt. Hon. W. Trefusis, expected home daily; 21st Jan. sailed from Barbadoes.

SARACEN, 10—Lieut. Com. T. Le Hardy, 18th March off Oporto.

SATELLITE, 18—Com. R. Smart, 18th Dec. sailed from Buenos Ayres; 11th Jan. arr. at Rio.

SAVAGE, 10—Lieut. R. Loney, 29th March arr. at Plymouth, from Falmouth; 10th April returned; 13th sailed for Lisbon.

SCOUT, 18 — Com. R. Morden, 1st March arr. at Malta, from Tripoli; 23d March at Malta.

SCORPION, 10—Lieut. N. Robilliard, 16th March off the Burlings; 24th March at St. Ubes; 27th March at Lisbon.

SERPENT, 16—Com. J C. Symonds, 12th Feb. arrived at Barbadoes.

SKIPJACK, 5—Lieut. W. H. Willis, (*act.*) Bahamas.

SNAKE, 16—Com. W. Robertson. The Maria da Gloria, captured by his Majesty's ship Snake, had been sent to Sierra Leone, as the mixed commission there would not take cognizance of the case, as she was Portuguese, although it has been stated that it might be proved she in reality was Brazilian property.—12th Dec. Rio.

SPARROWHAWK, 18 — Com. C. Pearson, 24th Feb. arrived at Madeira; 26th sailed.

SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Captain R. Tait, 12th Dec. at Rio Janeiro.

SPEEDWELL, 5 — Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieut. J. H. Norrington, Portsmouth station.

STAG, 46—Capt. N. Lockyer, 7th April at Vigo.

SWAN, 10 — Lieut. J. E. Lane, 5th Jan. sailed for the Clyde to protect herring fishery.

SYLVIA, 1—Lieut. Com. B. Shepherd, Portsmouth Station.

TALAVERA, 74 — Capt. E. Chetham, 23d March at Malta.

TALBOT, 28—Capt R. Dickinson, C. B., 8th Jan. at Cape. Daily expected.

THUNDER, S. V.—Commander R. Owen, 29th Dec. at Nassau.

THUNDERER, 84—Capt. W. F. Wise, C.B., 8th March arr. at Gibraltar.

TRINCULO, 18—Lieut. Com. Thompson, 1st Jan. arr. at Sierra Leone.

TWEED, 20—Com. A. Bertram, 4th Dec. at Jamaica.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, Portsmouth, fitting.

VERNON, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 13th Jan. sailed from Port Royal.

VESTAL, 26 — Capt. W. Jones, 22d Jan. arrived at Trinidad, from Barbadoes; 25th Jan. returned to Barbadoes; 26th sailed.

VICTOR, 18—Com. R. Russell, 21st Jan. arr. at Jamaica, from Barbadoes; 27th Jan. sailed.

VICTORY, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

VIPER, 6—Lieut. L. A. Robinson, 25th March left Portsmouth for Sheerness. 13th March sailed from Plymouth for Portsmouth; 17th arrived; 25th March Portsmouth, from Chatham.
VOLAGE, 28—Capt. G. B. Martin, C. B., 23d March at Corfu.
WASP, 18—Com. Jas. Burney, 19th Jan. arrived at Barbadoes; 21st sailed.
WOLF, 18—Com. W. Hamley, 22d Jan. arr. at Cape of Good Hope. Expected home daily.

PAID OFF.

COLUMBINE, 18—Sheerness.
VIPER—2d April, Sheerness.
PELICAN, 18—Chatham.
SCYLLA, 18—Chatham.

COMMISSIONED.

NORTH STAR, 28—Portsmouth, 29th March.
HASTINGS, 74—Chatham, 8th April.
VIPER—Sheerness, 3d April.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain—W. Burnett.
Commander—J. S. Foreman.
Lieutenants—W. R. Payne; F. E. T. Stephens; C. De Courcy Ross.

APPOINTMENTS.

Rear-Admiral Sir Thomas Masterman Hardy, Bart., G.C.B., has been appointed Governor of Greenwich Hospital, vacant by the death of Admiral Sir Rd. G. Keats. Rear-Admiral the Hon. George H. L. Dundas succeeds to Sir Thomas Hardy's situation (as first sea Lord) at the Admiralty Board; and Rear-Admiral Wm Parker, G.C.B., is appointed a Lord of the Admiralty.—Admiral Sir George Martin, G.C.B., succeeds to the commission of Vice-Admiral of England, vacant by the death of Admiral Sir E. Thornbrough, G.C.B.; and Admiral the Hon. Sir Robert Stopford, G.C.B., is appointed Rear-Admiral of England. Rear-Admiral Wm. Hall Gage is appointed to the command in the Tagus, in the room of Rear-Admiral Wm. Parker, and will proceed thither in a few days, to hoist his flag in the Asia, until the Hastings, 74, (at Chatham,) which is to be commissioned by Captain Henry Shiffner, as his permanent flag-ship, arrives out. John Irving, Esq., is appointed Secretary to Admiral Gage.

ADELAIDE, R.C.—*Lieut.* Conner.
BARHAM, 50—*Lieuts.* H. Schomberg, W. G. Griffiths, W. F. Young.
BELLEROPHON, 80—*Master*, E. Sabben.
BLONDE, 46—*Mate*, C. J. Balfour.
BRITANNIA, 120—*Lieuts.* W. Maitland, H. Schomberg.
COAST GUARD—*Commanders*, J. T. Talbot, Christopher Knight, R. C. Curry, J. Caulfield, C. Deare, C. Basden, G. A. Halsted, C. Moore (*b*), W. Neame; *Lieutenants*, A. Brown, C. Gale, R. Butcher, E. Hunt, W. Lyons, E. Rogier, J. Pettit, T. Mozely, W. Mitchell, J. Truppo.
CANOPUS, 84—*Mast. Assist.* F. E. Rose.
CARRON, *St. Ves.*—*Sec. Mast.* R. Salmond.
CORNWALLIS, 74—*Mast.* W. J. Armstrong.
DEE, *St. Ves.*—*Assist. Surg.* D. Deas.
EXCELLENT, 76—*Lieut.* G. K. Wilson.
FLAMER, *St. Ves.*—*Surgeon*, G. J. Fox.
GANGES, 84—*Master*, W. Carr.
GANNET, 16—*Master*, R. Cleveland; *Surg.* B. Browning, M.D.; *Purser*, G. Moore.
GREENWICH HOSPITAL—*Secretary*, T. F. Jessop.
HASTINGS, 74—*Capt.* H. Shiffner; *Lieuts.* E. Littlehales, T. Fisher, M. F. Brownrigg; *Flag Lieuts. to Rear-Admiral Gage*: *Surg.* W. Martin, (*b*); *Purser*, M. Scott; *Assist. Surgs.* Dr. Haig, R. Rogers; *Secry. to Rear-Admiral Gage*, I. Irving.
KITE, R.C.—*Mate*, H. B. Grey.
IMPREGNABLE, 106—*Mast.* E. Denison.
MALABAR, 74—*Lieuts.* C. A. Rarlow, R. Stopford.
MINDEN, 74—*Mast.* W. Aykbone.
NORTH STAR, 28—*Capt.* O. V. Harcourt; *Lieuts.* C. G. E. Napier, W. Maude; *Mast.* R. Hodges; *2d Mast.* P. P. Cotter; *Surg.* J. Philips; *Surg. Assist.* W. Houghton; *Purser*, G. Guy; *Mates*, D. O'Brien, S. Askey, M. Hockley; *Lieut. Mar.* A. D. Dorrat; *Assist. Surg.* T. Kidd; *Mate*, J. Gordon.
ORDINARY—PLYMOUTH, *Lieuts.* D. Keys, N. F. Edwards.
OCEAN, 80—*1st Lieut. Mar.* W. Cookson.
PORTLAND, 52—*Master*, T. Tuck.
PRESIDENT, 52—*Master*, M. Bradshaw; *Purser*, E. Buchell; *Schoolmstr.* J. Steel; *Mate*. H. Crance.
PRINCESS CHARLOTTE, 110—*Master*, C. Burney.
RAINBOW, 28—*Mate*, C. F. Wade; *Clerk*, —Donald.
RALEIGH, 16—*Lieut.* C. F. Schombergh; *Master*, W. J. W. Burney.
REYNARD, 6—*Master*, D. Pinder; *Surg.* R. Cooper.
REVENGE, 78—*Lieut.* H. C. Goldsmith; *Surg.* D. Baird; *Mates*, J. Short, J. Norman, M. Creyke.
RODNEY, 92—*Mate*, R. Dunn.
ST. VINCENT. 120—*Lieuts.* N. F. Edwards, W. Lewis. (*b.*)
SALAMANDER, *St. V.*—*Lieuts.* R. Roberts, T. S. Hill; *Clerk*, C. Jones.
SAPPHIRE, 28—*Purser*, J. Prance.
SKIPJACK, 5—*Clerk*, J. Seeve.
SHEERNESS ORDINARY—*Surg.* J. Hughes.
TARTAR, R. C.—*Lieuts.* J. Brooman, S. C. Umfreville.
THUNDERER, 84—*Lieut.* R. M. Burdon.
TRINCULO, 18—*Surg.* J. Wallace.
TYNE, 28—*Mate*, J. Provost; *Master Assist.* G. Andrews, J. W. Symonds; *Clerk*, E. Malone.
VERNON, 50—*Assist. Surgs.* H. W. Mahon L. J. Cunningham; *Clerk*, G. Bourchier.
VICTORY, 104—*Mate*, W. S. Cooper; *Schoolmaster*, J. Paterson.
VIPER, 8—*Lieut.* L. A. Robinson.
WICKHAM, R. C.—*Lieut.* H. Crockre.

FALMOUTH, 20TH APRIL.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
CHARYBDIS	Lt. Com. S. Mercer	15 March	———	———	12 April.
SCORPION	Lt. Com. N. Robilliard.	10 March	———	———	7 April.
CARRON, st.v....	Lt. Com. S. Duffil	4 April	———	———	2 May.
AFRICAN, st.v...	Lt. Com. J. Harvey....	9 Feb.	4 Mar.	St. Ubes	— March.
LEVERET	Lt. Com. G. Traill	4 Feb.	13 Mar.	Lisbon	— March.
NAUTILUS.....	Lt. Com. W. P. Croke..	28 March	5 April	Lisbon	25 April.
ROLLA	Lt. Com. H. P. Glasse .	———	16 Feb.	St. Ubes	— March.
SAVAGE	Lt. Com. R. Loney	13 April	———	———	———

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days: sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

COLUMBIA, st. v.	Lt. Com. B. Aplin	6 March	17 Mar.	Gibraltar	26 April.
FLAMER, st. v...	———	3 April	———	———	24 May.
SHELDRAKE....	Lt.Cm.A.R.Passingham	10 March	———	———	12 May.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.];

ECLIPSE.....	Lt. Com. W. Forester..	8 Feb.	8 Mar.	Halifax	21 April.
THAIS.....	Lt. Com. C. Church....	12 Dec.	———	———	13 Feb.
SWALLOW	Lt. Com. J. Griffith ...	7 April	———	———	9 June.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

PANDORA	Lt. Com. W. C. Croke..	22 March	———	———	14 June.
SPEY.....	Lt. Com. R. B. James..	20 January	———	———	14 April.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

LAPWING	Lt. Com. G. B. Forster	7 January	———	———	15 April.
MUTINE.....	Lt. Com. R. Paule	12 Feb.	———	———	21 May.
OPOSSUM	Lt. Com. R. Peters	7 April	———	———	17 July.
SKYLARK	Lt. Com. C. P. Ladd ..	24 Feb.	28 Feb.	47°N.13°W	18 May.
CAMDEN.....	Com. Mr. J. Tilley	8 March	———	———	14 June.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamaica by a Schooner, and returns to meet the regular Jamaica Packet.]

DUKE OF YORK..	Lt. Com. R. Snell	23 Novem.	5 Feb.	Vera Cruz	29 March.
NIGHTINGALE..	Lt. Com. G. Fortescue .	25 Decem.	———	———	30 April.
PLOVER	Lt. Com. W. Downey ..	22 Feb.	———	———	28 June.
RENARD.....	Lt. Com. G. Dunsford..	22 March	———	———	26 July.
STANMER	Lt. Com. R. S. Sutton..	20 January	———	———	26 May.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

LYRA	Lt. Com. J. St. John ..	28 January	11 Feb.	Madeira	17 June.
BRISEIS.....	Lt. Com. J. Downey ..	7 Feb.	18 Feb.	Madeira	27 June.
PIGEON.....	Lt. Com. J. Binney....	4 April	———	———	22 Aug.
REINDEER	Lt. Com. H. P. Dicken	12 Decem.	30 Jan.	Bahia.	2 May.
RINALDO	Lt. Com. J. Hill	7 March	———	———	25 July.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

CONFIANCE, St. V.—Lt. Com. J. W. Waugh, Woolwich.
GOLDFINCH—Lt. Com. E. Collier, 24th March arrived at Falmouth.
FIREFLY, St. V.—Lieut. T. Baldock, 29th March arrived at Falmouth.
LORD MELVILLE—Lt. Com. C. Webbe, 26th March arrived at Falmouth.
MESSENGER, St. V. — Mr. J. King, Woolwich.
PANTALOON—Lt. Com. S. C. Dacres, 2d April arrived at Falmouth.
PELHAM—Lieut. Com. H. Carey, 2d April arrived at Falmouth.
PIKE—Lieut. Com. A. Brooking, 17th April arrived at Falmouth.
SEAFLOWER—Lt. Com. J. Morgan, 24th Feb. Falmouth.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 254.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
170 Adventure	Lord	———	———	Off Humber	23 Mar.	Foundered, cw.svd
171 Æolus	Evers	Wismar	Hull	Off Grimstd.	5 April	Crew saved.
172 Amelia	Wilson	———	———	South Seas	———	Crew saved.
173 Aquatic	———	Liverpool	Africa	Benin	1834	
174 Brothers	Baker	Sunderland	Stettin	Jutland	10 Mar.	Crew saved.
175 Charlotte	———	———	———	———	———	
Kerr	M'Lean	Clyde	C. Verd I.	South Uist	6 March	Crew saved.
176 Confidence	Wesley	Clyde	Hayti	Hebrides	7 March	
177 David Barclay	———	Madras	———	Off Covelong	Jan.	
178 Eagle	———	Liverpool	Galway	St. Bride's B.	March	Crew saved.
179 Eclipse	———	Jamaica	Liverpool	Morant R.	———	
180 Eliza	Griffiths	I. Man	———	Liverpool	23 Mar.	Cw.sd. 5 p.drowned
181 Elizabeth	Tod	———	Newcastle	Off Teignmth	28 Mar.	Run foul of, cw.svd
182 Fame	———	Dundee	Baltic	Jutland	March	Crew saved.
183 Fame	———	London	Ferndo. Po	46 N. 10 W.	17 Mar.	Abandoned.
184 Friends	Of Saltcoats	———	———	Skerries	2 April	Crew saved.
185 Favorite	Of Glasgow	Stern wash-	ed on shore	Off Islay	March	
186 Glasgow Merchant	Duncan	———	———	Lincoln C.	16 Mar.	Cargo saved.
187 Helen and Eleonore	———	Hull	Fraserbrgh	Hk. Holland	April	Crew saved.
188 Henrietta	———	Liverpool	Bremen	Off Texel	April	Abandoned.
189 Linneus	Smith	Liverpool	Bombay	Dyer's Isld.	15 Jan.	Crew saved.
190 Margaret	———	Cullen	Sunderland	———	6 April	Abandoned.
191 Mary	Gill	Newcastle	Sonderburg	Grassholms	28 Mar.	Crew saved.
192 Mary-Ann	Foy	Hull	Ulverstone	Not heard of	since	18th March.
193 Mary-Jane	Whaler	———	———	Navigator's I.	———	
194 Mercury	Hawkings	Falmouth	St. Michl.'s	Not heard of	since	2d Jan.
195 Molly	———	Runcorn	Ballisadare	Lochlash	7 Mar	
196 Nancy	———	Alloa	Dundee	Off Montrose	15 Mar	
197 Paragon	———	———	Jamaica	Morant Reef	13 Feb	Doubtful.
198 Portland	———	Sydney	Launceston	Off Georgetn.	27 Sept.	Crew saved.
199 Rose	———	Brazils	Newfndld.	Not heard of	since	29th Sept.
200 Scotia	———	Glasgow	Westport	Benbecurla	6 Jan.	Crew saved.
201 Speedy	———	Africa	Liverpool	———	5 April	Crew saved.
202 Star	Lawson	Wick	Bristol	Hoy Sound	5 Mar.	Crew lost.
203 Sylvan	Stephenson	Newcastle	Wismar	Lischiel	5 April	Crew saved.
204 Thomas	Henley	Leith	Sydney	Hobart Town	2 Oct.	By fire.

ADMIRALTY ORDERS.

BY THE KING.—A PROCLAMATION.

WILLIAM, R.

Whereas, by our order in council of this day's date, we were graciously pleased, for the reasons therein contained, to annul our royal proclamation of the twenty-ninth of June, one thousand eight hundred and fifteen, for granting the distribution of the net proceeds of prizes captured from the enemy; and also our order in council of the thirtieth of June, one thousand eight hundred and twenty-seven, for the distribution of the net proceeds of captures and seizures made by our ships and vessels of war, under the several acts passed for the prevention of smuggling, and other acts relating to our revenue of customs, and to trade and navigation, for the abolition of the slave trade, and for the capture and destruction of piratical vessels,

and of the rewards which have been conferred for the same: and it is expedient that provision should be made by us for the future distribution of such proceeds and rewards:—We do now make known to all our loving subjects, and all others whom it may concern, by this our proclamation, by and with the advice and consent of our Privy Council, that our will and pleasure is, and we do hereby direct, that the distribution of such proceeds and rewards shall be made in the following manner, viz.:—

That the flag-officer or officers shall have one-sixteenth part of the whole net proceeds arising from prizes captured from the enemy, and from all other captures and seizures as aforesaid, made by the ships and vessels under his command, and of the rewards conferred for the same, save and except as hereinafter provided and directed.

That the captain, or captains, or commanders, of any of our ships or sloops of war, or the officer or officers, respectively, commanding such ships or sloops of war, who shall have been actually on board at the time of any such capture or seizure, shall have one-sixth part of the remainder, and where there is no flag-officer, one-sixth part of the whole.

That the remainder shall be distributed into shares, according to the annexed scale:

First class.—To the senior lieutenant, from first to fifth rates inclusive, or the commander acting as first lieutenant (where there is one,) the master of the fleet, and field-officer of marine (if embarked)—fifty-five shares each.

Second class.—To the other lieutenants, captain of the marines, master, physician of the fleet, and secretary to the commander-in-chief—forty-five shares each.

Third class.—To the chaplain, surgeon, and other flag-officers, secretaries, purser, lieutenants of marines, boatswain, gunner, and carpenter—twenty-five shares each.

Fourth class.—To mates, second-master, assistant-surgeon, schoolmaster, clerks, master-at-arms—eighteen shares each.

Fifth class.—To midshipmen, master's-assistant, admiral's cockswain, ship's corporal, captain's coxswain, quartermaster, gunners' and boatswains' mates, captains of forecastle and hold, coxswain of launch, caulker, sail-maker, carpenters' mates, armourer, captains of main and fore-tops, serjeant of marines—ten shares each.

Sixth class.—To captains of masts and afterguard, yeoman of signals, coxswain of pinnace, sail-makers', caulkers' and armourers' mates, cooper, rope-maker, and volunteers of first class, ship's cook, corporals of marines—eight shares each.

Seventh class.—To seamen gunners, gunners' crew, carpenters, coopers', and sail-makers' crews, able seamen, yeomen of store-room, private and fifer of marines, above seven years—five shares each.

Eighth class.—To cook's mate, barber, ordinary seamen, captain's and purser's and ward-room stewards, captain's and ward-room cooks, private and fifer of marines, under seven years, and admiral's steward, cook, and domestics—three shares each.

Ninth class.—To landsmen, stewards' mates, and others not described, including supernumeraries for victuals only, boys of first class—two shares each.

Tenth class.—To boys of the second class—half a share each.

When land forces are embarked to serve as marines—they are to share according to their respective ranks as marines.

Secondly.—In the case of prizes captured from the enemy, and all other captures and seizures as aforesaid, made by the officers and men of cutters, schooners, brigs, and other armed vessels of war, commanded by lieutenants, when not in company with other ships commanded by captains or commanders, the said lieutenants to share as captains, and where more small vessels than one shall be together, the lieutenants shall have equal shares of the one-sixth part.

But a lieutenant or lieutenants commanding small vessels, when in company with captains or commanders, shall share only as commanders doing duty as first lieutenants, or first lieutenants of first to fifth rates inclusive, namely—they shall have fifty-five shares.

The remainder to be shared as in the aforegoing scale, with the exception of the clerk in charge, who is to share as purser; but if a ship or vessel bearing a purser be present, he is to share only as a clerk.

Thirdly.—In all cases in which supernumeraries, whether officers or men, shall be borne by order of the Lord High Admiral, or our commissioners for executing the office of Lord High Admiral, or by other proper authority, they shall share with the respective ranks in which they may be acting: Provided always, and we do hereby direct, that no flag-officer, or other person, not actually present at the capture or destruction of any pirate vessel, shall be entitled to share in any distribution of the proceeds or bounty in respect of the crews of such piratical ships, vessels, and boats; and, also, that no flag-officer, or other person, who shall not have been actually on board of any of our ships, or ships of war, or at the actual taking, sinking, burning, or otherwise destroying any ship or ships of war, or privateers, belonging to the enemy, shall be entitled to share in the distribution of any head or bounty money, granted as a reward for the taking, sinking, burning, or otherwise destroying any such ship or vessel.

Fourthly.—The following regulations are to be established with respect to the share before mentioned, to be given to the flag-officer or officers under whose command the capturing ship may be.

That a captain, commander, or commanding officer of a ship or vessel, shall be deemed to be under the command of a flag when he shall have actually received some order from, or be acting in execution of some order issued by a flag-officer; and, in the event of his being directed to join a flag-officer on any station, he shall be deemed to be under the command of such flag-officer from the time when he arrives within the limits of the station, and shall be considered to continue under the command of the flag-officer of such station, until he shall have received some order directly from, or be acting in execution of some order issued by, some other flag-officer duly authorised, or by the Lord High

Admiral, or our commissioners for executing the office of Lord High Admiral for the time being.

That a flag-officer, commander-in-chief, where there is but one flag-officer upon service, shall have to his own use the one-sixteenth part of the proceeds of all prizes captured from the enemy, and of all other captures and seizures as aforesaid, made by ships and vessels under his command, and of the rewards conferred for the same, save and except as herein-before provided and directed.

That, when ships or vessels under the command of several flags, which belong to separate stations, shall happen to be joint captors, each flag-officer under whose orders the ships or vessels are, shall receive such proportion of the flag-share to which he shall be entitled according to the number of ships belonging to each respectively.

Captains or commanders, or commanding officers of such ships or vessels as shall be under orders from the Lord High Admiral, or our commissioners for executing the office of Lord High Admiral, being joint captors with other ships or vessels under a flag or flags, the flag-officer is only to have his proportion of the flag-share according to the number of ships belonging to his squadron.

That, if a flag-officer be sent to command in the ports of the United Kingdom, he shall have no share in the prizes captured from the enemy, nor in the other captures or seizures as aforesaid, made by ships or vessels which have sailed, or shall sail, from that port, by order of the Lord High Admiral, or our commissioners for executing the office of Lord High Admiral, nor in the rewards conferred for the same.

That, when more flag-officers than one shall be serving together, the one-sixteenth part of the net proceeds of prizes captured from the enemy, and of the other captures or seizures as aforesaid, made by any ships or vessels of the fleet or squadron, and of the rewards conferred for the same, shall be divided in the following proportions, namely:

If there be but two flag-officers, the chief shall have two-third parts of the said one-sixteenth, and the other shall have the remaining third part; but if the number of flag-officers be more than two, the chief shall have only one half, and the other half shall be equally divided amongst the junior flag-officers.

That commodores of the first class, and captains of the fleet, shall be esteemed as flag-officers.

And we do hereby further direct, that the captains and commanders of our ships and vessels of war shall, on making any capture or seizure, transmit, as soon as may be, or cause to be transmitted, to the Secretary of the Admiralty, a true and perfect list of all the officers, seamen, marines, and soldiers, and others, who were actually on board our ships and vessels of war under their command, at the time of the said capture or seizure, and also of those who were absent on duty at such time; which list shall contain the quality of the service of each person on board, together with the description of the men, taken from the description-books of the capturing ships or vessels, and their several ratings, and be subscribed by the captain or commanding-officer, and three, or more, of the chief officers on board.

And we do hereby further direct, that, when such lists shall have been duly examined with the muster-books of such ships or vessels, and lists annexed thereto, in order to see that such lists agree with such muster-books, and annexed lists, as to the names, qualities, or ratings of the officers, seamen, marines, soldiers, and others, belonging to such ships and vessels, and, upon request, the Accountant-General of our navy, or examining officer, shall forthwith grant a certificate, signed by such officer, of the truth of any lists so transmitted to the agents nominated and appointed by the captors or seizors; and, also, upon application, the said Accountant-General, or examining officer, shall give, or cause to be given, to the said agents, all such lists from the muster-books of any such ships and vessels, and annexed lists, as the said agents shall find requisite for their direction in making distribution to the parties entitled to share in the produce of such captures and seizures, and the rewards conferred for the same, and shall otherwise be aiding and assisting to the said agents in all such matters as shall be necessary.

And we do direct, that, in case any difficulty shall arise in respect to any of the regulations hereby proposed, and not herein sufficiently provided for, the same shall be referred to our Lord High Admiral, or our commissioners for executing the office of Lord High Admiral for the time being, and their directions thereupon shall be final, and have the same force and effect as if specially provided for in this our royal proclamation:—

Provided always, and we do hereby direct, that the distribution herein-before made, or directed to be made, shall not be construed to affect any captures or seizures made before the day of the date of this our royal proclamation, nor any captures or seizures which shall be made after that day, and which shall be condemned or adjudged in any of our Courts of Vice-Admiralty, before notice of this our proclamation shall have been received by the Court of Vice-Admiralty, in which such condemnation or adjudication shall pass; and we do hereby, lastly, direct, that the proceeds of all such captures and seizures made before the date of this our royal proclamation, or which will be made after that day, and shall be condemned or adjudged in any of our Courts of Vice-Admiralty antecedent to the notice of this our royal proclamation having been received in such courts, together with all rewards aforesaid, shall continue to be distributed in the proportions and manner directed in and by our said former proclamation and order, respectively.

Given at our Court at St. James's, the nineteenth day of March, one thousand eight hundred and thirty-four, and in the fourth year of our reign.

GOD SAVE THE KING.

[From the foregoing proclamation we have deduced the following statement, which may be found useful by our readers. Suppose that a frigate, such, for instance, as the

Dublin, commanded by Lord James Townsend, a fourth rate, with her full complement of 410 men, on the present peace establishment, captures a prize, while away from the admiral, that yields a thousand pounds sterling, clear of all expenses. Then, the respective shares would be nearly as follows :—

Class.	No. in Class.	Shares.
Captain	—	£166 13 4
1st class	1	18 11 3
2d —	6 each	15 3 9
3d —	7 —	8 8 9
4th —	10 —	6 1 6
5th —	38 —	3 7 6
6th —	16 —	2 14 0
7th —	182 —	1 13 9
8th —	87 —	1 0 3
9th —	53 —	0 13 6
10th —	10 —	0 3 4
Total,	410	

If the Admiral be included, the shares will stand as follows :—

Class.	No. in Class.	Shares.
Admiral	—	£62 10 0
Captain	—	156 5 0
1st class	1	17 3 0
2d —	6	14 1 0
3d —	7	7 16 0
4th —	10	5 12 0
5th —	38	3 4 0
6th —	16	2 10 0
7th —	182	1 11 0
8th —	87	0 18 0
9th —	53	0 12 0
10th —	10	0 3 0
Total,	410	

As the above calculation is for a thousand pounds, any other may be found for the same class vessel by a very simple process.]

Births.

On the 2d April, the lady of Capt. C. Lock, R.N., of a son.

At Exeter, the lady of C. R. Dashwood, Esq., Lieut. R.N., of a daughter.

At St. Ives, the lady of Lieut. Roberts, R.N. of a daughter.

At Falmouth, the lady of W. P. Dicken, Esq., Commander of H.M. brig Reindeer, of a daughter.

At Tor Hill, Kingskerswell, the lady of Capt. E. Hawes, R.N., of a daughter.

The lady of Capt. M. H. Herbert, R.N., of a daughter.

At Salisbury, the lady of Lieut. F. W. Ellis, R.N., of a daughter.

At Clifton, the lady of Capt. Prescott, C.B. R.N. of a daughter.

On the 8th April, at the Elms, Worcestershire, the lady of Rear-Admiral Maling, of a daughter.

On the 30th March, in the Close, Salisbury, the lady of Lieut. Ellis, R.N., of Southwold, of a daughter.

On the 8th April, at Rome, the lady of Captain Berkeley Maxwell, R.N., of a son.

At Baldoyle, the lady of Edward Digby, Esq. Lieut. R.N., of a son.

On the 10th April, Lieut. J. Douglas, R.N., of a daughter.

On the 12th April, at Efford, near Plymouth, the lady of Lieut. Sidley, R.N., of a son.

At Plymouth, the lady of H. Kelsall, Esq. surgeon, R.N., of a son.

On the 18th April, the lady of Lieut. W. V. Lee, R.N., of a daughter.

At Blackbrook Cottage, the lady of Lieut. G. F. M. Purvis, R.N., of a son, who survived only until the following day.

Marriages.

At Badock, Lieut. Smith Griffiths, R.N., and Commander of H.M. packet brig Swallow, on the Falmouth station, to Ellen, eldest daughter of — Galloway, Esq. surgeon, R.N

At St. James's Church, Piccadilly, Vice-Admiral Sir C. Ogle, to Mary Anne, relict of the late Sir John H. Thorold, Bart. of Syston Park, Lincolnshire.

At Belfast, Lieut. R. Hodder, R.N., to Ellen, daughter of W. H. Craig, Esq. Captain in the Royal Marines.

Deaths.

On the 27th March, at Hampstead, Admiral the Right Hon. the Earl of Galloway, aged 66.

On the 3d April, at his seat in Devonshire, Admiral Sir Edward Thornborough, G.C.B., Vice-Admiral of the United Kingdom.

On the 5th April, at Greenwich Hospital, of which he had been Governor since 1821, Admiral Sir Richard Goodwin Keats, G.C.B.

At his residence in Regent's Park, after a long and very painful illness, Rear-Admiral Lucius Hardyman, C.B.—a gallant and good officer.

Suddenly, Capt. Wynne Baird, R.N. (1827.)

On the 6th of March, at Malta, Retired Commander Henry St. John, who was upwards of twenty years in the service of the Havana Police Department, in which he acquitted himself with the greatest zeal and fidelity.

At his house in Bugle-street, Southampton, Commander Peter Mouat, the oldest Commander in the navy, (1787,) aged 83.

At Stoke, suddenly, aged 62 years, Lieut. J. B. Harrison, R.N. (1797,) an outpensioner of Greenwich Hospital.

At Liverpool, just after he had landed from Bahia, Mr. Thomas Doble, late master of H.M. packet Opossum.

At the Royal Hospital, Haslar, after a few days' illness, Richard Cotter, Esq., Purser of H.M.S. President, leaving a widow and eight children to mourn their loss.

At his house, in Cobourg-street, on the 26th March, Ed. Lloyd, Esq., retired Surgeon in the navy, aged 80.

At Devonport, Mr. W. A. Raven, late Master Attendant's Assistant at that Dockyard.

At Camberwell, on Sunday, Mr. Harry Munro, Purser, R.N., and late Secretary to Admiral Lord Beauclerc, (1806,) aged 55.

Lately, at Malta, Mr. Haswell, Master, R.N., late of the Bramble cutter.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

MARCH, 1834.

Month Day.	Week Day.	BAROMETER.		FAHRT.'S THERM. in the Shade.		WIND. Strength.		WIND. Direction.		WEATHER.	
		9 A.M.	9 P.M.	9 A.M.	3 P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
		In.dec.	In dec.	°	°						
1	S.	30·47	30·43	50	55	2	2	S W.	S.W.	O.	Bcm.
2	⊙	30·32	30·30	50	53	2	2	S.W.	S.W.	O.	O.
3	M.	30·41	30·34	47	55	1	1	S.W.	S.W.	O.	O.
4	Tu.	30·16	30·08	48	53	2	4	S.W.	S.W.	O.	Bc.
5	W.	29·80	29·76	54	55	6	8	S.W.	S.W.	Od.	Od.
6	Th.	30·03	30·04	44	50	4	6	S.W.	S.W.	B.	Bc.
7	F.	30·20	30·24	49	54	4	2	S.W.	S.W.	P.	P.
8	S.	30·33	30·30	51	56	4	6	S.W.	S.W.	Bc.	Bc.
9	⊙	30·32	30·33	53	57	2	2	S.W.	S.W.	B.	B.
10	M.	30·35	30·34	47	55	2	3	W.	N.W	Bc.	Bc.
11	Tu.	30·50	30·49	47	51	1	2	S.	E.	B.	Bc.
12	W.	30·52	30·49	45	54	1	2	S.	S.W.	Bc.	O.
13	Th.	30·44	30·38	45	48	1	2	E.	E.	Od.	Od.
14	F.	30·38	30·38	37	49	1	2	E.	N.E.	B.	Bc.
15	S.	30·53	30·52	44	50	2	2	N.E.	N.E.	G.	Bc.
16	⊙	30·52	30·51	43	51	2	2	N.E.	N.E.	Bc.	O.
17	M.	30·50	30·49	40	46	2	2	E.	N.E.	G.	G.
18	Tu.	30·59	30·58	38	44	4	2	N.F.	N.E.	O.	Bc.
19	W.	30·56	30·54	35	46	2	2	E.	E.	Bcm.	Bcm.
20	Th.	30·48	30·43	41	48	3	4	E.	E.	Op.	Op.
21	F.	30·43	30·35	40	46	1	1	E.	S.W.	O.	O.
22	S.	30·20	30·11	45	51	2	3	S.W.	S.W.	Bc.	Bc.
23	⊙	30·02	29·82	50	52	6	6	S.W.	S.W.	Gq.	Gq.
24	M.	29·80	29·79	46	46	5	5	W.	N.W	Qph.	Qph.
25	Tu.	29·88	29·94	37	42	4	4	N.W	N.W	B.	Bc.
26	W.	30·20	30·17	38	44	4	2	N.	N.W	Bc.	Bc.
27	Th.	30·12	30·05	49	54	4	4	S.W.	S.W.	O.	O.
28	F.	29·79	29·61	50	52	6	5	S.W.	S.W.	Gd.	Gd.
29	S.	29·68	29·68	45	50	4	4	S.W.	S.W.	P.	P.
30	⊙	29·92	29·90	41	49	4	4	S.W.	S.W.	B.	P.
31	M.	29·82	29·95	40	46	4	4	N.W	N.W	Bc.	Bc.

Depth of Rain fallen this Month, 0,60 inch.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.—0 Calm; 1 Light Air; 2 Light Breeze; 3 Gentle Breeze; 4 Moderate Breeze; 5 Fresh Breeze; 6 Strong Breeze; 7 Moderate Gale; 8 Fresh Gale; 9 Strong Gale; 10 Whole Gale; 11 Storm; 12 Hurricane.

WEATHER.—b Blue Sky—whether clear or hazy atmosphere; c Clouds—detached passing clouds; d Drizzling Rain; f Foggy—f Thick fog; g Gloomy dark weather; h Hail; l Lightning; m Misty hazy atmosphere; o Overcast—or the whole sky covered with thick clouds; p Passing temporary showers; q Squally; r Rain—continued rain; s Snow; t Thunder; u Ugly threatening appearances; v Visible clear atmosphere; w Wet Dew; · under any letter indicates an extraordinary degree.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

ZANTE.

GUARDIANA.

THEODORE POINT.

SANTA MAURA.

MADONNA, PAXO.

STROPHADES.

Published for the Proprietors of the Nautical Magazine by Stephen & Marshall, 1854.

THE

NAUTICAL MAGAZINE.

JUNE, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

22. Ionian Light-houses, Mediterranean.

Compass Bearings.

With our present number, we have commenced a series of views of light-houses,* which it is our intention to continue occasionally. For the present views, as well as for many of the particulars concerning them, we have had recourse to a collection made by Captain Sir John Franklin, while lately in command of his Majesty's ship Rainbow, in the Mediterranean. As there can be but one opinion of the utility of such information to the mariner, we shall at once devote our already limited space to a brief statement relating to each of them.

Zante Light—is situated on point Krio-Nera, the north-west point of the bay of Zante. It is sixty-six feet above the level of the sea, and is intended to point out the position of the anchorage, and the shoal off Point Krio-Nera. This light is shewn from fifteen lamps.

The following are the bearings from the light-house:—

Cape Capri, Cephalonia	N. ¼ E.
Castel Tornese, Morea	E. by N. ¼ N.
Point Basiliko, Zante	S.E. by S.

Another small light is placed on the mole head, twenty-eight feet above the level of the sea. Vessels are cautioned against mistaking any of the numerous lights on shore for this light.

Guardiana Light—is situated on the south-east point of the small low island of the same name at the entrance of the bay of

* We shall be thankful to any of our readers for the use of any views of light-houses, in any part of the world, to add to our stock.

Argostoli, in the island of Cephalonia. It is one hundred and twenty-two feet above the level of the sea, and is intended to shew the position of Guardiana, as well as to serve as a guide to vessels entering the most important bay of Cephalonia.

THEODORE POINT.—This light is not yet exhibited. It is intended to guide ships clear of the shoal off Theodore Point, at the entrance of the bay of Argostoli, and assist them to gain the best anchorage.

SANTA MAURA.—This light is forty-five feet above the level of the sea, and is on the mole head of the harbour of the same name, in the island of Leucadia or Santa Maura.

In running for the mole in the night, the light should not be brought to the eastward of S.E. by E., as there is a low point of beach which stretches out some distance.

MADONNA LIGHT—Stands on a small island of the same name at the entrance of the little port of Gajo (Gayo) at the eastern side of the island Paxo. It is a single light, produced from sixty lamps, one hundred and seven feet above the level of the sea, and is intended to keep vessels clear of the Madonna rock, the rocks off the south-east end of Paxo, and the Bianco shoal. It bears

From the south end of Paxo shoal (Madonna)	W.b.N.
.. the north end of .... ditto	W. $\frac{1}{2}$ N.

This light is useful to small coasting-vessels, running in bad weather for Port Gajo, (commonly called Paxo Harbour,) as also to vessels passing through the south channel.

STROPHADES.—This light is on Convent Island, the largest of the Strophades, or Stamphànes islands: the view of it is when bearing S.W. b. W.; the light is one hundred and twenty-seven feet above the level of the sea, and is produced from seventy lamps. The following bearings are from the light-house:—

The west extreme of Zante	N. by W. $\frac{1}{4}$ W.
Cephalonia summit of Black Mountain .	N. $\frac{1}{4}$ E.
Mount Skopo, Zante	N. by E.
Prodano, highest point, ...	S. by E. $\frac{1}{2}$ E.

Captain Sir John Franklin makes the following remarks on this light, and the island on which it is situated.

On the 15th August, we approached within a mile and a half of the S.W. point of Convent Island, the largest of the Stamphanes (Strophades) isles, on the north-west end of which a very good light-house has been erected by the Ionian government. This light serves to warn ships of their approach to these islands, lying

so directly in the track from Cape Matapan to Zante, or to ships bound to Navarin or Modon, from the north-west or west. The light is good, and was seen by the Rapid at the distance of twelve or fourteen miles. We could gain no soundings off the Convent island at the distance of a mile and a half.

Captain Swinburne landed on the island, to inspect the light-house. He found the light was attended, and the building kept in repair, by about forty priests, who inhabit the convent, the only residence on the island. Good water may be easily obtained there, as it flows from a spring underneath the garden of the convent. The priests have erected a kind of jetty or breakwater on the western side of the island, under the spring, to protect the boats as much as possible while getting water.

This is the principal, if not the only landing-place on the western side of the island. Vegetables and fruit at certain seasons may be obtained in small proportions from these priests. The island abounds with grapes and olives.

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23. Lunenburgh Light, *on Cross Island, Nova Scotia.*

In our number for March last,* we cautioned navigators against mistaking Lunenburgh light-house for that of Sambro, at the entrance of Halifax harbour; and we now find that precautions to this effect have been taken, to prevent vessels being deceived in the day-time by a St. Andrew's cross painted on the tower. This we have no doubt will be sufficient, during the day, to prevent such mistake; and, as the Commissioners for the Nova Scotia Lights have determined that it shall not be lit until the kind of light for it, to distinguish it from the other lights of the coast, can be decided on, there can be no danger of any mistake arising from it at night.

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24. New Light-house at Hobart Town.

By the following letter, we find that a new Light-house† has been erected at the mouth of the Derwent, Van Diemen Land:

"Sir—I have great pleasure in acquainting you with the establishment of a Light-house on the Iron-pot Island, at the entrance of the Derwent, which will be kept constantly burning from dark till daylight. It is at present a fixed light, and elevated about seventy feet above the level of the sea, bears N. 66° W. from Cape Raoul; N. 15° W. from Cape Frederick Henry, in the island of Bruné; and may be seen five leagues from a vessel's deck.

"I am, &c.

"William Moriarty, Postmaster."

* Page 130, No. 25, Naut. Mag.

† We shall be thankful for a sketch of the above light-house from any of our readers.

25. BOMBAY ROCK *(above water)* OFF CAPE SHARMA, COAST OF ARABIA FELIX. Latitude about 14° 49′ N., longitude 49° 49′ E.

Compass Bearings.

The following account of a rock, off Cape Sharma, materially concerns the masters of vessels, making the passage from Mocha to the eastward, as it is usual with them to keep in with the Arabian shore for the purpose of availing themselves of the land-winds.

To the Editor of the Nautical Magazine.

DEAR SIR,

Should you consider the following worth a place in your highly valuable and interesting Magazine, you will oblige me by inserting it. I much regret that the loss of my Journal prevents me from giving the exact bearings and distances, but, such as they are, they will be found to be pretty near the mark; and, as the rock in question is not laid down in any chart, or mentioned in any book of directions that I have seen, a description of it may be useful to eastern navigators.

I remain, dear Sir,

Your most obedient servant,

7, Arbour Terrace, Commercial Road, HENRY W. HYLAND.
May 8th, 1834.

"In the latter end of April, 1820, I was in command of the Bombay Merchant of Bombay, bound to the Red Sea, and when about two leagues abreast of the centre of the high table land, which extends for about six leagues in a W. ¼ N. direction from Cape Bogatshua to Cape Sharma on the coast of Arabia Felix, I saw a rock, much resembling a boglow under sail, bearing about W. ¼ N. of me, distant 2½ or 3 leagues. It seemed to be 40 or 50 feet high, 1¾ or 2 miles in a S.S.W. direction from Cape Sharma or the south-eastern extremity of Sharma bay, and had no breakers near it except immediately at its base. I passed about a league to the southward of it, but in returning against the N.E. monsoon in the same year, I worked well up towards the village of Sharma, which lies at the head of the bay, and came to an anchor about five P. M. and waited there for the land-wind, which generally commences at 8 o'clock in the evening, the sea-breeze setting in at eleven or half-past-eleven in the morning. While I lay there, I saw the same rock bearing about S. by E. ½ E. distant from me 2½ leagues, and intending to pass to the northward of it, should I have a steady breeze, I went in my boat, and sounded with the hand-lead right across from Cape Sharma to the rock. Close to the Cape I had 4 fathoms, which gradually increased until I was within an oar's length of the rock, in which place I had 10 fathoms, the channel between the two being perfectly safe. On the eastern side of Sharma bay there are several rocks 10 or 15 feet above water on which an immense number of birds roost, some of them resembling the man-of-war bird, and others very much like penguins. Between Cape Bogatshua and Kisseen Point there is an Arab village, the natives of which were very hospitable, furnishing me with water, a little fruit, and grass for my stock, but at Cape Fartash they are entirely the reverse; there the people are Bedouins, who live solely by plunder.

"I stretched in with the sea-breeze, and came to an anchor close under the lee of the Cape, in order to wait for the land-wind, but had not been long

there, when a large boat full of the Bedouins came on board, under pretence of friendship; at first they wanted me to go on shore, but, finding that I resolutely refused, they then wished to get the mate on shore, which, being likewise refused, they tried to get some of the crew to go; but, being again unsuccessful, they were beginning to resort to violence, when by a signal we all seized upon our arms, which were in readiness, and drove them at once overboard. They much wanted to look in the hold, and made several inquiries after dollars. It may be necessary to observe that, although there was not the least sign of a habitation, we soon perceived many signal-fires along the high cliffs which form the coast."

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26. Bank of Coral off Cape Direction, North-East Coast of Australia, and a Sunken Rock in Bass Strait.

Compass Bearings.

The following extract of a letter from Capt. P. P. King, R.N., at Sydney, contains an account of a bank of coral off Cape Direction, which masters of ships using the "inner passage" should be careful to avoid.

Extract from the Log Book of the Ship York, on her Passage from Port Jackson, toward Torres Strait, by the Inner Route.

"At 4 h. 45 m. P.M., passing Cape Direction about three miles distant, the ship grounded (slightly and did not stop) on a bank, extending 1½ mile farther from the Cape than is laid down on the most recent charts by captain King, R.N. The N.W. extreme of Cape Direction bearing W. by S. ½ S. and the rock to the southward SS.W. ½ W. The bank is of hard coral.

"The above danger is very probably connected with the shore. The York must have struck very close to the edge of the bank, since the bearings of the land place her position about half-a-mile within my track.

"It may here be remarked, that the coral reefs, which are near, or are connected with the shore, are very much more dangerous to approach than those in the offing, since they slope off gradually; whereas the limits of the latter are plainly distinguished by the coloured water, and may generally be approached within 100 yards without risk.

"The steepness of the off-shore reefs may be accounted for by the tidal current which runs round them with considerable strength. I have elsewhere remarked that it is not advisable to anchor within ¼ of a mile of the reefs, to avoid the current and a greater depth of water.

"Phillip P. King, Capt. R.N."

"*Note.* A sunken rock is said to have been lately discovered at the east end of Bass Strait on the west side of Great Island. The bearings of the land being

South-west End of Hummocky Island . . . . . S. by E. 12 miles.
West extreme of Great (Flinders) Island, a red bluff point East 4 or 5 miles.

"The above bearings are supposed to be magnetic.

(Signed) "Phillip P. King, Capt. R.N."

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27. Observations on the dangerous Rock called the Drunken Sailor, *lying off the Flag-Staff on Point Colombo, Island of Ceylon.*

We are indebted for the following observations to Colonel Wright of Edinburgh :—

Compass Bearings.

"The above rock, usually called by the English the Drunken Sailor, and by the Dutch Der Dronke Matroos, lies in a direction by compass about *west-south-west* from the flag-staff of Colombo, and distant from a bold projecting rock, usually named the Portuguese Rock, on the sea shore, directly in front of the flag-staff, about three quarters of a mile. The position of the Drunken Sailor is most dangerous to ships, being exactly in their track to the anchorage in the roads of Colombo during the north-east monsoon; at which time it may be considered as more so, from the circumstance of the sea not breaking upon it as it does during the south-west monsoon. In the latter monsoon, breakers are distinctly seen at intervals, which in general sufficiently mark its position; but even then it is not always visible, as, at times only a small white surge, scarcely discernible, can be perceived to rise over it once in about seven or eight minutes.

"The greatest depth of water which has yet been found over the summit of the rock is about six feet, and the least about three feet and a half; that difference being the rise and fall of the tides, or rather the difference of level in the sea, caused more by strong southerly winds than by the height of the tides, which, at Colombo, do not amount to *two feet*. The summit of the rock is very small, and appears to be of an oval shape of about twenty or thirty feet in circumference, and the sides of it are exceedingly steep and abrupt, the depth of water at a few yards' distance changing from *nine feet* to *twenty-five*, and a little further off to about *nine fathoms*, which is the greatest depth of water between the rock and the shore. The rock presents sharp angular points; it is much indented, and full of crevices, from which boats' grapnels, and sounding-leads, have been recovered at various times, with much difficulty. From the circumstance of the rock not appearing to increase in magnitude, it is most probably not of the description of coral rock so frequent in the Indian seas.

"A transport with troops, making the road of Colombo in the year 1819, passed within a short distance of it, not aware of the danger; and some years since, a large and valuable East Indiaman stood close in-shore, and tacked several times close to it, and passed between it and the shore, without being aware that such a rock existed."

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28. Shoal off St. James Castle, *Entrance of Smyrna Harbour, Mediterranean.*

Mr. Robert Hall, the master of his Majesty's sloop Raleigh, now in the Mediterranean, has pointed out in the following remarks the cause of so many vessels grounding while working into Smyrna harbour. We have no doubt, if the commanders of our merchant-ships will attend to the directions he has given for avoiding the shoal spits extending from the shoal opposite Castle St. James,

that we shall hear of fewer vessels getting aground there in future :—

"A great proportion of the vessels attempting to work through the passage between St. James's Castle and the shoal opposite, get aground. This passage is scarcely half a mile wide, and, on examination, the extremity of the shoal was found to be composed of short spits, running off in ridges, with deep water between them. There are seven and a half fathoms without the ends of all those spits, but not more than a quarter of a cable from them. A ship, in working through, should never stand towards the shoal into less than quarter less eight, or half seven fathoms, and always keep two leads going as fast as possible. Supposing her to stand on after she had got into half seven, at the next cast of the lead she might perhaps be in the same water; yet it would be because she was between the ends of two of these spits. Having, consequently, shoal-water on each side, when her helm is put down she would shoot aground on one of them.

"On turning through this channel, the following marks are recommended, viz. :—A remarkable white house, which stands close to the water-side, on the southern side to the right of Smyrna, kept a very little open to the left of another house standing at the left end of a grove of trees, further back in the country. Nearly in a line with it, still further inland, is a remarkable cone-topped hill, the top of which can only be seen, the lower part being hidden by the intervening land.

"In standing over from the castle side towards the shoal, the house which stands at the left end of the grove of trees should be observed, as it closes with the white house standing at the water side; and when it is nearly touching, (do not let them touch,) put the helm down, and you will be clear of all danger.

"The castle side is steep to, and may be approached to half a cable.

"Another cause of many ships getting aground, (particularly in working down the gulf during the summer months,) is a current, (perhaps not suspected by strangers,) running down, and early in the mornings at the rate of full a knot per hour; but as the day advances it becomes weaker. In light winds, this current has considerable influence on a ship in working, and renders her, in staying close to the shoal, comparatively unmanageable.

"The cause of this current is evident. The strong sea-breezes which blow during the middle of the day, tend to raise the water at the head of the gulf above its usual level, and it has only the narrow channel between St. James's Castle and the shoal by which to escape."

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29. BUCKINGHAMSHIRE SHOALS, CHINA SEA. *Northern*, Lat. 8° N., Long. 114° 55′ E.; *Southern*, Lat. 8° 30′ N., Long. 115° 19′ E. *The Sea breaks on them.*

Compass Bearings.

The following extracts from the log of the East India Company's ship Buckinghamshire, Captain C. Shea, in her passage to Canton, add two more shoals to the vast number by which the eastern part of the China Sea is afflicted :—

"*Sealog, Nov.* 4, 1833.

"At 10 P.M. (Nov. 4, 1833,) saw two ridges of breakers from the masthead, bearing from N. by E. to N. by W., distant about four or five miles. Obser-

vations of the sun and stars, at the time and afterwards, place the centre of the shoal in lat. 8° 0′ north, long. 114° 55′ east of Greenwich. This shoal appears to consist of two reefs of rocks, about one mile W. by N. and E. by S., and half a mile north and south.

"At 11 A.M. on the same day, saw high breakers from the masthead, bearing from N. to N.E., distant ten or eleven miles, two dry white sand-banks, with a ridge of rocks running from them to the westward, about two miles in length. By comparing these bearings with the ship's latitude and longitude, I consider this sand-bank to be in lat. 8° 30′, long. 115° 19′ east of Greenwich."

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30. EMBLETON BANK, *Southern part of Clement Strait, Lat.* 3° 18′ S., *Long.* 107° 11′ *nearly. The sea breaks on it.*

Compass Bearings.

The following is an account of the discovery of a dangerous shoal in Clement Strait, by the ship York, which navigators will do well to avoid. The situation of it, and its extent, renders it particularly dangerous to vessels passing through the strait at night; and the best way of keeping clear of it is to steer such a course from Saddle Island as will give Shoal-Water Island a berth of four or five miles.

"*Port-Louis, 6th October*, 1833.

"Sir—I beg leave to acquaint you, that on my passage up from Singapore, in the York, and on passing through the eastern channel of Gaspar Straits, known as Clement Straits, on the 17th of July, 1833, I discovered a very dangerous coral bank, level with the water's edge, and extending about a mile in circumference, with heavy breakers on it, and ten fathoms water within half a mile of its outer or western edge.

"The above bank I have every reason to suppose a new discovery, as there is no account of it in any new edition of charts of those seas. The above shoal I consider very dangerous, as it lies directly in the route of ships passing through Clement Strait to the westward of Shoal-Water Island; from which island it bears N.W. ½ N., distance three miles; and from the peak of Saddle Island S. ½ E., distance eighteen miles and a half.

"I have to request, therefore, that you will make public the existence of this dangerous bank, for the benefit of ships navigating those seas. (The name I gave the shoal was 'Embleton's Bank.'

"I have the honour to be, Sir,
"Your most obedient servant,
(Signed) "RICHARD SPRATLEY.

"To Captain C. H. Royer, R.N.,
"Harbour Master."

31.—BUOYS IN THE SOUND.

The following circular, and its accompanying despatch, concerns the masters of vessels trading to the Baltic:—

"*Admiralty*, 30*th April*, 1834.

"Sir—I am commanded by my Lords Commissioners of the Admiralty, to inclose for your information the copy of a despatch from his Majesty's Consul at Elsinore, relative to the Buoys and Beacons in the Sound.

"I am, Sir,

"Your most obedient humble servant,

"JOHN BARROW."

"*Elsinore*, *March* 18, 1834.

"Sir—I have the honour to inform you, that, some time ago, several British ship-masters frequenting the Baltic, finding themselves aggrieved at the early removal of the Buoys and Beacons in the Sound, presented to me a Petition to the Danish Government, praying that in future those Sea-marks might remain until the navigation were stopped by ice; and further, that three additional Buoys might be placed for the security of the Shipping in that part of the Sound called "the Grounds." In consequence, I took the earliest opportunity of transmitting that document to the Director of the Oresound Custom-house, accompanied by a Memorial in support of the same; and I have now the satisfaction of reporting to you, for the information of those whom it may concern, that the Danish Government have been pleased to grant the prayer contained in the above petition, and that the Buoys and Beacons have already been placed accordingly.

"I have, &c.

(Signed) "FRANCIS C. MACGREGOR.

"Sir George Shee, Bart.
&c. &c. &c."

32.—BUOY ON THE BARNARD SAND, OFF COVEHITHE, SUFFOLK.

Compass Bearings.

"*Trinity-House*, *London*, 29*th April*, 1834.

"Notice is hereby given, that this Corporation has caused a Buoy, painted Red, to be laid on the South-West end of the Barnard Sand, in six fathoms at low-water spring-tides, with the following marks and compass bearings, viz.:

Southwold Church Tower, bearing twice its apparent breadth open southward of the Houses upon Easton Ness	S.W. by W. ½ W.
Lowestoft Church on with the highest Windmill at Kirkley	N N.E.
Covehithe Church Tower	W. ½ N.
Kessingland Church Tower	N. by W.

"By Order,

"J. HERBERT, Secretary."

ORIGINAL PAPERS.

I.—A Narrative of the Proceedings on Board His Majesty's Ship Success, Capt. W. Jervoise, while aground at the Entrance of Cockburn Sound, *from the 28th November to the 3d December*, 1829.

At daylight on the morning of the 28th November, the land about Garden Island (Buache of the French) bore N.E. by E., the wind being fresh from the southward. Having determined to go into Cockburn Sound, the sails were shortened to the topsails, steering at the time N.E. by E.; an additional look-out was placed on the jib-boom end, the leads were kept going, and hands by the bower-anchors. At 6 h. 30 m. the north point of Garden Island bore S.S.E. and the south-east end of Pulo Carnac E.N.E.; altered course to E.S.E., and set the courses and driver. About 6h. 45m., in hauling up to the south-east, the sails were scarcely trimmed, when the ship took the ground, the last cast of the lead being three fathoms and a half, but she soon swung off into deeper water, when the best bower was instantly let go, and almost immediately parted. The sails were furled, the topgallant yards and masts sent on deck, and the small bower was let go. The ship swang to the wind, and rode by it for a short time, but the chain parted, and she again paid round with her head to Pulo Carnac, and was driven closer in-shore. The master was sent away in the second gig to sound round the ship, to seek the best position for laying out an anchor; the boats were then hoisted out, and lowered down, and, as the wind was increasing, we struck the topmasts.

The master having returned, the kedge-anchor was laid out to the southward, for the purpose of assisting the boats in warping out the spare anchor. At this time two boats were seen coming from the anchorage in Cockburn Sound. These proved to belong to H.M.S. Sulphur, in one of which was Captain Dance and the master of that ship. They came to offer us every assistance; and Lieut. Morrett, in the other, brought a stream-anchor and cable, which was speedily laid out in the same direction as our own.

The stream-cables being hove tight, the Sulphur's yawl and our own pinnace were directed to hang the spare anchor with a fourteen and a half inch cable between them, and, hauling themselves out, to let it go in the direction of the stream-anchors. About this time, the ship striking hard, the rudder was unshipped, all the pintles and lower gudgeon being carried away. The transom was sprung by the iron tiller, which was eventually cut, to enable us to

unship it. In heaving on the spare anchor, which had been laid out two cables' lengths to the southward it parted, the cable being cut through by the rocks. The kedge and stream also parted at the same time. The sheet-anchor was now instantly let go, but did not hold a minute, both arms being broken off at the crown. The ships' head was again forced to the northward, by which her stern was exposed to the fury of a strong south-west wind. The swell it brought in caused her to strike violently; so that she continued making five feet water per hour in this position all night.

At this critical period, when we were left to the mercy of the sea, which was beating us on the rocks, with all our cables and anchors gone, captain Jervoise assembled the ship's company, apprized them of the perilous state of the ship, expressed his approbation of their great exertions from the commencement, and recommended their perseverance as the only means of saving her. His short and well-timed address was received with enthusiasm, and, giving three hearty cheers, with one accord they rushed to the pumps, determined not to forsake her while she swam.

Several guns having been fired for assistance, at four in the afternoon a boat came from the Lion, a brig lying in Gage's Roads, with Mr. M'Leod, the master, and his supercargo. This gentleman was requested either to move the brig round, or send us an anchor and cable, as at that moment we had neither, and had sustained much damage. It was intimated to him at the same time, that government would make a remuneration for any service rendered. *Mr. M'Leod and his supercargo left the ship, but they never returned*, and perhaps never intended to do so, for the Lion sailed from Gage's Roads on the 30th November, *leaving his Majesty's ship Success, with her officers and crew, to their fate.*

29th November. From the peculiar situation of the ship, it was judged necessary to lighten her, and we commenced by landing some of the guns and stores. Captain Dance remained on board all night, and at daylight the following morning he was directed to proceed to the Sulphur, lying about seven miles from us, and send us a bower-anchor and cable. Notwithstanding that his ship was nearly unmanned, his boats being away on an exploring party, so that he was unable to move her, the anchor and cable was alongside of us at three in the afternoon. The anchor was laid out to the southward, bent to one of our own hempen cables, which, being passed through the rudder-hole, was brought to the capstan. We now tried to heave off, but the cable parted, and the ship was again forced towards a ledge of rocks about three feet above water. The end of the fourteen and a half inch cable, parted from yesterday, was crept up, and, bent to a shroud-hawser, was passed

through the starboard stern-port, and hove tight. The bolts in a part of the keel in the bread-room having started, the water began to make its way among the bread, when Mr. Hellyer (acting-purser) was directed to take charge of the ship's books, the chronometers, and his own stores, and to seek a place of safety for them on the island. During the night, three planks of the larboard-bow were stove in, and the cutwater completely ground away to the wood-ends against the rocks.

30th November. At seven in the morning, we crept up the cable parted from yesterday, lashed both messengers to it, and hove tight through the rudder-hole. We also crept up the small bower-chain which had parted on the 28th, passed the end of a bower hempen cable, with a splicing-piece on it, through the starboard after-port, on the half-deck, and hove it tight.

The Lieutenant-Governor, Captain (now Sir James) Stirling, came on board, and remained all night. His offers of assistance, and the kind manner in which he expressed his approbation of the exertion and perseverance of the officers and crew, were duly appreciated by all on board. As the ship was again secured, and the sea-breeze continuing to blow fresh, we made no attempts to heave the ship off, but continued to lighten her as fast as possible, by landing the guns, shot-ballast, provisions, and other stores. At the same time, the carpenters were employed in plugging up the holes made in the bow: the ship having made eight feet of water per hour, during this and the former days, the rest of the crew were incessantly at the chain-pumps; and the cheerful manner in which they performed this severe duty was our only hope of safety.

1st December. As it was necessary that some officer should be landed, to direct the requisite arrangement of all the stores, and receive the sick, this service was performed in a most careful manner by Mr. Blackwood, Acting-Lieut. This officer had been very unwell, and was still in a weak state, but he landed, with the assistant-surgeon, with the sick, on Pulo Carnac. At three in the afternoon, we made an attempt to heave the ship off, having shifted the stern-cable to one of the larboard-quarter main-deck ports. We had started her a few feet, when the cable parted; but having succeeded in clenching it again, we hove it tight, and seized the end to the side-bolts just inside the port, keeping the messenger also on it, and brought to. The crew were continually employed at the pumps, and in clearing the ship of all her stores down to the ballast. Some were also employed thrumming a sail, and rafting the spars. As a rise of tide was anticipated, we had still a hope of saving the ship.

2d December. We continued landing stores of every description. At three in the afternoon, made an attempt to heave off by the Sulphur's anchor, with two hempen cables on end over the lar-

board-quarter. They were led through the second after-port on the main-deck, with our own two messengers hitched and seized to them. The hempen cable was brought to the capstan on the main-deck, and the coir-cable, with a runner on it, was bitted forward; the latter being intended to ease the former; but, from having a less purchase, was more a stand-by. They were cast off as soon as we had end enough to bring the cable to the capstan. Two round turns were taken, and luffs used for holding on. Through the opposite port was led one of our hempen cables, shackled to the small bower-chain, the anchor of which was nearly astern; on this was clapped a runner and yard-tackle. The stream-anchor, which had been of necessity dropped among the rocks on the starboard quarter the day before, was now turned to good account by leading its chain through the same port. Through the stern-port on deck the shroud-hawser was led, the object in view being to keep an equal strain on the two bowers whilst heaving off. By a rally at the capstan, however, one of the cables gave way, but its end was recovered and re-bent.

The power at the capstan was now reduced to two hands to a bar, and the falls on the main-deck (or rather the other cable) better manned, and by seven in the evening the ship was fairly hove in two fathoms and a half water. The small bower-chain was then unshackled from the hemp, and passed from the starboard quarter post to the hawse-hole on the same side. The larboard cable was buoyed, and slipped; the shroud-hawse taken to the larboard hawse-hole, and the ship swang with her head to the northward, and moored, with nearly three lengths of chain on the starboard-cable.

3d December. At four in the morning we hove up the small bower, and commenced warping the ship towards Garden Island. We left an officer, with a party, at Pulo Carnac, for the protection of the stores and provisions. Ship making three feet water an hour. At 7 h. 30 m. in the evening we anchored in Cockburn Sound, in nine fathoms, veered to a whole cable, and moored ship, with a kedge, to the northward.

Our limited space will not allow us to insert Captain Jervoise's letter to the Lords Commissioners of the Admiralty, reporting officially the proceedings on board the Success, and the unwearied and almost unequalled exertions of her officers and crew in the course of this unfortunate transaction. Having given the reader a tolerably full account in the foregoing particulars, we shall be content with referring him to Marshall's Royal Naval Biography (vol. III. part. 2. p. 446,) and declare our opinion that it was only the admirable resources of a well-regulated and vigorous mind in the hour of danger, and a determined perseverance, seconded by the strenuous exertions of his officers and crew, that enabled Captain Jervoise to save his Majesty's ship Success from destruction. With-

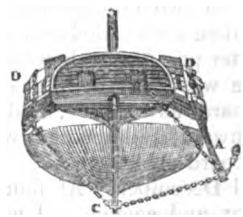
out disparaging the many noble exploits which are recorded of our gallant naval officers; there may not be found a similar instance of a ship having been so completely a wreck, and afterwards, by dint of energy, zeal, and exertion restored to his Majesty's service.

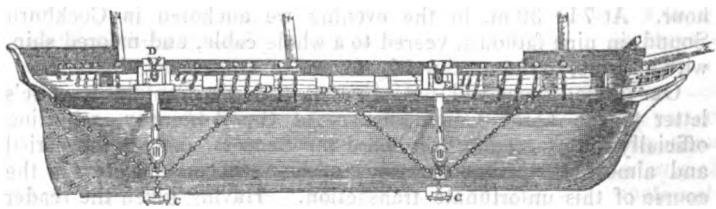
The following sketch represents the position of the larboard side of the Success's bottom, as she came off the rocks, and before the repairs were commenced. She was hove down in Cockburn Sound between the 20th July and the 27th November.

The broken lines shew the original limits of the keelson, &c., the bolts are shewn twisted at the line of separation. The floors were also rubbed away by the rocks to an inch and a half in depth.

The method, adopted by Captain Jervoise for heaving down the Success, (different from that usually employed by us) is shewn in the annexed views of a sloop of 18 guns.

A A are span shores, the upper part rounded and working in cavities, formed in the under side of the cheeks, fixed to the vessel's side beneath the portcill. The shores are secured by chain guys, and support the purchase blocks, which are affixed to chains, passing (through the shores) under the bottom of the vessel, and belayed within-board on the opposite side.





CC are shoes, fitted to keep the chains in their places, beneath the bottom of the vessel, and to prevent injury to the false keel.

DD are chocks, fitted to protect the several parts of the vessel from being injured by friction from the chains.

E blocks for leading the purchase falls to the capstans.

The foremost capstan was taken out of the Success, and fitted

in the fore hatchway of his Majesty's cruiser, by which vessel the Success was hove down. Forty tons of ballast, in addition to her usual quantity, were put on board the cruiser, to give her stability. The inclination of the cruiser, under the greatest strain, did not exceed eighteen inches.

The Success subsequently returned home, and was paid off at Portsmouth in the early part of 1832.

The foregoing sketches have been made from a drawing presented to the Naval and Military Library and Museum, by Rear-Admiral Sir Edward Owen, K.C.B., G.C.H., the Commander-in-Chief on the East India station at the time the Success got aground.

II.—The New Nautical Almanac—*Extract from the Primum Mobile, and Milky Way Gazette. Communicated by Aerolith.*

A meeting of the different bodies composing the solar system was this day held at the Dragon's Tail, for the purpose of taking into consideration the alterations and amendments introduced into the New Nautical Almanac. The honourable luminaries had been individually summoned by fast-sailing comets, and there was a remarkably full attendance. Among the visiters, we *observed* several nebulæ, and almost all the stars whose proper motions would admit of their being present.

The Sun was unanimously called to the focus. The small planets took the oaths, and their places.

Petitions were presented from α and δ Ursæ Minoris, complaining of being put on daily duty, and praying for an increase of salary.—Laid on the plane of the ecliptic.

The trustees of the eccentricity* and inclination funds reported a balance of ·00001 in the former, and a deficit of 0″·009 in the latter. This announcement caused considerable surprise, and a committee was moved for, to ascertain which of the bodies had more or less than his share. After some discussion, in which the small planets offered to consent to a reduction, if necessary, the motion was carried.

The Focal Body then rose to address the meeting. He remarked that the subject on which they were assembled was one of great importance to the routes and revolutions of the heavenly bodies. For himself, though a private arrangement between two of his honourable neighbours (here he looked hard at the Earth and Venus) had prevented his hitherto paying that close attention to the predictions of the Nautical Almanac, which he declared he always had wished to do; yet he felt consoled, by knowing that the conductors of that work had every disposition to take his peculiar circumstances into consideration. He declared that he had never passed the wires of a transit without deeply feeling his inability to adapt himself to the present state of his theory; a feeling which he was afraid had sometimes caused a slight tremor in

* See Sir J. Herschel's Astronomy, page 369.

his limb. Before he sat down, he expressed a hope that honourable luminaries would refrain as much as possible from eclipsing each other, or causing mutual perturbations. Indeed, he should be very sorry to see any interruption of the harmony of the spheres. (Applause.)

The several articles of the New Nautical Almanac were then read over without any comment; only we observed that Saturn shook his ring at every novelty, and Jupiter gave his belt a hitch, and winked at the satellites at page 21 of each month.

The MOON rose, to propose a resolution. No one, he said, would be surprised at his bringing this matter forward in the way he did, when it was considered in how complete and satisfactory a manner his motions were now represented. He must own he had trembled when the Lords of the Admiralty dissolved the Board of Longitude, but his tranquillity was more than re-established by the adoption of the new system. He did not know, but that any little assistance he could give in Nautical Astronomy was becoming of less and less value every day, owing to the improvement of chronometers. But there was one thing, of which nothing could deprive him—he meant the regulation of the tides. And, perhaps, when his attention was not occupied by more than the latter, he should be able to introduce a little more regularity into the phenomena. (Here the honourable luminary gave a sort of modest libration, which convulsed the meeting with laughter.) They might laugh at his natural infirmity if they pleased, but he could assure them it arose only from the necessity he was under, when young, of watching the motions of his worthy primary. He then moved a resolution highly laudatory of the alterations which appeared in the New Nautical Almanac.

The EARTH rose, to second the motion. His honourable satellite had fully expressed his opinions on the subject. He joined his honourable friend in the focus in wishing to pay every attention to the Nautical Almanac, but, really, when so important an alteration had taken place in his magnetic pole (hear) and there might, for ought he knew, be a successful attempt to reach his pole of rotation, he thought he could not answer for the preservation of the precession in its present state. (Here the hon. luminary scratching his side, exclaimed, as he sat down, "More steam-boats—confound 'em.")

An honourable satellite (whose name we could not learn) proposed that the resolution should be immediately despatched, corrected for refraction, when he was called to order by the focal body, who reminded him that it was contrary to the moving orders of the system to take cognizance of what passed inside the atmosphere of any planet.

SATURN and PALLAS rose together. (Cries of "New member," and the former gave way.) The latter, in a long and eloquent

speech, praised the liberality with which he and his colleagues had at length been relieved from astronomical disqualifications. He thought that it was contrary to the spirit of the laws of gravitation to exclude any planet from office on account of the eccentricity or inclination of his orbit. Honourable luminaries need not talk of the want of convergency of his series. What had they to do with any private arrangements between him and the general equations of the system? (Murmurs from the opposition.) So long as he obeyed the laws of motion, to do which he had that day taken a solemn oath, he would ask, were old planets, which were now so well known that nobody trusted them, to ....

The FOCAL BODY said he was sorry to break the continuity of the proceedings, but he thought that remarks upon character, with a negative sign, would introduce differences of too high an order. The honourable luminary must eliminate the expression which he had brought out, in finite terms, and use smaller inequalities in future. (Hear, hear.)

PALLAS explained, that he was far from meaning to reflect upon the orbital character of any planet present. He only meant to protest against being judged by any laws but those of gravitation, and the differential calculus: he thought it most unjust that astronomers should prevent the small planets from being observed, and then reproach them with the imperfections of the tables, which were the result of their own narrow-minded policy. (Cheers.)

SATURN thought, that, as an old planet, he had not been treated with due respect. (Hear, from his satellites.) He had long foretold the wreck of the system from the friends of innovation. Why, he might ask, were his satellites to be excluded, when small planets, trumpery comets, which could not keep their mean distances, (cries of oh! oh!) double stars, with graphical approximations, and such obscure riff-raff of the heavens (great uproar) found room enough. So help him Arithmetic, nothing could come of it, but a stoppage of all revolution. His hon. friend in the focus might smile, for he would be a gainer by such an event; but, as for him (Saturn) he had something to lose, and hon. luminaries well knew, that whatever they might think *under* an atmosphere, *above* it continual revolution was the only way of preventing perpetual anarchy. As to the hon. luminary who had risen before him, he was not surprised at his remarks, for he had invariably observed that he and his colleagues allowed themselves *too much latitude*. The stability of the system required that they should be brought down, and he, for one, would exert all his powers of attraction to accomplish that end. If other bodies would cordially unite with him, particularly his noble friend next him, than whom no luminary possessed greater weight—

JUPITER rose to order. He conceived his noble friend had no right to allude to him in that manner, and was much surprised at

his proposal, considering the matters which remained in dispute between them. In the present state of affairs, he would take care never to be in conjunction with his hon. neighbour one moment longer than he could help. (Cries of "Order, order, no long inequalities," during which he sat down.)

SATURN proceeded to say, that he did not know till then that a planet with a ring could affront one who had only a belt, by proposing mutual co-operation. He would now come to the subject under discussion. He should think meanly of his hon. colleagues if they consented to bestow their approbation upon a mere astronomical production. Had they forgotten that they once were considered the arbiters of fate, and the prognosticators of man's destiny. What had lost them that proud position? Was it not the infernal march of intellect, which, after having turned the earth topsy-turvy, was now disturbing the very universe. For himself, (others might do as they pleased,) but he stuck to the venerable Partridge, and the Stationers' Company, and trusted that they would outlive infidels and anarchists, whether of Astronomical or Diffusion of Knowledge Societies. (Cries of oh! oh!)

MARS said he had been told, for he must confess he had not seen the work, that the places of the planets were given for Sundays. This, he must be allowed to say, was an indecorum he had not expected; and he was convinced the Lords of the Admiralty had given no orders to that effect. He hoped this point would be considered in the measure which had been introduced in another place, and that some one would move that the prohibition against travelling on Sundays extend to the heavenly as well as earthly bodies.

Several of the stars here declared, that they had been much annoyed by being observed on Sunday evenings, during the hours of divine service.

The room was then cleared for a division, but we are unable to state what took place. Several comets-at-arms were sent for, and we heard rumours of a personal collision having taken place between two luminaries in opposition. We were afterwards told, that the resolution was carried by a majority, and the luminaries elongated at 2 h. 15 m. 33,41 s. sidereal time.

*** It is reported, but we hope without foundation, that Saturn, and several other discontented planets, have accepted an invitation from Sirius to join his system, on the most liberal appointments. We believe the report to have originated in nothing more than the discovery of the annual parallax of Sirius from the orbit of Saturn; but we may safely assure our readers that no steps have as yet been taken to open any communication.

We are also happy to state, that there is no truth in the rumour of the laws of gravitation being about to be repealed. We have

traced this report, and find it originated with a gentleman living near Bath, whose name we forbear to mention.

A great excitement has been observed among the nebulæ, visible to the earth's southern hemisphere, particularly among those which have not yet been discovered from thence. We are at a loss to conjecture the cause, but we shall not fail to report to our readers the news of any movement which may take place.

III.—History of Hadley's Quadrant.

(Concluded from page 292.)

The only question that remains is on the priority in point of time, which belongs to either of the invention. This, in the present case, is a merely accidental circumstance, and no ways diminishes or adds to the just merit of either party. Nevertheless, it has been considered as the great subject of contest, in which the victory has been sought, even by the attempt to sacrifice the fair claims which Hadley possessed to originality.

It must be borne in mind, that the two competitors at present under consideration were under widely different circumstances. Godfrey seized immediately the valuable idea which occurred to him, in Oct. 1730; communicated it at once to his friend Stewart, who was to put it to the test of trial; and, before the expiration of another month, got the old sea-quadrant (all possibly that his means enabled him at the time to accomplish) fitted up for that purpose: but, pressed by poverty, distracted by the manual labour to which the wants of his family made him unwillingly submit, and sunk unfortunately in habits which paralyzed his nobler exertion, he never advanced beyond the first construction which occurred to him. He must have possessed powers of mind, which, had they in early life been duly cultivated, and afterwards from leisure and independence had the means of developement, would have enabled him to make great advances; but we must rather admire what he accomplished, than think that more could have been expected from him. He put his quadrant into Mr. Logan's hands in Feb. 1731, and in the fifteen months which elapsed before that gentleman sent the account of it to Dr. Halley, (in May, 1732,) it does not appear that he contrived any essential improvement in the construction of his instrument. On the other hand, Hadley was a man of fortune, without any impediment to the employment, as he saw fit, of his time and thoughts in scientific pursuits; and, although he seems while engaged on his quadrant to have confined the knowledge of his object to himself and his brother, still he mixed in that society where, without explaining any reason for his inquiries, he had every facility for

obtaining information, or directing occasional conversation to the discussion of those points on which he might have any doubts. These advantages were not lost to him. It appears clear, from the statement* of Mr. George Hadley, on the 7th of Feb. 1734, (the first meeting of the Royal Society after the letters of Godfrey and Mr. Logan had been read,) that a double reflecting quadrant, which he then produced, had been completed in the middle of the summer of 1730. Now, this first construction is that which has the remarkable similarity to Sir Isaac Newton's, and to Godfrey's; but Hadley did not satisfy himself with this most obvious form. By further study, he considerably improved it; and this anxiety for perfecting his contrivance was most probably the cause of his not producing it at the same time when he first communicated the description to the Royal Society. He would naturally be desirous to exhibit it in its best state, and there happens to be direct evidence of his having done so. For, in the account of the observations made on board the Chatham yacht in the autumn of 1732, it is incidentally mentioned, that "the instrument produced at the society,"† was of the second construction which is described in Hadley's paper.

It is clear, therefore, that Hadley completed one of his quadrants in the summer of 1730, and communicated the account of it to the Royal Society in May, 1731; and it is equally clear, that Godfrey's was first made in November, 1730, and that the first notice of it for publication was drawn up at Philadelphia in May, 1732. This all rests on written contemporaneous documents which still exist, and the question might here be left to its own merits: but it will render the present inquiry more completely satisfactory, if a few remarks are made on the many erroneous particulars which have been annexed to this history. These are little known in England, where Godfrey's name has been treated with unmerited neglect, and they have been most probably nothing originally but suppositions of possibilities, which have acquired the character of positive assertions by the regular exaggerations of tradition. They enter likewise into such minute details, that, if we could not correct them by direct undeniable evidence, it would be hard to conceive that they could be so fundamentally inaccurate as they really are.

Nauticus, whose letter, from having been reprinted in the Nautical Magazine,‡ has given rise to all this discussion, says, that "Mr. Godfrey was putting a pane of glass in a window, on the first floor of a house in Philadelphia, when, having a pane of glass in each hand, he saw the double reflection. He immediately

* A full copy of the original minute of this statement may be seen in the Nautical Magazine, vol. i. p. 350.

† Phil. Trans. vol. xxxvii. p. 341.

‡ Vol. i. p. 161.

left his companion, and ran through the streets like one deranged, exclaiming, 'I've got it, I've got it.' Montucla,* it is true, rejects the well-known story of ευρηκα, ευρηκα, as a palpable fable that is wholly unworthy of any credit. I cannot agree with him;† but still this account is so evidently copied from it as to be, at least, extremely suspicious.

In Allen's American Biographical and Historical Dictionary,‡ it is said of Godfrey, that, "while replacing a pane of glass on the north side of Arch-street, opposite a pump, a girl, after filling her pail, placed it on the path-way. Turning round, Godfrey observed the rays of the sun reflected from his window into the bucket of water. He was thus led to conceive, that, if by reflection he could draw the sun down to the horizon, he should have an instrument incomparably superior to the pig-yoke then in use. He formed his model in wood, and carried pieces to Charles Hansen, who completed for him an instrument in brass. This was committed to Godfrey's brother, a captain in the West Indian trade, who, on arriving at Jamaica, and exhibiting the quadrant to some officers of the British navy, was tempted by a Captain Hadley to sell it to him for a large sum of money. Hadley carried the instrument to London, and placed it in the hands of his brother, a mathematical instrument maker in the Strand, and obtained a patent." The latter part of this extract, as far as regards Hadley, shall be more particularly examined hereafter, when it will be seen that minute detail is not always a guarantee for the accuracy of a relation. In the first place, we will only now point out the discrepancy from the positive affidavits which Godfrey sent to the Royal Society. They clearly shew that the first instrument was not made in brass, from a wooden model of the inventor's own construction, but in wood,‖ by Woolley, the carpenter, from a draught and directions with which Godfrey supplied him; they likewise shew, that the quadrant was carried to Jamaica, not by

* Histoire de Math. vol. i. p. 229.

† The story rests principally on the authority of Vitruvius, (ix. 3;) but his account is very precise, and is corroborated by the allusion made to it in Plutarch's treatise, "Ne suaviter vivi posse secundum Epicuri decreta" (§ xi.) It is true that Archimedes, in his work, "de iis quæ in humido vehuntur," lays down the principle by which specific gravities may be determined in the same accurate manner which is now used for that purpose; but we have no history of his progress in this department of science, and his having advanced to greater precision is perfectly compatible with his thoughts having been at first directed to the truth by an accident. Montucla dwells on the ridiculous absurdity (as he considers it) of Archimedes running in extacy from the bath, without stopping to dress himself: but such a fact is not to be so hastily rejected. It is impossible to read the works of this truly wonderful man, without being struck with the most extraordinary abstraction of which his mind was susceptible. Let any one look to the account which Plutarch gives of him in the Life of Marcellus, and it will no longer be incredible, that he might be so absorbed in the delight of a discovery as to have no thought about his clothing. Newton could forget that he had not eaten his meal, and "quem ardorem studii censetis fuisse in Archimede, qui, dum in pulvere quædam describit attentius, ne patriam quidem captam esse senserit? (Cic. de finibus, v. 19.)

‡ 8vo. Boston. 1832. page 415.

‖ Godfrey most probably had not the means of employing a workman to make his instrument in brass, and there was an advantage accidentally derived to him from this circumstance, since his wooden quadrant, being more light and manageable, enabled him to keep his view more directly fixed on the object of most importance—the lunar distances.

Godfrey's brother, but by his friend Stewart. This is certainly enough to justify some hesitation in admitting the rest of the account, which appears also to be quite incompatible with what we learn from Mr. Logan, and Godfrey himself. Both agree in representing the invention as the result, not of any accidental hint, but of a studied inquiry after the best means of improving the method of nautical observations. I would not be thought to speak lightly of that power of genius which can strike a brilliant discovery from a coincidence which would pass unprofitably before the eyes of a common spectator, but I must maintain that the fact is still more highly honourable to Godfrey, and the invention is, as it were, more completely his own when considered to be (as I believe it really was) the consequence of his ingenious and scientific investigations, directed to the removal of an important difficulty.

It only now remains to examine the stories which have been told of the manner in which several writers have supposed that Hadley possessed himself of Godfrey's invention so as to pass it for his own. This must not be omitted; for, although it may be ex abundantia as respects the general argument, it will be satisfactory to see, in all its detail, that the character of our illustrious countryman is totus teres atque rotundus—that no one of the accusations which involve the charge of injustice and duplicity can in the slightest degree attach to it. It is curious, likewise, to remark that they all contain particulars so far contrary to one another, that the evident vein of error and exaggeration might justify us in leaving it to invalidate the individual testimonies of each. But, although this proves that much cannot be true, it will be more conclusive to shew, by a particular examination, that the whole is without foundation.

Nauticus tells us, that "Mr. Godfrey, upon finishing his instrument, sent his son with it to the West Indies, to try its accuracy, where, being in company with some naval officers, ...Lieut. Hadley desired to see it, and taking a sketch of it, upon his return to Europe obtained a patent."

An extract may be seen above from Allen's American Biography, to which, in the original work, it is added, that "according to another account, John Hadley, commanding a vessel in the Delaware, was allowed to see the instrument, and took a description of it."

It may be observed, that, whatever difference there may be in other respects, these accounts all agree in assuming that Hadley had become master of Godfrey's invention by his being an officer on board a vessel where he had the opportunity of seeing it. Now, I have shewn,* that, between 1719 and 1743 there was no officer of his Majesty's navy of the name of Hadley: but it may be objected, that he might have been in a merchant's service, and the

* Nautical Mag. vol. i. p. 351.

rank might only have been assigned to him by courtesy. Even to this supposition, however, we have fortunately a direct and complete answer. In the trials at the Nore, it has been mentioned that the observations were made by Bradley, Hadley, and his brother Henry,* and we find it specifically stated, that "the observers were all persons quite unaccustomed to the motion of a ship at sea."† It is hardly necessary to add to this, that the minutes of the Council of the Royal Society prove that he was in attendance on his duties in London at the time that these stories would make him to be in the West Indies, or on the coast of America.

The first account in Allen's Dictionary is fortunately particular in another respect—Hadley's having taken designs can only be answered, by shewing that he could not have the opportunity of doing so; but when we are told that he absolutely purchased the instrument for a large sum of money, we are able to refer to Stewart's affidavit, and Mr. Logan's paper in the Philosophical Transactions: both prove, that at the termination of the voyage to Jamaica the quadrant was restored (Feb. 1731) to Godfrey himself.

There remains, however, one other account, which, from being less definite, does not admit of so direct a refutation. It appears in Miller's Retrospect of the Eighteenth Century,‡ in which it was reprinted from the American Magazine for July, 1758. It says, that "Mr. Godfrey sent the instrument to be tried at sea by an acquaintance of his, an ingenious navigator, in a voyage to Jamaica, who shewed it to a captain of a ship there, just going for England, by which means it came to the knowledge of Mr. Hadley, though, perhaps without his being told the name of the real inventor. This fact is sufficiently known to many seamen, and

* Mr. George Hadley was also on board, but no mention is made of his observing. Hadley informed the Royal Society, that this brother "had the curiosity to make the first instrument with his own hands:" he must therefore be the person designated in Allen's Dictionary as "a mathematical instrument maker in the Strand." From Hadley's rank in life, it is not likely that his brother was a mechanic; and when he was elected F.R.S. in 1734, his certificate (which had been signed by Sir Hans Sloane, Lord Colerain, Machin, Jones, Graham, &c.) calls him George Hadley, Esq., a description, which, in those days, would not have been applied to a tradesman. Of this, we cannot have a stronger instance, nor one more immediately in point, than, that we find the first artist of Europe, in the minutes of the Royal Society, always called "Mr. George Graham." The expression, likewise, of his having "the curiosity" to employ himself in making the instrument, applies rather to one who worked for his amusement, than in his regular occupation. However, this is of no importance to the main question: it is admitted on both sides, that he only executed a design, for which he received instructions from his elder brother; and the capacity in which he acted cannot in any way affect our view of that brother's originality.

† Phil. Trans. vol. xxxvii. p 351. This is perfectly conclusive, especially when it is recollected that the account was read before its publication to the Royal Society, many of whose members must have been personally acquainted with the circumstances alluded to. There is, indeed, in the British Museum, a note to Sir Hans Sloane, in which Henry Hadley speaks of having been in Java, but it is dated Dec. 4, 1742, ten years subsequent to the time now in question. It is not, however, improbable, that his having afterwards gone to sea, may have assisted in giving currency to the reports about the pretended piracy committed on Godfrey's invention.

‡ Vol. i. p. 407.

established beyond a doubt by the following letters, written about that time." The appeal to the seamen is beyond the power of investigation; but, however difficult it may be to conceive it, a simple examination of the letters which are referred to, will shew that they contain not one word in corroboration of the supposed communication to Hadley. They are the letters of Mr. Logan and Godfrey, written in 1732, and both express the full persuasion of the invention being unknown in England. Let it be supposed, that an ignorance of Hadley's paper had prevented suspicion, and that those with whom the instrument had been sent on trial to Jamaica had hitherto concealed the dishonourable violation of the trust reposed in them; still we have Stewart's affidavit in March, 1734, in which no allusion is made to any intercourse by which the invention could have reached Hadley. The affidavit was made to substantiate Godfrey's claims; and every thing might, therefore, be expected in it which could strengthen them. If it be said, that Stewart might have been the delinquent, and would not proclaim his own disgrace, no similar objection could be made to Mr. Logan's testimony; and his paper in the Philosophical Transactions* bears strongly on the only conclusion at which we can reasonably arrive. It was written in June, 1734, by one who was Godfrey's warm friend and patron, who was then acquainted not only with Hadley's claims, but with the decision, in consequence, of its not being expedient to insert their former letters in the Philosophical Transactions. Now, he confines himself almost entirely in this latter communication to the improvement which Godfrey had made in the mariner's bow. He introduces only one paragraph with respect to the reflecting quadrant. He says again, that he was persuaded when he wrote to Dr. Halley, that "the invention would appear entirely new," and he gives not the slightest hint of his suspecting any unfair means to account for its not having been so.

In conclusion, he disclaims the desire of assuming any personal merit, and expresses his "only wish, that the ingenious inventor himself might by some means be taken notice of in a manner that might be of real advantage to him." † It appears, therefore, that,

* Vol. xxxviii. p. 448.

† There was a tradition in America, according to Miller's Retrospect, that Hadley having obtained a patent, "complete justice could not be done to Godfrey; but that the Royal Society, thinking his ingenuity ought to be rewarded, either subscribed for him, as individuals, or gave him out of their own funds £200 sterling." This is a large sum; but it is not improbable that some members, admiring the talents of the man, and feeling for his poverty, may have subscribed together, to make him a present. That the Society, as a body, should have given him this money is out of the question, and there are no traces of such a transaction in the votes of the council. Their funds were not adequate to such munificence, and there was no call on them in the alleged circumstances for it. If any injustice had been seen in Hadley's patent, the remedy was in giving notoriety to superior claims (had they existed) in the other inventor. How far an English patent could be maintained in the colonies, I cannot tell; but Godfrey seems to have looked to nothing of the kind. From the latter part of Mr. Logan's first letter, it is clear, on the contrary, that his object was to obtain some reward from the Commissioners for the Discovery of the Longitude.

after the lapse of three or four years, in Philadelphia, where the facts could be most easily investigated by those who were most interested in the developement of them, the story which has been since told under so many different forms, was wholly unknown, or wholly disregarded.

The present inquiry has accidentally led to the knowledge of several particulars in Hadley's personal history with which the public is wholly unacquainted, and it is hoped that still more may be discovered. These, on some future occasion, will probably be submitted to the readers of the Nautical Magazine.

IV.—Remarks on "Original Papers on Naval Architecture." *By Commander John Pearse, R.N., in Nos. 20, 21, 22, 24, and 25, of the Nautical Magazine; with some Observations on the best Position for the Axis of Rotation. By* Mr. Wm. Henwood, *Naval Architect.*

The position of the point through which the axes of rotation of a ship must pass, is undoubtedly one of the most important principles involved in the science of naval architecture. Upon the certainty of our knowledge of the situation of this point depends the utility of the calculation of the force of stability, as well as that of various other calculations, which ought to be made, to render so costly a structure as a ship, as excellent, in all respects, as possible.

If, according to the reasonings of Captain Pearse, and his deductions from experiment, in numbers of the Nautical Magazine, from October, 1833, to March, 1834, it has indeed been erroneously considered by naval architects, and scientific men in general, that the axes of rotation of a ship always pass through her centre of gravity; and, if Captain Pearse has indeed discovered that the axis of rotation passes through the metacentre; then verily must "the subject be reconsidered and examined," and the whole theory of naval architecture be completely regenerated, before "the naval architects of Great Britain can hope to take a leading part in it."

In order that we may justly estimate the validity of the proof Captain Pearse has given that the axis of rotation must pass through the metacentre, and not through the centre of gravity of a ship, as is generally supposed, it will be proper to state, somewhat more precisely than Captain Pearse has done, what is meant by the metacentre. If we suppose a ship to be inclined from the upright position, through successive and constantly increasing angles of inclination, the vertical lines representing the consecu-

tive mean directions of the upward pressure of the water on the bottom, do not all intersect each other in one and the same point, but each two of them, indefinitely near to each other, intersect in a point; and this point of intersection of two of these lines, at any given angle of heeling, certain writers on naval architecture have called the metacentre corresponding to that given angle of inclination. The metacentre, accordingly, is constantly changing its situation as a ship revolves on her longitudinal axis; and it is not coincident with the vertical and longitudinal plane which divides the ship into two equal and similar parts, unless the angle of heeling is infinitely small. If, therefore, the axis of rotation passes through the metacentre, this axis must be continually varying its position whilst a ship inclines; and will always, at a finite angle of heeling, be situated above the centre of gravity, and out of the middle plane of the ship.

Again, if the axis of rotation passes through the metacentre, as the mean vertical pressure of the water is always in the vertical line passing through the metacentre; it is evident the upward pressure of the water, when a ship has inclined, can have no effect in restoring her to an upright position; so that, in fact, she can have no force of stability; and consequently, the smallest impulse of wind, acting to incline the ship, must inevitably overset her. This, however, is the reverse of fact, and, it is equally wrong to suppose that the axis of rotation can, when a ship is inclined, be situate out of the middle plane which divides the ship into two equal and similar parts. Ergo, the axis of rotation does not pass through the metacentre.

The point *m*, which on page 576, vol. 2, of the Nautical Magazine, Captain Pearse has called the metacentre, is obviously not the metacentre corresponding to the inclination of his model. It does not appear that Captain P. has obtained very accurate information of the mode of finding the position of the metacentre in such a case as he has supposed.

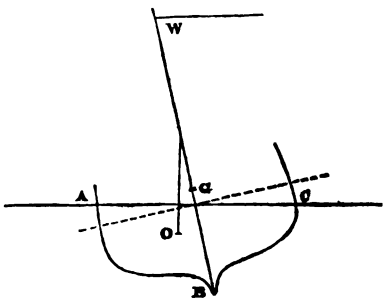
A mathematical demonstration that the axis of rotation of any body whatever, acted on by any forces whatever, must always pass through its centre of gravity, it is not my object to attempt to introduce in this paper. Those who wish to see a most complete solution of this interesting problem, may refer with advantage to Wheewell's Treatise on Dynamics. It will be sufficient for my present purpose to state the conditions of equilibrium of the forces which act on a ship in an inclined position.

It is, however, proper, previously to making this statement, to advert to a conclusion to which Captain Pearse has been led by his experiments; as he has stated on page 163, vol. 3, of the Nautical Magazine, that the resultant of the force of the water on the bottom of a ship, when she is inclined, does not pass through the centre of gravity of the part immersed. Captain

Pearse has stated on page 164, that "when, by the inclination of a ship, the contour of one side of its bottom becomes more vertical, while that of the other side becomes more horizontal, the latter sustains the greatest part of the vertical effort of the water, and this causes the direction of its centre of effort to deviate from the centre of gravity of the part immersed."

Suppose a body similar in form and equal in bulk to the immersed part of the bottom of a ship, when in an inclined position, to be of the same specific gravity as water. This body would, of course, float so that the contour of one side of its bottom would be more vertical, and that of the other side more horizontal! According to what Captain Pearse has truly and most unequivocally stated on page 166, this body can only be at rest when the centre of effort of the water is in the same vertical line as the centre of gravity of the body.

Now, as the centre of gravity of this body and its centre of gravity of displacement are identical, it is plain that, if the peculiar contour of the body causes the mean direction of the centre of effort of the water to deviate from the centre of gravity of the displacement, as according to Captain Pearse it does, then this body *cannot* rest, when the centre of effort of the water is in the same vertical line as the centre of gravity of the body. The fact is, the contour of the bottom does not cause the mean direction of the centre of effort of the water to deviate from the centre of gravity of the part immersed.



The conditions of equilibrium of a ship in an inclined position, are as follows:—Let A B C be the ship, G its centre of gravity, O its centre of gravity of displacement when inclined; AC the surface of the water. And let the inclination be produced by the force of the wind at W. One part of the force of the wind acts to impel the ship in the direction of her keel, and the remainder is employed in keeping her in the inclined position, and in driving her to leeward. And when the velocity of the ship has become uniform, that part of the force of the wind which produces the leeway, is equal to the force of the reaction of the water which opposes the leeway; and the latter force concurs with the former, to increase the angle of heeling.

The force which resists the inclination, is the vertical effort of the water passing through the centre of gravity of displacement.

The equation of equilibrium accordingly is—the vertical effort of the water, multiplied by the perpendicular distance of its mean direction, from the axis of rotation G, is equal to that part of the force of the wind which makes the ship incline, multiplied by the perpendicular distance of its mean direction from G, plus the force of the resistance of the water to leeway, multiplied by the perpendicular distance of the mean direction of the same resistance from the axis G.

One other fallacious notion advanced by Captain Pearse remains to be noticed. The position of the axis round which a ship revolves in pitching and rising, is supposed by this writer to be situated at a very considerable height above the centre of gravity of the ship. It is undoubtedly of equally great importance, we should have the most precise and certain knowledge of the position of the axis round which a ship revolves in pitching, as of that about which her rolling motion is performed.

The centre of longitudinal vibrations of a ship, as Capt. Pearse has stated in his article in the twenty-first number of the Nautical Magazine, is the longitudinal metacentre, or *point of stability*. It is not clearly explained by Captain Pearse how the longitudinal metacentre is to be found. But if, as it may be presumed, Capt. Pearse would determine the longitudinal metacentre in the same way he has the metacentre for the rolling of a ship, the longitudinal metacentre so found is not the same point as that which Bouguer would distinguish by the same name, when the angle of pitching is of finite magnitude. Captain Pearse's statement, that the arguments of those well-known writers on naval architecture, Chapman and Bouguer, tend to prove that the Captain's longitudinal metacentre is the axis of rotation, could not certainly be admitted as accurate by any one well acquainted with the writings of those authors, even if there was not so palpable a discrepancy between Captain Pearse's and Bouguer's meaning of the term metacentre. But, the circumstance of the Captain's misunderstanding the term metacentre, as used by Bouguer, renders altogether abortive the endeavour to support the assertion, that the axis of rotation of a ship is the longitudinal metacentre, by the extraordinary notion that "the eminent authorities above named" held the same opinion. Bouguer and Chapman no more entertained the idea that the point velique is the axis of rotation, than they would believe, if they were alive to read the article "on the centre of rotation" in the twenty-first number of the Nautical Magazine, that the writer of it had understood their works on naval architecture.

To satisfy any one who may have been led to hold a similar opinion with Captain Pearse, that the axis of longitudinal rotation of a ship is the longitudinal metacentre, or point of stability, or point velique, that such an opinion is utterly fallacious, it may be

sufficient to observe, that, in any revolving body whatever, the axis of rotation is the most nearly quiescent point, or line, in the body; and it either remains at rest whilst the body revolves, or it moves uniformly onward either in a straight or a curved line, and can itself have no rotation. If, therefore, the longitudinal metacentre of a ship could be the most nearly quiescent point, or axis, when the ship pitches or rises, the motions of pitching and rising would be performed like the vibrations of a heavy pendulum, so that the forward oscillations of the ship round her axis, passing through the metacentre, would produce the rising motions, and the backward oscillations the motions of pitching. These motions, however, it is scarcely necessary to mention, are not thus produced.

The comparison of the motions of a ship in rolling and pitching to the oscillations of a pendulum, in the way that Bouguer, and some other writers, have supposed these motions of a ship might be compared, has tended more, perhaps, than any thing beside, to create and foster erroneous opinions relative to the motions of a ship at sea. If those writers, instead of exercising their ingenuity in making and illustrating so fanciful a comparison, had applied themselves rather to an investigation of the phenomena which actually occur in a ship under sail, much of that darkness which has covered the minds of many nautical men, and constructors of ships, might long since have been dispelled.

The statement of the conditions of equilibrium of a ship in pitching, or when inclined longitudinally, on page 638, vol. ii., is partly correct, and partly erroneous. Captain Pearse states, "the moment of stability of a ship, which is the weight of the ship, multiplied by the horizontal distance of its centre of gravity from the vertical of the metacentre, or point of stability, is equal to the force of the wind, multiplied by the distance of its centre of effort from the metacentre, or point of stability." In the first part of this equation, it is tacitly admitted, that the axis of longitudinal rotation passes through the centre of gravity of the ship; because the force of stability is made to consist of the weight of the ship, or, which is the same thing, the vertical effort of the water on the bottom, and the perpendicular distance of the line in which the mean direction of this force acts from the centre round which it tends to produce rotation. This is perfectly correct. In the second part of the equation, it is taken for granted, that the point which Captain Pearse calls the longitudinal metacentre, is the axis about which the ship revolves, when inclined longitudinally. And thus, it is supposed, in the equation in question, that a ship has two distinct and widely-separated axes of rotation, at the same time, parallel to each other. This is impossible.

It would be easy to lengthen this paper considerably, by a further exposure of erroneous statements made by Captain Pearse.

But, having shewn the fallacy of the two principal points endeavoured to be established, I shall merely add, that, although Capt. Pearse "has had the advantage of long practical experience;" has, "during many years, often considered the subject as a seaman;" has "not imbibed the principles of the present theories from education;" and "has examined them without prejudice, and which has led to a confirmation of many opinions which were founded on observation and practical knowledge;" it does not appear that Captain Pearse's opinions respecting the position of the axis of rotation of a ship, or that of the point through which the mean vertical pressure of the water on the bottom of a ship passes, have been either well-founded, or judiciously formed.

The principal imperfection of the theory of naval architecture has been the want of a method by which the best situation of the axis of rotation might be determined with certainty and precision. The practice of those who have constructed ships according to theoretical rules, has been, first, to delineate the contour of a ship, according to their own peculiar notions respecting the best form for the bottom, and then to find, by calculation, where the axis of the body which has been formed is situated. And if the position of the axis, as found by calculation, should be included between the limits mentioned by the Swedish naval architect, Chapman, as those usually observed by constructors, the position of the axis has been supposed to be ascertained with due precision. The limits stated by Chapman, as the extreme points for the situation of the centre of gravity, are at one-fiftieth, and one-hundredth part of the length, before the middle. According to this mode of placing the centre of gravity, one ship, two hundred feet long, may have her axis of rotation only two feet before the middle point of her length, and another ship of the same dimensions might have her axis as much as four feet before the middle; and this might be the case without any deviation from the rules of the most approved theory.

It is proper to mention, that those who construct ships by merely practical methods, can have no means of determining the place of the axis of rotation, but must leave this important point to fall somewhere at hazard. And, in all probability, one forcible reason why some vessels which have been built without any reference whatever to the rules of theory, have been found equal, if not superior, to those few small vessels which, in this country, have been constructed according to the confessedly imperfect theoretical method, is, that the axis of rotation has chanced to fall more nearly in its best position in the former vessels than in the latter. As long as the best position for the axis of rotation remains undetermined, ships constructed according to theoretical rules *may* frequently be found to fail in comparison with others.

It will appear, on reflection, that the only consideration which

can enter into the question respecting the best situation for the axis of rotation, is the effect which the longitudinal position of this axis has on the motions of pitching and rising. These motions must of necessity, and it is well known they do, always operate to retard the velocity of a ship in sailing; and the more or less, in proportion as the motions are more or less violent. Reason and national interest combine to urge us to diminish, if possible, and as much as can be done, the violence of the pitching and rising motions of ships, that their velocity of sailing may be as little retarded by these unavoidable and injurious motions as possible.

In a paper inserted in the last November number of the United Service Journal, the writer shewed in what manner the pitching and rising motions of a ship may be reduced to the lowest possible degree. It is well known, that ships in general pitch more deeply than they rise; and, in many ships, the angle of pitching is about twice as great as the angle of rising. It is, however, very practicable to construct and equip a ship in such a manner, that her tendency to pitch shall be the same as her tendency to rise; so that when she is sailing, her angles of pitching and rising shall be equal to each other. And it is demonstrable, that if this were done, the pitching and rising would be reduced to a minimum; and, consequently, the retardation of the sailing caused by these motions would be reduced to a minimum.

The necessary adjustment of the form and equipment of a ship, to obtain an equal force of pitching and rising, would fix the position of the centre of gravity, or axis of rotation. A reference to the article referred to in the United Service Journal will make this observation perfectly apparent. The absurd latitude which the rules of theory permit for the situation of this all-important point, or axis, in the construction of a ship, ought accordingly, henceforth, to be discarded.

I observe, in conclusion, that the force with which one side of a ship descends in rolling is, of necessity, equal to the force with which the other side descends. And, that the contemplated modification of the mode of constructing ships consists simply in obtaining a similar equality between the forces with which the extreme ends shall descend; and, as this modification of the theoretical mode of constructing ships would entirely remove the glaring imperfection through which the theory of naval architecture has hitherto been applied with uncertainty of success in the construction of ships, it is most reasonably to be anticipated, that, if ships were to be formed in the manner supposed in the above observations, they would certainly be found to sail with increased velocity, and be remarkably easy in all their evolutions.

Table IV.

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

1 Petersburgh foot = 1·7656196 English foot.
1 English foot = 0·5663741 Petersburgh foot.

Russian or English Ft.	English Feet and Dec. parts.	Russian Feet and Dec. parts.	Russian or English Ft.	English Feet and Dec. parts.	Russian Feet and Dec. parts.	Russian or English Ft.	English Feet and Dec. parts.	Russian Feet and Dec. parts.
1	1·766	0·566	38	67·094	21·522	74	130·656	41·912
2	3·531	1·133	39	68·859	22·089	75	132·421	42·478
3	5·297	1·699	40	70·625	22·655	76	134·187	43·044
4	7·062	2·265	41	72·390	23·221	77	135·953	43·611
5	8·828	2·832	42	74·156	23·788	78	137·718	44·177
6	10·594	3·398	43	75·922	24·354	79	139·484	44·744
7	12·359	3·965	44	77·687	24·920	80	141·250	45·310
8	14·125	4·531	45	79·453	25·487	81	143·015	45·876
9	15·891	5·097	46	81·219	26·053	82	144·781	46·443
10	17·656	5·664	47	82·984	26·620	83	146·546	47·009
11	19·422	6·230	48	84·750	27·186	84	148·312	47·575
12	21·187	6·796	49	86·515	27·752	85	150·078	48·142
13	22·953	7·363	50	88·281	28·319	86	151·843	48·708
14	24·719	7·929	51	90·047	28·885	87	153·609	49·275
15	26·484	8·496	52	91·812	29·451	88	155·375	49·841
16	28·250	9·062	53	93·578	30·018	89	157·140	50·407
17	30·016	9 628	54	95·343	30·584	90	158·906	50·974
18	31·781	10·195	55	97·109	31·151	91	160·671	51·540
19	33·547	10·761	56	98·875	31·717	92	162·437	52·106
20	35·312	11·327	57	100·640	32·283	93	164·203	52·673
21	37·078	11·894	58	102·406	32·850	94	165·968	53·239
22	38·844	12·460	59	104·172	33·416	95	167·734	53·806
23	40·609	13·027	60	105·937	33·982	96	169·499	54·373
24	42·375	13·593	61	107·703	34·549	97	171·265	54·938
25	44·140	14·159	62	109·468	35·115	98	173·031	55·505
26	45·906	14·726	63	111·234	35·682	99	174·796	56·071
27	47·671	15·292	64	113·000	36·248	100	176·562	56·637
28	49·437	15·858	65	114·765	36·814	200	353·124	113·275
29	51·203	16·425	66	116·531	37·381	300	529·686	169·912
30	52·969	16·991	67	118·297	37·947	400	706·248	226·550
31	54·734	17·558	68	120·062	38·513	500	882·810	283·186
32	56·500	18·124	69	121·828	39·080	600	1059·372	339·824
33	58·265	18·690	70	123·593	39·646	700	1235·934	396·462
34	60·031	19·257	71	125·359	40·213	800	1412·496	453·099
35	61·797	19·823	72	127·125	40·779	900	1589·058	509·736
36	63·562	20·389	73	128·890	41·345	1000	1765·620	566·374
37	65·328	20·956						

VI.—On the Protection of Ships from Lightning.

By W. S. Harris, F. R. S.

(Continued from page 233, No. 26.)

No. III.

Objections to the Employment of efficient Conductors of Electricity in defending Ships from Lightning, considered.

31. The objections advanced to the use of lightning conductors, more especially on ship-board, are principally these: it is said, that by providing ships' masts with good conductors of electricity, we *invite* an electrical discharge from the atmosphere; that in virtue of a specific attraction for the matter of lightning, which it is assumed all metals possess, the explosion is drawn down thereby exclusively upon the vessel; that without the pointed conductor the vessel might escape, or the discharge not occur; that inasmuch as we can never estimate the absolute quantity of electricity which may be evolved in a thunder-storm, it is possible that the transmitting power of any conductor we can apply, may be inadequate to the purpose of defence; and that hence fatal consequences may result.

32. Such are the most important objections which have been advanced; and which I am led to hope have been fairly stated; they are undoubtedly deserving of serious attention, and it will be my endeavour, by a candid inquiry, to give them all the consideration which they appear to demand, keeping always in remembrance the beautiful aphorism of Lord Bacon, "Man, who is the servant and interpreter of nature, can act and understand no further than he has, *either* in *operation* or in *contemplation*, observed of the method and order of nature."

33. The notion that a lightning rod is a positive evil, seems to have arisen, rather out of assumptions, and facts partially considered, than from any knowledge acquired by a copious and general induction from experience. Thus, in consequence of the passage of the matter of lightning through the points of least resistance, (21) it has been observed to fall most frequently on bodies which least oppose its progress; metallic vanes, vane spindles, iron bars, knives, and pointed metallic substances generally, are therefore very frequently found in the track of the discharge. It is, indeed, solely from this circumstance, that metals have been especially considered as attractors of lightning, and calculated to draw it down upon substances in connexion with them.

34. It will be found, however, on examination, that the action of pointed, or other metallic conductors, is purely *passive;* that they merely afford an easy transmission to the matter of lightning, which is, in fact, already present, and is operating rather *on them*

in common with other bodies. So that their action is at best of a negative kind; and they can no more be said to *attract* the matter of lightning, than a water-course can be said to attract the water, which necessarily flows through it at the time of heavy rain; and as in the latter case the water is drawn down by a force not existing in the channel; so in the former, the electric fluid may be conceived to be determined to a given point by a force not existing in the metal. It would be absurd to say "that a hollow water-pipe open at its upper end, and placed perpendicularly, attracts, solicits, or invites rain from the clouds;"* or that in providing our houses with such pipes, we incur a greater risk of being inundated, because they are calculated to discharge freely all the rain which pass into them; no less absurd is it to say, that a metallic rod invites lightning, and may be productive of damage, because it is calculated to transmit the electricity which falls on its point.

35. It may still further be reasoned by analogy, that as the quantity of water transmitted, depends upon the capacity of the water-course, and the final protection it affords to surrounding objects in conveying the fluid, on an adequate extension in length; so on the other hand, the protection afforded by a lightning rod will be found to depend on *its* capacity, and on the completion of its extent between the points of action, (21.) If the channel be not present, the water may flow in an irregular and uncertain manner; or if its continuity be frequently interrupted, or narrowed in any portion, damage may be supposed to occur at the contracted points.

36. Such is, in fact, the way in which substances of the conducting class above-mentioned, (15,) may be conceived to operate in transmitting discharges of lightning; indeed, if we reflect on the electrical conditions of a thunder-storm, (19,) we may immediately perceive, that it consists in an intense action between a portion of the earth's surface and the contiguous atmosphere; it can in no way be considered as an exclusive operation between a ship and the clouds, or between the latter and any given mass of metal in the vessel. The ship is assailed by lightning only in consequence of its forming a point in one of the great electrified surfaces, (19;) even its elevated parts, as compared with the extent and distance of the charged clouds, are inconsiderable, and it must never be forgotten as an *important* feature in this discussion, *that whenever we set up any artificial elevation on the earth's surface, we do in fact set up a conductor of electricity*, (15,) *upon which discharges of lightning will sometimes fall, and no human power can prevent it;* hence if metallic bodies be present, and placed in prominent situations, these will be first assailed; if not, then the electric matter will fall on bodies next in conducting power, and so on: *the mast of a ship from its position alone, therefore, must*

* The Earl of Stanhope's Electricity.

necessarily determine a discharge of lightning upon the hull of the vessel.

37. An appeal to *experience*, from which we should never depart, in discussions of this kind, will very completely confirm the truth of what has been just advanced, and clearly shew—that ships are equally liable to be struck by lightning, whether equipped with lightning-rods or not, or whether their masts terminate in metallic points or not; hence, it cannot be fairly inferred of metallic bodies, that they possess a *positive* attractive power for the matter of lightning. (31.)

(v) An interesting and curious illustration is given in the Memoirs of the Count de Forbin, and printed in the forty-eighth volume of the Royal Society's Transactions. "In the night," says the author, "it was extremely dark, and it thundered and lightened fearfully: as we were threatened with the ship being torn to pieces, I ordered the sails to be taken in; we saw upon different parts of the ship above thirty St. Helmo's fires; amongst the rest, there was one upon the top of the vane of the mainmast, more than a foot and a half in height: I ordered one of the sailors to take it down. When this man was on the top, he heard this fire; its noise resembled that of fired wet gunpowder. I ordered him to lower the vane, and come down; but scarcely had he taken the vane from its place, *when the fire fixed itself upon the top of the mainmast, from which it was impossible to remove it.*" From this case it is clear, as just stated (36), that if metallic bodies be present, they will be first assailed; if not, the electric fluid will fall on the next best conductors, &c. &c. (36)

(w) His Majesty's ship Milford was struck by lightning in Hamoaze, Plymouth, in January, 1814, and the temporary mast fixed in her greatly damaged. This ship *had not her lightning-conductors up at the time;* they had been incautiously removed on the previous day, in consequence of some contemplated repairs to the mast. Now, there were a great many ships in the ordinary, some of them *close to the Milford, and all of them having lightning-conductors, terminating in prominent metallic points:* there was also a powder-magazine on the shore, not very distant, likewise furnished with this means of defence—neither of these were struck by the lightning. In fact, the Milford, the only ship in the vicinity of the discharge, not armed with lightning-rods, was the only one damaged.

(x) His Majesty's ship Norge, at anchor in Port Royal Harbour, Jamaica, in June, 1813, was severely damaged by lightning, so that she was completely disabled in her masts and rigging. The Norge, when struck, had not her lightning-conductors up. Several ships *with* conductors were near, but none of them were damaged by the lightning, *except a merchant-vessel, which, like the Norge, had not any protection.** Amongst the other ships, was his Ma-

* Captain Woldridge, R.N.

jesty's ship Warrior, of seventy-four guns, which ship was lying *close* to the Norge. The electric fluid was observed, as appears by an interesting account given by Admiral Rodd to Sir Byam Martin, "to absolutely stream down the conductor into the sea."*

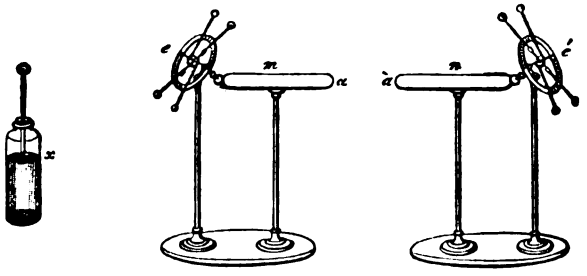
(y) To the instance already given of H. M. ship Etna having lightning conductors, and struck by lightning in the Corfu channel, without damage, (s) (22) may be added, the circumstance of H. M. ships Madagascar and Mosqueto, which were near the Etna, and had not *lightning conductors* in place; both these vessels were repeatedly *struck* by the *lightning, and considerably damaged.*

(z) The Heckingham Poor House, damaged by lightning in the year 1781, was struck at a point the *furthest* removed from the conductors with which the building was furnished;† and a similar instance occurred in a long building at Tenterden, which was struck by lightning at one end, a conductor having been applied to the other; that is to say, the electric fluid also fell upon a point the *furthest removed* from the assumed point of attraction.

(*a*) We have already alluded to the case of the packet ship New York (22) (t) (u), which also furnishes a remarkable instance of lightning having assailed a ship, both *with* and *without* a lightning chain fixed to the rigging.

38. In addition to the above illustrations, from experience, of the operation of lightning on ships, and which may be considered as so many experiments on the great scale, it may not be altogether useless to exemplify, artificially, the influence of electricity on conducting bodies, and its disposition to pass equally upon them, although differing considerably in conducting power.

Exp. 1. Communicate an electric charge to the insulated metallic cylinder *m*, by touching it with the charged ball of the small jar *x*. Oppose one extremity *a* of this cylinder to the extremity *à* of a similar cylinder *n*; the distance *a à* being carefully observed.



* Letter from Admiral Rodd to Sir Byam Martin.
† Transactions of the Royal Society.

Let each of the cylinders *m n* have an electroscope* *e*,*è* attached to their distant extremities, as shewn in the figure; then the comparative charge may be estimated by the divergence of *e*, and the influence of *m* upon *n*, by the divergence of *è*. When the distance *a à* is such as to bring the conductor *n* within the influence of *m*, observe the degree of divergence of the electroscope *è*; which done, remove the metallic cylinder *n*, and substitute for it a cylinder of wood, of the same superficial dimensions, when it will be immediately perceived that the divergence of *è*, connected with the cylinder of wood, is precisely the same as when connected with the metal.

Exp. 2. Withdraw the cylinder *n*, and charge *m* as before; when charged, observe the degree of divergence of the electroscope *e*. In this state, let the metallic cylinder *n*, and electroscope *è*, be caused to approach *m*, so as to gradually decrease the distance *a à* between their opposed extremities. The indication of electroscope *e*, will gradually become less; whilst the electroscope *è* will acquire an increasing divergence. Let the influence of the neutral conductor *n* upon the charged conductor *m* be carefully observed at various distances *a à*, and then substitute for *n* the cylinder of wood above mentioned. It will be then found that the same degree of influence obtains in each case, whether the body *n* be wood or metal.

39. The rapidity with which this action is propagated through imperfect conducting bodies, such as wood, may be observed, by placing one of the electroscopes, in connexion with a slight spar of wood, of thirty or forty feet in length, suspended by silk lines. If the charged jar be, under favourable circumstances, brought within a short distance of one end of it, the electroscope will immediately diverge at the other, although no actual communication of electricity has taken place, as may be seen, by again withdrawing the jar, in which case the electroscope will close.

40. It may be fairly inferred, from the above experiments, as already stated (21), that, previously to the exertion of any attractive force, between a charged and neutral body, the latter is first rendered attractable, and then attracted; the observed attraction, therefore, is the result of the law above mentioned (21); viz. the disposition of the electric matter to a state of proportionate distribution, until an equilibrium of force ensues in all directions; and that, in effecting this, it *marks* out, as it were, *in advance*, by a wonderful influence, operating at a distance, the course it is about to follow (21).

41. Since, then, the conducting power of bodies differs only in degree; and that the force to which they become subject, depends on a great natural agency, quite independent of them, we may

* For a particular description of the electroscope, see the new edition of the Encyclopedia Brittanica, Part XLVII. p. 657, art. Electricity.

expect to find all bodies liable to be assailed by lightning, and the effects the most felt, when the conducting power is imperfect; it is, in fact, from the slow transmission of the electric matter when it falls on them, that damage to the less perfect conductors so frequently ensues, the electric diffusion not being accomplished with sufficient rapidity. It is quite in accordance, therefore, with the above facts, to find cases on record, of trees and rocks rent asunder by lightning, as also of ships being struck and damaged, when iron spindles, and the like, have not been fixed in their masts;* as also, to find animals, even in a plain and open country, struck down and killed, when the electric fluid falls on the surface of the earth.†

42. The passive attraction of which we have been speaking, and which seems common to all conducting bodies, must be therefore carefully distinguished from the hypothetical attraction above mentioned (31), and by which metallic substances are assumed to possess a specific action on the power of lightning—an assumption quite disproved by the facts just stated (37) (38).

(To be continued.)

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

MATHEMATICAL AND ASTRONOMICAL TABLES, for the use of Students in Mathematics, Practical Astronomers, Surveyors, Engineers, and Navigators. Second Edition. By W. Galbraith, M.A., &c. Oliver, Edinburgh. Simpkin & Marshall, and Norie, London. 1834.

Mr. Galbraith's work is not new to us. We are much pleased to see it in a second edition, and hope shortly to find it in a third and a fourth. It has always been matter of surprise to us, how Mr. Galbraith has contrived to get so much useful matter, as he has done, into the small space of about three hundred pages, sufficient to meet the wants of the classes he enumerates in his title. And when, in addition to this, we find all the tables *requisite* for its application comprised in one hundred and twenty pages more, these are sterling recommendations. We need not touch any of the multitude of subjects in this work, but may briefly assure those who are in search of a work of its kind, that they will find their wants amply supplied in Mr. Galbraith's valuable book. It is one that we should certainly place in the hands of a naval *elève*. In his next edition, we should like to see a page or two devoted to the construction of charts, and charting surveys from the plain scale.

* The learned French philosopher, Coulombe, found, that an equal division of electricity eventually takes place between two bodies of equal surface and similar form, whatever may be the kind of matter of which they consist.

† Transactions of the Royal Society, vol. 49 and 69, Damage done to the Sheer Hulk at Plymouth, and on board the Atlas East Indiaman.

EMIGRATION.—Practical Advice to Emigrants on all points connected with their comfort and economy, from making choice of a ship, to settling and cropping a farm. London. Effingham Wilson. 1834.

To emigrants inexperienced in the new life they are about to enter, and unacquainted with the new scenes in which they are to take a part, what can be more desirable than good wholesome advice, derived from practical experience? Assuredly, there is no class of persons who, in general, stand more in need of information, and to be told what to do, than those who rush headlong from their native soil to seek their fortunes in a strange and distant land. Their new home is ever uppermost in their thoughts, while the passage, the provision for a sea-voyage, how they are ultimately to gain their destination, or even what they should first do when there, are points seldom thought of, or too easily dismissed, from a want of the knowledge of their importance. That the work before us supplies all this information, we have abundant proof, for we find it in a second edition before we have had time to notice the first. After this, we need scarcely assure those who have determined on settling in Canada, that they will find the work an invaluable companion to them, a monitor which they may consult with advantage. It is the production of a gentleman well acquainted with the numerous subjects it embraces; and he has introduced a light description of scenery in it, here and there, from which it becomes interesting as well as useful.

REPORT to the Chamber of Commerce of Greenock on the Admeasurement of Shipping for Tonnage. By Mr. Robert Steele, Shipbuilder. Greenock. 1834.

REMARKS ON MR. ROBERT STEELE'S REPORT to the Chamber of Commerce of Greenock on the Bill now before Parliament for the Measurement of Tonnage, by a Member of the late Committee. Murray, Albemarle Street. 1834.

We have linked these two pamphlets together, not in bonds of love and union, but because they bear a kind of ratio to each other, something like that of question and answer. The bill for the measurement of tonnage now in parliament, founded on the report of the late Committee, has been treated (it appears) rather cavalierly by Mr. Robert Steele in the above pamphlet. As the objections of this gentleman have been so completely answered by the member of the committee, we shall abstain from comment, as it would lead us far beyond our limits. We may, however, observe, that the objections of Mr. Steele appear to be of a very formidable kind, inasmuch as they imply that the rule proposed by the committee has the same mischievous tendency to narrow the breadths of vessels, that the old rule had. Mr. Steele also considers the committee altogether in error as to the divisor adopted by them for converting the capacity of a vessel into her tonnage for register. Such allegations as these, if they could be maintained, would tend to prove that the labours of the late committee were little better than useless, that the subject should be either referred at once to another more competent, or suffered to stand over for another session, in the hope that some rule fit for the purpose may be proposed.

As Mr. Steele's chief objections against the proposed rule are met in order

by the writer of the Remarks, we will place the objection and the answer before the reader; but with regard to the rule proposed by Mr. Steele as a substitute, we must refer him to the "Report," as Mr. S. has given us no means of comparing its particular qualities with those of the proposed rule of the committee. We will, however, state such properties of the proposed rule as the discussion has brought to light, because these properties are tests not only of the committee's rule, but of those which are advanced in preference to it.

Mr. Steele is of opinion, that the upper breadths should be all taken at the same depth from the deck, namely, at $\frac{1}{10}$ of the depth, instead of taking the midship one lower than the rest. To this the writer of the remarks very justly replies, that Mr. S. has brought forward no argument to prove that *his* results would be more correct than those of the committee's rule. In vindicating the method adopted in the committee's rule, the "Member" observes, that the upper midship breadth being taken lower down than the others, leaves it open to the builder to widen the upper part of the vessel, thereby increasing the stability; whereas, if this breadth were taken higher, it would induce the builder to cause the side to fall in before it came to the point for measurement, thereby tending to diminish the stability in proportion as the vessel was loaded more deeply, a consideration of high importance.

The rule proposed directs (see No. 25, Naut. Mag., p. 149) that the upper midship breadth shall be multiplied by *three* in the calculation of the tonnage, and the lower one by only *one*. On this, Mr. Steele founds the very natural objection, that the upper breadth will be contracted and the lower one increased, producing a *pot*-like form, in order to evade the rule; and he introduces a table, to shew the increase on the register tonnage of the Dunira, one of the largest of the East Indiamen, by augmenting certain dimensions by 1 foot, by which it certainly appears that this increase to the midship breadth would raise the new register tonnage by 14 tons, while the same increase forward would raise it only 4 tons. This objection the writer of the Remarks has met in two ways, either of which he considers as decisive of the point at issue; first, the committee's rule gives the capacity within a very small fraction of the whole in vessels of every form, as appears from a list of vessels inserted, which shews that evasion being confined within very narrow limits, there is proportionally little temptation to depart from the most approved forms. Secondly, he gives as a rough estimate of the *real* increase of the bulk of this ship by the proposed increase of one foot in the midship breadth, about 18 tons, from which he infers, that instead of narrowing the midship breadth, the builder will, on the contrary, find it his interest to increase it. This inference he also corroborates by throwing the contrary operation of the old (present) rule, which would shew in this case an increase of no less than 76 tons on the register, instead of the real increase of 18 tens.

Mr. Steele then proceeds to offer grounds for believing that the divisor adopted by the committee is too small, and, in consequence, their rule would shew a great increase in the whole register tonnage of the united kingdom, the effect of which would be to discourage the building of new ships. This objection Mr. S. founds on a comparison between the old and new register tonnage of certain vessels measured in the Clyde by himself, and of the vessels referred to by the committee. (See Appendix to their Report.) This the writer of the Remarks answers, first, by shewing that the cases adduced by Mr. S. are not, without further investigation, capable of leading to any direct influence either way; and, secondly, by exhibiting in detail the calculations on which the divisor was established, which tend to

shew that the divisor is, on the contrary, already rather over-rated, and that it could not be materially corrected without a very extensive measurement of shipping.

In conclusion, we strongly recommend to such of our readers as take an interest in this much disputed question, to peruse both these pamphlets; the latter of which contains many points not adverted to by the proposers of rules, and which must necessarily enter into a rule of any pretensions to general approbation. Indeed, from the crude, and even absurd methods proposed, from the absence of reasoning in support of them, and the opposite views of the proposers themselves, it is apparent that the subject is generally very ill understood.

RECOLLECTIONS OF A NAVAL LIFE, by Capt. James Scott, R.N. 3 vols. 8vo. Bentley, London. 1834.

In our last number we expressed a favourable opinion of this work, and we shall now transfer some of Captain Scott's recollections to our own pages. The following is an amusing sketch:—

A scheme was soon determined upon to outwit these dragons of the revenue, one of whom being constantly on deck, no trunk, portmanteau, clothes-bag, or parcel of any description, could leave the ship without being submitted to their rigorous inspection. It was accordingly decided between the gun-room officers and the reefers, that the latter should invite the two worthies to supper. Mr. Simpkins and Mr. Tompkins felt extremely flattered by the polite attentions of the gentlemen, and would be most happy to accept it, if, as one of them must remain on deck, we would allow them to relieve each other at our hospitable table. This was foreseen and agreed to, but at the same time it was inwardly determined that the caution should not in the end avail them.

At the appointed hour a reeking-hot supper smoked upon the board. Mr. Tompkins having done ample credit to our fare, and moistened his clay with a long draught of hot punch, ascended the deck, to enable his matey to come in for a share of the good things that had already warmed him into a high state of self-complacency. Down came Mr. Simpkins: the attention of his hosts was so very considerate, quite flattering—and in a short time, with the assistance of egg punch, he was one of the happiest of the happy—healths were drunk, toasts given, and

Swift the laughing jocund sound,
At the reefers' board went ludicrously round.

"But, Mr. Simpkins, do you not think your friend could come down for half an hour? it is a terrible cold night: besides, he has not tasted this last brewing."

"Why, really, I don't know, but I think he might for a few minutes, without the necessity of my going up."

"I quite agree with you; in that case I'll step up, and ask him down." Up mounted one of the Middies: the night was pitchy dark and freezing—

"Is that you, Mr. Tompkins? it is so dark I cannot see you; terribly cold, —don't you find it so?"

"Why, it is rather biting or so."

"I came up to ask you to step down and take a glass of hot egg-punch, just to keep the cold out."

"You are very good, Sir, I am sure, but it's my watch, and so you see I must not leave the deck."

"Your friend desired me to tell you, that it is of no consequence for a few minutes. Besides, what can you have to look after, such a night as this? the boats are all hoisted up, the watch is set, therefore come along."

"Why yes, that is all very true; but you see, our orders are very pertikler."

"Oh, nonsense! who is there to tell whether you are on deck or not?"

"Well, Sir, I am sure I am very much obliged to you—I think I will just step down for a minute or two."

"Well, come, that is kind. Quarter-master, let Mr. Tompkins know if anything is moving."

"Ay, ay, Sir," replied the weather-beaten tar.

"Thank you, Sir,—and, Quarter-master," (whispered Mr. Tompkins,) "if any boat comes alongside also, if you please—"

"Ay, ay, never fear."

Down dived the Mid and his companion into the snug warm berth, where good humour and jollity reigned paramount.

On the re-entrance of Mr. Tompkins, he was saluted by a burst of welcome from all sides. "A tumbler there, boy, for the gentleman. Sit down, sit down, my good Sir.—Now this is what I style friendly."

"Thank you, thank you very kindly for me, young gentlemen, but I positively cannot stay."

"Pooh, pooh! sit down, and never quarrel with good liquor.—

'What have we with time to do?
Sons of care—'twas made for you.'

Now give me your opinion of this bowl; it has been concocted *secundum artem*." Mr. Tompkins drank off his tumbler, and declared that nothing could be better—it was excellent.

"Now, my lads, fill a bumper—Mr. Tompkins, your health. A bumper to Mr. Tompkins re-echoed from all hands: the toast was drunk, whilst the subject of it appeared absorbed in contemplation of the unexpected honour thus shown towards him.

"Upon my word, gentlemen, you are very good; I am sure I am very much obliged to you, I am indeed; if I can be of any service to you at any time, I am sure I shall be very happy. Allow me to have the honour to drink all your very good healths"—And another bumper found its way under his jacket, which appeared to warm his inside so thoroughly, that he fancied he might as well take off his greygo while he stopped. A song was called for by Mr. Simpkins from his friend, and this being followed with another round of punch, the business in hand was in a fair train of being speedily clenched. But our guests had evidently brought up for the night, and it was our part to see that they were so securely moored by the head, as to place the possibility of their starting for the next six hours out of the question. Progress was reported accordingly to the gun-room.

The exhilarated Custom-house officers had scaled the third heavens, and their admiration and friendly feeling towards their hosts waxed warmer and warmer, as the inspiring draughts performed their appointed work in the pericraniums of the baffled foxes;—and at the precise time both of them were singing with rapturous glee—

"While *you*—you———"

(making a full pause, looking round, and pointing to each individual)—

———"lads of the ocean
Shall tell the proud elf,
He may go to the Devil and shake himself."—

the barge, which had been moored astern, was quietly hauled up under the counter, and was receiving from out of the gun-room ports the whole cargo of presents on board; and before midnight they were safely housed out of reach of the tenacious gripe of our jolly companions. Our object having been accomplished, we were greatly relieved by the appearance of the Master-at-arms, who put an end to the farce, by announcing the commanding officer's orders, that the lights should be extinguished. Our guests had by this time plunged deep into Lethe's stream deck-duty, customs, and excise, and were conveyed to their roosting-places, in which they soundly slept till the hammocks were piped up at seven bells, and roused them into a full and biting consciousness of the carouse of the preceding evening having subjected them to the censure of their superiors. The truth soon flashed in vivid colours upon their puddled brains, and their crest-fallen side-glances and mutual recriminations, delivered in *sotto voce*, added fresh fuel to the merriment and triumph of the reefers over the knowing and iron-hearted guardians of his Majesty's Customs.

The Pompée, in which Captain Scott served as midshipman, was employed against Martinique, and the following amusing story is told of an engineer officer, who was employed in the general service of superintending the erection of the batteries which reduced Port Royal, after many days' hard fighting:—

The admiration of the blue-jackets was greatly excited by the cool conduct of Captain Charles S—th of the Engineers, and the contempt of danger he at all times displayed. This officer was appointed to superintend the construction of the batteries to which the seamen were attached, and to direct their labours: we could not but admire his imperturbable equanimity. I felt highly amused at watching him one day eating his dinner. Descending from the parapet, where he had been exposed all the morning to a hot fire, he quietly seated himself upon the ground a little to the right of the battery, and, placing the plate upon his knees, began a vigorous attack upon the savoury viands. The second mouthful was on its way when a twenty-four pound shot grazed so close to him that it scattered the earth over himself and his dinner. The plate being cleared of this unwelcome condiment, he again set-to, in no way ruffled in temper or disposed to balk his appetite. A second ball played him the same malicious trick, when he got up and removed himself, his dinner, and his three bottles of porter, behind the parapet, and, once more settling his affairs, he exclaimed "Now fire away, and be d—d to you!" Five minutes had perhaps elapsed, when, as he was quaffing off a draught of porter, a shell fell in his rear, and, exploding, covered him with dirt and buried the remains of his luckless dinner. I think I see him now, rising and shaking the rubbish from his shoulders, his patience at length exhausted by the loss of his repast, and in irritated accents apostrophizing the inconsiderate Frenchmen with, "D—n your eyes, master Johnny, can't you let me have my dinner in peace?"

But we must now turn to graver matter. The Pompée still lay at Martinique, and the affair of the capture of the Carnation became the subject of a court-martial, which is related in the following pathetic narrative:—

Before our departure, a Court-martial was held on board the Pompée on the officers and men of his Majesty's late brig the Carnation, which had been captured by a French sloop of war, under circumstances extremely galling to

the pride of the British navy. It was an event which excited great interest. The Carnation was one of the finest of our eighteen-gun brigs, but she was manned by a worthless crew. A fatality appeared to hang over her when she fell in with the French brig; for the first broadside killed her Commander, Captain Charles Mars Gregory, and shortly afterwards the first and second lieutenants were severely wounded: the latter, James Fitzmaurice, in a gallant attempt to lead on the Carnation's men to board the enemy. The Master was mortally wounded; and the command of the vessel devolved upon the boatswain, who, observing the Frenchman waver, called on the men to board the enemy's vessel. At this critical moment the sergeant of marines turned recreant and fled below, and was followed in his dastardly retreat by the majority of the survivors. The French Captain was also killed, and his crew had in like manner started from their guns. Thus were the two vessels lying alongside of each other, with only a few brave spirits remaining on either deck, when the enemy's second in command, astonished at the cessation of his adversary's fire, peeped over the bulwarks, and, discovering the desertion of her decks, succeeded in rallying his people, and boarded on the forecastle of the Carnation, which was gallantly but ineffectually contested by the boatswain and two or three of his men. In a few minutes she became a prize to the Frenchman, and was safely conducted into Cul-de-sac Marin at Martinique, where she was destroyed on our making good our landing. The surviving officers and crew had been received in exchange on board the Pompée before the arrival of the expedition, and among them was the sergeant of marines.

The Court-martial would have been summoned immediately, but for the operations commenced for the reduction of the island. As soon as this event took place, the order for its assembling was given. By some oversight, or, which is more likely, a desire on the part of the first lieutenant of the Pompée to give the unhappy sergeant a chance of averting the destiny that hung over him, he sent him on shore as one of the party to work at the batteries. Had the sergeant taken advantage of this opportunity, he would probably have escaped the ignominious death that ended his career; but here again he turned tail, and was remanded on board as a prisoner.

The court rigidly examined into every particular, and, after a patient investigation of all the facts, honourably acquitted the officers, it being proved that the nature of their wounds was such as to preclude the possibility of their taking any farther part in the action; but the unhappy sergeant was condemned to be hung, and thirty-two of his cowardly followers to run him up to the yard-arm, and to be afterwards transported for fourteen years to Botany Bay.

From the conclusive evidence that was produced, the fate of the poor wretch was manifest. The stillness of the tomb reigned throughout the court as the Judge Advocate read the sentence. The start of horror which seized the doomed man as his death-knell rang on his ear, was succeeded by a calm resigned deportment which astonished the audience; and as he left the court he respectfully bowed to his judges, without one pleading look for mercy.

There is something so fearfully awful, so indescribably overwhelming in the condemnation of a fellow-creature to death, that, however deeply he may have sinned against a particular code of laws enacted for the well-being of the country, and though he may be pronounced deserving of the fate that consigns him to the hands of the executioner, yet we tremble, and an involuntary thrill of horror creeps through our frames, as we intently fix our eyes upon the living breathing form before us, sentenced to die by the decree of his

fellow men,—to perish in the vigour of manhood,—to expiate with the breath of life (God's own and precious gift,) an offence originating too often, it is to be feared, in some physical derangement of constitution, or proceeding from that mysterious influence which at times attacks and prostrates the energies of man,—mocking his free agency, and proclaiming his degeneracy.

Whence springs the wild anomalous feeling that prompts us to look with enthusiastic ardour on the slaughter of the battle-field? to deal and receive the blow that may dissolve the mystic union of the incorruptible soul with the corruptible body? our bosoms heaving with swelling pride, strangers to remorseful pangs or pity's throb. Await awhile! the battle is over, and a solitary being is doomed to die:—woman's softness steals over our senses, an indefinable rush of harrowing sensations crowd upon us, reminding us that we are men—inheritors of frail erring mortality!

The sentence was confirmed by the Commander-in-chief, and in a few fleeting hours the execution was to take place on board the ship of the second in command. The fatal morning was ushered in by the melancholy and necessary preparations: they were witnessed by our crew with settled gloom: the temporary stage erected over the cat-head was ready, the rope rove at the fore yard-arm was stopped into the bunt of the yard. The signal gun was fired from the Admiral's ship for the boats of the fleet to attend punishment, and repeated by the Pompée. The unhappy man was engaged with the chaplain in deep prayer, as the report of the gun struck upon his ear: it passed unheeded, so intently, so fervently were his thoughts fixed upon eternity—

> "That undiscover'd bourne,
> From whence no traveller returns."

From the period of his condemnation his conduct was edifying and devout: he expected no mercy,—he sued for none. To have judged him by his behaviour after sentence, it would have been difficult to believe that he could have ever failed in courage or fortitude. The boats assembled around, marines were stationed in the bows and stern-sheets, the hands were turned up, the rigging of the different ships of the squadron filled with their respective crews dressed in their best, and uncovered. All was ready, and the sergeant walked from the cabin on to the quarter-deck, attended by the clergyman. An awful stillness pervaded the ship; the sentence of the court, and the order for the execution, were read. His demeanour was so correct, so firm, and yet so submissively resigned, that the feelings of the bystanders were strongly, painfully excited in his favour: the fault for which he was about to suffer was forgotten in the admiration of the Christian fortitude with which he encountered his fate. Before his arms were pinioned, he requested to address the ship's company: he spoke to them in an impressive and collected manner; he acknowledged the justice of his sentence; called upon all those who were about to witness his ignominious death to remember they owed their lives to the service of their country; that by having yielded to unmanly fears he had led others astray; and that he felt he had fairly forfeited his life to the offended laws of his country; adding, that he hoped his fate would be considered a sufficient atonement for his offence. The address was delivered in a tone of deep humility, and he concluded by returning thanks for the kindness he had received. The silent tears might be seen coursing each other down the furrowed and bronzed cheek of many a hardy veteran. The scene became overpoweringly distressing as the signal was given to move forward to the scaffold. As he passed the main rigging, a suppressed groan, and "God bless you!" might be plainly heard to issue from the overcharged hearts of the crew. On the gangway the clergyman, taking the lead, commenced

in a deep sonorous voice the service for the dead over a warm, animated body—

"In the midst of life we are in death."

I have often heard that beautiful prayer, as the cold inanimate forms of my shipmates and friends have been plunged into the deep, but never did it make so forcible an impression upon me as on that morning; my tears were not to be repressed. Arrived on the forecastle, he again thanked the clergyman, and with a resolute step mounted the scaffold. He continued absorbed in prayer until the cap was drawn over his eyes. In a few seconds he dropped the handkerchief; the gun exploded under his feet, and in the smoke of the discharge his luckless and condemned shipmates ran him up to the yard-arm. Death must have been instantaneous, for the body never moved. It was an awful, heart-rending ceremony, such as might shake a man with iron nerves.

We quite agree with Captain Scott in his remarks on the mode of punishment by death in the navy. How different with our brethren of the other profession? In the army, a volley of musketry settles the business; and, probably, if yard-arms and ropes were not so plentiful and convenient on board ship, the unhappy delinquents of the naval profession would not be hanged, as Captain Scott says, like "the hardened felon of a hundred crimes." If a sailor be condemned to death by martial-law, that death should at least be inflicted by martial weapons. But enough of this; and we will conclude our extracts for the present with the following; premising, that Captain Scott having returned to England, and left the Pompée, is present at the siege of Flushing. He thus relates a visit to that celebrated place after the bombardment:—

I was one of the very few officers who obtained an entrance into the town the first day of the surrender. The principal battery opposed to our ships might not be inaptly compared to a slaughter-house; I remarked one poor devil in a sentry-box with the upper part of his head shot away; a ball had gone through the box, evidently fired from the sailors' battery commanded by Captain Richardson, but it must have been turned from its destructive course by coming in contact with some other object, which gave it the oblique direction that proved fatal to the sentry. The spot appeared completely sheltered from our shot.

I entered into conversation with an old veteran French sergeant, who, being proud of a little smattering of English, conversed in our native tongue. He had been quartered at the gun immediately adjoining the tower which caught fire during the contest. On describing the effect of our fire, which he considered as impossible to stand against, he apologised for the batteries being silenced, by the following emphatic speech:—"Me fire one gun—two gun—G—*d*—*n* English ship fire fifty hondred."

The upper parts of the houses situated at the back of the batteries exposed to our fire, were literally knocked to pieces. The devastation presented throughout the town was terrible and appalling. Numbers of the inhabitants perished from taking shelter in the cellars of their houses, and several melancholy instances were discovered of the annihilation of whole families; the shells having penetrated into their retreats, and exploding, buried all those in the ruins who had escaped the effects of the splinters.

There is no scene so deeply distressing to a humane and contemplative mind as that which meets our view immediately after the bombardment of a town. The mischief done to the garrison is sufficiently disastrous; but when a frightful majority of the sufferers are non-combatants, women, children, we in vain essay to stifle the harrowing images that haunt our imagination—of streams of blood and tears of anguish—of the despair, agony, and suffering, that by turns assailed the throbbing breasts of the slaughtered victims around us—of mothers mourning over the bleeding bodies of their little ones—fathers cursing their destroyers—terrified children clinging to dying parents—maddened parents refusing to be comforted—the wise and the virtuous, the wicked and the base, the beautiful and the brave, all engulphed in one common mass of ruin, carnage, and desolation; the homes of childhood, manhood, age, consuming; the rushing onward of the conquerors, flushed with victory, panting for revenge; the cry for mercy; the patriot's lament; the infant's wail! But, amidst the cannon's roar, the deafening shouts of triumph, and far above the shriek of mortal agony,

> The liberated soul ascends
> With rapid flight, spurning
> The shackles of destroying man!

Oh, England! fair, beautiful, and beloved country! "land of my sires," my devotion, my affection; thy peaceful bosom hath not been lacerated by these sores; thy towns have not been bombarded, thy dwellings burnt, thy altars destroyed, thy garners pillaged, thy hearths polluted, or thy daughters insulted. Blood hath not streamed at thy thresholds; thy verdant valleys have not resounded to the din of war, or to the groans of the wounded and the dying; thy hills have not re-echoed to the victor's blast, or thy rivers rocked a victor's fleet; thy cheek hath not blushed with shame, or thy bosom heaved indignant sobs, at the advance of a licentious soldiery.

Englishmen! fair and generous countrywomen! all these evils have your fellow-creatures suffered and endured; regret not, then, that your purse-strings have been opened to avert the destruction of your household gods. Look around you; read, travel, and learn to value the blessings ye enjoy; and if ye now, in the time of peace, feel an awkward pressure, the inevitable consequence of the past, recollect that ye suffered not in the time of war; and, that, if your luxuries are now abridged, and your pockets invaded, ye have escaped unharmed in person, unscathed in honour; that ye are happy, rich, and free. Senators, lords of splendid domains, squires of high and low degree; ye that revel in affluence, and ye that dwell in pining discontent; forget not the men who periled life, liberty, and limb for you; who struggled, fought, died, for you. Begrudge not the pittance allotted to the widows of the slain and the dead, or the necessary expenditure for the support of the survivors; suffer not the sordid harangues of ambitious men to subdue the generous dictates of British hearts; let not your active defenders live in poverty, and die in misery. The storm is past, the danger over, but a time may come when brave and indignant men, proclaimed, as they now are, a burthen to the state, may demur to spill their heart's blood, and bequeath their families to the equivocal justice of an ungrateful country!

It is to be hoped that Captain Scott's fears may not be realized; but there is enough for contemplation in this feeling address. We have not done with these volumes, and shall find another opportunity of returning to them. Considering the "Recollections" of Captain Scott as sterling historical matter, they would have been still more valuable had he given us dates.

A VOYAGE ROUND THE WORLD, including Travels in Africa, Asia, Australia, America, &c., from 1827 to 1832. By J. HOLMAN, R.N. F.R.S. vol. I. Smith & Elder, Cornhill.

For the present we can do little more than briefly notice this work as a literary curiosity. It is the first of a series of four volumes, and the production of a blind man! There appears, however, ample in it, both for the amusement and information of the reader; it is in the form of a journal, and, in the perusal, one insensibly loses all recollection of the physical disability of the writer, to whom all is

"Total eclipse, nor sun, nor moon,
All dark amidst the blaze of noon."

In another number, we shall find room for some passages from it. It is illustrated with some well-executed drawings from the pencil of Haghe, and if we considered the good taste displayed in getting it up as that of Mr. Holman, instead of his friend, he would not regret it.

NEW CHARTS.

ANEGADA ISLAND AND REEF. By Mr. R. H. Schomburgh, F.R.G.S. 1832. Size, about eighteen by sixteen inches. Admiralty.

This is a valuable chart, inasmuch as it shews the channel between this very dangerous nest of shoals, and the Virgin Islands. It is on the scale of an inch to a mile, which allows the various shoals with which it abounds to be easily distinguished. It should be in the possession of every West India trader.

THE BATTLE OF TRAFALGAR. By *W. H. Huggins*, Marine Painter to His Majesty.—We have taken an opportunity of inspecting the two paintings at Exeter Hall in the Strand, representing this last of Nelson's victories, and the disastrous gale which followed it. They are painted for the King at his Majesty's special desire, and, as productions of art, they bear ample testimony to the talent and judgment of their author. The conception of the subject, and the grouping of the various ships, in both are decidedly good; and it is evident that Mr. Huggins has paid great attention to the conditions he was required to portray. In the "Engagement" view, the swell is well observed, and the Victory very properly forms the most beautifully prominent object; she is seen under a bow-view, the most favourable one for a ship; and the heel to port (we speak technically) is happily introduced, leaving the beholder to speculate whether it proceeds from the swell in the water, or the destructive fire she is pouring into her antagonist, the Redoubtable.

The view "after the action" will be still more admired. Mr. Huggins must surely have been there himself, to have represented so admirably as he has done, the disastrous effects of bad weather on the disabled ships. The floating wreck, the misty confusion of the sea, the sinking ships, and the boats saving all they can; the different vessels bearing away under small sails on jury-masts, and among them the Victory occupying a prominent position;—all this is admirably portrayed, and, with the stately condition in which they are

represented in the action, speaks volumes for the artist and stamps him as a master of no ordinary talents. Marine painting is a difficult art, but Mr. Huggins has taken it up most successfully and deserves every encouragement. The size of the pictures is 10 feet by 8, they are noble paintings, worthy of their destination, and should be visited by every one while the opportunity offers.

South Sea Whale Fishery. By *W. J. Huggins*, Marine Painter to his Majesty.—This is a representation of boats attacking a spermwhale, and an excellent one it is. Mr. Huggins has chosen the fearful moment of the monster rising beneath one of the boats, by which she is placed in a dangerous predicament. The position of a man, as he is thrown out of her, is well conceived; and the other boat backing from the danger, is equally well done. The "huge leviathan" occupies nearly the whole drawing, adding to the general effect of the picture by his monstrous size. This will be always a popular drawing, and well worth looking for. The dimensions of it are about twenty-six by sixteen inches.

The Tides.—It is intended to make a series of simultaneous tidal observations on the coasts of Great Britain and Ireland, for sixteen days together, from June 7th to June 22d next. The object is to ascertain by how much the time of high and low water at each place is before or after those times at the neighbouring places; and also to determine, wherever it can be done conveniently, the comparative rise and fall of the tide at the different periods of the moon's age, as well as the different intervals between the morning and evening tides, or any other differences which regularly affect their height. Some very interesting results are anticipated from these observations, which are to be made by the officers at the various coast-guard stations, amounting in number to about five hundred. Much has been done of late towards perfecting the theory of the tides, and these observations, which it is intended shall be published, will no doubt afford some very curious particulars.

The Orphans of the late Lieut. and Mrs. Butcher.—It is with real satisfaction we find that Mrs. Skyring is exerting herself towards placing one of these children in the Blue Coat School. We sincerely hope she may succeed in her benevolent design on her own account, for what is more grateful to the stricken heart than to soothe another's sorrow. She cannot do more than this, to shew her gratitude to those who have been alive to her distress. The following subscriptions have been received by our publisher, since our last, and paid to Sir Francis Ommaney.—

	£.	s.	d.
Captain Horsburgh	2	0	0
A Friend	0	6	0
W. L. Vulliamy, Esq.	1	0	0
Mrs. Thorn	0	5	0

South Pole Expedition.—Since the return of Capt. Biscoe in the brig Tula, after having discovered Enderby's land, two small vessels, the Hopeful and the Rose, were sent by those gentlemen on a similar expedition, with the view, if possible, of following Weddel's track, and proceeding on towards the South Pole. One of the vessels has just returned to England, the other having been lost in long. 53° W. and 60° S., neither of them having penetrated further south. Mr. W. Rea, R.N., who accompanied the vessels for

purposes of a scientific nature, speaks very highly of the Falkland Islands as being well worthy of the particular care and attention of government.

THE SHIP ANNA.—On the 3rd Jan., the China ship Anna, arrived at Bombay, on board of which a mutiny occurred while she was at sea, the principal of which was the gunner, who, while he had the watch, endeavoured, with three men, to murder the officers. He unfortunately succeeded in killing the first and second officers and two lascars, and the captain was wounded before the mutineers were overpowered. They will be tried for the crime, and will, no doubt, be hung.—*Plymouth Journal.*

THE BELLEROPHON—or, as she was generally called during war, the ***Billy Ruffian***—who was always found in the arena where deeds of glory were to be performed, still continues a monument to the valour of British seamen. On her decks, death has strewn the mighty in greater numbers than any other ship in the British service, for she has always been officered and manned by hearts of oak, in whom the cannon's roar could not cause the nerve to vibrate, or daunt the heroes from defending the honour of Old England. The Captivity (late the Bellerophon) was built in the year 1786, and was one of the small-class 74s. On the French republican war breaking out, she was attached to the Channel fleet. On the glorious first of June, the Bellerophon was the second ship in breaking the line. In this memorable action she took a most distinguished part, bearing at the time the flag of rear-admiral (afterwards Sir Thomas) Paisley, who lost a leg in that action; she then severely suffered from the warm berth in which she was placed. This ship was subsequently commanded by Captain Lord Cranstoun; and in the well-known Cornwallis's retreat with 5 line of battle-ships and 2 frigates, from the French of 13 of the line, 14 frigates, besides small craft. The Bellerophon, though not a fast ship, maintained her good character for hard fighting. She had another opportunity at the battle of the Nile, under the command of Capt. H. Darby, of displaying herself. It was here the Bellerophon engaged the huge L'Orient: her behaviour was particularly set forth in Lord Nelson's despatches. In this action she lost most men, and had more wounded, than any other ship in the fleet, having 3 lieutenants and 1 master's mate killed; her captain, master, captain of marines, boatswain, and one midshipman wounded; her total loss was 49 killed and 148 wounded. Again, at the battle of Trafalgar she did Monsieur the honour of a visit. It was in this engagement her brave commander, Capt. Cooke, fell, together with the master, a midshipman, and 24 men, and the capt. of marines, 1 master's mate, 5 midshipmen, and 117 men were wounded. In 1815 this ship was rendered particularly remarkable, by receiving on board, when off L'Orient, the immortal Napoleon Buonaparte. This spontaneous action of that great soldier happily terminated the bloody struggle between man and man; that struggle that had, for so long a period, cursed by its existence the whole inhabitants of the globe; the ill effects of which will not cease to be felt for generations yet to come. At the time Napoleon came on board, the Bellerophon was under the command of capt. now rear-admiral superintendent Sir T. Maitland, of Portsmouth dock-yard. The Bellerophon has of late years existed under another name, "The Captivity," and was made a convict hulk; the Admiralty wisely determining, that the name that shone so gloriously upon the chronicled pages of history, should not be associated with those whose inglorious actions had brought down upon them the merited chastisement of the offended laws of their country. This ship is now ordered to be broken up.—*Plymouth Journal.*

DESTRUCTION OF THE ANN JAMESON.—The Ann Jameson brig, of 238 tons, Alexander master, arrived in port, from London, on the 15th ult. with merchandise. She hauled alongside the King's wharf, on Friday the 22nd, and commenced discharging her cargo. Forty-seven barrels of gunpowder had been consigned to Mr. Thomas Burdekin—forty-four or forty-five of which had been landed. The other two or three barrels had got loose in the hold and fallen amongst the cargo, which had caused Mr. Burdekin to refuse to receive his goods, and they remained on board. On Saturday afternoon the crew consisting of 12 or 13 hands, together with three or four labourers hired from the shore, were employed discharging iron and steel.

About a quarter to four, p. m., an explosion took place, and the form of a man was seen hurled into the air. The body thus blown up is supposed to have been that of the chief mate. The captain had left the vessel a short time before. Several other vessels were lying close to the Ann Jameson at the time. The captain of the Prince Regent jumped across the burning vessel, to cast off a warp that secured his own vessel. In crossing, he saw the poor fellows in the hold endeavouring to escape, and in which he would have assisted them but for the intense heat of the fire in the hold, and imminent danger of his own ship. The captain's nephew was in the cabin at the time, but saved himself by jumping out of the windows overboard. Mr. Chastels, the tide-waiter, being forward, jumped overboard, together with four other men—two of whom died the same night of their wounds, and one of the other two lies in a very dangerous state. These are all, out of the hands employed on board when the explosion took place, who are alive.

Almost on the instant of the explosion, the flames burst forth with irresistible fury. The alarm brought people from all parts to see the awful spectacle, and to render assistance. The military were ordered out, and sentries posted to keep the mob from the wharf, whilst parties of soldiers were placed at the engines, (three in number, about the size of a gardener's watering-pot, and falling to pieces), which were employed in preserving the houses adjoining, and the wharf, from catching fire. As to the vessel, it was useless to weary the men in attempting to get the fire under, at the risk of the adjoining houses and wharf being consumed. About a quarter past four the spectacle was awful. The decks fell in and the flames seemed to sport among the rigging and up the masts. The body of the vessel appeared like a crater, glowing so intensely that the eye could not rest upon it. She was kept at a safe distance from the wharf by a hawser, which was carried from her stern to a ship lying above her. The wind was due north, and blowing a fresh breeze, which wafted embers and flames towards the stores and houses to the southward of the wharf. The houses in the neighbourhood were in imminent danger several times. The engines were, as before mentioned, out of repair, and so worked very badly; the hoses were too short, which let the water escape in several places; and thus, as remedies, they were totally useless—as preventives, they did a little.

About half past four, the main-top and rigging went over the side, and fell advantageously; and about a quarter of an hour afterwards, the fore-top-mast fell in like manner, the butt of the mast falling on the wharf. Attempts had been made, ere this, to scuttle the vessel, which, either from the timidity of the parties or from the intense heat, failed. The danger of the spars falling previously to the falling of the top-masts, was certainly great, and sufficient to deter stout hearts. When the top-mast fell, some hands from the shore caught a rope hanging from the jib-boom, which served as a director for the flames towards the stores, and succeeded in pulling it down. Nothing further could now be done, but to guard against the flames communicat-

ing with the shore, or with the vessels in the harbour. For upwards of an hour and a half the hull burned fiercely; and not until the spars fell, was any successful attempt made to scuttle her. Upon the first intimation being given of the vessel sinking, great numbers of persons rushed to the water's edge, to witness her going down. The contrast between the opposing elements, at this juncture, was grand. The rise and undulation of the water was so great on her sinking, that those persons who had crowded to the beach were up to their middles in water by the flow. The schooner Ann's gaff-top-sail being loose, caught fire, and was nearly consumed; and but for the prompt activity of the captain of the Prince Regent, that vessel also must have become a prey to the devouring element.

It is not easy to describe in adequate terms the terrific grandeur and melancholy beauty of the scene. The reader may, however, judge of the intenseness of the fire, when informed, that besides the ordinary combustibles of dry wood and tarred rope, which fed the flame, there were on board, at the time she caught fire, 40 hogsheads of brandy, 50 cases linseed oil, 50 cans of turpentine, 3 barrels of tar, 15 barrels of pitch, 1 barrel spirits of tar, 7 barrels of resin, beside about 47 barrels of gunpowder, 200lbs. of which had been incautiously left lying scattered about, and it is said that in hoisting up the iron or steel, a bundle fell into the hold, and, by collision with the other steel or iron, struck a spark which ignited the powder.—*Sydney Monitor, Dec.* 4, 1833.

MURDER OF RICHARD LANDER.—[1 May, 1834. Extract of a letter from the Agent to Lloyd's at Fernando Po, dated February 6, 1834.]—"You will be sorry to be informed of the death of Richard Lander, who left this place some weeks since in the Craven cutter, belonging to the Company, taking with him a longboat I let him have for the purpose. On his arrival at the Nun he left the cutter, and proceeded up the river in the boat with about £400 worth of goods, to join the iron steam-boat, which he had sent up a few weeks before; she was to proceed about 300 miles up to a small island which he had purchased from the king, and where he had a factory.

They had proceeded about 100 miles up, the current being strong against them, they were in good spirits, tracking the boat alongshore, when they were fired on from the bush; three men were killed, and four wounded; Mr. Lander was one of the latter. They had a canoe of their own, and at the time they were fired on the boat was aground, and to save themselves they were obliged to leap into the canoe, and make the best of their way; they were immediately followed by five or six war-canoes, full of men, keeping up a continued fire for five hours, until it got dark, when they lost sight of them: they arrived here on the 27th ult.

Mr. Lander expired of his wound this morning; he wrote me a letter two days ago, requesting that I would take charge of the vessels and property belonging to the African Inland Commercial Company, with which I accordingly complied. The ball entered near his hip, and worked down to the thick of the thigh. It was a most malicious and treacherous attack. Mr. Lander told me that there were Bonny, Brass, and Benin canoes; so that, from these circumstances, I am of opinion that some of the slavers, or other Europeans, have been the promoters of this murderous affair. Colonel Nicolls has forwarded a statement of the transaction to government, and, if proper steps are taken, the whole must be brought to light. Mr. Lander's clothes and papers are all lost. I have had a great deal of trouble with the expedition, and now it will be considerably increased; but the value of Fernando Po in all cases of difficulty is incalculable, and I shall now com-

municate to you a little information relating to this island and the slave trade.

On new-year's day at daylight there were four vessels in sight, two brigs, and two small vessels, schooner rigged, in company with one of the brigs; one of them anchored, named the Renown, of Liverpool, M'Nabb master, belonging to Sir John Tobin, three months' passage. Two hours afterwards, the other brig and two small schooners anchored; they turned out to be his Majesty's brig Trinculo and two slavers, captured off the Gaboons, belonging to Prince's Island; 54 slaves and a crew of 15 men on board each. The slavers were surveyed by the officers of his Majesty's vessels the Curlew, Griffin, and Trinculo, and condemned as unfit to proceed to Sierra Leone. Captain Warren, son of Admiral Warren, wrote to Colonel Nicolls, on service, requesting him to allow the slaves to be landed here, which request was immediately complied with. The spectacle was horrible; there were several children that must have been torn from the breast, for, when landed, it was found necessary to give them in charge to the women to take care of; so much for Prince's Island, that nest for piratical slavers. If Colonel Nicolls had three government steamers under his control, he would put down the slave traffic on the coast in six months, by destroying their nests in the rivers. At present, the government vessels only cruise about, and pick up a slaver occasionally."—*Times.*

COURTS MARTIAL.

A court-martial assembled, the 9th of May, on board the San Josef, in Hamoaze, for the trial of Mr. John Fitzgerald Carroll, mate of H.M. steamer Columbia, on two charges preferred against him by his commanding officer, Lieut. Benjamin Aplin, viz. first for neglect of duty, in not calling him, (Lieut. Aplin) at 1 A.M. on the morning of the 20th April, as directed by the officer, whom he, (Mr. Caroll,) relieved, the ship then running for the rock off Lisbon. 2ndly. For disrespectful and disobedient conduct in persisting to address him, (Lieut. Aplin) though repeatedly ordered to desist, and to attend to his (Mr. Carroll's) duty.

The court, after a short deliberation, gave sentence that the first charge was fully proved, and the second charge partly proved, and they therefore; taking into consideration the good character the prisoner had hitherto borne, and other circumstances which had appeared in the prisoner's favour, adjudged Mr. Caroll to be admonished, and he was admonished accordingly.

A Court Martial was held on board the Magnificent, Lieut. Com. J. Paget, at Port Royal, Jamaica, on the 7th of January last, and continued by adjournment until the 8th, composed of Captain Sir G. A. Westphal, (President) Captains William Walpole and Charles Phillips, and Commanders Peter Mc. Quie and Mark H. Sweeney, and at which George V. Oughton, Esq. officiated as Judge-Advocate, to try Mr. Thomas T. Jeffery, Purser of H. M. brig Serpent, for an attempt at fraud, a breach of discipline, and un-officer like conduct, in having, on the 2nd of September, 1833, altered a document or demand, after his Commander's signature, without his sanction. The prosecution was conducted by Com. John Symonds.

After the examination of the witnesses for the defence, the Court were of opinion that the charges were not proved, and Mr. Jeffery was fully acquitted accordingly.

On the 12th of May, at 10 o'clock, a Court Martial assembled at Sheerness, pursuant to orders from the Lords of the Admiralty, on board His Majesty's

ship Hastings, Captain Shiffner, to try Captain Hugh Pigot, late of His Majesty's ship Barham, the Commodore on the Turkish station, for various charges brought against him by Lieutenant Henry Walker, Commander of His Majesty's steam-vessel the Alban, while under his command.

No strangers were allowed to go on board the Hastings until the court-martial was formed, which consisted of Vice-Admiral Sir Richard King, Bart. K.C.B. the Port-Admiral at Sheerness; Rear-Admiral Gage, K.C.B.; Captain Sir James Alexander Gordon, K.C.B.; Captain Barnard, of His Majesty's flag-ship Ocean; and Captain Shiffner, of the Hastings.

Edward Twopenny, Esq. attended as Judge-Advocate, and, after the court had been sworn in the usual manner, the names of the witnesses were read over.

The Judge-Advocate, by desire of the Court, then read over copies of the correspondence which had taken place between Lieutenant Henry Walker, and the Lords of the Admiralty, on the nature of the charges brought forward by Lieutenant Walker against Captain Pigot, which occupied a considerable time, and also the order for a court-martial to be held on Captain Pigot on these charges:—

The charges were then publicly read in the court, which was crowded.

"1. Endangering His Majesty's ship Barham, under his command, on or about the 24th of March, 1832, by disregarding my representation that the Alban (steam-vessel under his command) was not properly lashed alongside of the Barham, for the purpose of towing her, after having been on shore at Scutari; in consequence of which unskilful mode of lashing, the Barham was in imminent danger of grounding on the Seraglio Point, at Constantinople, and threatening, on the same occasion, to come on board the Alban, and flog every fifth man.

"2. For ordering coals belonging to His Majesty's steam-vessel Alban to be sent on board a Turkish vessel in the Alban's gigs, on or about the 25th of March, 1832, which, owing to the crowded state of the harbour at Constantinople, was highly dangerous.

"3. When inspecting the Alban between the 27th and 29th of March, 1832, for giving a variety of vexatious and unnecessary orders; and, in consequence of my remonstrating thereon by letter, dated the 30th of March, 1832, threatening me with a court-martial, unless I withdrew the same; and finally forwarding a copy thereof to Vice-Admiral the Hon. Sir H. Hotham, accompanied with such a palpably unfounded, or grossly exaggerated, statement respecting the Alban, as drew forth an unmerited reprimand to me from the Commander-in-Chief.

"4. For conduct injurious to His Majesty's service in removing stores, &c.

"5. For vexatious and oppressive conduct in ordering him (Lieutenant Walker) to relinquish his cabins, under pretence of their being required for the use of the British ambassador and suite, which was not the fact, &c.

"6. For vexatious conduct in accusing me of making excessive and unnecessary demands for stores, &c., and insisting that myself and officers should pay for the same.

"7. For using vexatious orders, to the annoyance of myself and officers; using opprobrious language to them, and for general contumacious and humiliating conduct to me while under his orders, tending to degrade me in the estimation of the crews of the Barham and Alban.

"8. For on several occasions questioning my veracity, and that of the Alban's crew and officers, alleging that I had received a pecuniary present from the Turkish government, and upon the same occasion falsely asserting that he had previously reproved me for receiving presents at all, and insinuating that I was not worthy of credit even upon my oath.

"9. For arbitrary and oppressive conduct, at variance with the custom of the service and their Lordships circular No. 58, respecting punishments, in ordering me, between the 27th and 31st of May, 1832, to flog John Lewis, ordinary seaman; Thomas Harris, the chief engineer; and James Harris, able seaman, belonging to the Alban; for conducting the inquiry respecting the alleged offence of the latter in a partial and unfair manner, and, at the close thereof, turning me ignominiously out of the Barham."

The 10th, 11th, and 12th charges were for various acts injurious to His Majesty's service.

This court-martial has excited a considerable degree of interest. The result will be found in our next.

Admiralty Court Decisions.

The Thetis: Salvage.—Dr. Curteis, on behalf of Captain de Roos and the officers of his Majesty's ship Algerine, part salvors of the bullion in the Thetis, sunk off Cape Frio, applied to the court to direct their share of salvage

to be paid out of the money in the registry; the service performed by the Algerine having been distinct from that of Captain Dickinson, by whom an appeal had been made from the judgment of the late judge, which appeal had no reference to the allotment made in favour of the Algerine.

No opposition was made to the application on the part of the owners; but on behalf of Captain Dickinson it was contended by Dr. Adams, that the court was precluded from making the order by the terms of the inhibition, and that no valuation of the property had been made, the sums mentioned in the argument and judgment having been assumed merely, and that a decree of appraisement would be necessary prior to the payment of the money.

Sir John Nicholl concluded that all parties would be desirous that the sums allotted should be paid, not to the representatives of the parties, but to the parties themselves. It was therefore desirable, that all the money that could be distributed should be distributed as speedily as possible. If Captain Dickinson had reason to think he should suffer injury by the metals not being properly valued, he was entitled to an appraisement. He (the learned judge) therefore should let the matter stand over, in order that the parties might see whether, after a candid and fair inquiry, they could or could not avoid the delay and expense of an appraisement.

THE HOGHTON: WAGES.—This was a suit by John Davis, the mate of the Hoghton, against the owners, for balance of wages. The vessel, burden 270 tons, had sailed from Hull in September, 1831, on a voyage, partly with cargo and partly in ballast, to Riga, and back to some port in the United Kingdom. The articles signed by the mariners had a clause, stipulating that, should the vessel be detained by the ice, they were to have half wages only during such detention. She arrived at Riga on the 29th of October (having been detained on the way by bad weather) and took in a portion of the homeward cargo; but on the 26th of November was obliged, on account of the ice, to go down to Bolderaa, at the mouth of the river, about eight miles from Riga, where she remained till the 6th of April, 1832, when she returned to Riga, completed her cargo by the 27th of May, and arrived at Hull on the 8th of June.

Dr. Dodson, (with whom was Dr. Addams,) on behalf of the mariner, contended that the detention of the vessel was not occasioned by the ice, but because she had not completed her cargo during the four weeks prior to the setting-in of the frost, and it suited the convenience of the owners to wait for spring freights; that the vessel was not absolutely prevented from coming away, inasmuch as a number of vessels had left after the Hoghton had moored for the winter at Bolderaa, and that, in a case of this kind, the mariner should have the most favourable interpretation of the contract.

The King's Advocate, with whom was Dr. Daubeney, for the owners, submitted, that as the master had made every exertion to procure a cargo, in vain, till the frost set in, the *casus* contemplated in the articles had occurred; that it was not the interest of the owners to detain the ship, but the contrary, as they incurred additional expense; that the vessels which came away had completed their cargoes; that the mariner was fully aware of the stipulation he had entered into, so that he had not been entrapped, and that the stipulation was usual in the trade.

Sir J. Nichol held that, as the master had made every exertion to procure a cargo, till he was forced by the regulations of the port to go down to Bolderaa; as there was no imputation of *mala fides*; as the mariner was cognizant of the stipulation, which was common in this trade in this and other countries, he was not entitled to more than half wages. He should give no costs.

Massacre at the Falkland Islands.

A short time ago a report* reached this country, that some of our people had been murdered at these islands. It was then discredited on very good grounds; but the following letter of Mr. Rea, R.N., to the commanding-officer on the South American station, confirms the substance of the fact :—

(Copy.)

"*Johnson's Harbour, East Falkland Island,*
"*Monday, Nov.* 18, 1833.

"Sir—In compliance with the orders of my Lords Commissioners of the Admiralty, I embarked in the Hopeful at London, on the 13th May, 1833. The nature of my employment will be seen by their Lordship's circular, a copy of which I have the honour to inclose. In the prosecution of our voyage, we arrived at Berkeley Sound, East Falkland Island, on the 23d of October, where I was informed of the following circumstances :—

"That, on the 26th of August, 1833, Antonio Rivero, Jose Maria Luna, Juan Brasido, Manuel Gonzales, Luciana Flores, Manuel Godoy, Felipe Salazar, and Lattore, (the last five being Indians, sent here by the Governor of Monte Video for bad conduct, and the rest Gauchos, in the employ of Lewis Vernet,) attacked and murdered Mathew Brisbane, William Dixon, D. Ventura, Antonio Vehingar, and Juan Simon, being the principal persons at the settlement; after which they plundered the town of whatever it contained, and drove all the cattle and horses up the country, laden with their booty. Mr. William Lowe, who some time since sold the schooner Unicorn to Captain Fitzroy, of his Majesty's ship Beagle, had left the settlement early the same morning, with four hands, for the purpose of taking seal on the north and south rocks at the entrance of Berkeley Sound. The rest of the settlement, consisting of thirteen men, three women, and two children, remained in the town two days with the murderers, and then escaped, with their clothes, &c. to Hog Island, at the head of Berkeley Sound, where we found them, living on birds' eggs. Mr. Lowe returned from his sailing voyage fifteen or sixteen days after the murder, and was then put (by his own request) on Kidney Island, on the south side the entrance of Berkeley Sound.

"As I did not like the appearance of many I found on Hog Island, I sent down to Kidney Island for Mr. Lowe, and the next morning went with two armed boats to the town, where I found all the trunks and boxes broken open, and every article in the houses ransacked, and cut to pieces. The body of Mr. Brisbane was about a quarter of a mile from the houses where I was told it had been dragged by one of the Indians on horseback, soon after the murder: it was so slightly covered with earth, that the dogs had fed on it, and was in such a mangled state that I could not remove it, and bury it properly, as was my intention. I, however, secured it from further ravages, by placing some boards and a quantity of stones on the grave. The rest of the bodies were buried at the town, near where they were killed, and we secured their graves in the same manner. I then hoisted an English jack at the flag-staff, which I

* See page 181, No. 25, Nautical Magazine.

intend to leave flying, and have cautioned those on Hog Island to respect it, and consider themselves in a settlement of his Britannic Majesty; which they have promised to do.

"As it is uncertain into whose hands this may fall, I have not entered into many particulars that have come to my knowledge; but I feel convinced, that if an English ship of war does not arrive here soon, more murders will take place; and, as I have neither the authority nor the means to prevent it, I shall sail from this immediately when I have completed water, and cruize for a few days in the track of vessels bound round Cape Horn: if I do not succeed in meeting any, shall then proceed to the southward, in pursuance of my orders.

"I trust, sir, that what I have done with regard to the flag will meet your approbation, and have to request, that, should this reach you, a copy may be forwarded to the Admiralty, which will account for my not having written from this, as I was directed.

"I have the honour to be, Sir,
"Your very obedient servant,
(Signed) "HENRY REA.

"Rear-Admiral Sir M. Seymour, Bart., K.C.B., Commander-in-Chief, South America; any British Consul, or the Commanding-officer of any British ship of war."

NAVAL INTELLIGENCE.

THE ROYAL NAVY IN COMMISSION—*continued from p. 314.*

*** S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Flag-Ships.		*Stations.*
ASIA - -	84	Tagus.
BRITANNIA,	120	Mediterranean.
HASTINGS -	74	East Indies.
ISIS - -	50	Cape, and Africa.
MELVILLE -	74	East Indies.
OCEAN - -	80	Nore.
SAN JOSEF -	110	Plymouth.
SPARTIATE -	74	South America.
VERNON - -	50	N.America&W.Indies.
VICTORY -	104	Portsmouth.

ACTEON, 26—Hon. G. Grey, March at Constantinople.

ÆTNA, S. V. 6—*Act.* Com. W. Arlett, Feb. at Port Praya, from the coast of Africa. Expected home.

ALBAN, St. V.—Lieut. A. Kennedy, 30th Oct. at Demerara, from Berbice.

ALFRED, 50—Capt. R. Maunsell, 29th April at Malta. The Alfred's lads, at Corfu, lately struck the target seven times in twelve shots, it being only eighteen inches square, and four hundred yards distance.

ALLIGATOR, 28—Captain G. R. Lambert, 30th Oct. left Batavia, for Sincapore. Sailed for Sydney from Madras 20th Sept.

ANDROMACHE, 28—Capt. H. D. Chads, C.B. 17th Feb. arrived at Madeira; 19th sailed for China.

ARACHNE, 18—Com. J. S. Foreman, 18th March sailed for Bermuda.

ASIA, 84—Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus 9th April to 9th May. Daily expected.

ASTREA, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Kerley, 30th March arrived at Barbadoes, and placed in quarantine, having measles on board.

BEACON, S.V.—Com. R. Copeland, surveying in the Archipelago.

BEAGLE, 10, S.V.—Com. R. Fitz-Roy, 25th Oct. Monte Video.

BELVIDERA, 42—Capt. C. B. Strong, 4th April arr. at Madeira; 6th April sailed for Barbadoes.

BLONDE 46—Capt. F. Mason, C.B. 25th March arrived at Barbadoes. Sailed 28th for Jamaica. To proceed to Rio, said, to relieve Dublin, 2d April off Port Royal.

BRISK, 3—Lieut. T. Stevens, Gold Coast.

BRITANNIA, 120—Vice-Admiral Sir Josias Rowley, Captain P. Rainier, 10th April to 29th at Malta.

BRITOMART, 10—Lieutenant H. Quin, 21st Nov. at Sierra Leone. Sailed for Gambia.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 10th Nov. left Sydney for New Zealand.

CALEDONIA, 120—Captain T. Brown, 10th April to 29th at Malta.

CANOPUS, 84 — Hon. J. Percy, 10th May sailed for Corunna.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 28th April arrived at Plymouth. Left the Tagus 18th April.

CEYLON, 2—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 21st Dec. sailed for the Falkland Islands.

CHAMPION, 18—Com. Hon. A. Duncombe, March at Barcelona.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, 15th April at Sierra Leone.

CHILDERS, 16—Com. Hon. H. Keppel, Portsmouth, fitting.

COCKATRICE, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

COCKBURN, 1—Lieut. Com. C. Holbrook, Kingston, Lake Ontario.

COLUMBINE, St. V. 2—Lieut. Com. R. Ede, Portsmouth.

COMET, St. V.—Lieut. Com. T. Cook, Woolwich.

COMUS, 18—Com. W. Hamilton, 17th March sailed for Demerara from Barbadoes; 31st sailed from Barbadoes, with Vernon.

CONWAY, 28—Capt. H. Eden, 31st Dec. arrived at Rio, from Bahia; 1st Feb. expected to sail for Pacific Islands.

CRUIZER, 18—Com. James M'Causland, 3d March arrived at Nassau, from Plymouth.

CURAÇOA, 26—Capt. D. Dunn, 10th Nov. arr. at Calcutta. To convey Governor-General to Madras. 31st Jan. at Calcutta.

CURLEW, 10—Com. H. D. Trotter, 4th March at Ascension. Daily expected home.

DEE, St. V. 4 — Com. W. E. Stanley (*b*) Portsmouth and Plymouth.

DISPATCH, 18—Com. G. Daniell, 25th March sailed from Barbadoes for Bermuda.

DONEGAL, 78 — Captain A. Fanshawe, 9th May in the Tagus.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, 12th Dec. sailed for Valparaiso, from Lima; 1st Jan. arrived.

EDINBURGH, 74—Capt. James R. Dacres, 7th April arrived at Malta; 29th April remained.

ENDYMION, 50 — Captain Hon. F. W. Grey, Knt. C.B.; 4th April arrived at Smyrna.

ESPOIR — Lieut. Com. C. W. Riley, see Packets.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, 4th March at Ascension.

FAIRY, S. V. 10—Com. W. Hewett, surveying in the North Sea.

FAVORITE, 18—Com. G. R. Mundy, March at Valparaiso.

FIREBRAND, St. Yt.—Lieut. W. G. Buchanan, 8th April left Portsmouth for the river.

FIREFLY, 2 — Lieutenant J. M'Donnel, 19th March arrived at Jamaica, from Honduras.

FLY, 10 — Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER — Lieut. G. Miall, 13th Feb. at Simon's Bay.

FORTE, 44—Captain W. O. Pell, 22d Feb. arrived at La Guayra, with the Bishop of Barbadoes; 3d April at Barbadoes, with the bishop on board, waiting passage for England.

GANNET, 18 — Commander J. B. Maxwell, Sheerness.

GRIFFON, 3—Lieutenant E. Parlby, Gold Coast.

HARRIER, 18 — Com. H. L. S. Vassal, Dec. in the Straits of Malacca; 31st Jan. at Madras.

HASTINGS, 74—Capt. H. Shiffner, Chatham, fitting for flag of Rear-Admiral W. H. Gage. 2d May the Admiral's flag was hoisted on board.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, Dec. in Straits of Malacca; 31st Jan. at Calcutta.

IMOGENE, 18 — Captain P. Blackwood, 6th Nov. left Trincomalee, for Bombay, to be docked, having sustained some damage at Swan River. To proceed from thence to Persian Gulf. 31st Jan. at Bombay.

INVESTIGATOR, 16, S. V. — Mr. G. Thomas, surveying the Shetland Islands.

ISIS, 50 — Capt. J. Polkinghorne, 5th Jan. arrived at Sierra Leone. Flag of Rear-Admiral S. Warren. 6th April left Ascension, on her return to the Cape.

JACKDAW, S. V. — Lieutenant E. Barnett, 12th January arrived at Nassau from Egg Island.

JASEUR, 18—Com. J. Hackett, 26th March arrived at Gibraltar; 4th May arr. at Gibraltar; 6th May arr. at Malta.

JUPITER, *Troop Ship*—Mr. R. Easto, 12th March arrived at Malta.

LARNE, 18—Com. W. S. Smith, 25th March arrived at Jamaica, from Carthagena.

LIGHTNING, St. V. — J. Allen, 11th April arrived from Lisbon. Passenger, Lord W. Russell.

LYNX, 10—Lieut. Com. H. V. Huntley, 26th Feb. arrived at the Gambia.

MADAGASCAR, 46 — Capt. E. Lyons, April at Nauplia.

MAGICIENNE, 24—Capt. J. H. Plumridge, 24th Dec. arrived at Singapore; 1st Jan. sailed for Madras.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74—Capt. Hon. J. Percy, 10th April to 29th at Malta.

MASTIFF, 6, S. V.—Lieut. T. Graves, surveying in the Archipelago.

MEDEA, St. V. 6—Com. H. T. Austen, 1st May left Sheerness for Woolwich.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 31st Jan. at Bombay. Expected at Madras in March, to go thence to Mauritius, to be there in May. 7th Nov. left Trincomalee, for Bombay.

METEOR, St. V.—Lieut. Symons, 9th March arrived at Gibraltar; 11th April arr. at Plymouth; 14th left for Woolwich.

NIMBLE, 5 — Lieut. C. Bolton, 18th Jan. arr. at Jamaica, from Nassau.

NIMROD, 20 — Com. J. Mc. Dougal, 21st April arrived at Lisbon.

NORTH STAR, 28 — Capt. O. V. Harcourt, Portsmouth, fitting. To convey W. Hamilton, Esq., Minister Plen. to Buenos Ayres.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

PEARL, 20—Com. R. Gordon, 15th March at

Port Royal, Jamaica; arrived from Nassau 4th.

PELORUS, 18—Com. R. Meredith, 5th Feb. at Fernando Po.

PHŒNIX, St. V.—Com. R. Oliver, Channel: Woolwich, Portsmouth, and Plymouth.

PICKLE, 5 — Lieut. C. Bagot, 19th March arrived at Jamaica.

PINCHER, 5—Tender to flag-ship, 18th Jan. arr. at Jamaica, from Carthagena.

PLUTO, St. V.—Lieut. T. R. Sulivan. Coast of Africa.

PORTLAND, 52—Captain D. Price, Plymouth, fitting.

PRESIDENT, 52 — Capt. J. M'Kerlie, Portsmouth; 25th Feb. taken into dock; 25th March undocked. Major-General Sir Colin Campbell, K. C. B., Governor and Commander-in-Chief in Nova Scotia, with Lady Campbell and family, will take their passage to Halifax in the President, when ready to proceed to that station.

PRINCE REGENT *Yacht*— Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 1st Jan. arrived at Valparaiso.

PYRAMUS—8th Oct. arrived at Bermuda; sailed for Halifax with Forte; 23d Oct. arr. at Halifax.

RACER, 16—Com. J. Hope, 30th Jan. arrived at Port au Prince; sailed 2d Feb.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. Sailed for West Indies.

RAINBOW, 28 — Capt. Thomas Bennet, 3d April moved to Spithead. Lieut. Dowse, and Messrs. Cunningham and Mahon, Assistant-Surgeons, take their passage to join the Vernon at Jamaica. 15th April sailed.

RALEIGH, 18 — Com. A. M. Hawkins, 5th May sailed for England; 18th arrived at Spithead.

RAPID, 10—Lieut. Com. F. Patten, 10th Dec. arrived at Rio Janeiro.

RAVEN, S. V. 4—Lieut. H. Kellet, 2d Dec. at Santa Cruz, Teneriffe.

REVENGE, 78—Capt. W. Elliott, C.B., undocked 26th March.

RHADAMANTHUS, St. V.—Com. G. Evans, 15th March at Port Royal, Jamaica; 22d March returned there from Crooked Island.

RINGDOVE, 16—Com. W. F. Lapidge, 26th March arr. at St. Ubes, from Lisbon.

ROLLA, 10—Lieut. H. F. Glasse, 24th March at St. Ubes.

ROMNEY, *Troop Ship*—Mr. R. Brown, sailed for West Indies 14th March, with 64th regiment.

ROVER, 18 — Com. Sir G. Young, Bart., 3d March arr. at Malta, from Sheerness; 23d March at Tripoli.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth, preparing for sea. It is expected that her gracious Majesty Queen Adelaide will embark in the yacht at Woolwich, about the 5th of July, for Rotterdam, on her way to visit her Royal Mother. The Castor, Capt. Lord John Hay, will escort the Royal George, and two government steamers will be in attendance. The Royal Yacht Fleet intends accompanying her Majesty on her visit to Germany, in July next, to the place of Royal disembarkation. The different yachts at Cowes are preparing for this distinguished service. Lord Yarborough's Falcon is to be ready in six weeks, and Lord Belfast's Water Witch is to be off Brighton by the 1st of next month.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, 18th March off Oporto; 24th March in the Douro.

SALAMANDER, St. V.—Com. W. L. Castle, 22d April sailed for Woolwich.

SAMARANG, 28—Capt. C. H. Paget, 3d Nov. at Panama, on her way to San Blas. Expected home in August.

SAN JOSEF, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28 — Capt. Hon. W. Trefusis, 15th March expected at Port Royal. Sailed from Barbadoes for Jamaica and England. 23d March arrived there.

SARACEN, 10—Lieut. Com. T. Le Hardy, 18th March off Oporto.

SATELLITE, 18—Com. R. Smart, 18th Dec. sailed from Buenos Ayres; 11th Jan. arr. at Rio.

SAVAGE, 10—Lieut. R. Loney, 5th May arr. at Plymouth.

SCOUT, 18 — Com. R. Morden, 10th April had sailed for Alexandria and Constantinople.

SCORPION, 10 — Lieut. N. Robilliard, see Packets.

SERPENT, 16 — Com. J. C. Symonds, 18th March sailed on a cruize.

SKIPJACK, 5—Lieut. W. H. Willis, (*act.*) Bahamas.

SNAKE, 16—Com. W. Robertson, 12th Dec. Rio.

SPARROWHAWK, 18 — Com. C. Pearson, 24th Feb. arrived at Madeira; 26th sailed.

SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Captain R. Tait, 12th Dec. at Rio Janeiro.

SPEEDWELL, 5 — Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieut. J. H. Norrington, Portsmouth station.

STAG, 46—Capt. N. Lockyer, 9th April off the Burlings; 9th May in the Tagus.

SWAN, 10 — Lieut. J. E. Lane, 30th April arrived at Sheerness. Proceeded to Dover for volunteers for H.M.S. Hastings.—To be paid off.

SYLVIA, 1—Lieut. Com. B. Shepherd, Portsmouth Station.

TALAVERA, 74 — Capt. E. Chetham, 10th April to 29th at Malta. Daily expected.

THALIA, 46—Capt. R. Wauchope, Chatham, fitting.

THUNDER, S. V.—Commander R. Owen, 29th Dec. at Nassau.

THUNDERER, 84—Capt. W. F. Wise, C.B., 10th April to 29th at Malta.

TRIBUNE, 24—Capt. J. Tomkinson, Chatham, fitting.

TRINCULO, 18—Lieut. Com. Thompson, 1st Jan. arr. at Sierra Leone.

TWEED, 20—Com. A. Bertram, 4th Dec. at Jamaica.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, 20th May sailed for Mediterranean. Passengers, Lieuts. W. Aldham and W. Lewis, to join the Caledonia.

VERNON, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal,

Knt., 21st March arr. at Barbadoes; 31st March sailed for Bermuda.

VESTAL, 26—Capt. W. Jones, 18th March left Barbadoes for Antigua; 22d arrived.

VICTOR, 18—Com. R. Russell, 21st Jan. arr. at Jamaica, from Barbadoes; 27th Jan. sailed.

VICTORY, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

VIPER, 6—Lieut. L. A. Robinson, 3d May arrived at Portsmouth.

VOLAGE, 28—Capt. G. B. Martin, C. B., April, at Corfu.

WASP, 18—Com. Jas. Burney, 18th March left Barbadoes for Trinidad; 2d April left Barbadoes for Antigua; 6th arrived.

WINCHESTER, 52—Capt. E. Sparshott, K.H. Chatham, fitting.

PAID OFF.

ARIADNE, 28—Capt. C. Phillips, 7th May arr. at Plymouth; 10th May at Spithead. Paid off 24th May.

BARHAM, 50—Capt. H. Pigot, 1st May at Sheerness.

ORESTES, 18—Com. Sir W. Dickson, 30th April arrived at Plymouth, from Oporto and Lisbon; 5th May arrived at Portsmouth. Paid off 17th May.

PALLAS, 42—Captain W. Walpole, 24th April arrived at Plymouth, from Jamaica, with his Excellency the late Governor of the island, Earl Mulgrave, the Countess of Mulgrave, and suite. Left Port Royal 15th March. The inhabitants presented an address to him, on his embarking, deeply regretting that his impaired health was the cause of his resigning the government. The merchants of Kingston, previous to the sailing of the Pallas, voted an address to Captain Walpole, expressive of their approbation of his conduct, and gratitude for the services of that gallant and obliging officer.—9th May paid off.

ST. VINCENT, 120—Capt. H. F. Senhouse, 2d April left Malta for England; 4th May arrived at Spithead; 9th moved into harbour. Paid off 23d May.

TALBOT, 28—Capt. R. Dickinson, C.B., 28th April arrived at Plymouth. Passengers, Capt. and Mrs. Harding, and Lieut. Allen, from the Niger Expedition alluded to in p. 364 of our first volume. 2d May into Hamoaze; 15th May paid off.

WOLF, 18—Com. W. Hamley, 24th April arr. at Plymouth. Passengers, Lieut. Motley, Undaunted, and Mr. Herbert, from Harrier.

COMMISSIONED.

PORTLAND, 52—Plymouth.
TRIBUNE, 24—8th May, Chatham.
*CHILDERS, 16—17th May, Portsmouth.
†WINCHESTER, 52—Chatham.
THALIA, 46—Chatham.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commander—R. Morgan.
Lieutenant—R. Ogilvie.

APPOINTMENTS.

COAST GUARD—*Commanders*, J. T. Talbot, T. P. Robinson; *Lieuts.* J. Hyett, J. Ray.

COLUMBIA, 2, *St. Ves.*—*Surg.* J. Coulter.

CALEDONIA, 120—*Lieuts.* W. C. Aldham, E. P. Halstead, W. Lewis; *Clerk*, W. Pinhorn.

CANOPUS, 84—*Mid.* E. P. Mainwaring.

CHILDERS, 18—*Com.* Hon. H. Keppel; *Lieut.* G. Goldsmith; *Master*, J. Coaker; *Purser*, D. Bruce.

EXCELLENT, 76—*Mates*, P. Wilson, C. Coswell.

GANNET, 16—*Lieut.* F. G. Bond.

GREENWICH HOSPITAL—*Secretary*, J. A. Lethbridge; *Steward*, T. Jessop.

HASTINGS, 74—*Com.* J. Parker: *Lieuts.* B. W. Walker, C. C. Nelson; *Purser*, M. Scott; *Chaplain*, E. Winder; *Mate*, G. B. Hooke; *Sec. Master*, J. Prior; *Secry. to Admiral*, J. B. Hutchins; *Schoolmaster*, J. Harkness.

HARRIER, 18—*Lieut.* B. J. Wilson; *Purs. act.* W. Nicholls.

HIND, *tender*—*Lieut. Com.* T. Coleman.

MADAGASCAR, 46—*Assist. Surg.* J. Read.

MALABAR, 74—*Lieuts.* C. A. Barlow, R. T. Stopford.

MELVILLE, 74—*Lieut.* A. Forbes.

NAUTILUS, 10—*Mate*, G. B. Dewes; *Sec. Mast.* J. D. Pascoe.

NORTH STAR, 28—*Lieutenant* T. Hope (*s*); *Assist. Surg.* T. Kidd.

ORDINARY—*Portsmouth*, *Lieuts.* S. Mottley, R. Lowcay; *Purser*, J. D. Jones. *Sheerness*, *Surg.* J. H. Hughes; *Purser*, J. Bowman; *Lieuts.* F. Beckett, J. J. Moore. *Plymouth*, *Lieut.* W. Parker.

PLYMOUTH HOSPITAL—*Hospital Mate*, D. Pritchard.

PORTLAND, 52—*Capt.* D. Price; *Lieuts.* G. M. Hunter, T. Mackeson, H. N. Lawrence, G. Smyth, R. Burridge; *Master*, S. Tuck; *Surgeon*, J. H. Hughes; *Purser*, H. Cooper; *Assist. Surgeons*, J. Hampton, J. Belcher, M.D.

POWERFUL, 84—*Master*, G. Amey.

PRESIDENT, 52—*Lieuts.* F. Cannon, J. A. Bainbridge; *2d Lieut. Mar.* H. Marriott; *Chaplain*, J. Marshall; *Clerk*, G. D. Nobbs.

REVENGE, 78—*Lieut.* Hon. G. F. Hastings; *Mast. Assist.* R. B. Mudge; *Mid.* J. B. Branch.

SALAMANDER, *St. V.*—*Clerk*, J. Stapleton.

SAN JOSEF, 110—*Assist. Surg.* J. Vallance.

TRIBUNE, 24—*Capt.* J. Tomkinson; *Lieuts.* J. Skypwith, D. Curry.

VICTORY, 104—*Mates*, G. C. Adams, F. Lewis, J. Wilson; *Assist. Surg.* J. Kittle; *Super. Assist. Surg.* G. Doak.

VIPER, 6—*Assist. Surg.* W. Patison.

* See page 43 of Vol. ii. and preceding Vol. for former services.
† See page 360, Vol. ii. and preceding, for former services.

FALMOUTH, 20TH MAY.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
CARRON, st.v....	Lt. Com. S. Duffil	4 April	29 April	Malta	2 May.
ESPOIR	Lt. Com. W. C. Riley ..	27 April	———	———	25 May.
SCORPION	Lt. Com. N. Robilliard.	5 May	———	———	2 June.
NAUTILUS.....	Lt. Com. W. P. Croke..	10 May	———	———	7 June.
LEVERET	Lt. Com. G. Traill	4 Feb.	15 April	St. Ubes	———
ROLLA	Lt. Com. H. F. Glasse .	———	24 Mar.	St. Ubes	———

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

FIREFLY, st.v...	Lt. Com. T. Baldock, ..	3 May	———	———	23 June.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

SWALLOW	Lt. Com. J. Griffith ...	7 April	———	———	9 June.
LAPWING	Lt. Com. G. B. Forster	12 May.	———	———	14 July.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

PANDORA	Lt. Com. W. C. Croke..	22 March	———	———	14 June.
PELHAM.....	Lt. Com. H. Carey, ...	19 April	———	———	12 July.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

CAMDEN.....	Com. Mr. J. Tilley	8 March	6 April	Barbadoes	14 June.
OPOSSUM.....	Lt. Com. R. Peters	7 April	———	———	17 July.
SPEY.....	Lt. Com. R. B. James..	12 May.	———	———	8 Aug.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday everyMonth.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet.]

STANMER	Lt. Com. R. S. Sutton..	20 January	9 Mar.	Jamaica	26 May.
PLOVER	Lt. Com. W. Downey ..	22 Feb.	———	———	28 June.
REYNARD	Lt. Com. G. Dunsford..	22 March	———	———	26 July.
GOLDFINCH	Lt. Com. E. Collier,....	19 April	———	———	23 Aug.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Tenerife, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Tenerife, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

LYRA	Lt. Com. J. St. John ..	28 January	11 Mar.	Bahia	17 June.
BRISEIS.....	Lt. Com. J. Downey ..	7 Feb.	18 Feb.	Madeira	27 June.
RINALDO	Lt. Com. J. Hill	7 March	18 Mar.	Madeira	25 July.
PIGEON.....	Lt. Com. J. Binney....	4 April	18 April	Madeira	22 Aug.
MELVILLE.....	Lt. Com. C. Webbe	9 May	———	———	26 Sept.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

RETURNED TO PORT.

AFRICAN, St. V.—Lt. Com. J. Harvey, 11th May arrived at Plymouth.

COLUMBIA, St. V.—Lt. Com. B. Aplin, 24th April arrived at Falmouth.

CONFIANCE, St. V.—Lt. Com. J. W. Waugh, Woolwich.

DUKE OF YORK—Lt. Com. R. Snell, 30th April arrived at Falmouth. Passengers, Marquis Morenco and family, Senor St. Maria, Mr. Miers, and Sen. Gomes.

ECLIPSE—Lt. Com. W. Forester, 20th April arrived at Falmouth.

FLAMER, St. V.—Lieut. Com. C. W. Griffin, 13th May arrived at Falmouth. Passengers,

Colonel Thomas, Major Hill, Captain Carnagie, Lieuts. Gordon and Wilton, Messrs. Green Edwards, Grillot, Glasgow, Ludlow, Dastis, and Martinez.

LAPWING—Lieut. Com. G. B. Forster, 1st May arrived at Falmouth. Passengers, Gen. Montillo, O'Leary, and Mr. Morton. —*Sailed.*

MESSENGER, St. V. — Mr. J. King, Woolwich.

MUTINE—Lt. Com. R. Paule, 4th May arr. at Falmouth. Passenger, James Forsyth, Esq.

NAUTILUS—Lieut. Com. W. P. Croke, 28th April arrived at Falmouth. Passengers, Lieut.-Colonel Baldock, Messrs. Ferier and Borges.—*Sailed.*

NIGHTINGALE—Lt. Com. G. Fortescue, 17th May arrived at Falmouth. Passengers, Messrs. Geaves, Byrn, Copland, Udhe, and Masco.

PANTALOON—Lt. Com. S. C. Dacres, 2d April arrived at Falmouth.

PIKE—Lieut. Com. A. Brooking, 14th May arrived at Falmouth.

REINDEER—Lieut. Com. H. P. Dicken, 14th May arrived at Falmouth. Passenger, Mr. Bradshaw.

SAVAGE—Lieut. Com. R. Loney, 4th May arrived at Falmouth. Passengers, Viscount Icoromeka, Marquis and Marchioness Bellune.

SEAFLOWER—Lt. Com. J. Morgan, 24th Feb. Falmouth.

SHELDRAKE—Lt. Com. A. R. Passingham, 3d May arrived at Falmouth. Passengers, Mr. and Mrs. Stewart, and Mrs. Jenkins.

SKYLARK—Lt. Com. C. P. Ladd, 14th May arrived at Falmouth.

SPEY—Lieut. Com. R. B. James, 26th April arrived at Falmouth. Passenger, Mr. Bremner.—*Sailed.*

THE THAIS.—On the arrival of the Eclipse from Halifax, on the 26th of April, all doubt ceased respecting the loss of the Thais packet, which sailed from Falmouth in December last. A vessel which had been dispatched to Sable Island, to inquire for her, had returned before the Eclipse left Halifax, without any tidings of her; and it was generally believed that she has foundered in crossing the Atlantic, with all hands on board.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 316.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
205 Ann	Waller	Liverpool	St. Thomas	Bermuda	11 Mar.	
206 Caledonia	M'Lay	Liverpool	New York	Rockaway	11 April	Crew saved.
207 Chance	————	Wexford	Glasgow	Donaghadee	28 Mar.	Crew lost.
208 Holland	Sloop	————	————	Jamaica	1834	
209 Industry	M'Leod	Londonder.	Lancaster	Off Sanda	17 April	Crew saved.
210 Jack Tar	Fowler	Newcastle	Newfndld.	At Sea	1 May	Abandoned.
211 Lord Gambier	————	Sunderland	Riga	Engelholm	8 April	Crew saved.
212 Madeira	Ross	Liverpool	Oporto	C. Portugal	April	
213 Rodney	Salisbury	Mobile	Liverpool	At Sea	6 April	Abandoned.
214 Seaforth	————	Morant Bay	Port Maria	Jamaica	10 Mar.	
215 Union	————	————	————	Madagascar	Dec.	

BEACON AT THE MOUTH OF THE ELBE.—The following was too late for the first part of our work:—"It being requisite, in the course of this summer, to repair the Schaarhorn Beacon, situate at the mouth of the Elbe, for which purpose part of the top wooden-work must be taken down, whereby the form of this signal will of course be altered; this is to give notice to all masters of vessels trading to the Elbe, that during the said repair the height of the middle post to the top, and the button or call, will remain unaltered. The beacon might in thick weather, during the repair, be taken for the mast of a vessel by those who are not aware of the intended repair. The time when it will take place depends on the weather."

An instance of the zeal and perseverance of British seamen has been just afforded, by the arrival at the Cape of the Circe, of only twenty-six tons burden, and having only three men on board. The following was the route of this perilous undertaking:—On the 2d of August she left Deptford, and reached Scilly on the 12th, Madeira on the 21st, the Canaries on the 23d, and the Cape de Verds on the 30th of the same month. On the 16th of September she again set sail, and crossed the line on the 6th of October, then stretched over to Abrolhas, on the South American coast, and touched at the Isle Grande on the 30th. On the 3d of November she arrived at St. Sebastian, and remained there ten days. She from thence made her way across the Atlantic, and reached Elizabeth Bay, on the African coast, on the 1st of January last, where she stayed eighteen days, and arrived in Saldanha Bay on the 7th of February; and was at Table Bay at the time of the departure of the vessel which brings the present advices: thus having been about seven months in completing this singular and bold undertaking.—*Times.*

Births.

At Clive Hill, Cork, the lady of Captain Richard Connor, R.N., of a daughter.

In Jubilee-Terrace, Southsea, the lady of Lieut. Binstead, R.N., of a daughter.

At Woodside, the lady of Captain Thorne, R.N., of a daughter.

At Strete Raleigh, the lady of Captain Buller, R.N., of a son.

At Stone-Pitts, Isle of Wight, the lady of Captain Brigstock, R.N., of a daughter, still-born.

At Worhing, the lady of A. Savage, Esq., Surgeon, R.N., of a daughter.

At Fratton, the lady of Lieut. Frederick Wood, of H.M.S. Belvidera, of a daughter.

Marriages.

At St. George's, Camberwell, Captain J. A. Gardner, R.N., to Ellen-Mary, only daughter of S. Johnson, Esq., of Marlborough-place, Kent Road.

At Redruth, Captain George Hay, R.N., to Nanny, youngest daughter of the late William Davey, Esq.

At Charles church, Lieut. Fortescue, R.N., to Miss Carter, of Buckwell-street.

At St. Mary's, Cheltenham, Captain James Hamilton Murray, R.N., to Fanny, youngest daughter of the Hon. Mrs. Pelham, of Sussex.

Deaths.

At his residence, Palestine-House, Plymouth, Rear-Admiral Samuel Brooking, respected by the gallant and honourable service of which he was a member, and sincerely esteemed by his relatives and numerous friends.

On the 6th April, at Malta, retired Commander Henry St. John, R.N., formerly of Boxhill, near Plymouth. He was upwards of twenty years in the service of the Havannah Police Department at Malta.

At Bodmin, where he had gone for the benefit of his health, Thomas Barnes, Esq., Surgeon, R.N., of Morice-town.

Robert Bruce, Esq., Commander, R.N., (1818,) a most excellent and meritorious officer, lately commander of H.M.S. Revenge for upwards of three years.

At his residence, in Morice-square, Mr. William Dryden, Surgeon, R.N., formerly Assistant-Surgeon in this dock-yard, leaving a widow and several children.

On the 24th April, at Falmouth, Lieut. Robert Ede, R.N. Latterly he commanded his Majesty's steamer Colombia; previously to which he commanded for several years his Majesty's packet Sheldrake, on that station.

On the 11th of May, aged 42, Lieut. Wm. Richards, R.N., eldest son of the late Rev. William Richards, rector of Little Cheverill, Wilts.

At Denars, in France, on the 23d of April, Lieutenant Joseph Arnold, R.N.

At Littlehampton, Mr. R. Ellis, Purser, R.N. (1807.)

On board his Majesty's ship Forte, in the West Indies, Mr. Goodridge, purser of that ship.

In Jubilee-street, Plymouth, Mrs. Grant, aged 53. The deceased had served in the Mediterranean on board his Majesty's ship Ocean, as Purser's Steward, upwards of two years after the death of her husband, who originally held the situation; a woman's performing such duty is perhaps a circumstance unprecedented in naval history.

Lieutenant Arindell, the Assistant-Surveyor of H M.S. Ætna, about 11 A.M. on January 6, unfortunately fell overboard from the gangway, and soon disappeared, though his cries being heard, a boat was instantly lowered, and the most prompt assistance was rendered. It is supposed that he fell a prey to the numerous sharks that had been seen plying round the ship, by which he was soon dragged away from the surface, as he was a most excellent swimmer, and had, during the course of his service, been the happy means of rescuing several men who had fallen overboard, from a similar death.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

APRIL, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrt.'s Thermometer, In the Shade.				Wind.				Weather.	
								Strength.		Quarter.			
		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.
				°	°	°	°						
1	Tu.	30·13	30·19	43	52	35	53	4	4	N.W.	N.W.	B.	Bc.
2	W.	30·28	30·26	47	50	40	52	1	1	S.	S.W.	Gd.	Gd.
3	Th.	30·31	30·24	51	52	46	55	2	2	W.	N.	Bc.	O.
4	F.	30·48	30·38	44	54	32	55	2	2	N.W.	N.	Bcm.	Bcm.
5	S.	30·35	30·28	49	53	44	56	1	1	N.W.	N.W.	Bcm.	Bcm.
6	Su.	30·40	30·48	48	56	42	58	2	2	N.W.	N.W.	O.	Bc.
7	M.	30·35	30·29	45	55	32	56	2	1	W.	N.W.	Bv.	Bv.
8	Tu.	30·36	30·35	46	48	39	49	6	6	N.E.	N.E.	O.	O.
9	W.	30·36	30·31	42	45	38	46	5	6	N.E.	N.E.	O.	O.
10	Th.	30·28	30·27	40	42	27	43	4	4	N.E.	N.E.	Bc.	Phs.
11	F.	30·19	30·12	39	41	26	45	7	5	N.	N.	Bc.	Qphs.
12	S.	29·99	30·01	39	42	32	46	6	4	N.	N.E.	Bqps.	Qphst.
13	Su.	30·18	30·26	38	48	31	49	5	5	N.E.	N.E.	Bc.	Bc.
14	M.	30·38	30·37	42	49	27	49	2	2	E.	E.	Bv.	Bv.
15	Tu.	30·41	30·39	45	50	28	54	1	5	S.E.	E.	Bcv.	Bv.
16	W.	30·36	30·33	47	51	32	52	2	3	E.	E.	Bc.	B.
17	Th.	30·25	30·22	48	53	33	55	3	4	N.E.	E.	B.	B.
18	F.	30·18	30·18	51	55	35	56	3	3	N.E.	N.E.	B.	B.
19	S.	30·23	30·21	52	60	36	60	2	3	E.	E.	Bv.	B.
20	Su.	30·28	30·27	46	58	36	58	4	4	N.E.	N.E.	Bc.	Bc.
21	M.	30·34	30·31	46	55	35	55	2	3	N.E.	N.E.	O.	Bc.
22	Tu.	30·30	30·24	46	54	34	55	3	2	N.	N.	Bc.	O.
23	W.	30·22	30·22	52	52	39	55	2	3	N.E.	N.E.	Bcm.	Opr.
24	Th.	30·33	30·28	48	51	37	52	2	3	N.	N.	Go.	Bc.
25	F.	30·16	30·13	44	52	31	53	1	1	S.W.	N.E.	Gm.	Bcm.
26	S.	30·07	30·01	46	54	34	55	2	3	E.	E.	Bc.	Bc.
27	Su.	29·63	29·50	48	60	36	62	1	2	S.E.	E.	Bc.	O.
28	M.	29·33	29·36	57	62	54	64	5	5	S.W.	S.W.	O.	O.
29	Tu.	29·42	29·41	60	61	48	65	3	4	S.E.	S.E	O.	Od.
30	W.	29·52	29·57	54	57	47	61	5	5	S.W.	S.W.	Od.	Pr.

April—Mean height of the Barometer, 30 16 inches; Mean Temperature, 45°; Depth of Rain fallen, 0·50 inch.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds — detached passing clouds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
. Under any letter indicates an extraordinary degree.

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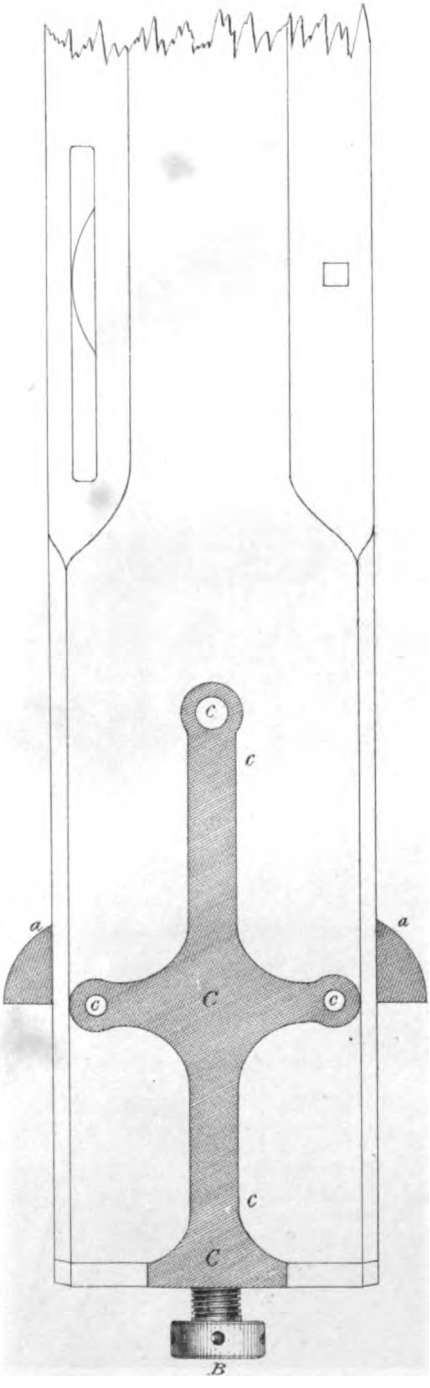

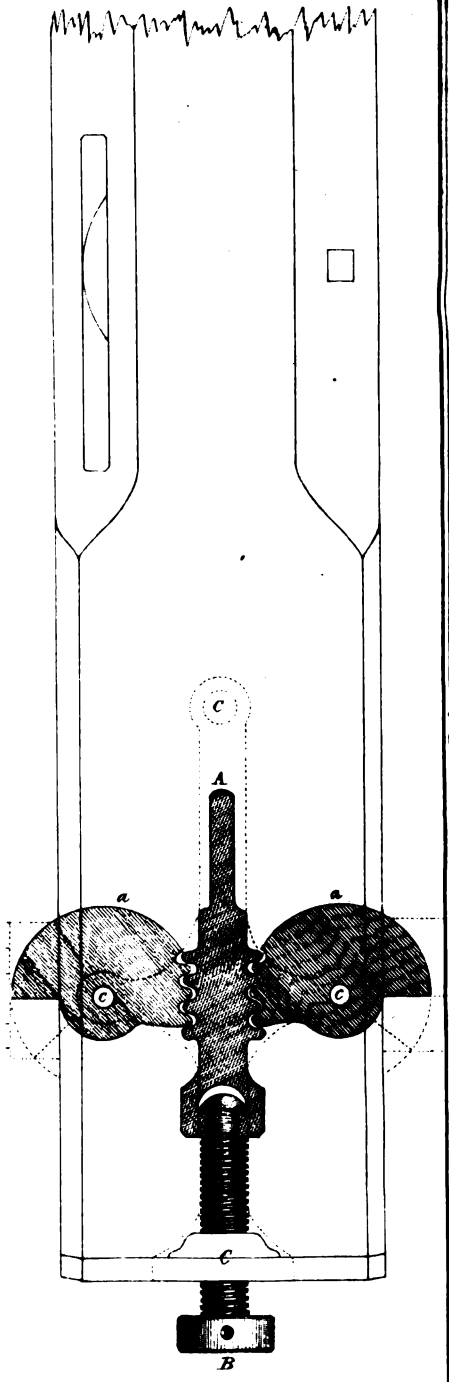

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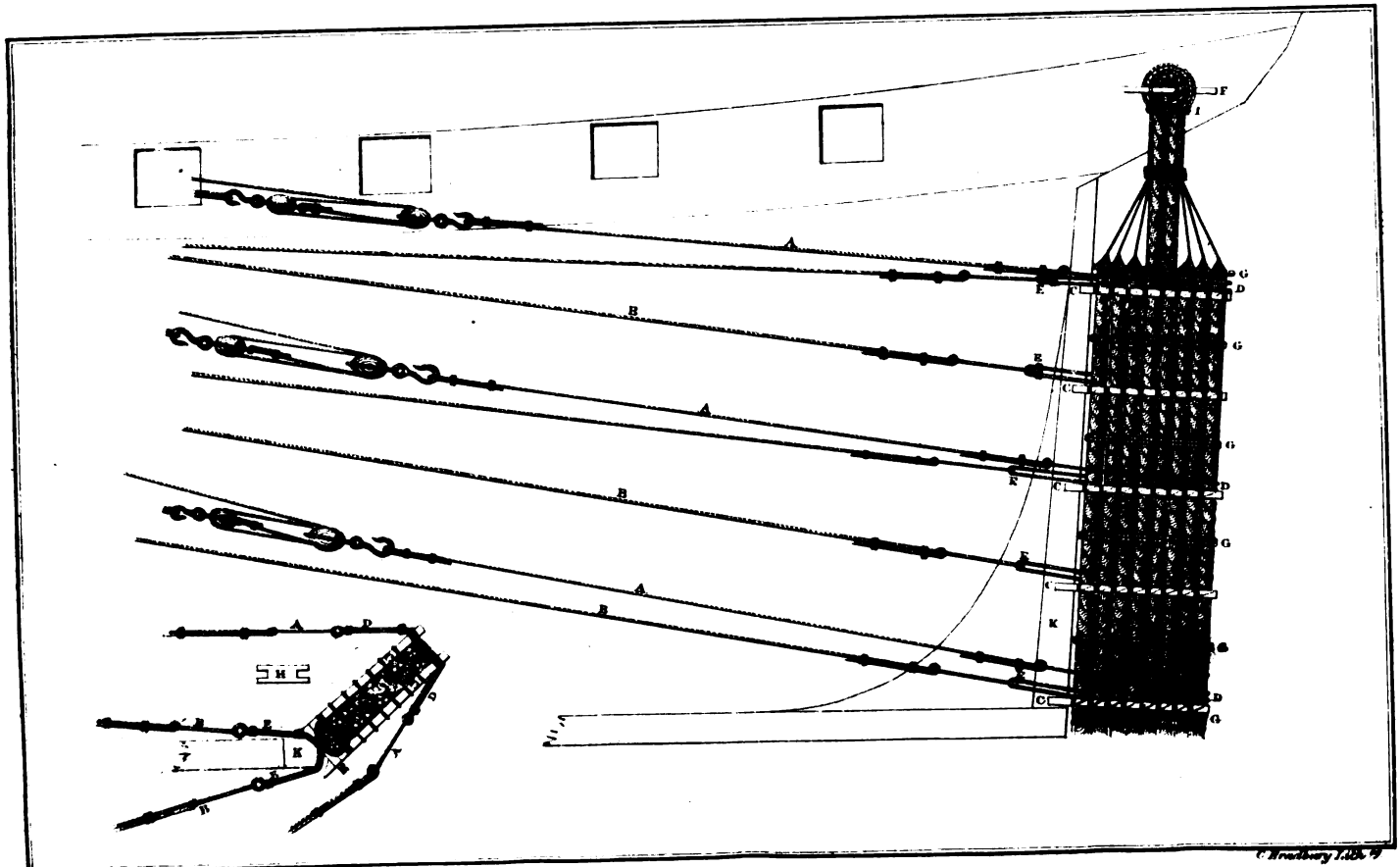

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THE

NAUTICAL MAGAZINE.

JULY, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

33. On the Navigation of the Straits of Malacca. *By Capt. W. Hamley, R.N.*

Compass Bearings.

The following is an extract of a letter from Capt. W. Hamley, R.N., lately in command of H.M.S. Wolf, on the East India station, to Vice-Admiral Sir John Gore, the Commander-in-Chief. Notwithstanding there is so much information on the places alluded to by Captain Hamley in that invaluable work of Capt. Horsburgh, the East India Directory, which no one in those seas ever thinks of being without, yet the remarks we have extracted contain so much important and very desirable information on the navigation of the strait in general, that we are satisfied they will be acceptable to our East India commanders, and shall therefore give them without further comment:—

In running over for the straits, through whatever channel of the Nicobar Islands a ship may have come, she should endeavour to reach as far to the northward as Pulo Buton, as she is then likely to carry northerly winds to the entrance of Penang harbour; whereas, if she gets to the southward, there is often great delay from light winds, and a strong set down the straits, which renders it difficult to get round the north end of Penang.

After making Pulo Buton, she may run down outside the Lancarvis and Ladda Islands, at any distance most advisable from circumstances; but, should she have to go inside towards the Queda shore, she should not go into less than eight fathoms, as there is a bank extending at least three miles off, on which there is at times a great break, when the wind sets in from the south-west. I was obliged twice to slip, and run under the Boontings for shelter, where there is good anchorage in a S.W. wind.

After passing outside the Boontings, a vessel may run midway between the Malay shore and the Island of Penang; rather nearer the Malay shore is the deepest water. I have never gone in without having a quarter four fathoms cast on the mud bank, which stretches from side to side; but, as the bottom is

soft mud, and the water generally smooth, there is little danger. After passing the mud bank, the water deepens to seven, eight, and nine fathoms: the flag-staff on the fort bearing S. by E. half a mile, eight fathoms is good anchorage.

There is a good passage through the south channel for ships not drawing more than seventeen feet, and might be made a very safe one, if properly buoyed off: the only marks at present are the fishing-stakes, which are liable to be moved. I have gone through several times by the lead and stakes without difficulty.

In leaving Penang for the eastward, or coming to it, several days may be saved by taking this channel, instead of having to beat round the north end.

In leaving Penang, to go down the straits, it is well to keep on the Malay side, taking care to keep outside the Kio Flat that extends some distance off shore. You may pass close to the Dindings, and outside the white and black rocks of the Sambilongs. Running down the straits, a ship should keep on the edge of the north sands, which is the best guide. There is generally a set towards the Arrows, which are dangerous rocks, with reefs about, and extending some distance from them. I found good anchorage off the Long Arrows, in eight fathoms, when set on in light and variable winds.

The Round Arrow is the mark for running between the sands, until Parcelar Hill is made. A ship should never borrow too much on the south sands, as they are the most dangerous, and have deep water close to, but run along the north sands, in from fourteen to fifteen fathoms, passing over the south end of the two-and-a-half-fathom bank, in from eight to fifteen fathoms. After clearing the sands, you will have Parcelar Hill for a guide, till Cape Ricardo is made. The Bambeck Shoal, about three miles off shore, lying in a line with Parcelar Point and Cape Ricardo, is easily avoided. Here is the narrowest part of the straits, being only about nine miles between the Bambeck Shoal and the Pyramids on the south sands, which are the most dangerous, having deep water close to, and only one and a half and two fathoms in some parts.

From Cape Ricardo, keeping about three miles off shore, there are no dangers as far as Malacca but what are visible.

Fisher's Island, to the northward of Malacca, should not be approached nearer than a mile. The best anchorage is in about eight fathoms, with the flag-staff bearing N.E. by E.

Leaving Malacca for Singapore, you may pass any distance outside the Water Islands, but not between them. To the southward, there is good anchorage all the way to Mount Formosa, in from ten to fifteen fathoms, two or three miles off shore. Off Formosa, there is a bank with only one and a half fathom on it, extending four miles off shore.

From Formosa to Pulo Pisang there are no dangers; but you must not run inside of Pisang, as there is a flat extending to the southward, to Pulo Cocob. Pulo Pisang itself stands on the edge of the flat. There is good anchorage in fourteen fathoms, about a mile and a half off Pisang.

Off Cocob, also, there is very good anchorage, in from eleven to thirteen fathoms. Good anchorage extends all the way along this side to Barn Island, which is the entrance of Singapore strait. A ship should never attempt running through the Singapore strait in the night, except very well acquainted, particularly as she may always have good anchorage off Barn Island.

The greatest danger is Tree Island, on the south side of the entrance. It is very low sand, with a single tree on it, and a dangerous reef, extending almost to Red Island. It cannot be seen far off, being so very low; there is generally a strong set towards it. The tides here are very strong, and not at all regular, as I have known them run eighteen hours one way. In rounding the Coney,

off Barn Island, you may pass within two and a half cables' length of it, and then stand for St. John, which forms the harbour of Singapore.

The anchorage on the east side of the Rabit and Coney is not so good, being twenty-four and thirty fathoms, with a rocky bottom, particularly towards the south shore.

The Buffalo Rock is visible at high-water, but should not be approached nearer than half a mile. There is plenty of room to beat by the marks laid down by Horsburgh.

The anchorage at Singapore is good, in four and five fathoms, with the flag-staff bearing N.W. by W.

A ship navigating the straits should have a stream-anchor at the bows, ready for letting go, as the tides are strong; and there being anchorage in almost every part, it saves a great deal.

The soundings and banks, as laid down in the charts, and Horsburgh's directions, are generally correct, and perfectly safe to run by.

The water is generally smooth, with land and sea-breezes. In the months of July and August there are heavy squalls at times, called "Sumatras;" they do not last long: but a ship should always shorten sail in time; they give plenty of warning.

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34. REMARKS ON THE FALKLAND ISLANDS,* *visited by H.M.S. Tyne, Charles Hope, Esq., Captain, in January*, 1833. *By Mr. Edward Gulliver, Master, R.N.*

Compass Bearings.

At present we possess but scanty information on the hydrography of the Falklands in general. We trust it may not be long before we shall become better acquainted with them, through that able and scientific officer, Captain Fitzroy, commanding his Majesty's surveying vessel Beagle, in those parts; but, in the mean time, the following remarks on two of their principal harbours will be highly useful to navigators:—

PORT EGMONT, in West Falkland Island, is situated on the north side of the island, in a fine and spacious harbour, but difficult to be made out when first coming in from sea. The entrance may be known in clear weather by two small islets or keys, called by sailors who frequent that port, Keppel Island Keys: they are about nine miles N.N.W. from the entrance; but, in consequence of the very thick fogs that prevail, and always with any wind that has northing in it, they are difficult to be made out. They are to be left on the larboard hand going in. There are also two other low islands, that lie about W.N.W. ten miles from Keppel Island Keys, called Wreck and Ledge Islands, and are always to be left on the starboard hand going in.

The course into the harbour, after passing within a mile of the Keppel Island Keys, on the western side, is about S.S.E. ½ E. There is no difficulty or danger in running for the harbour, after you have once got hold of the keys, by steering the above course until you get within the points of the entrance of the harbour, where a sunken rock is laid down in Lieut. Edgar's chart, just within the points, and nearly midway between them; but its existence appears to me to be doubtful, as I went away sounding at low-water, for the purpose of

* For further information on these islands, see Vol. i. p. 397; Vol. ii. p. 394, 525, 614, of Nautical Magazine.

ascertaining its position, but could not find it, although I stretched across from point to point, and from kelp to kelp, off both shores, and found plenty of water, seven fathoms close alongside the kelp on either shore, and gradually increasing to sixteen and seventeen fathoms mid-channel.

There appears to be anchorage in every part of the harbour. The best is with the ruins of the old settlement bearing N.N.W., (they are just round the first point on your starboard hand, when within the harbour,) and the watering place W. by S., in about nine or ten fathoms water, good holding ground, and distant from the shore about half a mile. We anchored in H.M.S. Tyne, with the above bearings, in eleven fathoms, stiff mud, and rode out a heavy gale without driving.

Water may be obtained here by sending on shore your water-casks, and filling them, and either rafting them off, or parbuckling them into your boat, as you please: there are also abundance of wild ducks, geese, both upland and kelp, and also snipe, to be found here; so that a few days may be most agreeably passed here. There is also an abundance of fish to be caught here with the seine; in one haul we got a sufficiency for one ship's company.

The rise and fall of the tide in Port Egmont is about nine feet; and it is high water, full and change, about seven o'clock. I made Port Egmont by mean of three chronometers, rated only three weeks before at Fort Vilganhon, Rio, to be in long. 60° 15′ 00″ west, which is about thirty-four miles to the westward of where Lieut. Edgar places it.

The coast between Keppel Island Keys and the entrance into Falkland Sound, is pretty bold; having sailed in H.M.S. Tyne twice along it, and at the distance of forty-five and six miles from the land, without discovering any thing like broken water. I should therefore recommend a stranger, working up from Falkland Sound to Port Egmont, to stand within three or four miles of the shore, and not too far off, when he will have no difficulty in making out the islands that point out the approach to Port Egmont, as they are the first islands that are made in going to the westward from Falkland Island.

Falkland Sound, so called, being the channel between the two principal islands, East and West Falkland, is easily made out by a very remarkable rock, called the Eddystone, which lies about four leagues N. by E. from White Rock Point, and W. by N. six miles, from Cape Dolphin. It may be seen from the deck in clear weather five or six leagues. It makes at first something like a sail, and appears to be pretty bold all round. The land also half-way between Cape Dolphin and the eastern entrance of the Sound, is rather high and rugged; and White Rock Point is also remarkable, from some white rocks that lie off it: it is the western point of the entrance into the sound. The soundings off the entrance of the sound are laid down very correctly in Lieut. Edgar's chart, but his distance between the Keppel Island Keys and the Eddystone is very much out. In H.M.S. Tyne we measured it, and made it as near as possible thirty-five miles, when Lieut. Edgar makes it fifty-two miles in his chart. I also make the latitude of the Eddystone 51° 10′ S., which is about six miles further north than laid down in the charts. West Falkland Island is generally higher than the East, and both are very uneven, and the land much indented.

Berkely Sound, East Falkland, is easily made out by the breadth of the entrance, which is plainly visible some miles at sea. Off Cape St. Vincent, are the Volunteer rocks; and a sunken rock, on which a French corvette struck, is said to lie about N.E. by E. three-quarters of a mile from the Volunteer rocks: therefore a good berth should be given to it when hauling round into the sound. There are also some rocks off Cape Pembroke, the southern point of the sound; they extend about one mile and a quarter out from the point;

but when within the points, the sound, for about seven miles, is perfectly clear, and may be worked up without danger. Be careful not to stand too close to Cape Nelson, off which some rocks lie. After working up about seven miles, the Sea-Lion Islands, or Rocks, will be seen, with a patch of kelp about them, that extends to the point they lie off, and also to the southern end of them, and nearly midway between the Sea-Lion Islands and the east point of Goat Island, another large patch of kelp will be seen, on each side of which there is a passage: but be careful not to get in among the kelp,* as many dangers unknown may exist among it. In H.M.S. Tyne, we worked in, blowing fresh between the Sea-Lion Islands and this patch of kelp, and tacked entirely by our approach to the kelp on each side. We worked up as far as to bring the eastern extreme of Goat Island to bear S.E. small island of Ellice Island, West; kelp in midway, East and the Sea-Lion Islands E.N.E., when, in consequence of not thinking it prudent in so large a ship to work up any further, we anchored in ¼ less 9 fathoms, good holding-ground, and gave her a good scope of cable.

With a fair wind, a ship may safely run inside all the islands, taking care to keep Goat Island on the larboard hand, when a good berth may be picked up in a quarter five fathoms, mud, with the settlement of Port Lewis bearing W.N.W. one mile; western point of Ellice Island N.E.; and western point of Goat Island S.E. Although this anchorage is handy for the watering-place and settlement, in south-west gales it is not so smooth as the anchorage we had in the Tyne; but I would not on any account recommend any square-rigged vessel, larger than a ten-gun brig, working up further than we did in the Tyne.

Water may be had at the settlement by sending on shore your water-casks, and filling them. Cattle are plentiful here, and may be obtained in any numbers, by giving the Guachos twenty-four hours' notice: the price we paid was ten dollars a head. The same abundance of wild ducks, geese, and snipe as at Port Egmont. There are also a great number of wild horses in East Falkland.

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35. Remarks on the Island St. Andrew, West Indies.—*With Directions for Approaching it. By Mr. H. Mapleton, Acting Master of H. M. S. Arachne, in* 1833.

Respecting this island, Mr. Mapleton observes, that it is a matter of great regret that it is so seldom visited by the men-of-war which monthly take the mail from Jamaica to Chagres, as the sickness, which few ships on this service escape, is occasioned by the long stay they make for the return mails, being often three weeks at anchor in Navy Bay, or the open roadstead of Chagres.

The centre of the Island St. Andrew is in about lat. 12° 30′ N. and long. 81° 30′ W.

St. Andrew Island bears by compass N.W. by N. 210 miles from Chagres. The dangers, on approaching it from the southward, are the two Keys lying S.S.W. and E.S.E. of it: the former 22 miles, and the latter 7 miles from the N.W. point of the island. A good look-out being kept, they may be seen from the mast-head 12 or 14 miles distant. On making them, shape your course so as to pass mid-channel between them. The S.S.W. Keys may be

* Captain P. King, in his work on South American Navigation, says, "be careful to avoid kelp every where."

approached on all sides to within a ¼ of a mile, with anchorage from thence in 7 fathoms.

The E.S.E. Keys must have a wide berth, as they cannot be approached by a stranger to within 3 or 4 miles; but as the position of both these Keys, and likewise the island, is not yet correctly laid down, the dangers surrounding them are most likely but little known.

On making the island, which can be seen 20 or 21 miles off, it has the appearance of a high perpendicular hill, running off to the eastward to a low point.

A nearer approach shews the western end of the island to be formed by two high sugar-loaf hills running into each other, and the land to the eastward to be low and uneven.

Steer directly for the western point of land you see. The breakers on the S.E. side are very heavy, and on a small sandy Key in the midst of them are two cocoa-nut trees. By steering for the southward of the island, which, as you approach, shews a high bluff point, you will avoid all danger. After rounding this point, the west side close to its shores is clear of all danger. Stand on, until a house on the top of a bare hill, having the appearance of high cultivation, with two cocoa-nut trees towering over it, comes in view. Stand on until you bring this house to bear N. by E.: you will then have the entrance of a small cove well open; steer boldly for it, and run in until you get into white water, caused by the sandy bottom, and at four cables' length from the shore you will have good anchorage in seven fathoms, sand. Quite close to the shore on this side of the island, you will have four, five, and six fathoms; but, with the exception of the sandy bottom off the cove, it is rocky. You lie here sheltered from easterly, and open to westerly winds.

Intending to make a long stay here, it would be advisable to warp into the cove, where you would lie secure from all winds. It is about 260 feet wide, but you have only deep water in mid-channel, about 70 feet broad. On each side of this channel it shoals to 2 and 1½ fathoms. You must be careful in taking a vessel in, and securing her well when in.

The East-South-East and South-South-West Keys.

The E.S.E. Keys.—From the top of the hill where the house before mentioned is, we took their bearings with an azimuth compass. They bear E.S.E. fourteen or fifteen miles from the south-west end of the island. The largest of them is a considerable height out of the water, and has a great many cocoa-nut trees on it. They appear to extend three or four miles in a north-east direction. The channel between them and the island is six or seven miles wide; but it is intricate and difficult, and would be dangerous for a stranger attempting it.

The S.S.W. Keys—Bear S.S.W. from the north-west point of the island, distant twenty-two miles. From information we received from the turtle fishermen who make it their summer residence, they may be approached from any side to within a quarter of a mile, with good anchorage from them at this distance in seven fathoms.

In running for the island at night, you must have the deep-sea lead kept going. Shoaling your water, will point out your approach to danger, and a good look-out must be kept.

36. Remarks on the Strait and Roads of Singapore. *By Mr. J. S. Taylor, while acting Master of H.M.S. Wolf in* 1832.

Compass Bearings.

Rounded the Coney at two and a half cables' distance, in sixteen and seventeen fathoms. A reef extends from the Coney to the southward a good cable-length, which, at high-water, is nearly covered. I do not think this reef is explained by Horsburgh. I should have thought by his Directions, Coney to be a bluff steep rock to the southward. When this reef is covered, you may be sure it is, or very near, high-water. Anchored in twenty-four fathoms, with the kedge, (to stop tide,) half a mile southward of the Coney.

Anchored several times while working through the straits in twenty and twenty-four fathoms; the last time twenty-one fathoms, between Middle and St. John Islands, (working through,) to stop tide. Bottom hard yellow clay. Centre of Middle Island, W. by N. ¼ N.; south end of St. John, N.E. by E. ¼ E. Buffalo South, (easterly,) saw the reef eastward of Middle Island very plain, S.W. by W. ¼ W. about a third of a mile from where we anchored. These soundings also agreed with Horsburgh, and his marks for tacking from the northern shore very good. In standing towards the south side, having a commanding breeze, we stood far beyond his marks, which you may do if you can make certain of keeping your breeze, and the two Ledges and the Buffalo distinctly seen. Rounded Signal Island at one cable and a half, seventeen and eighteen fathoms; at two cables, nineteen and twenty fathoms.

Working into Singapore Roads in the night, cloudy and dark, Signal Island not seen, a ship should be careful she does not stand over too far to the western shore. We put the helm down in nine fathoms and a half, (quarter flood,) had seven fathoms in stays; laid N.N.E. had three fathoms almost immediately. Kept away N.E. and deepened to four fathoms. I have since seen in the loose paper that accompanies Horsburgh, (of one sheet,) under the head of Singapore Anchorage, almost a similar thing. The Bridgewater, anchoring in nine fathoms, veering half a cable, had only a quarter four at low-water. As this side is steep to, a ship in the night should be careful how far she stands over, especially if the flood has made.

We anchored five or six times in the Roads: the best anchorage appears to be (for a man of war) with Signal Island from S. to S. by W. and the flagstaff N.W. by W. in from three to eight and nine fathoms, at low-water. You are more out of the way of merchantmen here, and nearer the river, for landing, &c. We always anchored in three fathoms at low-water, and near these bearings.

Throughout the straits, the bottom is soft mud, except the northern part of Singapore Straits, which I have mentioned.

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37. Tides in the Straits of Malacca.* *By Mr. J. S. Taylor, acting Master of H.M.S. Wolf, between November,* 1832, *and March,* 1833.

Penang.—Anchorage off Fort Cornwallis Point, H.W.† at a quarter before four. Velocity, two miles and a third per hour. Spring-tides very regular. H.W. on shore nearly two hours sooner.

* If the reader will consult Mr. Whewell's paper on "the establishment of the place," given in our 23d number, p. 42, he will see the importance of noting whether the time is A.M. or P.M.

† H.W.—High-water at full and change.

ARROAS.—A few miles N.N.E. of Fort Cornwallis Point: H.W. at half-past six.

CAPE RACHADO.—Five miles west of Cape Rachado H. W. about a quarter to eight. Found the tides between Parcelar Hill and the Cape regular, setting fair through the straits. Velocity, from one to two miles per hour, (neaps.)

MALACCA.—H.W. in the roads at a quarter past nine. Velocity, two miles and a quarter per hour, (springs,) setting about W.N.W. and E.S.E. Were very regular. H.W. two hours earlier at the river.

NORTH END OF LONG MIDDLE BANK.—H.W. about ten, setting fair through the straits.

SOUTH END OF LONG MIDDLE BANK.—H.W. about noon, setting fair through the straits.

PULO PISANG.—H.W. half-past ten. Velocity, from 1,6 to 2,2 knots per hour.

TWO MILES SOUTH OF PULO COCOB.—H.W. about one. Velocity, from 2 to 2,6 knots per hour, setting W.N.W. and E.S.E.

TREE ISLAND.—H.W. half-past eleven, if at all regular.

THE CONEY AND SINGAPORE STRAITS.—H.W. at eleven, if at all regular. The tides between St. John and the Coney are sometimes very irregular indeed, the flood from the China Sea sometimes running sixteen hours together, and the velocity from 2½ to 4½ knots per hour, setting fair through the straits E.N.E. and W.S.W. It requires great attention to the steerage. This is in the north-east monsoon, and the flood running in the manner it does is, I rather think, owing to the strong winds in the China Sea at this season.

ST. JOHN ISLAND.—H.W. about ten, if at all regular.

SINGAPORE ROADS.—H.W. at nine. Tides pretty regular here, setting N.E. and S.W. from 1 to 1¾ knots per hour.

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38. DANGEROUS ROCK AT THE ENTRANCE OF BARRA HARDOUR, *Hebrides; and a* ROCK IN THE SOUND OF SKY.

Lieut. Lane, commanding his Majesty's cutter Swan, has reported the existence of a dangerous rock lying off the entrance of Barra harbour, in the Island of Barra, one of the Hebrides. It has not more than five feet water over it, and, from its peculiar position, is a very formidable danger to vessels frequenting that place. The following are the marks for it:—

Curachan on with the highest part of Eriskay, to the northward.
South Extreme of Muldonick Isle on with the S.E. extreme of Sanderay.

In the Sound of Sky, half-way between Skerindrick and Scalpa, Lieut. Lane reports a rock with only twelve feet water on it, which, to vessels leaving the sound with westerly winds, and therefore keeping the weather shore (Scalpa) on board is very dangerous.

ORIGINAL PAPERS.

I.—Mode of Calculation, to determine the Rates of Chronometers.

Translated from the French of Mr. M. P. Daussy.*

Chronometrical observations being in the present day the basis of the majority of determinations of longitude, it becomes important to render the results furnished by them as exact as possible. Now, it is indispensable to determine two things with the greatest precision—the rate of the watch, and its error, fast or slow, on mean time, at each point of departure and at each place on arriving.

If we examine the rules given in works which treat of this subject, we find directions to take the difference between the first and last observation, and to divide it by the number of days elapsed, in order to obtain the mean rate; only it is recommended to compare as much as may be possible, like observations, that is, observations made before noon with each other, or, in like manner, observations made after noon.†

To obtain the difference of longitude, the last observation before departure is compared with the first on arrival at another port.

Hence, it appears that the intermediary observations made during a stay in port do not enter into the calculations, and that every thing depends upon the first and the last. Some persons, however, after remaining a long time at one place, have endeavoured to employ these intermediary observations, by combining them in various manners, and taking the mean of the results, but, besides that this method is exceedingly vague, it has the inconvenience of taking a mean of rates determined from intervals of time sometimes very unequal.

For the error of the watch, I do not know that any thing has been done, besides taking the first observation on arriving, or the last before departure, except when an observation has been obtained both morning and afternoon, on the same day, in which case the mean has been used. When employing the chronometrical observations of M. Gauttier, I adopted the plan of making use of the rate given by the greatest interval of time, to deduce from all the observations the error of the watch, for each intermediate day, and then taking the mean of the values thus obtained

* Alluded to in p. 177, of No. 25.

† In a paper by the translator "On the probable errors in determining time," published in No. 5 of this Magazine, it is directed to collect the rate from the daily observations, though no method is pointed out for that purpose. The present one is conceived the most proper to be employed.

for the error; but this method had the inconvenience of not correcting the rate: this led me to seek a simple mode of correcting at the same time both the error and the rate, employing all the observations. I imagined that the most advantageous manner of arriving at this, would be that employed by astronomers to correct approximate elements, by forming for each observation an equation of condition, and determining the corrections in each of them, so that the sums of the squares of the corrections should be the least possible: it consists, as is well known, in forming as many systems of equations as there are unknown quantities, by multiplying each equation of condition successively by the coefficient of each of the unknown quantities (x, y, &c.) in that equation; the sum of all the equations multiplied by the co-efficient of x, forms the first final equation; the sum of all those multiplied by the co-efficient of y, the second; and so on. We arrive thus at as many equations as there are unknown quantities, from which these become known by the usual method. The only difficulty consists in rendering this method simple in its application: this I have endeavoured to effect.

The two quantities to be determined are—the daily rate, supposed uniform, and the error of the watch on any given day, which may be taken at pleasure, as by the rate we can determine the error for all the other days.

Let us then take the first day that an observation was made, and take as an approximate value of which we are to seek the correction, the result of that first observation. Let us also take, as the approximate rate, that determined by comparing the first and last observation. These are the two quantities to be corrected.

We can, by means of this approximate error and rate, determine the error of the watch for the instant of each of the other observations; and comparing this error with the result of the observation, we shall have a difference depending upon the incorrectness of the data, independently of the errors of observation. An incorrect assumption of the error of the watch will have a constant effect, but the difference between the assumed and true rate will be repeated as many times as there may be days elapsed between the first day and that for which the calculation is made.

Each observation will give an equation of this form; error of the watch calculated, plus correction of the error supposed on the first day, plus correction of the rate multiplied by the number of days elapsed since the first day, is the error of the watch by observation.

$$\text{Or } A + x + n\,y = A', \text{ or } x + n\,y = A' - A.$$

We see at once, that, as the co-efficient of x is always unity, the first final equation will be the sum of all these equations; it will thus be obtained without difficulty. To obtain the second, we

must multiply these particular equations by the coefficient of y, which will be generally a fractional number; for it will rarely happen that the observations have been made all at the same hour. Thus the calculation would become long and complicated; but, to render it more simple, we can reduce the errors of the watch to the same time of day by means of the approximate rate. If observations have been only made either before or after noon, the time chosen should be the mean of the times; then, at most, we shall only have two hours interval between the mean time and the extremes. Thus, the error that would be committed in reducing the errors to one instant would be $\frac{1}{12}$th the correction of the approximate rate, and therefore almost always insensible. If we had both morning and afternoon observations, we might form two groups which ought to give the same rate, but a different error, supposing the observations to be incorrect by a constant quantity. If there be no ground for suspecting incorrectness in the altitude instrument, all the observations might be reduced to noon; the mean interval would then be about four hours, which would produce an error which would be $\frac{1}{3}$th the correction of the approximate rate. This quantity would always be less than the error of observation; and, besides, might be compensated by observations taken before and after noon.

After the equations have been reduced to the same hour, the co-efficients of the unknown quantity representing the correction of the rate will be whole numbers, and always small, for we should not extend the supposition of the uniform rate of a watch beyond twenty days, or thereabouts. If the interval should be greater, and the observations in great number, it would be well to divide them into two or three intervals that should be examined separately.

It is seen, then, that by this reduction of the errors of the watch to the same time of day, the multiplication of all the equations by the co-efficient of the unknown quantity sought, becomes an easy operation: the sum of the equations thus multiplied will give the second final equation, which, combined with the first, will give, by the usual methods, the value of each unknown quantity; that is to say, the corrections to be made to the error and rate of the watch, so that the sum of the squares of the corrections may be the least possible.*

To render this more intelligible, we subjoin an example of our method of operation, taken from the register of astronomical observations at the marine dépôt.

By observations made at St. Paul, Ile de Bourbon, in 1822, the watch was found to be too slow as follows:—

* The author mentions here, that when there are observations both morning and afternoon which appear to indicate a constant error either in the instrument or mode of observing, it may be sought by introducing a third unknown quantity, z, whose co-efficient equals unity, and which has a contrary sign morning and afternoon.—Trans.

	Mean time. h.	m.	s.		h.	m.	s.
11th July	at 3	1	32	watch slow	6	41	32
12	.. 3	1	44	.....	6	41	32
14	.. 2	33	31	.....	6	41	34
16	.. 2	50	40	.....	6	41	42
18	.. 3	13	52	.....	6	41	51
19	.. 2	47	3	.....	6	41	50

Comparing the first and last observation, we find for the approximate rate $\frac{18}{8} = 2{\cdot}25$ s.

With this rate we will reduce each error to 3 h. 0 m. 0 s., by diminishing those obtained later, and increasing those obtained sooner than that hour; the difference being very small, our corrections will be so likewise. Thus we shall have—

	h.	m.	h.	m.	s.
11th July	at 3	0	6	41	32·00
12	.....		6	41	32·00
14	.....		6	41	34·04
16	.....		6	41	42·01
18	.....		6	41	50 98
19	.....		6	41	50·02

Now, by means of the error found on the 11th July, and the rate 2·25 s., we shall have, calling x the correction of the approximate error, and y the correction of the approximate rate used—

	h.	m.	s.						h.	m.	s.
11th July	6	41	32·00	+	x	+	0	=	6	41	32·00
12 ..	6	41	34·25	+	x	+	y	=	6	41	32·00
14 ..	6	41	38·75	+	x	+	$3y$	=	6	41	34·04
16 ..	6	41	43·25	+	x	+	$5y$	=	6	41	42·01
18 ..	6	41	47·75	+	x	+	$7y$	=	6	41	50·98
19 ..	6	41	50·00	+	x	+	$8y$	=	6	41	50·02

					s.
Or,	x		=		0·00
	x	+ y	=	−	2·25
	x	+ $3y$	=	−	4·71
	x	+ $5y$	=	−	1·24
	x	+ $7y$	=	+	3·23
	x	+ $8y$	=	+	0·02

Taking the sum of these equations, we obtain the first final equation,

$$6x + 24y = -4{\cdot}95 \text{ s.};$$

In order to obtain the second, we must multiply each equation by the coefficient of y in it: thus we obtain—

				s.
	0	=		0
x	+ y	=	−	2·25
$3x$	+ $9y$	=	−	14·13
$5x$	+ $25y$	=	−	6·20
$7x$	+ $49y$	=	+	22·61
$8x$	+ $64y$	=	+	0·16

Taking the sum, we obtain the second final equation:

$$24x + 148y = + 0^{s}.19$$

We have then, to obtain the values of x and y, these two equations—

$$\begin{aligned} 6x + 24y &= - 4^{s}.95 \\ 24x + 148y &= + 0^{s}.19 \end{aligned}$$

whence, dividing each by the coefficient of x, we obtain,

$$\begin{aligned} x + 4{\cdot}00\,y &= - 0^{s}.825 \\ x + 6{\cdot}17\,y &= + 0^{s}.008 \end{aligned}$$

and consequently,

$$2{\cdot}167\,y = + 0^{s}.833 \quad \therefore y = + 0^{s}.384:$$

which finally gives

$$x = - 1^{s}.536 - 0^{s}.825 = - 2^{s}.361$$

Applying these corrections to the approximate values for the error and rate of the watch, we shall have—

11th July, at 3 h. 0 m. watch slow 6 h. 41 m. 32·00 s. $-$ 2·36^{s} = 6 h. 41 m. 29·64 s.: daily rate = 2·25 s. + 0·384 s. = 2·63 s. losing.

The errors of the observations are therefore,

11th July	$-$ 2·36^{s}
12.....	+ 0·27
14.....	$-$ 3·54
16.....	$-$ 0·81
18.....	+ 2·92
19.....	$-$ 0·61

These errors are not much diminished, but they are distributed more uniformly, and we have the advantage of having employed all the observations for the determination of the two elements of the calculation of longitude, which can be obtained by means of this watch.

[The author gives a second example, in which he determines, from observations made both before and after noon, the error in the hour-angle, arising from a constant error in the altitudes. He proceeds on the same principle, first reducing the observation by an approximate rate to noon, and then introducing a third unknown quantity, z, the coefficient of which is unity, but which has a contrary sign for morning and afternoon. The reader is referred to the Connaissance des Temps, 1835, or the Annales Maritimes, Mai et Juin, 1833.—TRANS.]

II. The Internal Roller Fid. *Invented by Commander E. Belcher, R.N.*

The piece A is a flat bar of metal, of the same thickness as the cogged rollers *a*, *a*, which should be equal to the fid-hole. It is acted on *upwards* by the screw B, which passes through the span plate C, and is secured to the topmast by the three bolts *c*, *c*, *c*, going entirely through the topmast, and screwing into its opposite hole in the span-plate.

The scale is 1·68 inch to a foot.

The weight of the topmast alone will, of course, on unscrewing, turn the roller fid until it revolves from d to e, when it should be nearly flush with the wood.

In unfidding, therefore, it will be merely necessary to sway tight the top ropes, and at any time one man may unfid, and on coming on deck (if necessary) lower the topmasts.

In fidding, this fid will bite at two inches and a half above fidding mark, and if the lanyards of the rigging have not been let go, is powerful enough of itself, without the usual purchase of the pendant and falls, (which of course would be kept tight,) to sway it to the mark; or, if requisite, even two inches and a half above it, (equal to fifteen inches of the lanyards,) should the rigging be slack.

One shews the topmast (the internal machinery concealed) and fids at the usual mark,—

The other is the centre of the topmast, as if slit from head to heel, in the direction of the fid-hole, the dotted line shewing the span plate of No. 1, C.

The advantages proposed in the internal roller fid are as follow: Security in the act of fidding; increased power in doing so; temporary security, if the pendants should require fleeting, (as they frequently do at the last inch,) and, even should falls or pendant fail, a power of itself sufficient, not only to accomplish the end, but also heave it so much higher as to bring the rigging tight, if sudden emergency should require canvass to be set; and, lastly, superseding the necessity of casting off lanyards in unfidding, by which the last-mentioned case will be completely met.

The model constructed on the scale of one inch to a foot raised one cwt. *with ease* from the mark of biting (i. e. two inches and a half above fidding level) to that of fidding, and its excess above. The whole purchase, therefore, effecting a perpendicular elevation of five inches, unassisted by any other power.

III.—Directions for Making a Rope-Rudder, *as proposed by Mr. Thomas Unwin, Boatswain in the Royal Navy.*

In a former number of our work, we recommended to the notice of our readers a plan of Mr. Unwin's, for constructing a rudder with part of an old cable. It is quite as natural for a boatswain to turn his thoughts upon hemp as it is for a carpenter to think of spars; and Mr. Unwin deserves the greater credit for the very ingenious manner in which he has converted his own ware to so valuable a purpose. There is a considerable degree of merit in the plan, and, although there are several others for constructing a rudder by other means, still we think Mr. Unwin's fully entitled to a place in our pages. We therefore give, in his own words nearly, the following directions:—

Ascertain what water your ship draws, and the height from the keel to the upper part of the rudder-hole, for the purpose of cutting your junks. Let the ends of the foremost and aftermost pieces come above the water, (as seen in the plate,) and the bights of the middle pieces be long enough to go through the rudder-hole, to put in the toggle, for the purpose of hanging the rudder. The junks must be all laid double, to be thick enough to take the stern-post. If two breadths of the ship's cable be not as thick as the ship's stern-post is wide, at the upper part, then lay in some small pieces of thin board between the parts of your junks where the capstan bars will cross them, to make them so, and frap all in together. It will be found that about eight pieces of the ship's cable will be about the breadth of the rudder, with the rubbing pieces that will be put in between the bars, to keep them out the thickness of the post. (See chock in the plate.)

Cut twelve pieces the length from the keel to the water's edge, and the two middle pieces, twice the length from the keel to the upper part of the rudder-hole; and when the junks are cut out, worm the upper ends of the short pieces, about a fathom down, with such rope as will fill up the lays; and then clap a good seizing of spun-yarn close to the ends, leaving the ends of the worming long enough to go over the eye of the middle junk, and come under the seizing below the toggle, (as seen in the plate.)

Lay up the worming of each piece into a cablet, to bring over the bight forming the eye. When you are ready to put on your seizing, the ends of the worming are to go over the bight, and come under the eye-seizing, to support the ends of the short junks forming the fore and after part of the rudder, taking care that they bear an equal strain with the middle pieces that hang the rudder. When you have got your junks wormed and laid up, take each two pieces, and stop them together; double the middle pieces, and stop them also, and clap a good stop on, to form the eye: then

bring them all together upon some dunnage, to keep them up from the deck, to enable you to pass your round-about lashings: then take some good rope, and pass round the upper and lower ends, and at four places in equal distances between, for a large rudder. A large rudder will require six round-about lashings, and five pairs of bars; a small one, only five, and four pairs of bars. Cross-frap each round-about lashing with some small rope between each layer of junk, (see plate,) then take some strong capstan bars, or other good spars, fit for the purpose, for a large ship, (or handspikes will do for a small one,) long enough to go across the rudder and take in the stern-post clear of the chock nine or ten inches, for the purpose of keeping the rudder in its place.

Mitre all your cross bars from the chock to the ends, and if your bars or spars are more than six inches thick at the heel of the rudder, you may allow eleven or twelve inch ends, and better, for the two lower ones on each side, as they will come against the dead wood. For all the rest, allow about nine or ten inches, (because the run begins to widen about six feet up from the keel,) as they will take the buttock, and will not fly off as the lower ones. Your lower bars must be about sixteen inches above the heel of the rudder, (see plate.)

The heel of the rudder must be as low as the keel, the same as your proper rudder; let the end of your bars go twelve inches abaft the rudder; and one pair should be close to the top, three more at equal distances between, (see plate;) clap a good lashing at each end of the bars, and cross-frap the end-lashing abaft; but let the lashings be as flat as possible next to the stern-post, that the chocks may come the closer to the rudder.

Your end-lashings being on, cross-frap the bars the same as you did the round-about lashings, (as seen in the plate.) This being done, take some good pieces of hard wood, if you have it; cut deep scores in each end, to lash to the fore side of the rudder, to prevent the lashing of the bars from chafing; cut mortices in each end, (see chock in the plate.) To the ends of the bars, you may nail them to the chocks, to make them more secure; then take some strong rope for your beckets, or some short pieces of chain will be much better, to bend your brace pendants to, to brace the rudder to the stern-post. I would recommend that every ship should carry some pieces of spare chain for that purpose, as they will not be so liable to chafe as rope against the stern-post. If you have no chain, be sure to parsel your beckets well, to prevent them from chafing, as they will go across the stern-post.

Pass the beckets through abaft the first layers of junk next to the post, and pass them round the bar on the opposite side, above the bars, and bring the bight round across the foreside of the rudder. Cut them sufficiently long to cross above the chocks, so that when your rudder is braced to, they will not prevent it from

coming over easily. By crossing the beckets, there will be no strain on them, as the rudder comes over.

If you have no rubbing pieces, put plenty of good parseling on the beckets; and especially if you have rope-beckets, put one becket to every bar for the brace pendants, (as seen in the plate.)

Put on your beckets for the steering tackle pendants; splice them round the bar on the opposite side to which they are to lead after passing them between the three after-layers of junk, and bring the bight round across the after-part of the rudder, to take the strain off the junk; stop them across, ready for bending on your pendants, which will be three in number; one at the top, one in the middle, and one at the bottom bars, on each side, (see plate;) if it is more convenient, the two lower steering-tackle pendants may be in one, and a block to traverse on the bight, with a good strap to hook the steering-tackle to.

When your rudder is ready to go overboard, cut your brace pendants out the length you want them, taking care the lower ones are long enough to come as far forward as possible, to be in a line with the lower part of the rudder, to keep it down. As they come up, bring them aft, to such parts or places as may be necessary. Bring your rudder aft, as far as possible; bend on, and pass round your braces and steering-tackle pendants; hook on your tackles, and pass a strong rope through a block and rudder-hole, lashing the block well where convenient, for heaving up the rudder: then bring your rudder-rope to the capstan or windlass, to heave up the head of the rudder. This being done, heave it overboard, and ease it down with the brace pendants belonging to the side you lower it over; then heave away on your rudder rope, and take in the slack of your braces and steering pendants on the other side. When your rudder is high enough, put in the toggle, and let the rudder hang; then haul taut the upper brace pendants, and so on until you come to the bottom, and you may be sure your rudder is fairly hung. Then hook on your steering-tackle to the pendants.

We have now endeavoured, with a little alteration, to convey to our readers Mr. Unwin's intentions regarding the construction of his rope-rudder. We fear that in one or two places the plate may not be exactly what it should have been, but they will no doubt make those allowances which a British sailor, with so worthy a purpose, deserves. We will conclude the directions with some further advice from Mr. Unwin, which certainly deserves attention. After saying, "this being done, steer your ship to her intended port, and may God guide the ship with such a rudder," he adds—"N.B. It would be highly necessary that every captain of a merchant-ship should have a rudder-mould, or the exact length and breadth of the ship's stern-post, and the distances between the braces thereon, to enable them to keep the brace-pendants clear of

them, should they ever be under the necessity of making a rope-rudder. It would also be necessary for a ship not carrying a hemp cable to be provided with junk for the purpose; and if junk be scarce, one long middle-piece will do, letting the eye come athwart-ships, and four short pieces abaft, instead of three." But we recommend to our readers the worthy boatswain's pamphlet,* for further particulars regarding the efficiency of his rudder.

IV.—On the Protection of Ships from Lightning.

By W. S. Harris, F.R.S.

(Continued from p. 358, No. 28.)

43. We may therefore consider the conducting power of a lightning rod, to arise, not out of any attractive property peculiar to it, but from an action purely passive; that is to say, the removal of resistance; indeed, in the case of a vacuum, or a very finely-exhausted receiver, which transmits electricity freely,† and which is found to operate as a conducting body,‡ we must necessarily admit the truth of this principle; the conducting power here evinced must arise solely from the removal of a resisting medium; since we cannot suppose the absence of all substance to possess any positive quality whatever. Now, the circumstances attending the conducting power being precisely the same, whether we suppose it to be peculiar to a void, or to a positive substance; it is a legitimate deduction, not contradicted by any known fact, that, in either case, the conducting power is a negative quality. In further confirmation of this opinion, we find that an artificial discharge of electricity will rather pass through a small interval of air, than through an extensive length of metal;‖ that is to say, when the resistance in the direction of the metal is *greater* than *that* offered by the air, the electric matter no longer passes in the direction of the metal, it being no longer the *line*, of least resistance.

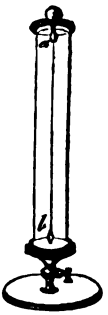
The following experiment, which is new of its kind, is very illustrative of this important point.

* Facts and Observations on the Dangers and Difficulties attending the Loss of a Ship's Rudder; together with a Description of an improved Plan of a Temporary Rope-Rudder, and for Removing the existing Difficulties, and affording Ships the means, within themselves, of making this temporary Rope-Rudder at sea. By Thomas Unwin, Boatswain, Royal Navy. Published by Picken, 38, Tavistock-street, Devonport.

† Transactions of the Royal Society for 1832, p. 71.

‡ See the following experiment, 3.

‖ Singer's Eelctricity, p. 142.



Exp. 3. Let an extremely fine iron wire *a b* be fixed at the points *a b* in a very finely-exhausted receiver; and let a powerful battery be discharged from *a* to *b*. The electric fluid will be observed to pass in a brilliant spark on the surface of the metal without fusing it. The resistance offered by the surrounding space to the superabundant electricity being less than that offered by the wire at its point of fusion. I have known an extremely fine wire, treated in this way, remain perfect under a charge of fifteen or twenty square feet of coated glass, whilst in air it became fused by a charge from five square feet.

44. The utmost, therefore, which can be urged in the shape of objection, on this ground, to the use of lightning rods, is the circumstance of their constituting an easy line of discharge, so that the electric matter may be conceived to fall on a ship, in consequence of such a line being present, when, otherwise, it would remain without any explosion happening; but this, as already shewn (37), is not the fact, or in any way consistent with experience; for, although it is admitted that continuous conductors greatly facilitate discharges of electricity, when such happen to fall on them, yet it by no means follows that, without such conductors, the electric action would remain, as it were, quiescent; the intense forces in operation in a thunder storm are seldom, perhaps never, so nicely balanced as to be overset by the presence of a metallic line applied in a particular place. The thunder-storm which occurred at Plymouth, on the 21st of May, 1831, is in point here:—during the storm, H. M. ship Caledonia, with fixed lines of metal in her masts and bowsprit, terminating in points, was under sail in Plymouth Sound: the lightning was observed to strike, in vivid sparks, immediately on the surface of the sea, and not a very great distance from the ship; it struck at the same time upon the distant hills, and did some damage there. In all these cases, therefore, we should remember, that the forces in operation are distributed upon a vast extent of surface, and that the point or points in which the lightning strikes, is rather dependent on some peculiar condition of the intervening air, or on the amount of force exerted in such point or points, than on the presence of metallic bodies, projecting, for a comparatively short distance, into the atmosphere. "I do not object," says Lord Stanhope, "for shortness sake, to the word attraction, or the point attracting the electric fluid; though I should myself rather wish to employ a less ambiguous term; therefore, what I state relative to there being no real attraction in metallic points, must be understood to refer to the systems of those who most *inconsiderately* assert, that, prominent points of metal placed on the earth's surface do really

invite and attract the matter of lightning from the clouds, and who, in consequence of this *false* and *absurd* notion, very unphilosophically conclude, that elevated conductors are dangerous to the buildings on which they are placed.*"

45. With respect to the actual quantity of electricity which may possibly be discharged in a thunder-storm, and the effect likely to be produced on lightning-rods; that must be determined altogether by experience. It is by no means contended, that lightning-conductors operate as a *charm* or *nostrum;* but that they constitute a useful method of defence against such cases of damage as have come within our knowledge, and certainly not against convulsions of nature, when it would be of no great consequence whether we had lightning-rods or not. It is, therefore, against such cases of damage, as may be reasonably expected to occur, that we propose to employ lightning-rods, and not against such as exist only in imagination. Now we have an induction from the facts of nearly a century, to guide us in this: (e. g.) we do not find in any well-authenticated case of damage by lightning at sea, that a quantity of metal has been melted, equal to that contained in a copper bolt of half an inch in diameter, and six inches long; or otherwise, an equivalent quantity of any other metal, more readily fusible by electricity;† on the contrary, we find, that very heavy discharges have been safely transmitted without fusion, by very small masses of metal; amongst many instances we may cite the following:—

(β) The lightning which fell on the house of Mr. West, at Philadelphia, was received on a pointed brass rod, ten inches long,

* The authority of the late professor Leslie has been quoted by some writers against lightning conductors, but that philosopher had too high a conception of natural causes, to reason in the way attributed to him: indeed, he expressly states, in alluding to lightning rods, "that they *provoke* the shaft of heaven, is the suggestion of *superstition*, rather than of *science*."

† It has been said, that the iron conductors of St. Paul's Cathedral, in London, have been, in certain parts, made red-hot by lightning; but it seems, on examination of the evidence, that this conclusion is very imperfect. The conductors were not examined before the lightning, which was said to have fallen on them, occurred, so that we cannot be certain that the observed appearances, were not originally present after the forging of them: it is beside, very unlikely that a stroke of lightning should have fallen on this building, capable of rendering bars of iron, six inches wide, and an inch and a half thick, red-hot, without destroying the thin copper covering the ball and cross, on the dome of the building, and without the crash of the thunder having been heard over the whole city; no mention of which is made. When St. Bride's steeple was struck, the latter was peculiarly remarkable. The original ball and cross on which the lightning is said to have fallen, may be seen at the Colosseum, London.

If, however, we admit the evidence, it is highly conclusive, as to the value of the lightning-conductors. Since the former church, not defended by a lightning-conductor, was twice struck, and damaged. There is another instance on record, of the effects of lightning on an iron rod, in Port Royal, Jamaica, mentioned in the Transactions of the Royal Society, the evidence of which, seems very incomplete. Two men are said to have perished by lightning near a church-wall; that is not improbable; but, on subsequently looking inside the wall, a bar of iron an inch thick, and a foot in length, was found in many places wasted away to the size of a fine wire; now, it does not appear that this bar was examined previously to the occurrence of the lightning; hence, we cannot infer that the wasting was produced by the electric fluid: more especially as similar appearances are not uncommon in bars of iron erected in church-yards in this country, and which have evidently resulted from oxidation and time.

and a quarter of an inch in diameter—*only three inches* of the point underwent fusion—the house was effectually protected.*

(γ) The spike of the conductor on the mast of the packet-ship, New York, above mentioned (22) (u) and which received a fearful stroke of lightning, consisted of an iron rod four feet in length, and half an inch in diameter, a few inches only of it were melted near its point.

(δ) In the case given of the Ætna (22) (s) the conductor escaped fusion altogether.

(ε) In the Transactions of the Royal Society for 1770, there is an instance recorded, in which a bell-wire conveyed a charge without fusion, which shattered a chimney; and in the same valuable work for 1772, we have an instance in which a bell-wire resisted fusion in its twisted portions.

(ζ) A house was struck at Tenterden, the electric matter fell on an iron bar three-fourths of an inch square, but produced no effect on it.†

(η) Mr. Calandrini witnessed a flash of lightning which struck a bell-wire, and was safely transmitted by it without fusion.‡

In the great experiment of Mons. De Romas; the electric fluid of a thunder-cloud was effectually discharged over a small wire wove in the string of a kite. At the extremity of the string, the electric fire "assumed the shape of a spindle eight inches in length and five inches in diameter:" another time "streams of fire, which appeared to be an inch thick, and ten feet in length," darted with a crashing noise, similar to thunder when near, into the ground.§

(θ) Andrew Crosse, Esq. of Broomfields, near Taunton, a gentleman of high scientific attainments, has erected a very extensive conductor of atmospheric electricity, from which similar effects have been witnessed. During the passage of a thunder-cloud, a full dense stream of electricity passes to the receiving ball, which at each flash of lightning becomes changed to an explosive stream. It has been well observed by the late Mr. Singer, in his Elements of Electricity, "that during this display of electric power, so fearful to a common observer, the electrician sits quietly in front of the apparatus, conducts the lightning in any required direction, and employs it to fuse wires, decompose fluids, and fire inflammable substances; and when the effects become too powerful to attend to such experiments, he then connects the insulated wire with the ground, and transmits the accumulated electricity in silence and safety."

(ι) Charles Church, at Plymouth, was struck by a heavy discharge of lightning about the close of the year 1824; the whole charge passed down over a small brass wire of about one-fourth of

* Transactions of the Royal Society, Vol. LIII. Part i. p. 96.
† Transactions of the Royal Society. ‡ Ibid. § Priestly's History of Electricity.

an inch in diameter, without fusion, or damage, to the church; the lightning, however, completely disjointed the conductor, and tore up the ground at its termination.

46. We may, from these and numerous other instances, fairly infer, that a copper rod, of half an inch in diameter, or even an iron rod of the same dimensions, would be equivalent to the transmission of any flash of lightning which has hitherto come within the range of human experience.

47. The amount of what has been just advanced concerning the operation of lightning-rods is this:—metallic substances remove, by the aptness of their parts, that resistance to the passage of the electric matter, which it meets with in bad-conducting bodies, such as air;—that their action is purely passive;—that they can, therefore, no more be said to draw down upon themselves the matter of lightning, than a water-course can be said to attract the water which flows through it; that such passive action cannot be fairly urged as an argument against lightning-rods, which operate only in conveying away the electric fluid when it falls on them: that we must consequently distinguish between lightning attractors, as commonly understood, and protectors from lightning:—that inasmuch as all the materials of which a ship is constructed, are calculated to transmit electricity, and that detached metallic bodies are necessarily found amongst them, and that too in a prominent way, such as studding-sail, boom irons, vane-spindles, and the like, we have such passive attractors already present; that, if we were even to remove them, the substances to which they are attached would be equally open to electrical action (37) (v); that, finally, the *continuous protector* is applied to prevent the damage which invariably occurs when the electric fluid finds its own way through the ship by main force (24); and that, as we have no means of avoiding, or of resisting the action of lightning, it must be considered as extremely fortunate that we are enabled to direct it.

47. Some further appeal to experience will shew satisfactorily the operation of lightning-rods as a successful means of defence in thunder-storms. The cases (t) (u) (22) of the packet-ship New York are striking illustrations; indeed, if a great natural experiment could have been instituted for the purpose of determining the utility of lightning-conductors on ship-board, such should have been the conditions under which the experiment should have been placed.

The cases of the Ætna and Madagascar (y) (22) are likewise important instances, as also those of his Majesty's ships Norge and Warrior (x) (37); to which may be added the case of the Milford (w) (22). In Mr. Kinnersley's account of the lightning which fell on Mr. West's house,* the conductor evidently performed its office.

* Phil. Trans. vol. liii.

Charles Church and Steeple, struck by lightning a few years since, at Plymouth, remained without damage, although the conductor, being small, was quite disjointed. It is worthy of remark, that, of six church-towers in Devonshire, all struck by lightning within a few years, the tower at Plymouth *alone* escaped damage; it was likewise the *only one defended by a conductor*. In the fifty-second volume of the Royal Society's Transactions, there is recorded an instance of a ship called the Generous Friends, twice preserved by a lightning-conductor.

The celebrated Frenchman, Le Roy, in a memoir presented to the Royal Academy of Sciences at Paris, in the year 1790, mentions the circumstance of two French frigates being successfully defended from lightning by chain-conductors of his own construction, led along the masts, which, he says, completely disarmed the fury of the vivid flashes by which they were assailed, and transmitted the electric fluid into the sea.

Captain Winn observed, that his chain-conductor was broken for a short distance above the ship's side, leaving an interval of nearly an inch between the fractured ends: the electric matter was observed to pass in the form of sparks over this space, during two hours and a half, at the time of a thunder-storm.

48. It may be finally remarked, that lightning-rods have, for upwards of eighty years, been applied to powder-magazines, without ill consequences, as also to buildings, and likewise to ships: and, from the whole course of experience, it is found that destructive discharges of electricity have almost always occurred *where they have not been present*; that, where *they have been present*, and effectively applied, *little* or no *damage* has been ever sustained; but, on the contrary, evidence of the most complete kind exists of their positive utility.

(To be continued.)

Table V.

For reducing Portuguese palms to English feet, and English feet to Portuguese palms.

1 Lisbon palm = 0·7171718 English foot.
1 English foot = 1·3929577 Lisbon palm.

Lisbon Pm. or Eng. Ft.	English Feet and Dec. parts.	Lisbon Palms and Dec. parts.	Lisbon Pm. or Eng. Ft.	English Feet and Dec. parts.	Lisbon Palms and Dec. parts.	Lisbon Pm. or Eng. Ft.	English Feet and Dec. parts.	Lisbon Palms and Dec. parts.
1	0·717	1·393	38	27·253	52·932	74	53·071	103·079
2	1·434	2·786	39	27·970	54·325	75	53·788	104·472
3	2·152	4·179	40	28·687	55·718	76	54·505	105·865
4	2·869	5·572	41	29·404	57·111	77	55·222	106·258
5	3·586	6·965	42	30·121	58·504	78	55·939	108·651
6	4·303	8·358	43	30·838	59·897	79	56·657	110·044
7	5·020	9·751	44	31·556	61·290	80	57·374	111·437
8	5·737	11·144	45	32·273	62·683	81	58·091	112·830
9	6·455	12·537	46	32·990	64·076	82	58·808	114·223
10	7·172	13·930	47	33·707	65·469	83	59·525	115·615
11	7·889	15·323	48	34·424	66·862	84	60·242	117·008
12	8·606	16·715	49	35·141	68·255	85	60·960	118·401
13	9·323	18·108	50	35·859	69·648	86	61·677	119·794
14	10·040	19·501	51	36·576	71·041	87	62·394	121·187
15	10·758	20·894	52	37·293	72·434	88	63·111	122·580
16	11·475	22·287	53	38·010	73·827	89	63·828	123·973
17	12·192	23·680	54	38·727	75·220	90	64·545	125·366
18	12·909	25·073	55	39·444	76·613	91	65·263	126·759
19	13·626	26·466	56	40·162	78·006	92	65·980	128·152
20	14·343	27·859	57	40·879	79·399	93	66·697	129·545
21	15·061	29·252	58	41·596	80·792	94	67·414	130·938
22	15·778	30·645	59	42·313	82·184	95	68·131	132·331
23	16·495	32·038	60	43·030	83·577	96	68·848	133·724
24	17·212	33·431	61	43·747	84·970	97	69·566	135·117
25	17·929	34·824	62	44·465	86·363	98	70·283	136·510
26	18·646	36·217	63	45·182	87·756	99	71·000	137·903
27	19·364	37·610	64	45·899	89·149	100	71·717	139·296
28	20·081	39·003	65	46·616	90·542	200	143·434	278·592
29	20·798	40·496	66	47·333	91·935	300	215·152	417·887
30	21·515	41·789	67	48·051	93·328	400	286·869	557·183
31	22·232	43·182	68	48·768	94·721	500	358·586	696·479
32	22·949	44·575	69	49·485	96·114	600	430·303	835·775
33	23·667	45·968	70	50·202	97·507	700	502·020	975·070
34	24·384	47·361	71	50·919	98·900	800	573·737	1114·366
35	25·101	48·754	72	51·636	100·293	900	645·455	1253·662
36	25·818	50·146	73	52·354	101·686	1000	717·172	1392·958
37	26·535	51·539						

VI.—Suggestions for Avoiding or Lessening the Disasters incident to a Sea Life.

To the Editor of the Nautical Magazine.

"The exercise of a little prudence saves a world of care."

Without the slightest desire to detract from the sterling merits of our mercantile commanders, who, taken in the aggregate, if not superior, are, undoubtedly, inferior to none in the world, for practical seamanship and honest integrity of principle, I may, I trust, be permitted, without offence, to make a few remarks on the subject of the following papers. Had not, indeed, the experience of years clearly informed us, and the annual disasters among our shipping fully confirmed the truth, that an unaccountable indifference pervades the mind of the navigator, as to any precautionary means for the preservation of the lives of his crew, (including himself and passengers,) to be employed in any case of extreme danger that might overtake them during a voyage,—and that, until the moment of disaster arrives, when in most cases it is too late, no provision whatever is made to meet it with that hope of success which must result from the consciousness of being enabled to enter upon the struggle prepared,—we should almost doubt the fact.

As far as my personal observation goes, having, as a passenger, made several voyages in merchant vessels, I can confidently state, that I never saw the slightest preparatory measure adopted for contending with any desperate peril that might have overtaken them; and, had any of those vessels foundered, or had there been a necessity for suddenly quitting them, all the miseries so pathetically narrated by many a sufferer would, assuredly, have been again realized: in case of shipwreck, we should have been equally unprepared; and, at such a crisis, according to the sailors' expression, it must have been "every body for himself, and God for us all!"

The instances I allude to of negligence in providing the means to contend with the known perils of a sea life, are not solitary. The repeated accounts of dreadful sufferings experienced by the crews of vessels which have foundered, or have been abandoned at sea, &c., warrant the conclusion, that this neglect of one of the essential considerations of a commander is pretty general.

Some ships, it is true, are provided with a life-boat and with life-buoys; but this is only partial in the mercantile marine, or, indeed, (which is more extraordinary,) in our royal navy! The

example being first set in the latter,* might very properly be insisted upon, by statute, in the former service.

As an illustrative circumstance of the indifference spoken of, I may state here, that I have known a vessel, which, having carried away one of her after-davits whilst in port, afterwards make the voyage home, from the West Indies, with her boats securely lashed in-board; and she was also unprovided with a life-buoy! Fortunately, no accident occurred to need the use of a boat whilst at sea; but, had a man fallen overboard, he must inevitably have perished before the small boat could have been got afloat. Had such an event happened, surely the feelings of the commander would not have been of the most pleasing nature; his humanity I had no doubt of, and I think the negligence can only be attributable to the desire of saving expense to the owner—this, however, should not be weighed against the *chance* of a fellow-creature losing his life.

Self-preservation is said to be one of the first laws of nature; and this is borne out by fact. The instinctive impulse which every person exercises, who may have fallen into the water, to save himself, proves it. It is not a little singular, therefore, that the men most liable to oceanic disasters should be totally negligent of the means for encountering them with something like a chance of escape. I have no sympathy with those selfish and timid beings (very few among seamen) who are ever restless to preserve life under any circumstances, or haunted, at the least appearance of danger, with the fear of losing it. A prudent preparation can have nothing to do with such feelings; such would be nothing more than one of the necessary points of professional duty, which requires the attention of a commander, and should be so considered by him, just in the same way as he would other ship's stores, &c. But whatever may be the cause of the neglect, whether arising from "*fear* of being *thought afraid!*" (a double moral cowardice, by the bye,) or from any other cause, one thing is most certain, such negligence is reprehensible in the highest degree, and cannot be justified under any plea.

The precautionary measures here recommended to the notice of mariners, if adopted, would tend to lessen the sum of human suffering, and, consequently, they will find an advocate in every thinking and feeling person.

In the following suggestions, I do not pretend to give instruction to the experienced seaman; with respect to him, all I desire is, to secure his attention to the subject of precautionary measures for

* The omission is certainly most surprising. We hear repeatedly of men-of-war's boats upsetting, &c., and lives lost: this would not happen, if they were provided with at least two life-boats, and all the others converted into safety-boats. It should be remembered, that "every able seaman is worth his weight in gold to the country;" and it is equally worthy of consideration, that six years at least (oftener ten) must elapse before the deficiency occasioned by the death of a good seaman can be supplied to equal advantage.

averting, or lessening, when possible, the perils of the "stormy seas;" and, in exercising his mature judgment on the occasion, when the hour of trial comes he will assuredly experience a very agreeable feeling springing from *prudence*—distant alike from abject fear or weak timidity—by which he has been enabled to meet the evil *prepared;* and thus, with a firm reliance on that beneficent Providence which watches over us, he will be doubly fortified against an impending danger. For, let it ever be remembered, that true courage and fortitude do not consist in insensibility of danger, but, when exposed to it, in bearing and contending against it with firmness and resolution.

To the young and inexperienced sailor, whose mind has scarcely settled down to "sober thought," perhaps the hints here thrown out may eventually be useful, and induce him, if he should not approve of the plans, of suggesting for his own guidance such as he may himself consider better, or more suitable to the occasions.

Perhaps a more favourable opportunity for drawing the attention of mariners to the subject treated of, could not have occurred. The long-continued gales which have lately occasioned such melancholy devastation among shipping, must dwell in the minds of all seamen, and the loss of life resulting therefrom, ought to make due impression even upon the most apathetic.

COSMOPOLITE.

No. 1.—*The propriety of publishing accounts of Disasters at Sea.*

THE ANNE, 1804.—This vessel was lost upon a reef situated on the Chubaniani Bank, NW from the Laccadive Islands. The account is unsatisfactory.

Hundreds of instances have occurred, where vessels have been wrecked, without any farther statement appearing before the public than that such a vessel was lost at such a place. And, indeed, in most instances, the narratives published are deficient in particulars that might be of use to future navigators.

Personal narratives are, indeed, very interesting; but the seafaring individual who suffers any of the disasters incident to his profession, should consider that he has a gratifying duty to perform, much more creditable to him than the exercising of his literary talent in the production of adventures for the entertainment of those who read only for amusement. The main object to be studied should be, that of making the production of his misfortune useful; the embellishment is only a secondary consideration; but both may be so blended as to afford alike gratification and instruction, according to the taste and the pursuit of the reader.

Although some vessels are lost under circumstances that do not

deserve to be narrated, yet the catastrophe, in the greater number of instances, embraces points of interest and warning to the seaman, and which, if written by some intelligent person, who was himself on board of the vessel, cannot fail of being useful.

It is very desirable, therefore, that every navigator who may have the misfortune to be "cast away," &c., would publish* a detailed account of the event, with such observations as may be useful to others of his profession; especially such local information as the time and circumstance admit of his obtaining. The immediate cause, too, of the disaster should, in all cases, be clearly and candidly pointed out, in order that other navigators may be enabled to regulate their conduct accordingly, to avoid a similar mishap.

It is almost unnecessary to remind the mariner, how generally useful such remarks would be to others of his profession, and that much valuable information and advice may be given in plain language: indeed, he ought to consider it as an imperative duty which he owes to his sea-faring brethren, and, therefore, never shrink from the performance of it from diffidence of his literary talent. A sailor is a plain man, his language should also be plain; and the plainer a tale is told, the more readily it will be understood.

No. 2.—*Water and Provisions.—Store Chest.*

THE GOLDEN RULE, *lost off Wisscasset, New England.*—Water and provisions, in a certain quantity, should be kept upon deck *always* during a voyage. According to act of parliament, a certain proportion of fresh water in casks is directed to be secured above hatches; a wise provision, which, however, is *not* invariably observed.

In the account of this shipwreck, it appears that, not until the water had reached up to the main-deck did it occur to the officers and crew that provisions would be necessary for their support, and it was then too late; what little they procured, they lost by injudiciously placing it in the binnacle. What is to prevent the commander of a vessel from being prepared to meet such an emergency?

Where there is time allowed for taking to the boats, *precaution* will have provided for the rest. A little forethought would save him much bodily and mental suffering—would save him the misery of witnessing his brave followers sinking into the arms of death one after the other; and of losing, probably, his own useful life, under circumstances, too, aggravated by his own want of care.

* Having now a periodical expressly intended for his benefit, in which his remarks will become extensively circulated among his brother sailors, he is no longer in want of a vehicle of communication.

The manly and generous feelings of a British seaman are proverbial; how harrowing, then, must be the consciousness, which cannot fail to overwhelm his mind at such a moment, of having thrown himself and companions into such a dreadful dilemma as that of being cast adrift in the midst of a tempestuous ocean or upon an inhospitable coast, without a particle of food or a drop of water wherewith to sustain life?

Let every commander of a vessel reflect seriously on his pillow upon such a melancholy event, and I am sure the appeal made to his feelings will have due weight; and I am not without hope it may lead to something like a systematic mode of proceeding to meet such an occasion—the issue must be left to Providence. A *large chest* might easily be formed for containing a *certain proportion of food*, (such as biscuit, portable soup, cocoa in cakes, potted meat, &c.,) utensils for cooking, tools for repairing boats, compass, chart, log-line and glasses, quadrant, telescope, tinder-box, cast-net, hooks and lines, &c., &c.

This chest should be secured on deck, and, in the event of the vessel being wrecked, might be cut adrift or thrown overboard, whence it would soon be borne to the shore by the wind and sea. What a treasure it would prove afterwards to the wearied and hungry crew, who, perhaps, may be cast upon a shore where no food could immediately be procured.

If a vessel be near the land, a line might be attached to it when hove overboard, which might become of the greatest utility, as it is often by means of a line carried to the shore by some expert swimmer, that the lives of a ship's crew have been saved.

I need scarcely remark, that the chest (rounded at the angles) should be strongly put together and secured with iron braces, and then cased with cork, as an additional security against injury from rocks or surf. The inner lid should be so contrived as to fit extremely close, and be edged with felt, to prevent the articles within from being damaged by the sea water.

Our India ships, in their voyage out to the 'golden East,' among other good things for the comfort of their wealthy passengers, often provide joints of fresh meat ready cooked, and potted in lard, in which state, excluded from the atmospheric air, the meat will keep a long time. The masters of ships making a voyage to any of the colder parts of the world, would do well to be provided with this article.

A chest, as above described, which may be called the Resource, (for sailors will have a name for every thing,) would, doubtless, be provided by the ship-owner without a moment's hesitation.

(To be continued.)

VII.—A Plan for facilitating the Watering of Ships by Boats, without the use of Casks.

To the Editor of the Nautical Magazine.

Sir—There is hardly a narrative of a voyage of discovery, or cruise' that does not contain some account of the difficulties and troubles with which the vessels employed had to contend, in consequence of their not being able to convey their casks to and from the shore, often close to them, and where the water was in great abundance. This has been owing, in some cases, to the wind blowing too strongly for a boat, lumbered with empty casks, to be either pulled or towed on shore; in others, to strong tides, or currents, as also to ground-swell and surf: all of which are equally bad for a boat, or raft, loaded with casks.

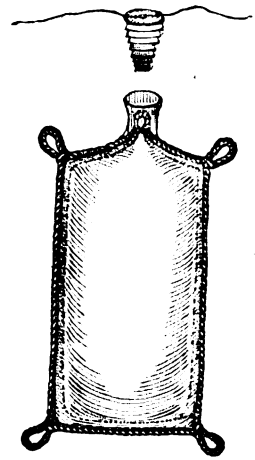
Of the many instances on record, I beg leave to give you one, selected from the voyage of the Centurion, Commodore Anson, in the South Seas, in 1740, and the three following years, from the fifth chapter of the third book, by the Rev. Richard Walter, chaplain of the ship. It is as follows:—"When the Commodore came on board the Centurion, after her return to Tinian, he resolved to stay no longer at the island than was absolutely necessary to complete our stock of water; a work which we immediately set ourselves about. But the loss of our long-boat, which was staved against our poop, before we were driven out to sea, put us to great inconveniences in getting our water on board; for we were obliged to raft off all our casks, and the tide ran so strong, that besides the frequent delays and difficulties it occasioned, we more than once lost the whole raft."

Having received the most favourable opinions of the enclosed plan, (which is intended to meet the above-mentioned difficulties,) from all to whom I have shewn it, officers in his Majesty's service and other persons, I beg leave to forward it to you, for the purpose of being laid before the seafaring public; as, perhaps, by so doing, some of the owners of yachts or vessels in the merchant service may think proper to adopt it.—I have the honour to be, sir,

Your obedient humble servant,
John Tudor, Lieutenant R. N.

Much inconvenience, it is well known, to seafaring men, arises from the use of casks supplied to ships for the purpose of watering: when empty, they occupy as much room in the hold as when full, to the detriment of other stowage; a considerable expense is occasioned by them in the wear and tear to the boats; much delay also arises from them, more particularly when the watering-place is at some distance from the ship, as they occupy as much space in the boat when empty as full, thus interfering with the crew at their oars, and rendering the boats in every way inefficient,

either for offensive or defensive operations, should they be watering near an enemy.



In order to remedy these objections, I would suggest the use of leathern bags, made of the annexed form; each large enough to contain about 15 gallons. They should be roped round the sides for their greater security, and have beckets at each corner for the facility of handling them; when full, they might be closed by a ribbed wooden plug, round which the mouth will be easily secured with a three-yarn fog; and to be hoisted on board with nets made for that purpose.

By using these bags, stowage will be gained in the ship, little or no room will be taken up in the boats by them empty, when going on shore; and even when full, they will lie under the thwarts, leaving the crew the full use of their oars, and, at the same time, in a better condition than when casks are in the boat, to act on the offensive or defensive if necessary, or to assist in towing, or any other service.

This plan of carrying off the water, will also prevent loss and great inconvenience to vessels. For instance, when a gale of wind comes on whilst watering, it is often necessary for a boat to cut away from a raft of casks, to enable her to regain her vessel, perhaps to save the lives of the crew. Not only this, but our slightest-built gigs or galleys, will by this method be made available for the purpose of watering, an important service, on which they cannot be employed with casks; and when the water may be at some distance from the beach, the facility with which the leathern bags can be carried and put into the boat, will in some measure prevent that sickness and mortality which is too often the attendant of the watering duty in a tropical climate, from those employed being constantly exposed to wet.

It often happens that a vessel, after the trouble (and sometimes expense) of completing her water, may be detained in, or off, her port for some weeks, and will, of course, not wish to reduce her sea-stock. In such a case, with leathern bags, a four-oared gig, at one trip, without inconvenience to her crew in pulling, can bring off 100 gallons of water; and thus a supply might be kept up by the boat which is generally sent on shore daily for letters or other purposes. And if the boat belonged to a man-of-war, she might be accompanied by an officer, to perform any other duty, for which, if she were filled with casks, she would be quite unfit.

VIII.—Cuidado Reef.

To the Editor of the Nautical Magazine.

H.M.Ship Thunder, Port Royal, 18th April, 1834.

Sir,—I am induced to reply to your correspondent, "An Old Stager," not from any feeling of displeasure at his communication, but merely to state more fully the reasons that induced me to recommend that the "Cuidado Reef" should be erased from the chart.

Your correspondent appears to have overlooked the remarkably translucid quality of the water in the Bahama Group, and has fallen into an error in supposing that the "Chesterfield Rock," near the S. E. part of Long Island, is in the Bahamas. I think it incredible that such a danger could have eluded the vigilance of the Bahama wreckers for any length of time.

Your correspondent is not more felicitous in the other instances that he has *adduced*, to shew that dangers have remained long unknown to the Bahama wreckers. The "Lorton Rock"* has no existence in the position assigned to it by the master; the Lorton having struck upon a rock on the edge of the reef to the northward of Royal Island, and more than a mile within the edge of soundings. And the spot where the barque "Fletcher" was wrecked, according to the mate's account, in February, 1833, viz. in 20° 15′ N. and 70° W., is on the S. W. corner of the Silver Cay Bank.

The "Old Stager" having been in a frigate cruising to and fro between Acklin's Island and Great Inagua, without being able to find the Hogsties, is certainly a remarkable fact; but I have heard of something similar, in Bermuda and St. Helena having been looked for in vain. I do not conceive that *such* a circumstance can fairly be made to bear upon the question.

The mere fact of my having run four times across the space within which the Cuidado Reef is said to exist, had but little weight with me in forming my conclusion. From my experience among the Bahama banks and islands, I was convinced that upon a clear day no dangerous bank could exist within at least a mile of the ship's tack without being visible; and that, from the peculiar clearness of the water, it was unreasonable to suppose that such a danger could exist unknown to the numerous wreckers that are constantly traversing the space in question.

The wreckers have certain points that they always visit, after or during blowing weather; and amongst others, is the Hogsties, the east end of Little Inagua, and the Mariguana Reef, the space between which must have been traversed by them in every direction hundreds of times.

* We must exempt our correspondent from this, as it was introduced by us on too great a reliance on the master's assertion.

Had the position assigned to the Cuidado Reef been out of the common track of ships, or even in the open ocean, there would perhaps be no great object gained in erasing it, but, lying as it does so near the Caicos passage, it only serves as a bugbear to the commanders of vessels going through that passage, and may have caused vessels to be endangered by getting over to the West Caicos, in order to avoid the Cuidado.

I cannot follow your correspondent in his opinion, that, "*because a danger has been marked in the chart, there it ought to remain.*" We should first ascertain upon what authority it has found its way into the chart, and form our judgment accordingly. We may now confidently rely that no new vigias, or doubtfuls, will be allowed to find their way into the Admiralty charts, without a careful investigation.

In the case of the "Lorton Rock," above referred to, the steps taken by the hydrographer to the Admiralty to ascertain its position were fortunately attended with success; and we have been saved the alternative of having a frightful danger placed nearly in mid-channel between Egg Island and the south point of Abaco, directly in the track of vessels bound through that passage, which would probably have caused many accidents, both on the Egg Island and Abaco sides of the channel, and have given many sleepless and anxious nights to those navigating in that vicinity.

I was told, previous to the investigation, by many intelligent persons acquainted with the transparent nature of the water, that, in their opinion, it was *impossible* that a danger could exist in such a position without having been discovered.

I fully agree with your correspondent that too much circumspection cannot be used in erasing doubtful dangers from the charts; and I should be sorry to have it supposed that I recommended such a step without mature reflection, or without being aware of the high responsibility that would attach to such a procedure.

I am, Sir, very truly yours,

RICHARD OWEN.

IX.—BARS AT THE ENTRANCE OF HARBOURS.

To the Editor of the Nautical Magazine.

SIR—The subject to which the following observations refer being of much importance to this great nautical and naval nation in particular, and to the maritime commerce of the world in general, I beg you will allow them a place in your extensively circulated journal.

The causes of the formation of *bars* at the entrance of harbours, and of shoals in rivers, and in the ocean, although so injurious and destructive to property, and to human life, seem hitherto not to have had that consideration to which, from their importance, they are entitled. It is more remarkable in an era distinguished for the improvement of roads by various plans, in order to accelerate the traveller's progress, and promote his safety by *land*.

The surveyors of harbours appear only incidentally to have glanced at the subject of *bars*. Such, indeed, is the discrepancy of opinion on their accumulation, that very opposite causes have been assigned for the same effects, and enormous sums expended on plans resulting in the most injurious consequences, by *increasing* the very barrier which was intended to be reduced or removed!

For some years back, I feel assured that I have detected the real cause of bars and shoals; and this opinion has subsequently been confirmed by my own observations on various harbours in the Baltic, on the coast of Denmark; on the Elbe, Jhade, and Weeser; on the coasts of Holland, France, Spain, Mediterranean, on Africa's shores, and on many ports of the United Kingdom; in none of which is there to be found an exception to the general rule—*That, wherever the water disembogues, and has passed over a soil susceptible of suspension in water*, there, to a certainty, a bar exists, whether the tide passes out under its natural impetus, or is accelerated by artificial means. In the latter case, the construction of sluices have in many places proved prejudicial, and in *no instance* have they effected a permanent improvement. *Dunkirk, Ostend, Shoreham*, and the lost harbour of *Hyde*, are examples illustrative of this.

It cannot be expected that my patriotism will prompt me gratuitously to prescribe a remedy for the evils referred to, nor can any general effective plan be proposed: local causes and circumstances, such as the direction of the coast, of the tide, the conveniences and facility of egress and ingress of vessels, &c., would control the suggestions for the reduction or removal of bars and shoals. In many places, indeed, no alteration could be effected, as at the *entrance* of the Thames, the Humber, the Mersey, &c., for at these places there is great depth of water; but it is chiefly at the *shoal-water ports*, where much improvement, at an inconsiderable charge, and an important reduction in the present annual expenditure, might be very easily accomplished.

I have been examined twice before a Committee of the House of Commons on the subject of the new harbour at Lowestoft. My opinions, as there given, in direct opposition to the evidence of two professional men, stand recorded: "That so soon as the sluices proposed to be constructed (and now constructed) are employed as a scouring power, a bar will be formed; and if continued to be so employed, the harbour will be blocked up." This opinion has

since been verified to the letter. Where ten feet of water formerly existed, opposite the entrance to the harbour, an impassable bar is now formed, and which is sometimes even *dry* at low-water. Fifty per cent. over the first estimated cost of this scheme has been borrowed from the Government; while, to say the least of it, the contemplated connexion of the sea with the interior water remains *in a bad state.*

Apologizing for this intrusion,

I remain, Mr. Editor,
Your most obedient servant,
HENRY BARRETT.

X.—LINES TO A LADY, *on her anticipated Voyage to the Shores of the Mediterranean.*

Fare thee well, fare thee well: thy young fancy is weaving
A tissue full brilliant with hope's gayest hue;
Thy wishes are far from the land thou art leaving;
And yet thou hast proved it hath joys not a few.

When the beautiful south before thee appearing,
Shews temple and palace, and vineyard and grove;
With snow-crested mountains, their haughty brows rearing
In coldness and scorn o'er those valleys of love:

When the bright Adriatic before thee is gleaming,
And Venice's domes to thy view shall arise;
When her gondolier songs are on night-zephyrs streaming,
While moonlight is silvering earth, water, and skies:

When her proud setting sun before thee is glowing;
When it kisses thy cheek, and adds light to thine eye;
And gilds the full tress on thy fair temples flowing,
And enriches each thought with its gorgeous dye:

Perchance, even then, though that bright eye may wander,
Enraptured, unwearied, o'er garden and dome,
With sympathy deeper thy mem'ry may ponder
On many loved scenes in thy dear Island Home!

* * * * *

Fare thee well, fare thee well: may each blessing attend thee,
That friendship's desire can invoke on thy head;
May He who can calm the rude ocean befriend thee;
And still fearing Him, nothing else may'st thou dread!

J * * *.

Whitby, May, 1834.

XI.—Chronometers with Glass Balance-Springs.

In some former numbers of this work, we have alluded to the introduction of glass in the construction of the chronometer, and we now have the satisfaction of laying before our readers the first results of its application to this novel purpose. That it is better adapted to such a purpose than any metal, is quite certain; and it only remains to observe the effects produced by those deranging causes which are continually in operation, in order to arrive at the most perfect mode of using it. This, experiment only can divulge; but, at the same time, the rates which we now publish being the first obtained, afford ample room for congratulation.

It may be satisfactory to the scientific reader to know, that, in addition to a chronometer of this kind, at the Royal Observatory, a similar one has been placed in the hands of Captain Hewett, in H.M.S. Fairy, who is investigating the soundings in the North Sea, by order of the Lords Commissioners of the Admiralty. We look forward to the report of Captain Hewett, as a document that will be most interesting to our nautical friends in particular.

To the Editor of the Nautical Magazine.

84, *Strand, June* 22, 1834.

Sir—Some time has now elapsed since we last communicated with you on the subject of our glass-spring chronometer; and, although we feel assured that no one can reasonably consider a few months sufficient to decide fully on its merits, still we are aware that many of your readers feel much anxiety for its success, and we therefore request your permission to advert to it. You are aware that our chronometer with the glass balance-spring has for some time past been on trial at the Royal Observatory, and we are now enabled to lay before you several months of its daily rates.

We trust, however, that no one will suppose that we offer these rates with any other view, than to satisfy the scientific world that we are proceeding with our investigation into the practicability of substituting glass for the metal balance-spring of a chronometer. Our main object being the welfare of the science to which we are attached, we conceive that we shall in no way better illustrate that feeling than by exposing to public view the very secrets of our endeavours, whether good or bad. This will be our object hereafter, and we trust then to enter at full length into the explanation of our invention: at present we are engaged not so much in inquiring how far glass is available for the balance-spring, (for we have mastered that difficulty already,) as in experiments on the nature and properties of the glass which it is necessary to employ in the chronometer. This subject, it must be allowed, presents a wide field for discussion, especially as we associate with it other

important matters, which we are enabled in the course of our inquiries to elicit, such as the expansive powers of various metals.

With your permission, Mr. Editor, we will furnish you with the result of one set of experiments arising from the application of glass. We took an old-adjusted chronometer, and, having applied the glass spring instead of the gold one, we found on trying it at different degrees of the thermometer, such an excess of compensation, that we resolved on ascertaining what was the error of the three metals—gold, steel, and glass. We removed the compensation balance from the three chronometers, and applied plain glass disks on each, and, assuming no errors to arise from the balances, we should have the error arising from the different springs occasioned by variation of temperature, and supposing them to keep correct time at thirty degrees of Fahrenheit, by raising the thermometer to one hundred, the result shews how the error of the chronometer is reduced by the application of glass, proving that glass loses its elasticity or force by heat, in a very trifling degree, when compared with other metals.

	Fahrenheit.		m.	s.
Gold, ...	32 to 100	..... loses	8	4
Steel, ...	ditto	..... —	6	8
Glass, ...	ditto	..... —	0	40

Our subject is beguiling us into a longer statement than it is either just to expect, or politic to make, now. We will therefore at once lay before you the rates of the glass-spring chronometer from January last. We have chosen these dates for the following reason:—All your readers are aware that the public trial of chronometers at Greenwich commenced at that period. Now, as our chronometer has been placed in the same room with the trial chronometers, and has been compared with the same clock, and been subject to the same vicissitudes of temperature as those chronometers which are trying for the prize, it will be interesting to ascertain how far we should have succeeded, had we been bold enough to have placed this very chronometer in competition with those trial chronometers. Moreover, we are thus enabled to institute fair and undeniable comparison between the two systems which the several chronometers embrace. It appears by the printed report of rates for January last, that the trial commenced with twenty-eight chronometers. At the present time there are only thirteen, so that fifteen have exceeded the prescribed limits for a prize, which are—

For the First Premium, ...	2·5	seconds.
— Second —	3·5	—
— Third —	4·5	—

and have consequently been withdrawn from trial. Now, it further appears by the formula employed in determining the prize at

Greenwich, that our prize-number is on the 31st of May 2·72; so that we had then just exceeded the limit of the first prize; and, taking the fifteen chronometers withdrawn, and four remaining on trial whose errors have exceeded the glass chronometer, it stands, as regards its performance, surpassed by nine only out of the twenty-eight first deposited. Yours, &c.

ARNOLD & DENT.

Rate of Arnold and Dent's Chronometer, No. 616, with glass balance spring.

(The two right-hand figures in each column shew the height of Fahrenheit's Thermometer.)

1834.	D. Rate. January.	D. Rate. February.	D. Rate. March.	D. Rate. April.	D. Rate. May.
	s °	s °	s °	s °	s °
1	+2·0 48	+1·8 46	+1·2 53	+1·1 52	+2·9 60
2	3·1 48	2·7 47	1·7 53	2·6 52	3·4 60
3	2·5 49	2·7 48	1·7 54	2·6 55	3·0 62
4	2·0 51	2·5 49	0·9 53	2·3 53	3·5 66
5	2·4 49	3·1 50	1·9 55	2·4 53	3·6 68
6	2·4 50	2·9 50	1·0 54	2·6 54	3·1 67
7	2·5 50	3·3 47	2·4 56	2·5 57	3·2 67
8	2·2 48	1·0 44	2·7 54	2·8 57	2·2 69
9	2·7 49	1·7 42	2·6 55	2·9 54	2·4 69
10	2·4 48	1·8 40	2·6 57	1·9 51	2·6 68
11	2·7 49	2·2 43	2·2 59	1·7 50	2·3 70
12	2·5 50	2·4 45	2·3 55	2·6 49	2·3 68
13	2·4 50	2·2 45	1·5 55	1·4 51	2·1 65
14	2·6 51	2·8 45	1·9 52	1·5 51	2·9 63
15	2·0 50	2·8 46	1·9 53	2·4 55	2·6 66
16	2·6 52	2·4 46	2·0 53	2·2 56	2·4 68
17	2·3 52	2·3 48	2·0 54	3·5 57	2·1 67
18	2·4 51	2·1 48	2·4 51	3·1 58	2·1 64
19	1·9 50	2·2 49	1·5 50	3·5 61	2·1 61
20	1·9 47	1·6 49	2·1 49	3·4 65	2·8 64
21	2·4 49	2·2 51	1·5 47	3·5 61	2·6 68
22	2·9 52	1·2 50	1·6 49	3 9 59	2·4 68
23	2·5 53	0·8 49	1·8 50	2·7 59	2·5 68
24	1·9 56	0·9 51	1·8 52	2·4 57	2·4 69
25	2·5 55	0·9 53	2·7 51	2·3 56	2·5 67
26	2·4 53	0·9 52	1·5 48	3·2 57	2·5 65
27	2·4 52	1·3 52	1·9 51	3·5 59	2·9 65
28	2·3 53	+1·8 54	2·1 51	3·6 61	3·0 67
29	2·0 49		1·6 51	3·9 63	3·2 66
30	0·1 43		1·8 51	+3·4 61	2·9 69
31	+1·5 46		+1·9 52		+3·0 68
Rate	2·27	2·02	1·92	2·62	2·72
Ext var.	3·0	2·5	1·8	2·8	1·5

J. POND, Astronomer Royal.

XIII.—On the Productions of Isle St. Andrew, *in the West Indies, by Mr. Henry Mapleton, Acting Master of H.M.S. Arachne.*

This island is under the Columbian flag, and has a military governor (a captain) and twelve soldiers, who are paid by the island produce.

Two magistrates are annually elected without salary. During what is called the rainy season, that is from June to February, fruit, vegetables, &c., are more plentiful than the remainder of the year. We visited the island at the latter period, when the following prices of provisions were considered as dear: yams, one dollar and a half for one hundred pounds; fowls, three dollars and a half per dozen; turkeys, three dollars each; sheep, two dollars each; bullocks, weighing three cwt. one half for thirty dollars; fire-wood, cut and brought to the beach, four dollars per cord. Cocoa-nut oil may be obtained in small quantities. The above articles were plentiful and good; but we were told, that, during the rainy season we should have paid only one half for them. We could not negotiate bills, and payment was required in gold or silver.

Fish are in great abundance, and caught by hauling the seine inside the cove, from the entrance to the head of it, and making use of two boats to get it in.

Water is plentiful, but not near the landing-place, which is on the left-hand side of the cove, as you enter. A vessel might well keep herself supplied with a daily use of breakers, by carrying them up hill about one mile.

The soil of the island is rich, and capable of producing any thing; but from the heavy duties imposed, cotton is only cultivated, besides tobacco and the sugar-cane. The mean temperature during the year is seventy-one degrees. Sickness is seldom or never known.

Its length is . . . . . 13 or 14 miles.
.. breadth, in the widest part . . 3 miles.

Population consists of forty or fifty white inhabitants—the whole speak English; and black slaves, eight or nine hundred.

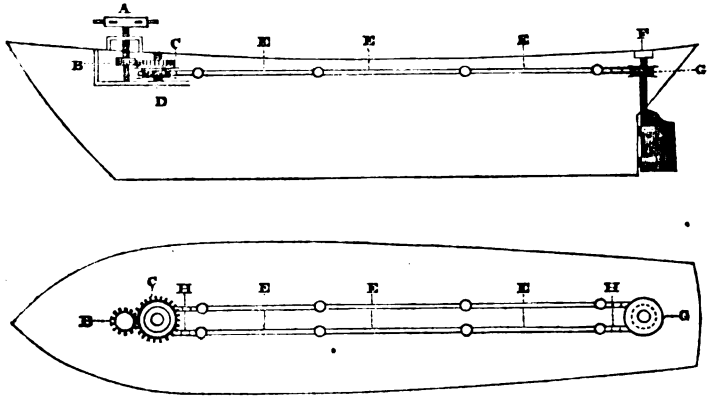
Its defence is one gun, badly mounted, with five or six others, and no carriages, in different parts of the island.

XII.—Symington's Method of Steering Steam Vessels.

To the Editor of the Nautical Magazine.

Sir,—Encouraged by your friendly offer of aiding me in investigating the invention of steam-navigation, I have taken the liberty of transmitting a sketch, furnished by Mr. Symington, Jun., of his

father's mode of steering vessels at the stem, as practised in the steam-boat experiments on the Forth and Clyde canal in 1801-2-3.



Description.	*Description.*
A. Steering Wheel.	E.E.E. Connecting Rods.
B. Pinion.	F. Rudder Head.
C. Lever Wheel.	G. Stern Chain Pulley.
D. Chain Pulley. Stem.	H. Chains attached to the Pullies.

In reference to Mr. Gould's communication, contained in your number for January, on the subject of stem steering, in which communication I have the pleasure of seeing a warm interest for Mr. Symington's reputation expressed, permit me to observe that when it is borne in mind that Fulton was on board of Mr. Symington's vessel in 1801, and took sketches of it and of its machinery, it will at once become apparent whence the Americans derived their information, and how the plan came to be introduced into that quarter of the world.

It is stated in the British Cyclopædia, edited by Charles F. Partington, Esq., professor of mechanical philosophy, &c. &c., at page 882, of the first volume, that "in the best steam-boat the steering capstan is placed in the bow instead of the stern, and the rudder is acted on by two strong ropes which run the entire length of the vessel. This great improvement was, we believe, suggested by captain Hall;" but how is this statement to be reconciled to the following passage, copied into a work on the steam-engine, published by the learned professor? "So that it becomes necessary to have two rudders, one on each side, connected by rods, which are moved by a winch near the head of the boat, so that the person who attends the engine may also steer."—(Royal Institution Rep. vol. i. page 195, 1802.) And how does it accord with the fact, that

this very quotation came under the notice of Mr. Partington in 1830, when I submitted to his inspection, in the library of the London Institution, drawings of Mr. Symington's steam-carriage and boats, similar to those which are to be seen in your August numbers, and in my pamphlet.

In conclusion it may be remembered that Mr. Symington possessed, in a supereminent degree, a readiness of inventive power, which, on many occasions, enabled him, almost instantaneously, to overcome difficulties which might, to others of less talent, have seemed insurmountable. And thus the steering of vessels at the stem was one of his plans rapidly devised and speedily executed, in order to get rid of the danger attached to getting his boats into the lakes through the drawbridges of the canal.

With much respect, I remain, Sir,
Your most obedient servant,

74, *Bishopsgate-st. Within*, ROBERT BOWIE.
March, 29., 1834.

Mr. Bowie has fully proved in his pamphlet that this method was copied by the Americans from Mr. Symington; and we have no doubt that Captain Hall *suggested* it, not as an original idea, but from having seen it in the States when he was there. It is to be regretted, however, that honour has not been paid "to whom honour is due," and we hope the mistake in the Cyclopedia will be rectified.—ED.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

OBSERVATIONS ON THE COLONIES OF NEW SOUTH WALES AND VAN DIEMEN'S LAND. By John Henderson. Calcutta, printed at the Baptist Mission Press, Circular Road. 1832.

This is a work exhibiting considerable research into the condition and resources of those distant, but highly-important colonies, and a no less valuable disquisition on the information which it details. It deserves the attentive perusal not only of those who are turning their thoughts towards emigration, but of those on whom devolves the difficult duty of legislating for those remote and peculiarly situated dependencies of the British crown. Indeed, the book generally is better adapted for the study of the latter than the former. There is much of the firm, we had almost said stern, disciplinarian in Mr. Henderson's suggestions relative to the treatment of the convict population; but, persuaded as we are, that his picture of the settler's embarrassments and vexations, in consequence of the misconduct of servants, drawn from this source, is an unexaggerated delineation from the life, we cannot but acknowledge the absolute necessity of investing him with such an authority as shall enable him to hold

them in the strictest subjection, always, of course, liable to the interference of the legislative power, where this authority shall be satisfactorily proved to have been abused.

IGNORANCE is, for the twice-ten thousandth time, again displayed, by Mr. Henderson's book, to be the companion, and who shall say it is not the parent, of crime. Speaking of the convicts, he remarks, "The state of education among these people is most extraordinary; few of them, proportionally speaking, can either read or write. At my farm in Van Diemen's Land, I had an English free overseer, and five convict servants, not one of whom could write his name. From all my inquiries, also, on the subject, I am convinced that not one half, perhaps a much smaller number, can read or write. One would expect that the Scotch, at least, would not be included in this remark, but even they did not appear to me to form an exception." While we repeat with exultation "the schoolmaster is *abroad!*" we may feel some degree of shame that the effects of his labours are not more evident at *home*, and certainly we should lose as little time as possible in sending him on his benevolent travels to New South Wales.

The second part of Mr. Henderson's publication is devoted to the geology and natural history of the insulated continent; and here will be found much to interest and inform the mind of the student of these branches of knowledge.

JOURNEY TO THE NORTH OF INDIA, *overland from England*, through Russia, Persia, and Affghaunistaun. By Lieutenant Authur Conolly. 2 Vols. Bentley, New Burlington-street. 1834.

An overland journey from England to India is one of those schemes which cannot fail to be productive of adventure and amusement in the highest degree, and the most interesting part would, no doubt, be that between the shores of the Caspian and the banks of the Indus. Lieutenant Conolly has succeeded in performing this undertaking, passing through Astrabad, Meshed, Beraud, and reaching the Indus at Shikarpoor, from whence he travelled to Hissar, and all this in spite of difficult roads, dangers of climate or robbers, the intrigues of Cazees, Vuzeevs, Syuds, and, what is still more formidable, the treachery of Arab servants. We are compelled, by the overflowing state of our pages, to reserve an extract or two for a future number; but, in the mean time, cordially recommend the work to the attention of our readers. As might be expected, these volumes are replete with interesting anecdotes of extraordinary customs and superstitions, partaking more of the character of romance than of real life.

NAUTICAL AND HYDRAULIC EXPERIMENTS, with numerous Scientific Miscellanies. By Colonel Mark Beaufoy, F. R. S. In 3 Volumes, 4to. With Plates. Vol. I.

When we inform the reader that this volume is printed at the *private press* of Henry Beaufoy, Esq., F.R.S., in South Lambeth, that it consists of nearly 800 pages of large-sized 4to., illustrated with numerous plates executed in the first style of the art, as it now is—that it is the first of three, to be distributed gratis among the followers of science and the friends of its patron, the late Colonel Beaufoy, containing a collection in full detail of all his interesting experiments—we feel pride in having an opportunity of recording a work, which displays at the same time an unbounded zeal for the promotion of

scientific discovery, and the highest respect for the memory of a once revered parent.

And, perhaps, there could not have been chosen a better time than the present for producing a uniform and complete collection of Colonel Beaufoy's experiments, for his well-known accuracy and strict impartiality in recording them must ever render them valuable. Each of the series of experiments in this volume is prefaced by a few introductory remarks, and we were much struck with the early propensity of this celebrated man for experimenting on whatever he could. It is told of him, that at the age of 15 he happened to hear a learned mathematician pronounce as a law, that "a cone drawn through the water with its base foremost experienced less resistance from the fluid than with its apex foremost." This excited the curiosity of young Beaufoy, and he speedily brought it to the rude test of experiment in his father's beer cooler, a huge bunch of keys acting as the moving power. The fallacy of the assertion was thus proved, and it no doubt operated as a stimulus to him in after life in the numerous experiments in which he became engaged.

The work is prefaced by a beautifully executed engraving, representing on one hand the elegant Nautilus, fairly *under way*, so appropriately styled the "Queen of the Ocean;" and on the other is the result, of naval architecture, with the very becoming motto, "Art is but Nature better understood."

THE ARCHITECTURAL DIRECTOR, Parts 2, 3, and 4. By John Billington, Architect. Bennet, Paternoster Row.

This valuable little work, embracing in a condensed form all the important branches of the sublime art on which it treats, is proceeding in the same spirit with which it was commenced. We consider it one of the most desirable ephemeral works of the day.

LETTERS ADDRESSED TO A YOUNG MASTER MARINER, on some Subjects connected with his Calling. By Charles Lorimer. Effingham Wilson.

This is an unpretending and useful little work. We were much struck with the straightforward manner in which the author sets out, and were not disappointed when we found ourselves arrived in the midst of his letters. There is much in our mercantile marine that calls for reform, and we fear it will yet be long before that reform be effected. We look on the new tonnage bill, now in parliament, as likely to commence it by improving their build: but we principally allude to the whole system of insurance, and the relations between owner, captain, crew, and passenger, which require looking into carefully. In the work before us, there is much that will open the eyes of a new "skipper," and we recommend him to take a leaf or two of the good wholesome advice which it contains. His duty in the various situations in which he may be placed is clearly and ably pointed out, and instances of similar natures are adduced to illustrate them.

NEW CHARTS.

A CHART OF THE COAST OF PORTUGAL, with part of Spain, from Cape Finisterre to Cape St. Mary.

We observe that the admirable survey of the entrance to the Douro, by Commander E. Belcher, in the Ætna, has been introduced into this valuable chart.

THE BATTLE OF TRAFALGAR.—In the notice of these paintings in our last number, the name of the artist, Mr. W. J. Huggins, was inadvertently wrongly stated. The mistake, however, enables us to inform those of our readers who may not have seen them, that they are still exhibiting at Exeter 'Change in the Strand, and should be visited by naval officers while the opportunity lasts.

NEW OBSERVATORY IN RUSSIA.—His majesty the Emperor of Russia has ordered an observatory to be built on a large scale, in a beautiful situation on the road towards Zavskoe Zelo, about nine miles from Petersburgh. The learned astronomer M. Struve, who will shortly visit this country, is to be its director. He comes, no doubt, with the view of ordering instruments, for which purpose the sum of £10,000 has been awarded by the emperor.

THE THETIS.—We understand that Captain Dickinson, the late commander of H. M. S. Lightning, who has suffered so much in his operations at Cape Frio, intends shortly to publish a full account of the whole of that arduous undertaking.

ROYAL NAVAL SCHOOL.—The last report of the Council of Administration affords a pleasing prospect to the friends of this establishment. It says, "Last year, as may be remembered, it consisted of an establishment calculated to receive 150 boys; it is now equal to the reception of 230. Last year its income barely met its expenditure; there appears now a prospect of a considerable surplus. Last year it was an experiment to be tried; the experiment has now been tried, and, if not with uniform or unmingled success, at least with a more than respectable result, pointing out, almost of itself, the alterations yet requisite to obtain entire efficiency." These are flattering assurances of the actual prosperous condition of the school, and that it is in a fair way of achieving those great benefits for which it was intended. The retiring members of the council this year are Rear-Admiral Brenton, Major-General Sir James Cockburn, Bart., Rear-Admiral Sir T. B. Capel, J. A. Lethbridge, R.N., and Lieut. A. B. Becher, R.N.; who are succeeded by Vice-Admiral Sir Isaac Coffin, Captain Hon. W. Waldegrave, Lieut. Stratford, R. N., W. B. Basden, R.N.

THE BELLEROPHON.—Report says that this veteran ship is not to be consigned to destruction; her death-warrant has been revoked, and she is to be preserved. We do not regret either this or the circumstance which has been the means of drawing forth so noble a character of her.*

From a Correspondent.—We insert the following, without vouching for its accuracy.

WATER TELESCOPE.—A new optical instrument, of very considerable ingenuity, has been invented by Mr. William Leslie, of Lausinburgh, United States, for seeing through water, and thus exploring the bottoms of rivers, &c. It consists of a tube, that may be varied in length as occasion shall require, about an inch broad at the top, where the eye is applied, and regularly enlarging at the bottom, which bears a proportion to the other end about ten to one in diameter. Each end is glazed.

The reason why we cannot look through water to the bottom, generally, is the reflexion and refraction of the rays of light upon arriving at the surface. The glass overcomes that difficulty by extending the eye, as it were, into the denser medium, and making use of the light which is in the water, where the

* See page 370, No. 28.

rays pursue right lines as well as the rare medium of the air. The advantages of such an instrument will readily occur:—among other interesting ones, is the speedy recovery of drowned bodies, and it would doubtless be the means of saving many lives. Lost property, too, may be found, and the impediments to excavation discovered, and their removal facilitated.

THE CENTURION.—A whaler lately, on weighing her anchor at the island of Tinian, hooked up the anchor of the *Centurion*, of 64 guns, which was lost by that ship in the year 1742, when Commodore Anson touched there to refresh his crew. It was comparatively little corroded, having on a thick coat of rust; the wooden stock was completely rotted off. The anchor was carried over to the island of Guam, where the natives immediately commenced beating it out into bars and bolts, with which they are building a brig.

It was probably sold or given to the natives by the master of the whaler, but his proper course would have been, to have brought it home, and deposited it in one of his majesty's dock-yards.

It will be recollected that the Centurion was twice driven to sea: first, on the 23d September, at one in the morning, when she was absent nineteen days; and secondly, on 14th October, remaining five days at sea.

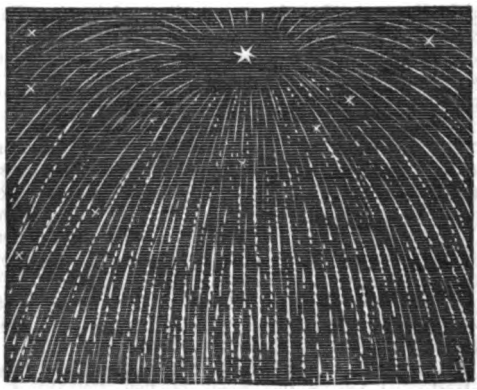
METEORS.—We should not, probably, have been induced to notice the extraordinary meteoric phenomena which were seen in November last in the United States, had not their appearance been confirmed in various parts, and reported by Lieut. E. Barnet, commanding H. M. Schooner Jackdaw, to have been seen by him when at the Cay Sal Bank, in the Gulf of Florida, distant more than a thousand miles from where they principally occurred. The following is an extract from Lieut. E. Barnett's letter.—

"I dare say you have already seen an account of the inclosed, still there can be no harm in sending it. But I am induced to do so principally to tell you that on that occasion we were in the Gulf near the Cay Sal Bank, and observed precisely *the same phenomena*, and at *the same time*. I cannot add any thing to the description, except to say that three days previous we had strong north winds, and for some days afterwards the wind was extremely variable, but light, going round the compass in the course of the twenty-four hours."

The following is the extract alluded to, and which is from a New York paper:—

"The celebrated exhibition of yesterday morning is noticed in the Philadelphia evening papers; but it is evident from their accounts, that it fell far short, both in the number of the meteors and the brilliancy of their light, of the splendours visible in our city. A correspondent of the National Gazette estimates their number at two thousand one hundred and sixty in the compass of two hours and a half. More than that number were visible here within every ten minutes of that period; and it was as difficult to count them as to number the rain-drops. The following statement, from the pen of the gentleman to whom we yesterday alluded, confirms, substantially, our own version of the phenomenon—the like of which has, probably, never been before witnessed in this country. The exhalations of the Pontine marshes (so far as their description is recorded) bore but a remote resemblance to the magnificent scene.

"The 'meteoric rain,' alleged to have fallen some years ago in one of the south-western departments of France, approaches nearest in affinity to the grand display of yesterday morning. The figure annexed to this paragraph may convey an imperfect idea of its appearance."—*Commercial Advertiser.*



"*To the Editor of the Commercial Advertiser.*

"The meteoric shower of the 12th instant was a rare phenomenon.

"At half past 4 o'clock, A. M., I first observed it, and continued to notice it until its termination at 6 o'clock, A. M.

"From a point in the heavens, about fifteen degrees south-easterly from our zenith, the meteors darted to the horizon in every point of the compass. Their paths were described in curved lines, similar to those of the parallels of longitude (? meridians) on an artificial globe.

"They were generally short in their course, resembling much an interrupted line, thus, ——. ——. ——————————. They ceased to appear when within about ten degrees of the horizon.

"I did not see a single meteor pass the meteoric pole which I have described—nor one pass in a horizontal direction.

"Several of them afforded as much light as faint lightning. One in the north-east was heard to explode with a sound like that of the rush of a distant sky-rocket. The time from explosion to the hearing was about twenty seconds, which gives a distance of about five miles. It left a serpentine cloud, of a bright glowing colour, which remained visible for about fifteen or twenty minutes.

"Millions of these meteors must have been darted in this shower.

"I was not able to remark a single one whose proximity to me was greater or less than any other—by being intercepted between my vision and any distant object, such as trees, houses, or the high shore of New Jersey west of me.

"The singularity of this meteoric shower consisted in the countless numbers of the celestial rockets, and more especially in their constantly uniform divergence from the point fifteen degrees south-easterly from our zenith.

"The meteors are supposed to be gaseous, and, when inflamed by some cause not explained, appear darting through the heavens, generally in various directions. It is certain that they are generated at a moderate distance from the earth, probably from two to five miles.

"The exhibition I have partly described, was the most splendid pyrotechny I ever saw, and I do not recollect to have met with anything comparable to it in description.

"I am, respectfully, yours, "H. M."

"*The Meteors.*—About day-break this morning, our sky presented a remarkable exhibition of fire-balls, commonly called *shooting stars*. The attention of the writer was first called to the phenomenon about half-past five o'clock, from which time, until near sunrise, the appearance of these meteors was striking and splendid, beyond any thing of the kind he has ever witnessed or heard of.

"To form some idea of the phenomenon, the reader must imagine a constant succession of fire-balls, resembling sky-rockets, radiating in all directions from a point in the heavens near the zenith, and following the arch of the sky towards the horizon. They proceeded to various distances from the radiating point, leaving after them a vivid streak of light, and usually exploding before they disappeared. The balls were of various sizes and degrees of splendour: some were mere points, but others were larger and brighter than Jupiter or Venus; and one, seen by a creditable witness, before the writer was called, was judged to be nearly as large as the moon. The flashes of light, though less intense than lightning, were so bright as to awaken people in their beds. One ball that shot off in the north-west direction, and exploded near the star Capella, left, just behind the place of explosion, a phosporescent train, of peculiar beauty. This line was at first nearly straight, but it shortly began to contract in length and dilate in breadth, and assume the figure of a serpent folding itself up, until it appeared like a small luminous cloud of vapour. This cloud was borne eastward by the wind, opposite to the direction in which the meteor had proceeded, remaining in sight several minutes. The light was usually white, but was occasionally prismatic, with a predominance of blue.

"A little before six o'clock, it appeared to the company that the point of radiation was moving eastward from the zenith, when it occurred to the writer to mark its place accurately among the fixed stars. The point was then seen to be in the constellation Leo, within the bend of the Sickle, a little to the westward of Gamma Leonis, and not far from Regulus. During the hour following, the radiating point remained stationary in the same part of Leo, although the constellation in the mean time, by the diurnal revolution, moved westward to the meridian nearly 15 degrees. By referring to a celestial globe, it will be seen that this point has a right ascension of 150 degrees, and a declination of about 20 degrees: consequently, it was 20 degrees 18 minutes south of our zenith.

"The weather had sustained a recent change. On the evening of the 11th, a very copious southerly rain fell; and on the 12th a high westerly wind prevailed, by gusts. Last evening the sky was very serene; a few falling stars were observed, but not so numerous as to excite particular attention.

"*Yale College, Nov.* 12, 1834. "DENISON OLMSTEAD."

The Lords of the Admiralty have been pleased to award a handsome medal, and a gratuity of 50l., to one of the boatswain's mates of the Pylades, for several instances of humanity and intrepidity, in saving from drowning, men belonging to that ship, including the carpenter on a recent occasion.

LAUNCH OF A STEAM FRIGATE.—On the 7th June, one of the largest steam-vessels ever built in this country was launched at Limehouse, in presence of a numerous assembly of respectable persons. She is called the Egyptian, being built by order of the Pacha of that country. She is pierced for 20 carronades, and two non-recoil long guns. She has two boilers of 110 horse-power each.—The king of the Two Sicilies has given orders for a steam-frigate of similar construction and power.

The Tartarus, steamer, will be launched at Pembroke on the 23rd instant. A party of men, under the direction of Mr. Walker, Master-Attendant's Assistant of Plymouth Yard, will proceed thence on Saturday, for the purpose of navigating the Tartarus to Woolwich, where she will take on board her engines and boilers.—*Ports. Herald.*

The Nile, 92, which is ordered to be launched on the 21st July, is fitted with a square stern, on a new plan, after the suggestion of Mr. Roberts, master-shipwright, of this dock-yard, which combines strength, durability, and beauty, and is far superior to any other square-stern we have seen. The Nile is in a very forward state, but there is some doubt whether the Pique frigate can be got ready for launching at the same time, as first intended.—*Devonp. Tel.*

At this season of the year, when so many accidents occur from persons bathing, we think the following remarks may prevent the loss of life:—Men are drowned by raising their arms above water, the unbuoyed weight of which depresses the head. Animals have neither notion nor ability to act in a similar manner, and therefore swim naturally. When a man falls into deep water, he will rise to the surface, and continue there, if he does not elevate his hands. If he moves his hands under water in any manner he pleases, his head will rise so high as to allow him liberty to breathe; and if he moves his legs as in the act of walking up stairs, his shoulders will rise above the water, so that he may use less exertion with his hands, or apply them to other purposes. Persons not having learned to swim in their youth, will find the above plain directions highly advantageous.—*Hull Packet.*

The Semaphore Telegraph at the Sally Port, under the superintendence of Lieut. Prosper Ambrose, is about to be discontinued in a few days, and the duties transferred to that in the Dock-yard, to which station Lieut. Barnes is appointed from Lumps Fort Telegraph.—*Ports. Herald.*

Naval Science.—Arrangements have recently been made in that part of the Royal Naval College, in Portsmouth Dock-yard, hitherto exclusively appropriated to the students in naval architecture, for affording the means of instruction on scientific subjects, connected with the naval service, to twenty-four commissioned officers of the navy. These studies will be directed by an able professor. The Admiralty holds out no inducement for officers to enter on this course of instruction, save that of affording them gratuitously the means of acquiring scientific knowledge.—*Portsmouth Herald.*

First Vessel for China from Livepool.—The *Symmetry*, Capt. W. C. Riley, sailed from this port for China yesterday, (Friday). This vessel is the first that has cleared out from any port in the United Kingdom direct, Company's ships excepted. She is a very complete ship, of about 550 tons burden, well adapted for the East India trade, is the property of T. Chadwick, Esq. London, and loaded by Messrs. Acraman and Stitt, of this place.—*Liverpool Journal May* 3d, 1834.

The Viceroy of Egypt has just nominated Capt. Besson, a Frenchman, to be his Vice Admiral, this being the first instance of a Christian being employed in such a distinguished office in a Mahommedan country.—*Southampton Advr.*

By a recent Act of Parliament this session, the sentencing smugglers to serve in his Majesty's navy is abolished, and, in future, when smugglers are convicted

of offending against the revenue laws, they are to be sent to the House of Correction to hard labour; six months for the first offence, nine months for the second, and twelve months for the third.—*Hull Packet.*

A short time since, says a French periodical, as some men were fishing at the entrance of the Seine, they caught a large sturgeon, in the stomach of which was found a portfolio, containing a number of papers in an excellent state of preservation, belonging to a naval officer who had been shipwrecked a short time before. His will, discovered among these papers, will enrich a poor soldier who had formerly saved the deceased officer's life in an engagement.—*Hants. Tel.*

JANE, OF HALIFAX.—*Distressed condition of the Crew and Passengers.*—This vessel, which left London on the 1st of February, bound for New York, with a considerable number of persons emigrating to that place, we regret to state, had scarcely lost sight of land, when she encountered the most violent and boisterous weather, which continued with trifling intermission until the 19th. During this period, a lapse of eighteen days, three of her crew were swept away by the tremendous seas which broke over her; and the motion of the vessel at times was so extremely violent, that but few escaped without severe bruises and other injuries. Among those who suffered most were the carpenter and mate, the former of whom had his leg broken and the latter his ribs, and one man had his teeth knocked out. The vessel also shared damage —the masts went by the board together, with the exception of the foremast; and by far the greater portion of the time, the ship was quite unmanageable. On the 18th the Mariane Pauline, a Hamburgh brig, commanded by J. J. J. Wilken, of Hamburgh, from Laguaira to the former port, came in sight in the morning, and afterwards got near enough to hail them, but the sea continued so rough as to render it highly dangerous to lower the boat. The Captain of the Mariane Pauline then desired the Commander of the Jane to hoist a lanthorn to the mizenmast head, as he would lie to, in hope that the weather would abate by the next morning. He was fortunately able to accomplish his humane intention, and as the sea at daylight had abated, the boat was lowered, into which the mate and a portion of the crew of the Jane descended, and then went to speak the Captain of the Hamburgh vessel, to which he explained their forlorn situation. With the utmost humanity, Captain Wilkin consented to receive the whole of the passengers on board his brig, but, as the hull of the Jane continued seaworthy, it was neither deemed necessary nor expedient to remove the crew of the distressed vessel. This arrangement was made to the satisfaction of all parties; for, on the removal of the passengers, the provisions, which were getting short, were found to be sufficient for a month. Captain Wilkin then assisted them to some rope, of which they were in want, and then took the passengers on board, and succeeded in arriving off the Lizard on Tuesday, about ten o'clock A. M., when he put them on board a Cawsand pilot-boat, which brought them to this port the same night, between ten and eleven o'clock. The passengers, twenty-two in number, are in a most destitute condition. We have been enabled to collect the names of the following:—Mr. F. A. Cox, cabin passenger, Mrs. Hull and two children, Mrs. Murphy and child, Miss Rawley, Mrs. Crump, Mr. and Mrs. Crow, Mr. and Mrs. Colman, W. Anderson, W. Hopkins, S. Davison, S. Johnson, T. Adams, E. Mollett, W. Worland, J. Raylton, G. Colman, and W. Smith. Application was made yesterday by a portion of them for relief from the governor of the workhouse, as, owing to the haste in which they left the Jane, the whole of their clothes, &c., were left behind.—*Plymouth Journal.*

Loss of the Sarah, Captain J. Rennison.—This vessel was bound from London to Quebec. She put in here on the 10th of June, and on the 13th attempted to get out to sea, although the weather was any thing but propitious; on nearing the western end of the Breakwater, she attempted to go about, but unfortunately missed stays and tailed ashore, where she soon became a wreck, owing to a heavy ground-swell that was up at the time. The crew and passenger, we are happy to find, are all saved: the former had no opportunity of rescuing any thing belonging to them, except what they had on; but the passenger, Mr. Reynolds, of this town, was so fortunate as to save much of his goods. The Sarah was built at Prince Edward's Island, of fir and birch, as is usual there. It gives us much pleasure to record the kind-heartedness displayed by our worthy vicar of St. Andrew's, the Rev. J. Hatchard, who, on Sunday, in addition to his own munificent donations, pleaded for the poor destitute crew before his parishioners in the church on that morning and evening so effectually, as to obtain for them the sum of £20, and which was subsequently distributed among them. The poor fellows were on Sunday at the Mariner's Chapel, returning their heartfelt thanks to that all-wise Being, for his mercies vouchsafed in thus preserving them from a watery grave. The Rev. Mr. Hatchard, in the evening, gave to each of them also a prayer-book and bible.—*Plymouth Journal.*

H.M.S. Thetis.—Judgment.—The hearing of this appeal cause was concluded on Friday, and their Lordships delivered their judgment. Sir John Nicholl remarked that it would be for consideration whether the Hon. Capt. De Roos, and the officers and crew of the Algerine ought not to have an increased allowance for their salvage services, although they had not appealed. The Vice-Chancellor said their Lordships had considered the question before them, and were of opinion that, considering the arduous nature of the service, the privations that had been sustained by the salvers, and the long time employed in the duties, the sum awarded by the court below was not sufficient. Their Lordships were of opinion that an addition of £12,000 to £17,000, to the amount decreed by the court below, would not be too much. Their Lordships directed the increased sum to be distributed as follows:—To Admiral Barker one-eighth, according to the regulations of the Orders in Council of 1827; to Captain Dickinson, two-eighths; and the remaining five-eighths to the officers and crews engaged in the service, rateable according to the amount of treasure recovered by the vessels engaged. The decision was in accordance with previous decisions, and, considering the claim made by the Admiralty, amounting to £13,833, together with the amount now decreed for salvage, would make 54,000, and a fraction, or something more than one-third of the total amount recovered, £157,000. Considering the nature of the salvage services, therefore, their Lordships decreed that in addition to £17,000 decreed by the court below, a sum of £12,000 in addition should be paid to the salvers in the mode stated. The amount of dollars on board the Thetis when she was wrecked, was 810,000, of which £586,000 were recovered by Capt. Dickinson, and about 161,090 dollars by the Hon. Capt. De Roos.—*Ports. Herald.*

Locusts.—The provinces of *Hoo-kwang* were, some time since, attacked by these destroyers, and, as they were found to be moving south, it was feared that the provinces of *Quang-si* and *Quang-tong* might also be visited—this has lately come to pass. As soon as their march brought them near the borders of the province, the viceroy issued a proclamation against them, in very strong terms, warning the people of their destructive habits, and the

necessity that existed for at once destroying them. His excellency observes that, having made diligent inquiry into their habits, he finds that they stop to feed three times a day; after which, being tired and sleepy, they may be easily destroyed—if this be not done, each one will, the next day, be ten thousand, &c. &c. We know not whether his excellency's description of the habits of this insatiable scourge be correct. Some of the saints of the Roman calendar took on themselves, in former years, to excommunicate these insects; and, we doubt not, but the *Foo-yuen's* proclamation will have equal effect. Specimens of the insect are to be seen in the shops in Canton; they are of unusual large size, of both the brown and green kinds. They made their appearance last year in great multitudes in most of the northern provinces of China.—*Canton Register.*

NAVAL GUNNERY.—The gun lately fitted on board the Excellent, at Portsmouth, with a percussion pin, for trial on the plan of Mr. Bartholomew, has, after several experiments, been landed by Admiralty order, not having been found to answer the purpose intended. The following is the result of several shots fired from it last week: 1st shot—The vent screw was taken out, and the vent was not served, a considerable quantity of smoke issued from the vent on spunging, the pin could not be taken out by hand, but was done with a vice, which occupied two minutes. 2d shot.—The pin could not be taken out by hand, but was taken out as before, which occupied 15 seconds, and a sponge was used to clear the cylinder. 3d shot.—Same as 2d. After every fire, the pin was wiped, it having become foul; after the fifth round, the guard of the pin, together with a solid piece of the gun metal, was blown off, and the pin was thrown 20 feet diagonally to the right, striking the topsail sheet bitts, making a deep indent thereon; fortunately, it did no injury, as Captain Hastings had taken the necessary precaution lest such an accident should occur.—*Hants. Tel.*

NAVY PAY.—The bill introduced into the House of Commons, by Sir James Graham, to amend the laws relating to paying the navy, seems a considerate and proper measure. By the first clause, the power to draw bills periodically for their pay is to be extended to mates, midshipmen, and masters' assistants, though they have not passed their examination; volunteers of the first class, engineers and assistant engineers, belonging to steam vessels, under regulations to be prescribed by the Lords of the Admiralty, it being provided that those who have made allotments, or are entiled to receive monthly pay, shall not have the privilege. By the second clause, captains, lieutenants, and masters commanding ships, surgeons, and others, who are only entitled to draw for three-fourths of their pay, will be enabled to draw for their net personal pay. The third clause extends the privilege of receiving two months' wages in advance to boatswains, gunners, carpenters, second masters, &c. The fourth class extends the power of making allotments to brothers, sisters, grandfathers, grandmothers, mothers-in-law, children of eighteen years of age, and to trustees for the use of children. By the seventh clause, the remittance of wages is extended. The obvious purpose of this considerate bill is to enable all classes to get their pay easily, and to appropriate it for such useful porposes as supporting their families, without being subjected to any risk or expense.—*Hants. Tel.*

FATAL EFFECTS OF LIGHTNING ON THE SHIP JESSIE, OF LONDON.—The Jessie, Bevan, Master, left London for Bahamas, about the 13th of November, 1833. She was struck by lightning, and abandoned by her crew, in lat. 45° long. 14° and on the 5th of February, 1834, drove on the island of *Groix*, near *L'Orient*, and was immediately dashed to pieces.

We have been favoured by a correspondent with the following instances of vessels being struck by lightning, in addition to those mentioned by Mr. Harris :—

The Desireé frigate was struck by lightning whilst lying in the western anchorage of Port Antonio, Jamaica, in 1803 ; the splinters from her topgallant-mast being scattered upon the shore.

In 1804, H.M.S. Theseus (with flag of Rear-Admiral Dacres) was struck by lightning off St. Domingo.

In June, 1804, H.M. corvette Mignonne having been damaged by getting on shore off Lucca harbour, Jamaica, was towed thence to Port Royal by the Desirée. Early on the morning (1 A.M.) of the 9th July, whilst off the south-east side of the island, the ships encountered a severe squall, accompanied with lightning and thunder. The Mignonne was struck by the electric fluid, which shattered her mainmast, killing three men and wounding nine others. One of the topmen, who, to screen himself from the rain, had drawn part of a small sail over his body, in the maintop, escaped unhurt; whilst another, who was lying upon the armourer's chest, between decks, was killed.

On the 20th of August, 1804, off Falmouth, Jamaica, during violent gales from the N.N.W. at 9 h. 30 m. A.M., the main braces and signal haulyards of the Desirée were burnt by the electric fluid.

In 1809, the Dædalus frigate having encountered a hurricane off Porto Rico, returned to Port Royal to refit. After getting in the new foremast, it was struck by the electric fluid during an awful thunder-storm at night, and so shattered as to be rendered useless. Fortunately there was no powder on board, and the ship and crew thereby escaped inevitable destruction, as the lightning penetrated into the fore-magazine, and ignited the few grains which had escaped the swabs. Its direction could not be traced further.

The officer of the watch, and some of the seamen, were struck down by the shock, and were blinded for more than half an hour.

The Hebe frigate was struck also at the same time, and lost her main-topgallant-mast, without sustaining further damage. She was within port. But an unfortunate merchant schooner, at anchor astern of the frigates, was so completely pierced by the fiery bolt, that she went down, her mastheads alone appearing above water at daylight.

Perhaps the above additional instances of the effects of the electric fluid on vessels unprovided with a rod, or conductor, may be interesting to Mr. Harris, and some of your readers. M.

THE FALKLAND ISLANDS—*Further particulars of the late Murders, by one of the Survivors.*

On the 26th of August, 1833, the settlement at Port-Louis, Berkley Sound, East Falkland Island, consisted of the following persons, viz. :—Capt. Mathew Brisbane, superintendent; Thomas Helsby, William Dickson, Don Ventura Pasos, Charles Kussler, Antonio Vehingar, (known at Buenos Ayres as Antonio Wagnar,) Juan Simon, (Capataz,) Tanstin Martinez, Santiago Lopez, Pascual Diaz, Manuel Coronel, Antonio Rivero, Josè Maria Luna, Juan Brasido, Manuel Gonzales, Luciano Flores, Manuel Godoy, Felipe Salazas, and Lattore, (the last five being Indians, having been sent by the Governor of Monte Video

to this island, for bad conduct); three women, viz. Antonina Roxa, Gregoria Madrid, Carmolita, and her two children. Also, Captain William Low, and a boat's crew, late of the schooner Unicorn, were temporary residents, (Capt. L. having sold the Unicorn nearly six months previously, to Capt. Fitzroy, of his Majesty's ship Beagle,) viz. Henry Channen, John Stokes, Daniel Mackay, Patrick Kerwin, Samuel Pearce, George Hopkins, Joseph Douglas, Francis Machado, and Jose Manuel Pardo; likewise two men of colour, one of them formerly of the Unicorn, known in the settlement by the name of honest John, and the other late of the American schooner transport, Captain Bray, (Antonio Manuel.)

On the morning of the 26th August, as above mentioned, Captain Low left the settlement in a whale-boat, with four hands, viz. Faustin Martinez, Francis Machado, Jose Manuel Prado, and the man of colour, late of the transport, for the purpose of sealing on the north and south rocks at the mouth of the Sound, calling at Johnson's Harbour. About 10 A.M. of the same day, I walked down from Captain Brisbane's house, towards the store on the point, for the purpose of procuring some oil from William Dixon, whom I found, with Henry Charman, Daniel M'Kay, and Joseph Douglas, in the house of Antonio Wagnar.

I returned immediately afterwards towards the flag-staff, with Henry Charman, leaving the three above-mentioned persons, with Antonio Wagnar, in his house. When we had passed the house of Santiago Lopez, we met Antonio Rivero, Jose Maria Luna, Juan Brasido, Manuel Gonzales, Luciano Flores, Manuel Godoy, Felipe Salazar, and Lattore, running towards the house of Antonio Wagnar, and the point, armed with muskets, pistols, swords, dirks, and knives. It was very evident they were going to kill some person, and I hastened towards the house of Captain Brisbane, for the purpose of informing him what was going on. On my arrival, I was alarmed at finding the doors locked, and, after knocking some time, was informed by two of the women, the above-mentioned eight men had killed Captain Brisbane, Juan Simon, (the Capataz,) and had left Don Ventura for dead, he having been wounded by a ball through his throat, his head cut open, and some of his fingers cut off by a sabre. Afterwards he escaped by a back window, and reached the house of Antonio Roxa, about fifty or sixty yards distant.

On my way up from the point, I heard two musket-shots fired at the house of Antonio Wagnar, where they killed him and William Dixon; to which, two of the boat's crew, Daniel M'Kay and Joseph Douglas, were each an eye-witness. They then returned to the house of Captain Brisbane, and, not finding the body of Don Ventura, they searched for him; on which he ran out, and I saw him killed by their firing two or three musket-shots at him.

After I was informed what had taken place, by the two women, on my arrival from the point, I was attempting my escape, by running into the camp, but was soon overtaken by Felipe Salazar, who was on horseback; and, seeing it was impossible to get from him, I walked towards him. He had a drawn sabre in his hand. Afterwards I got up on the north side of the garden wall, to see where the remaining seven armed men were, when they passed along the outside of the south garden wall, entered the garden by the gate, and came across it to shoot me, and ordered me off the wall for that purpose.

Some conversation took place among themselves, and I was spared, but I was ignorant at that time by whose interposition. This occurred immediately on their return from killing Antonio Wagnar and William Dickson, and before they missed the body of Ventura. I was ordered by them into Captain Brisbane's house, and then first saw his body dead on the floor. He appeared to have been making towards his pistols before he fell, and there was a smile upon

his countenance. They dragged his body with a horse to a considrable distance, and plundered the house afterwards. I was locked up, and I was ordered to the house of Antonio Roxa, where I found her, one of the other women, and Pasqual Diaz. I pleaded hard to be allowed to go to the house of the boat's crew, but was not permitted. I considered myself still condemned to be shot; and they left me for the purpose of plundering William Dickson's, the store at the point.

After some conversation on their return, I was ordered to my own room, and I took that opportunity of joining the boat's crew (seven of them) at their own house. The assassins now became in possession of all the arms and ammunition in the place, excepting what the boat's crew had, two guns of which only were good for any thing, and which might be said to compose all the arms they had to defend themselves. The house of Faustin Martinez (who was with Captain Low) was robbed of its contents.

At the time these murders took place, the remainder of the male inhabitants of the settlement were at the following places:—I and Henry Channon were returning from the house of Antonio Wagnar towards the flagstaff, having left two of the boat's crew there, as before related, with him and William Dickson. Santiago Lopez was in the house of the boat's crew, four of whom were within, and variously employed. Pasqual Diaz was cooking in the house of Antonio Roxa.

[By the last accounts, the murderers were still in the interior of the island, but desirous of returning to Berkeley Sound.]

THE SCHOOLMASTER ABROAD.—The following interesting document is copied from a Cape paper, for the benefit of *emigrants*. We sincerely hope that some *learned* couple will, ere long, attend to the reasonable demands of the islanders:—

"We, the undersigned, being three of the senior principal inhabitants of the Island of Tristan da Cunha, do hereby agree to furnish any respectable middle-aged people, (as man and wife,) who are willing and capable to undertake the office of schoolmaster and mistress, with house and all necessaries for their subsistence, as well as to present them every year at Xmas with a tenth part of the amount of sale of our produce, so long as the schoolmaster and mistress shall conduct themselves with propriety, and chuse to remain with us. And we do further agree—that any persons sent to us with a certificate of good conduct, and necessary qualifications, signed by the Governor of the Cape of Good Hope, or by Admiral Warren, (the Naval Commander-in-Chief,) shall be considered by us as eligible to the situation, and their passages to this island paid to the master of any merchant-vessel bringing them, immediately on their arrival—the sum of passage-money having been agreed upon by either the Governor or Admiral before-mentioned.

"Signed by us, at Tristan da Cunha, this 17th day of January, 1834, on board his Majesty's brig Forrester, in the presence of Commander Booth, R.N.

"W. M. GLASS, Governor.
"RICHARD RILEY, his × mark.
"JOHN TAYLOR, his × mark."

NAVAL REGISTER.

COMMISSIONERS *for executing the Office of* LORD HIGH ADMIRAL *of the United Kingdom of Great Britain and Ireland.*

The Right Honourable George *Baron* Auckland.*
Sir Thomas Masterman Hardy, Bart. G.C.B. *Rear-Admiral of the White.*
George Heneage Lawrence Dundas, *Rear-Admiral of the Blue.*
Sir Samuel John Brooke Pechell, Bart., K.C.H., C.B., *Captain, R.N.*
Henry Labouchere, Esq.
Maurice Frederick Fitzhardinge Berkeley, Esq., *Captain, R.N.*

THE ROYAL NAVY IN COMMISSION—JUNE 21ST, 1834.

Flag-Ships.		*Stations.*
ASIA - -	84	Tagus.
CALEDONIA,	120	Mediterranean.
HASTINGS -	74	Tagus.
ISIS - -	50	Cape, and Africa.
MELVILLE -	74	East Indies.
OCEAN - -	80	Nore.
SAN JOSEF -	110	Plymouth.
SPARTIATE -	74	South America.
THALIA - -	46	Cape, and Africa.
VERNON - -	50	N. America & W. Indies.
VICTORY -	104	Portsmouth.
WINCHESTER	52	East Indies.

ACTÆON, 26—Hon. G. Grey, March at Constantinople.

ALFRED, 50—Capt. R. Maunsell, 29th April at Malta.

ALLIGATOR, 28—Captain G. R. Lambert, 30th Oct. left Batavia, for Sincapore. Sailed for Sydney from Madras 20th Sept.

ANDROMACHE, 28—Capt. H. D. Chads, C.B. 1st April arrived at Rio; 12th sailed for China.

ARACHNE, 18—Com. J. Burney, 1st May at Bermuda.

ASIA, 84—Rear-Admiral W. Parker, C.B., appointed 9th Sept. 1831 — Captain P. Richards, Tagus 9th April to 9th May. Daily expected.

ASTREA, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Karley, 30th March arrived at Barbadoes, and placed in quarantine, having measles on board.

BELVIDERA, 42 — Capt. C. B. Strong, 4th April arr. at Madeira; 6th April sailed for Barbadoes; arrived 12th May.

BLONDE 46—Capt. F. Mason, C.B. 25th March arrived at Barbadoes. Sailed 28th for Jamaica. To proceed to Rio, said, to relieve Dublin, 5th April arrived at Port Royal; sailed 11th for Rio. The Lieut.-Governor, the Marquis of Sligo, with his lady and suite, landed safely at Port Henderson on the 3d.

BRISK, 3—Lieut. T. Stevens, Gold Coast.

BRITANNIA, 120—Captain P. Rainier, 10th May at Nauplia.

BRITOMART, 10—Lieutenant H. Quin, Cape of Good Hope.

BUFFALO, *Store Ship*—Mr. P. W. R. Sadler, Master, 10th Nov. left Sydney for New Zealand, having touched at King George Sound in Sept. previously.

BUZZARD, 10—Lieut. Com. W. C. Burbidge, Portsmouth, fitting.

CALEDONIA, 120—Vice-Admiral Sir Josias Rowley, Bart., G.C.B., appointed 18th Dec. 1833—Captain T. Brown, May at Nauplia.

CANOPUS, 84 — Hon. J. Percy, 10th May sailed for Corunna; 18th arrived; 25th sailed; 30th arrived at Gibraltar, on way to Malta.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 2d May moved into the Sound, from Hamoaze; 7th June arrived at Spithead; 12th June sailed for the river, having received on board a splendid barge, forty feet long, for the use of her Majesty. 23d June in the Downs.

CEYLON, 2—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 21st Dec. sailed for the Falkland Islands.

CHAMPION, 18—Com. Hon. A. Duncombe, March at Barcelona.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, 15th April at Sierra Leone.

CHILDERS, 16—Com. Hon. H. Keppel, Portsmouth, fitting.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

COLUMBINE, 18—Com. T. Henderson, Sheerness, fitting. This officer was promoted for his gallantry in an attack on armed smugglers, by whom he was severely wounded.

COMUS, 18—Com. W. Hamilton, 8th May arrived at New York from Bermuda, and sailed for Halifax.

CONWAY, 28—Capt. H. Eden, 18th March left Rio for Pacific.

CRUIZER, 18—Com. James M'Causland, 11th April arrived at Port au Prince, from Jamaica. Sailed 16th for Aux Cayes.

CURAÇOA, 26—Capt. D. Dunn, 10th Nov. arr. at Calcutta. To convey Governor-General to Madras. 31st Jan. at Calcutta.

DISPATCH, 18—Com. G. Daniell, 18th April arrived at Barbadoes; 29th April arrived at Trinidad, from Grenada.

DONEGAL, 78—Captain A. Fanshawe, 13th

* Successor of Sir James Graham.

June arrived at Spithead, with Don Carlos, the late pretender to the crown of Spain, and his suite; they having embarked in the Tagus on the 1st June. On the 18th H.R.H. landed at Portsmouth.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, to leave Valparaiso, for Rio in June.

EDINBURGH, 74—Capt. James R. Dacres, May at Nauplia.

ENDYMION, 50 — Captain Hon. F. W. Grey, Knt. C.B.; 7th May at Smyrna.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, Bight of Benin.

FAVORITE, 18—Com. G. R. Mundy, 5th May at Malta, from Marseilles. By a misprint, stated wrongly to be at Valparaiso in two last numbers.

FIREFLY, 2 — Lieutenant J. M'Donnel, 19th March arrived at Jamaica, from Honduras.

FLY, 10 — Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER — Lieut. G. Miall, 13th Feb. at Simon's Bay.

FORTE, 44—Captain W. O. Pell, 7th May sailed from Barbadoes for Jamaica.

GANNET, 18 — Commander J. B. Maxwell, 27th May sailed for West Indies.

GRIFFON, 3—Lieutenant E. Parlby, 2d April in the Bight of Benin.

HARRIER, 18 — Com. H. L. S. Vassal, Dec. in the Straits of Malacca; 31st Jan. at Madras; arrived 22d Jan.

HASTINGS, 74—Rear-Admiral W. H. Gage—Capt. H. Shiffner, 7th June arrived at Spithead; 15th sailed for Lisbon.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, Dec. in Straits of Malacca; 31st Jan. at Calcutta.

IMOGENE, 18 — Captain P. Blackwood, 6th Nov. left Trincomalee, for Bombay, to be docked, having sustained some damage at Swan River. To proceed from thence to Persian Gulf. 31st Jan. at Bombay.

ISIS, 50—Flag of Rear-Admiral F. Warren, appointed 5th Aug. 1831—Capt. J. Polkinghorne, 6th April left Ascension, on her return to the Cape.

JASEUR, 18—Com. J. Hackett, 6th May at Gibraltar.

JUPITER, *Troop Ship*—Mr. R. Easto, 11th May arrived at Gibraltar.

LARNE, 18—Com. W. S. Smith, 9th April at Port Royal. To sail next day for Spanish Main.

LYNX, 10—Lieut. Com. H. V. Huntley, at Ascension 2d April. To sail on 5th for the Cape.

MADAGASCAR, 46 — Capt. E. Lyons, April at Nauplia.

MAGICIENNE, 24—Capt. J. H. Plumridge, 7th Feb at Madras; arrived 30th Jan.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74—Capt. H. S. Marsham, May at Nauplia.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., appointed 16th Dec. 1831—Capt. H. Hart, 9th Feb. at Bombay.

NIMBLE, 5 — Lieut. C. Bolton, 18th Jan. arr. at Jamaica, from Nassau.

NIMROD, 20 — Com. J. Mc. Dougal, 21st April arrived at Lisbon.

NORTH STAR, 28 — Capt. O. V. Harcourt, Portsmouth, fitting. To convey W. Hamilton, Esq., Minister Plen. to Buenos Ayres.

OCEAN, 80 — Vice-Admiral Sir Richard King, Bart. K.C.B., appointed 23d July, 1833—Capt. E. Barnard, Sheerness.

ORESTES, 18—Com. H. J. Codrington, Portsmouth, fitting.

PEARL, 20—Com. R. Gordon, 15th March at Port Royal, Jamaica; arrived from Nassau 4th.

PELORUS, 18—Com. R. Meredith, 2d April at Prince's Island.

PICKLE, 5 — Lieut. C. Bagot, 19th March arrived at Jamaica.

PINCHER, 5—Tender to flag-ship, 18th Jan. arr. at Jamaica, from Carthagena.

PORTLAND, 52—Captain D. Price, Plymouth, fitting.

PRESIDENT, 52—Capt. J. M'Kerlie, 29th May sailed for Halifax, to receive the flag of Vice-Admiral Sir George Cockburn, G.C.B. and relieve the Vernon, 52, in that service, which ship will return to England, in command of Captain M'Kerlie. Passengers, Major-General Sir Colin Campbell, K.C.B., Governor and Commander-in-Chief in Nova Scotia, with Lady Campbell and family; Capt. Campbell; Hon. Capt. and Mrs. Norton; and Lieut. Maw, R.N.

PRINCE REGENT *Yacht*—Capt. G. Tobin, Deptford.

PYLADES, 18—Com. E. Blankley, 5th June arrived at Spithead, from South American Station, with the brigantine Clemente. They both sailed for Plymouth 7th June.—11th in Hamoaze.

PYRAMUS—Receiving ship at Halifax.

RACER, 16—Com. J. Hope, 20th April arr. at Jamaica.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. Sailed for West Indies.

RAINBOW, 28 — Capt. Thomas Bennet, 3d April moved to Spithead. Lieut. Dowse, and Messrs. Cunningham and Mahon, Assistant-Surgeons, take their passage to join the Vernon at Jamaica. 1st May arr. at Teneriffe; 3d sailed for Jamaica.

RALEIGH, 18 — Com. A. M. Hawkins, 5th May sailed for England; 18th arrived at Spithead.

RAPID, 10 — Lieut. Com. F. Patten, 28th March at Rio.

REVENGE, 78—Capt. W. Elliott, C.B., 9th June moved to Spithead, from Portsmouth harbour. 15th June sailed for Lisbon, with the Duke of Portland and Lady Howard de Walden.

RINGDOVE, 16 — Com. W. F. Lapidge, 9th May arr. at St. Ubes, from Lisbon.

ROLLA, 10—Lieut. H. F. Glasse, 24th March at St. Ubes.

ROMNEY, *Troop Ship*—Mr. R. Brown, 24th April arrived at Jamaica.

ROSE, 18 — Com. W. Barrow, Chatham, fitting.

ROVER, 18 — Com. Sir G. Young, Bart., 3d March arr. at Malta, from Sheerness; 23d March at Tripoli.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., 19th June

sailed for Woolwich, fitted for the reception of her Majesty, in her intended visit to Germany.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, 18th March off Oporto; 24th March in the Douro.

SAMARANG, 28—Capt. C. H. Paget, expected at Rio in November, on her return to England.

SAN JOSEF, 110—Admiral Sir W. Hargood, G.C.B., G.C.H., appointed 27th April, 1833—Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28—Capt. Hon. W. Trefusis, 15th March expected at Port Royal. At Vera Cruz 14th April. Daily expected.

SARACEN, 10—Lieut. Com. T. Le Hardy, 18th March off Oporto.

SATELLITE, 18—Com. R. Smart, 18th Dec. sailed from Buenos Ayres; 11th Jan. arr. at Rio.

SAVAGE, 10—Lieut. R. Loney, 5th May arr. at Plymouth.

SCOUT, 18—Com. R. Morden, 10th April had sailed for Alexandria and Constantinople.

SCORPION, 10—Lieut. N. Robilliard, see Packets.

SEAFLOWER, *Cutter*, 4—Lieut. Com. J. Morgan, 11th June arrived at Spithead, from Jersey.

SEAGULL, 6—Lieut. W. Parsons, Sheerness, fitting.

SERPENT, 16—Com. J. C. Symonds, 18th March sailed on a cruise.

SKIPJACK, 5—Lieut. W. H. Willis, (*act.*) Bahamas.

SNAKE, 16—Com. W. Robertson, March at Rio Janeiro.

SPARROWHAWK, 18—Com. C. Pearson, 4th April arrived at Rio Janeiro.

SPARTIATE, 74—Rear-Admiral Sir M. Seymour, Bart., K.C.B., appointed 6th Dec. 1832—Captain R. Tait, 28th March at Rio Janeiro.

SPEEDWELL, 5—Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieut. J. H. Norrington, Portsmouth station.

STAG, 46—Capt. N. Lockyer, left Lisbon for St. Ubes on 29th May; 3d June in Cascaes Bay, with Don Miguel on board, the late pretender to the crown of Portugal.

SWAN, 10—Lieut. J. E. Lane, at Sheerness May.

SYLVIA, 1—Lieut. Com. B. Shepherd, Portsmouth Station.

TALAVERA, 74—Capt. E. Chetham, 10th May at Nauplia.

TALBOT, 28—Capt. W. F. Pennell, Hamoaze, fitting.

THALIA, 46—Capt. R. Wauchope, Chatham, fitting for the flag of Rear-Admiral P. Campbell, C.B.

THUNDERER, 84—Capt. W. F. Wise, C.B., May at Nauplia.

TRIBUNE, 24—Capt. J. Tomkinson, Chatham, fitting.

TRINCULO, 18—Lieut. Com. Thompson, 1st Jan. arr. at Sierra Leone.

TWEED, 20—Com. A. Bertram, 24th April arrived at Jamaica, from Carthagena.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, 20th May sailed for Mediterranean. Passengers, Lieuts. W. Aldham and W. Lewis, to join the Caledonia. 1st June arrived at Gibraltar; on 5th sailed for Malta.

VERNON, 50—Vice-Admiral Sir G. Cockburn, G.C.B., appointed 6th Dec. 1832—Capt. , 1st May at Bermuda.

VESTAL, 26—Capt. W. Jones, 30th April left Bermuda for Barbadoes; 8th May arrived.

VICTOR, 18—Com. R. Russell, 9th May arr. at Halifax, from Bermuda; sailed 30th April.

VICTORY, 104—Adm. Sir T. Williams, G.C.B., appointed 23d Jan. 1833—Captain C. R. Williams, Portsmouth.

VIPER, 6—Lieut. L. A. Robinson, 11th June arrived at Plymouth, from Lisbon and Falmouth, with Sir John Campbell.

VOLAGE, 28—Capt. G. B. Martin, C. B., April, at Corfu.

WASP, 18—Com. J. S. Foreman, 1st May at Bermuda.

WINCHESTER, 52—Capt. E. Sparshott, K.H. Chatham, fitting for the flag of Rear-Adm. Hon. Sir T. B. Capel, K.C.B.

WOLF, 18—Com. E. Stanley, Plymouth, fitting.

ZEBRA, 16—Com. R. C. M'Crea, Chatham, fitting.

STEAM VESSELS.

AFRICAN, 1—Lieut. J. West, Plymouth, fitting. To proceed to Africa.

ALBAN—Lieut. A. Kennedy, 30th Oct. at Demerara, from Berbice.

CARRON—Lieut. Com. J. S. Duffil, 29th April at Malta.

COLUMBIA, 2—Lieut. Com. ———, Portsmouth.

COMET—Lieut. Com. T. Cook, Woolwich.

CONFIANCE, 2—Lieut. Com. J. M. Waugh, Woolwich, fitting.

DEE, 4—Com. R. Ramsay, Plymouth, fitting for West India station.

FIREBRAND—Lieutenant W. G. Buchanan 8th April left Portsmouth for the river.

LIGHTNING—J. Allen, 28th May arrived at Plymouth; 29th May sailed for Dublin. 12th June returned to Plymouth, and proceeded to Woolwich.

MEDEA, 6—Commander H. T. Austen, 1st May left Sheerness for Woolwich.

MESSENGER, 1—Com. M. J. King, Channel, Thames, Portsmouth and Plymouth, and Milford.

METEOR—Lieutenant Symons, 9th March arrived at Gibraltar; 11th April arr. at Plymouth; 14th left for Woolwich.

PHŒNIX—Com. R. Oliver, employed in the Channel, between Woolwich, Portsmouth, and Plymouth.

PLUTO—Lieut. T. R. Sulivan, 2d April at Prince's Island, Coast of Africa.

RHADAMANTHUS—Commander G. Evans, 15th March at Port Royal, Jamaica; 22d March returned there from Crooked Island.

SALAMANDER—Commander W. L. Castle, 16th June on her way to Plymouth and Falmouth.

SPITFIRE, 6—Lieut. Com. W. Symons, Woolwich, fitting.

TARTARUS—Launched at Pembroke 23d June.

Surveying Vessels Abroad.

Ætna, 6—*Act.* Commander W. Arlett, Feb. at Port Praya, from the coast of Africa. Expected home.

Beacon — Com. R. Copeland, surveying in the Archipelago.

Beagle, 10—Commander R. Fitz-Roy, 25th Oct. Monte Video.

Fairy, 10—Commander W. Hewett, investigating the soundings in the North Sea.

Gulnare, *Hired Schooner*—Captain H. W. Bayfield, surveying the Gulf of St. Lawrence. This officer has been employed in the survey of the St. Lawrence since 1827, when he was appointed by his present Majesty, then Lord High Admiral.

Investigator, 16, — Mr. G. Thomas, surveying the Shetland Islands.

Jackdaw — Lieutenant Com. E. Barnett, 26th April at Port Royal, from Nassau, refitting.

Mastiff, 6 — Lieutenant Com. T. Graves, surveying in the Archipelago.

Raven, 4—Lieutenant Com. H. Kellet, 2d Dec. at Santa Cruz, Teneriffe.

Thunder—Com. R. Owen, 19th April at Port Royal, refitting, from Nassau.

Officers Employed in Surveying at Home.

Com. W. Mudge; *Assistants, Lieuts.* J. Harding, G. A. Frazer.—Coast of Ireland.

Lieutenants, M. A. Slater; W. L. Sheringham, H. C. Otter.—East Coast of Great Britain.

Lieutenants, H. M. Denham; C. G. Robinson.—West Coast of Great Britain.

Paid Off.

Curlew, 10—Com. H. D. Trotter, 3d June arrived at Plymouth, from Ascension, with a detained slaver, the Esperanza, of 120 tons. Left Ascension 3d April, and St. Michael's in May. 4th June sailed for Portsmouth; 5th arrived at Spithead. Passengers, Lieuts. De Saumarez and Dixon, R.N., and Lieut. Barnes, R.M. 17th paid off.

Dee, St. V.—Com. E. Stanley, 22d May arr at Plymouth; 27th May

African, St. V.—Lieut. Com. E. Harvey, 5th June at Plymouth.

Commissioned.

Buzzard, 10—Portsmouth.

Dee, St. V.—At Plymouth, 29th May.

Confiance, St. V.—At Woolwich, 20th May.

African, St. V.—At Plymouth.

Wolf, 18—At Plymouth, 29th May. See p. 380, and preceding, for former services.

Talbot, 28— Plymouth. See p. 380, and preceding, for former services.

Columbine—Sheerness. See p. 250, and preceding, for former services.

Algerine, 10—Chatham.

Rose, 18—Chatham. Paid off in Aug. 1832. See vol. i. p. 381.

Orestes, 18—Portsmouth. See p. 380, and preceding, for former services.

Raleigh—Com. H. J. Codrington, Sheerness, fitting.

Tyrian—11th June, at Plymouth, for Packet Service.

Seagull, 6—At Chatham.

PROMOTIONS AND APPOINTMENTS.

Promotions.

Captains—H. W. Bayfield; W. D. Dance.

Commander—W. Gordon.

Lieutenants—J. R. Engledue; E. Peirse; T. P. Thomas; H. Galloway; G. D. O'Callaghan; J. Richardson.

Appointments.

Captain George Gipps, of the Royal Engineers, is appointed Private Secretary to the new First Lord of the Admiralty.

Commanders-in-Chief—*Cape and Africa,* Rear-Admiral P. Campbell. *East Indies,* Rear-Admiral Hon. T. B. Capel. *Flag-Lieut.* Hon. J. R. Drummond; *Secretary,* A. Kant. *Flag-Lieut.* to Rear-Admiral W. H. Gage, J. L. Parkin. *Master,* D. Quintone.

African, St. V.—*Lieut. Com.* J. West; *Master,* J. Rundle; *Assist. Surg.* T. Brenan; *Clerk,* T. Sullivan.

Arachne, 16—*Com.* James Burney.

Algerine, 10—*Lieut. Com.* G. C. Stevin; *Master,* D. Duncan.

Buzzard, 10—*Lieut. Com.* W. C. Burbridge; *Surg.* R. Dixon; *Master, act.* J. Halerow.

Caledonia, 120 — *Lieuts.* W. Lewis; P. De Saumarez.

Castor, 36—*Chaplain,* Rev. J. Mallet.

Childers, 18—*Lieut.* G. Skipwith; *Surg.* A. Simpson; *Assist. Surg.* L. Livesay, M.D.; *Purser,* J. C. Bulman; *Mate,* T. O'Brien; *Gunner,* W. Andrews; *Clerk,* D. Stapleton.

Coast Guard—*Lieuts.* A. D. Carron, Ballyglass, Mayo, chief officer; J. Campbell, (*a*).

Columbia, 2, *St. Ves.*—*Master, act.* G. Craigie; *Purser, act.* — Braid; *Mid.* J. Derriman.

Columbine, 18 — *Com.* T. Henderson; *Lieuts.* J. Batt, J. Wilson; *Purser,* F. May.

Confiance, *St. Ves.*—*Lieut. Com.* J. Waugh; *Purser,* J. Pope; *Mate,* T. Slade; *Assist. Surg.* A. Fletcher.

Dee, *St. Ves.*—*Com.* W. Ramsey; *Lieuts.* E. E. Owen, F. Warden, J. Russell; *Master,* T. R. Lord; *Surg.* J. Sebire; *Purser,* J. Foster; *Assist. Surg.* W. Wilkes; *Mid.* J. Keast; *Clerk,* R. Sutherland.

Excellent, 76—*Lieuts.* Hon. G. F. Hastings, A. Murray; *Mate,* G. Haydon.

Hastings, 74—*Lieuts.* G. S. Reynolds, J. E. Bingham; *Chaplain,* Rev. J. E. Moore,

Mutine, *Packet*—*Surg.* T. Gibson.

Nautilus, 10—*Mate,* S. Dawes.

North Star, 28—*Mate,* J. Allen; *Mids.* J. K. Hancock, C. Sullivan; *Clerks,* W. D. Gibson, V. A. Halle.

Ordinary—*Portsmouth, Capt.* R. Thomas.

Orestes, 18 — *Com.* H. J. Codrington; *Lieut.* F. T. B. Hankey; *Mast.* R. Troughton; *Purser,* W. Cox; *Surg.* A. M'Laren; *Assist. Surg.* J. Low.

PELORUS, 16—*Lieut. act*, C. Wise.
PEMBROKE DOCK-YARD—*Police Director, Lieut.* R. Weatherly.
PLUTO, *St. Ves.* — *Master's Assistant*, R. Whichly.
PORTLAND, 52—*Chaplain*, Rev. E. Winder; *Schoolmaster*, J. Sambell.
PORTSMOUTH DOCK-YARD — *Semaphore, Lieut.* J. Barnes, (*a*).
REVENGE, 78—*Assist. Surgs.* R. M'Lean, J. B. Brown.
RINGDOVE, 16—*Mid.* J. O. Price.
ROSE, 18—*Com.* W. Barrow; *Purser*, H. Brenton.
ROYAL OAK, at Bermuda — *Boatsw.* J. Osborne.
RUSSELL, 74—*Master*, J. Sandford.
SAN JOSEF, 120—*Assist. Surg.* T. Frazer.
SEAGULL, 6—*Lieut. Com.* W. Parsons.
SPARTIATE, 76—*Lieuts.* E. Peirce, T. M. Rodney; *Mate*, M. Lowther; *Assist. Surg.* C. Alson; *Clerk*, A. J. Fry.
SPEEDY, *cutter—Clerk*, E. Roberts.
SPITFIRE, *St.V.*—*Lieut. Com.* W. Symons; *Act. Master*, T. Tucker; *Purser, act.* T. Dobbin.
TALBOT, 28—*Com.* F. W. Pennel; *Lieuts.* H. Hutchinson, A. D. Carrol; *Master*, H. Babb; *Surgeon*, E. Leah; *Purser*, W. Bruce; *Assist. Surgeon*, R. Narrower; *Mast. Assist.* F. H. Niblet.
THALIA, 46—*Capt.* R. Wauchop; *Lieut.* C. H. Baker; *Purser*, J. B. Cotman; *Assist. Secry.* D. R. Walker; *Sec. Master*, J. T. Russel.
TRIBUNE, 24—*Capt.* J. Tomkinson; *Lieuts.* J. W. Noble, J. M. Murray, D. Curry; *Master*, W. Henaley; *Purser*, W. M'Lennen; *Assist. Surg.* A. C. M'Leroy; *Carpr.* G. Andrews.
TYRIAN, *Packet—Lieut.* E. Jennings.
VICTORY, 104—*Assist. Surg.* W. Lambert.
WASP, 16—*Com.* J. S. Foreman.
WINCHESTER, 52—*Capt.* E. Sparshott, K.H.; *Sec. Master*, A. P. Briskwood.
WOLF, 18—*Com.* E. Stanley; *Lieuts.* F. Coppin, J. A. M'Donald; *Master*, J. Brown; *Surg.* W. Bland; *Purser*, R. Barron; *Assist. Surg.* A. Yeoman; *Gunner*, G. Hobbs; *Boatswaine*, J. Lyan; *Carpr.* W. Brand.
ZEBRA, 16—*Com.* R. C. M'Crea.

COURTS MARTIAL.

The court-martial on Captain Pigot, after sitting about twenty days, has been brought to a close. The sentence of the court was, that Captain Pigot was fully *acquitted* upon all the charges.

That the 8th charge was partly proved, but found frivolous. The 12th charge was found to be scandalous and malicious.

After the delivery of the sword to Captain Pigot,

Sir Richard King, the president, after promulgating the sentence, addressed himself to Captain Pigot—"I feel happy in returning to you your sword, and in expressing my conviction, that if ever you have occasion to draw it against the enemies of your king and country, you will so act that it will redound to the honour of both, and also to your own credit."

It is stated that Lieut. Duthy, of the Wasp, had been tried by a court-martial by Commander Burney, upon several charges, and was acquitted. And also that Lieut. Christopher Bagot, of his majesty's schooner Pickle, has been tried by a court-martial, and dismissed his majesty's service, upon charges exhibited against him for occasioning the death of a marine, by negligently firing a carronade before the deceased had time to get from before the muzzle of it.

A court-martial was held on the 16th of June, on board his Majesty's ship Victory, on Lieutenant Philip de Sausmarez, of his Majesty's ship Pelorus, on the following charge preferred against him by Commander Richard Meredith, of that ship, viz.—For having, on the 18th of April, 1832, whilst in charge of the Secunda Teresa, slave brig, punished Francis Brown, with twenty-four lashes, for neglect of duty, contrary to the general rules of the service, and in opposition to the written orders of Commander Meredith. It appeared from the evidence that Lieutenant de Sausmarez was surrounded by a disrespectful and even mutinous crew; that Francis Brown, the seaman who was punished, was most conspicuously so; that on being ordered by Lieut. de Sausmarez to put the helm up, he refused to do so; and, on the order being repeated to him, he said he could steer a ship as well as he (Lieut. de S.) could. That, on

another occasion, being sent ashore on duty, by the officer of the watch, he did not return to the ship until several hours after he ought to have done so, and then he refused to take the quarter-master (Price) off to the schooner, though ordered to do so.

Lieutenant de Sausmarez, in his defence, commented on the insubordinate state of the crew, and on the evident necessity there was that he should make an example of Brown, but whose punishment he did not resolve upon until he had consulted with Lieutenant Huntly, then the senior officer at Sierra Leone, who not only concurred in opinion, but sent the boatswain's mate of his own vessel (the Lynx) and Marines, to carry the punishment into execution.

The Court decided, that, under the circumstances, Lieut. de Sausmarez was justified in having had recourse to such punishment, and, therefore acquitted him of the charge which had been preferred against him.

The President (Rear Admiral Sir Fred. L. Maitland, K.C.B.) then returned Lieut. de Sausmarez his sword, saying—"I have great pleasure in returning you your sword, and in saying that nothing whatever has appeared to affect your character on this occasion."

Lieutenant de Sausmarez had been under arrest eighteen months upon the charge.

Midshipmen recently passed at the College (*c*); and in Seamanship (*s*):—J. Allen, *c*; T. G. R. Barrow, *c* and *s*; F. Church, *c*; R. S. Clarke, *c*; F. P. Egerton, *c*; G. Elliot, *c*; B. Fox, *s* and *c*; G. T. Graham, *c*; A. E. Glynn, *c*; J. Jefferys, *c*; G. P. Mends, *s*; S. T. Maddock, *c*; Sir F. W. E. Nicholson, *s*; F. Porteous, *s*; L. Prevost, *c*; F. E. Rose, *c*; F. Slade, *c*; C. F. Schomberg, *c*; T. Woodgate, *s* and *c*; A. S. Woodley, *c* and *s*; R. R. Western, *c*; B. Young, *s*.

Sounding-Machine.—In April last, a trial of a new sounding-machine was made off Scilly, in H.M. steam-vessel Medea, Commander Austin, the invention of Mr. Reid, a gentleman from the United States. The lead, formed of two parts, was fastened to the end of a copper wire, (the substitute for the line,) and when at the bottom, one of the parts was to be disengaged. An index on the reel shewed the number of revolutions it had made while the lead descended and measured the depth. There were, besides this, other details, but the whole proved a failure.

This was the first trip of the Medea since her launch, and she has proved herself not only the fastest of the Government steam-vessels, but also an excellent sea boat. The decided superiority of Morgan's wheels, with which she is fitted, was exemplified during this trial, by the Medea going 3½ knots against a strong easterly gale, and a heavy sea directly ahead. The Medea passed vessels, hove to under a close-reefed main-topsail, when, as it is well known, steam-vessels fitted with the common wheel, and the appropriate masts and rigging of a vessel of the Medea's tonnage, will not even answer their helm.

H. M. S. Colossus.—It is now 35 years since this vessel was wrecked in St. Mary's road, Scilly. A few weeks since, two young men (brothers) were there with a diving apparatus of a new construction, and succeeded in bringing up several pieces of cannon, &c., from the wreck. The following extraordinary fact merits investigation: one of the guns exploded on being struck with a hammer, while lying near St. Mary's Quay, and the wadding, &c., fell on Rat Island. Master Gunner Ross was severely injured in the leg by the accident.—*Hants Tel. Nov.* 1833.

FALMOUTH, 20TH JUNE.

LISBON—Sails every Tuesday.

Packet.	Commander.	Sailed.	Last Spoken.	Where.	Due.
SAVAGE	Lt. Com. R. Loney	26 May	———	———	23 June.
PIKE	Lt. Com. A. Brooking..	2 June	———	———	30 June.
ESPOIR	Lt. Com. W. C. Riley ..	8 June	———	———	6 July.
LEVERET	Lt. Com. G. Traill	4 Feb.	15 April	St. Ubes	———

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz, Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

COLUMBIA, st. v.	Lt. Com. B. Aplin	5 June	———	———	26 July.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

LAPWING	Lt. Com. G. B. Forster	12 May	———	———	11 July.
REINDEER	Lt. Com. H. P. Dicken	9 June	———	———	11 Aug.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

PELHAM.....	Lt. Com. H. Carey, ...	19 April	———	———	12 July.
SHELDRAKE	Lt.Cm.A.R.Passingham	26 May	———	———	18 Aug.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

OPOSSUM	Lt. Com. R. Peters	7 April	———	———	17 July.
SPEY	Lt. Com. R. B. James..	12 May	———	———	8 Aug.
SKYLARK	Lt. Com. C. P. Ladd ..	10 June	———	———	16 Sept.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet.]

PLOVER	Lt. Com. W. Downey ..	22 Feb.	30 April	Jamaica	28 June.
REYNARD	Lt. Com. G. Dunsford..	22 March	———	———	26 July.
GOLDFINCH	Lt. Com. E. Collier,....	19 April	———	———	23 Aug.
ECLIPSE.....	Lt. Com. W. Forester..	26 May	———	———	29 Sept.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

RINALDO	Lt. Com. J. Hill	7 March	17 Feb.	Madeira	25 July.
PIGEON.....	Lt. Com. J. Binney....	4 April	21 April	Teneriffe	22 Aug.
MELVILLE.....	Lt. Com. C. Webbe	9 May	19 May	Madeira	26 Sept.
MUTINE.....	Lt. Com. R. Paule	6 June	———	———	24 Oct.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

AFRICAN, St. V.—See Naval Register.
CAMDEN—Com. Mr. J. Tilley, 3d June arr. at Falmouth.
BRISEIS—Lieut. Com. J. Downey, 3d June arrived at Falmouth.
DUKE OF YORK—Lt. Com. R. Snell, 30th April arrived at Falmouth.
FLAMER, St. V.—Lieut. Com. C. W. Griffin, 13th May arrived at Falmouth.
FIREFLY, St. V.—Lt. Com. T. Baldock, 15th June arrived at Plymouth.
LYRA—Lieut. Com. J. St. John, 4th June arrived at Falmouth.
MESSENGER—See Naval Register.
NAUTILUS—Lieut. Com. W. P. Croke, 3d June arrived at Falmouth.
NIGHTINGALE—Lt. Com. G. Fortescue, 17th May arrived at Falmouth.
PANDORA—Lieut. Com. W. C. Croke, 3d June arrived at Falmouth.
PANTALOON, *Tender*—Portsmouth Harbour.
ROLLA—See Naval Register.
SCORPION—Lt. Com. N. Robilliard, 3d June arrived at Falmouth.
SEAFLOWER—See Naval Register.
STANMER—Lieut. Com. R. S. Sutton, 31st May arrived at Falmouth.
SWALLOW—Lieut. Com. J. Griffith, 4th June arrived at Falmouth.
VIPER—See Naval Register.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 382.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
216	Abeona	———	Newcastle	Torquay	Brake Sound	23 May	Crew saved.
217	Actrea	———	Cork	Quebec	Newfoundld.	240 Emi	gts. lost, 3 lives svd.
218	Bee	———	Liverpool	———	Coleraine	9 May	Crew saved.
219	Billow	———	St. John's	———	In the ice	29 Mar.	Crew saved.
220	Caledonia	———	St. John's	———	40 N. 50 W.	24 April	Abandoned.
221	Columbia, of Workington	———	Liverpool	Har. Grace	Newfoundld.	May	By ice.
222	Fanny	Lockyer	Poole	———	Torbay	27 May	Crew saved.
223	Jack Tar	———	Newcastle	Newfndld.	42 N. 52 W.	1 May	Abandoned.
224	Julia	———	Newfndld.	———	Newfoundld.	30 Mar.	Crew saved.
225	Marchioness of Queensbury	———	Liverpool	Miramichi	CTormentine	16 May	Crew saved.
226	Maria	Thomas	Hamburgh	Trinity	Newfoundld.	May	By ice, crew saved.
227	Mary Ann	Schooner	run foul of	———	Newfoundld.	18 April	Crew saved.
228	Mexico	J. Miller	Cadiz	Carthagena	Off Carthgna	21 Mar.	
229	Sally	———	Newcastle	Jersey	Off Jersey	22 May	Crew saved.
230	Trafalgar	———	St. John's, N. B.	Quebec	Gut of Caneo	27 April	By ice, crew saved.
231	Triad	———	———	———	Off Harwich	25 May	Crew saved.
232	Triad	Pearson	Shields	———	Heaps	28 May	Crew saved.
233	Two Brothers	———	Wemyss	Prt. Gordon	Rattray	17 May	

ADMIRALTY ORDERS.

An Admiralty minute has been issued, signifying his Majesty's commands, that Officers of the Navy shall, on all occasions of full dress, wear white trowsers over boots, from the 23d of April to the 14th of October inclusive; and blue trowsers over boots between the 15th of October and the 22d of April inclusive.

A memorandum has also been issued from the Admiralty, directing that in future none of his Majesty's ships with less than 10 guns are to fire salutes that require the guns to be re-loaded, unless in a case where such an omission could not be explained away without giving offence to a foreign power or flag. This has arisen out of the many accidents that have occurred during the firing of salutes in small vessels, by the haste with which the guns have been re-loaded.

By a recent regulation of the Admiralty, the Engineers and Stokers serving on board his Majesty's steamers when within the Tropics, are to receive an addition of one half their usual pay; for instance, instead of 10s. they will receive 15s. per diem.

Births.

On the 21st June, in Pimlico, the lady of Lieut. A. Miles, R.N., of a son.

At Brockhurst, the lady of Mr. John Aylen, R.N., of a daughter.

At East Emma-place, Stonehouse, on Wednesday last, the lady of J. Owen, Esq., of this Dock-yard, of a daughter.

At the Fawn Hotel, Ermington, the wife of Mr. G. Slyfield, of a daughter.

At Hanover Lodge, on 1st of June, the Countess Dundonald, of a son.

On the 9th instant, Lady Henry Thynne, of a daughter.

On the 25th October, at Albany, Western Australia, the lady of Captain Sir Richard Spencer, R.N., C.B., K.C.H., Government Resident of that Port, of a son, her ladyship's 12th child.

On the 11th instant, the lady of Mr. J. F. Russell, R.N., of a son.

At his seat, the Ryalls, Seaton, Devon, on Sunday, the 25th instant, the lady of Captain Wm. H. P. Proby, R.N., of a son.

On the 30th May, at Hackney, Mrs. John Lawford, of a son.

On the 28th instant, at Lewisham, the lady of William Tucker (*b*), Commander, R.N., of a son.

Marriages.

On the 27th, in London, Capt. Hoare, R.N. of Wavendon, Buckinghamshire, to Elizabeth, eldest daughter of the late William Praed, Esq. of Tyringham, Buckinghamshire, and of Trewithon, Cornwall.

On the 12th instant, at Christchurch, Lieut. Charles Baker, R.N., of the Coast Guard service, to Miss Tancreade, of Christchurch, sister of the Rev. Dr. Tancreade.

Lately, at Woolwich, Mich. Moore, M.D.,

Assistant-Surgeon, R.N, to Mary, eldest daughter of T. Brown, Esq. Master Attendant of Woolwich Yard.

June 14th, at St. Alphage, Greenwich, Lieut. W. H. Symons, R.N., commanding his Majesty's steam-packet Spitfire, Woolwich, to Mary Ann, eldest daughter of Lieut. W. Taylor, R.N., Greenwich Hospital.

On 8th April, in Jamaica, Lieut. Henry Pengelley, R. N.. to Charlotte Heriott, youngest daughter of J. Heriott, Esq., late of Mexican Estate, in that island.

At the Cathedral church, Calcutta, Dec. 17, Ensign Frederick C. Wardropes, 6th Regt. Bengal N.I., to Miss F. M. White, daughter of the late Captain White, R.N.

On the 31st ult., at St. George's, Hanover-square, Captain Cornwallis Ricketts, R.N., eldest son of Rear-Admiral Sir R. Ricketts, Bart., of the Elms, Gloucestershire, to Henrietta, youngest daughter of Colonel Tempest, of Tong Hall, Yorkshire.

Lately, at Rio de Janeiro, George Lee, Esq. surgeon, in that city, to Anna Maria, second daughter of William James, Esq. of Falmouth, formerly Commander of his Majesty's packet Spey, on that station.

Deaths.

An inquest was held by G. B. Corfe, Esq., at the George Hotel on the body of Admiral Thomas Manby, who arrived here on Wednesday, 18th June, by the Telegraph coach, from London, and shortly afterwards dined and walked out. In the mean time, his housekeeper arrived by the Red Rover, in consequence of the Admiral's leaving home ratherly abruptly in the morning, and urged him much to return to his family, but he excused himself on the ground that he was too ill, and wished to retire to bed. He did so, about seven o'clock, and the housekeeper sat up with him. Nothing particular occurred, except that he got out of bed twice, and she assisted him back in consequence of his feeble state. In the morning, however, he was in a state of lethargy, and medical advice was called in, when it was discovered that he had taken opium. All means were resorted to, but without effect, and he expired. It appeared, however, that the deceased had been a long time in a dejected way, and that he had purchased a large quantity of opium; and, from the quantity left, it is supposed the unfortunate gentleman must have taken 154 grains. The jury deliberated some time, and returned a verdict of, "Died of taking incautiously an over-dose of opium." The Admiral, who was in his 67th year, was brother to Captain Manby, inventor of the life-preserving apparatus. Admiral Manby, when holding the rank of Captain, brought Queen Caroline to this country.—*Southampton Advertiser.*

Lieutenant J. M'Clintock Clive, son of Theophilus Clive, of the Isle of Wight, and nephew of Edward B. Clive, Esq. M.P., went out boating in Berkeley Bay, Falkland Islands, accompanied by a gunner, steward, and two young persons belonging to the Challenger. Finding that a considerable time had elapsed without the parties returning, the officers of the Challenger, fearing that some accident had occurred, sent another boat in the direction they had steered. Their boat was found upset, and nothing belonging to the party but one hat. When the accounts came off, diligent search was making for the bodies.—*Devonport Telegraph.*

At South Hill, Liverpool, Robert Murray, Esq. Admiral of the White.

On the 21st of February, on board his Majesty's ship Isis, from the effects of a fall, (having lost his hold in descending from the mast-head, whither he had been sent to look out,) Mr. Edmonstone, midshipman of that ship, son of Mr. Edmonstone, of the India-House.

At Hare's Down, near Titchfield, Lieut. Richard Danford, R.N.

At Fowey, Mr. P. Roberts, Master, R.N. (1827.)

At his residence, in Southgate-street, Winchester, in his 72d year, Captain Charles Hewett, R.N.

In Deptford yard, Lieutenant Cockeraft, late Warden of the Dock-yard, Chatham.

On the 29th ult. at New Abbey, near Dumfries, Captain James Murray, R.N. (1818.)

At Bodminster, Somersetshire, Lieutenant J. Buckner, R.N, an officer who had often distinguished himself during the late war. He was on board the Royal George with Sir J. T. Duckworth, at the passing of the Dardanelles; served on shore with Sir Sydney Smith, in Egypt; and was one of the gallant party which cut the French corvette Guepe, from under the batteries in Vigo.

Lately, in Wexford, Rear-Admiral Wilson, on the superannuated list, of Birchgrove, in that county.

In the Royal Naval Hospital, Lieutenant J. Hose.

At the Royal Naval Hospital, Plymouth, on the 9th instant, P. Macternan, Esq. M.D. Surgeon, R.N. In all the relations and duties of social life, Dr. Macternan was correct, amiable, and exemplary.

At Saint Thomas's, near Exeter, of decline, T. C. Barron, R.N, aged 40, formerly Commander of his Majesty's brig Frolic, on the Falmouth station.

At Efford, Lieutenant Robert Sidley, R.N.

Lately, in Morice-square, Devonport, Mr. Dryden, Surgeon, R.N., formerly of that Dock yard.

At Upton Hellions, William May, Esq., Commander, R.N.

At Yealmpton, John Gullett, Esq., Purser, R.N., (1798,) an officer highly respected.

Lately, at Tothill Farm, Mr. F. W. Fox, Purser, (1833.) He was for many years a Clerk in the Admiral's office at Portsmouth.

At Croydon, Mary Ann, widow of the late James Tunstall, M.D. and Surgeon, R.N., aged 42.

At Sheerness, Mr. John Brooman, converter in that Dock-yard.

On the 5th ult. in De La Hay-street, Westminster, Mr. Joseph Ollier, Surgeon, R.N.

At Athlone, M. Molloy, Esq., late Lieut. R.N.

On 13th ult, at Regent-place, Landport, aged 24, Miss Eliza Lucas Davenport, niece of Captain Mark Robinson Lucas, R.N.

On the 1st instant, Mrs. Mackfield, aged 64, sister of Mrs. Davenport.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

MAY, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength.			
		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.
				°	°	°	°						
1	Th.	29·68	29·76	57	62	49	63	S.W.	S.	4	5	O.	Bc.
2	F.	29·90	29·88	58	62	44	62	S.	S.	4	3	O.	Bc.
3	S.	29·99	30·00	60	66	45	68	S.W.	S.W.	2	4	O.	Bc.
4	Su.	29·97	29·97	62	73	46	75	S.W.	S.	2	4	B.	Bc.
5	M.	29·96	30·00	62	64	59	69	S.	S.W.	1	3	Op. 2)	Bc.
6	Tu.	30·30	30·36	58	66	48	67	S.W.	S.W.	5	5	Bv.	Bv.
7	W.	30 44	30·42	59	71	50	72	S.W.	S.W.	4	5	Bcm.	Bcm.
8	Th.	30·32	30·24	60	73	52	74	S.W.	S.W.	3	3	Bcm.	Bm.
9	F.	29·90	29·81	63	73	53	74	S.W.	W.	1	3	O.	B cm.
10	S.	29·94	29·94	54	65	48	66	N.	S.W.	2	2	B.	Bc'm.
11	Su.	29·85	29·75	59	73	45	74	S.W.	S.W.	2	4	Bv.	Bcv.
12	M.	29·73	29·73	60	72	52	72	S.	S.W.	2	2	Opt. (1	Om.
13	Tu.	29·60	29·60	55	59	52	60	S.W.	S.W.	3	3	Or. (2)	Or. (3)
14	W.	29·76	29·80	56	61	48	62	S.W.	S.W.	4	6	P.	Bc.
15	Th.	29·84	29·90	62	70	51	71	E.	S.E.	4	4	Bcv.	Bcv.
16	F.	29·92	29·86	59	71	49	72	N.E.	N.E.	5	3	Bc.	Bc.
17	S.	29·51	29·46	61	54	50	66	S.W.	S.W.	3	7	Bcp. 2)	Oqr.' (3
18	Su.	29·40	29·46	51	63	44	64	S.W.	S.W	4	4	Bc'p. 2)	Bcp. (3
19	M.	29·75	29·90	54	61	44	62	S.W.	S.W.	5	4	Bcp. 2)	Bc.
20	Tu.	30·30	30·32	55	64	43	67	S.W.	S.W.	3	3	Bv.	Bv.
21	W.	30·48	30·48	58	66	45	67	N.E.	N.E.	3	5	Bv.	Bcv.
22	Th.	30·42	30·37	57	61	46	63	N.E.	N.E.	6	8	Bv.	B.
23	F.	30·30	30·28	60	67	48	68	N.E.	N.E.	7	6	Bm.	B.
24	S.	30·35	30·37	63	69	46	70	N.E.	N.E.	5	6	B m.	B m.
25	Su.	30·44	30·40	54	60	48	62	N.E.	N.E.	6	6	Bc.'	Bv.'
26	M.	30·31	30·31	55	61	44	62	N.E.	N.E.	6	6	Bc.	Bv.
27	Tu.	30·27	30·23	58	63	43	64	N.	N.E.	7	8	Bv.	Bv.
28	W.	30·20	30·16	55	62	42	62	N.	N.	8	8	Bv.	Bv.
29	Th.	30·12	30·09	52	62	39	63	N.W.	N.W.	3	2	Bm.	Bcm.
30	F.	30·13	30·15	59	66	50	67	N.	N.E.	3	3	Bcm.	Bcm.
31	S.	30·23	30·23	55	65	42	65	N.E.	N.E.	2	2	Bm.	Bm.

May—Mean height of the Barometer, 30·041 inches; Mean Temperature, 57·1°; Depth of Rain fallen, 0·90 inch.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

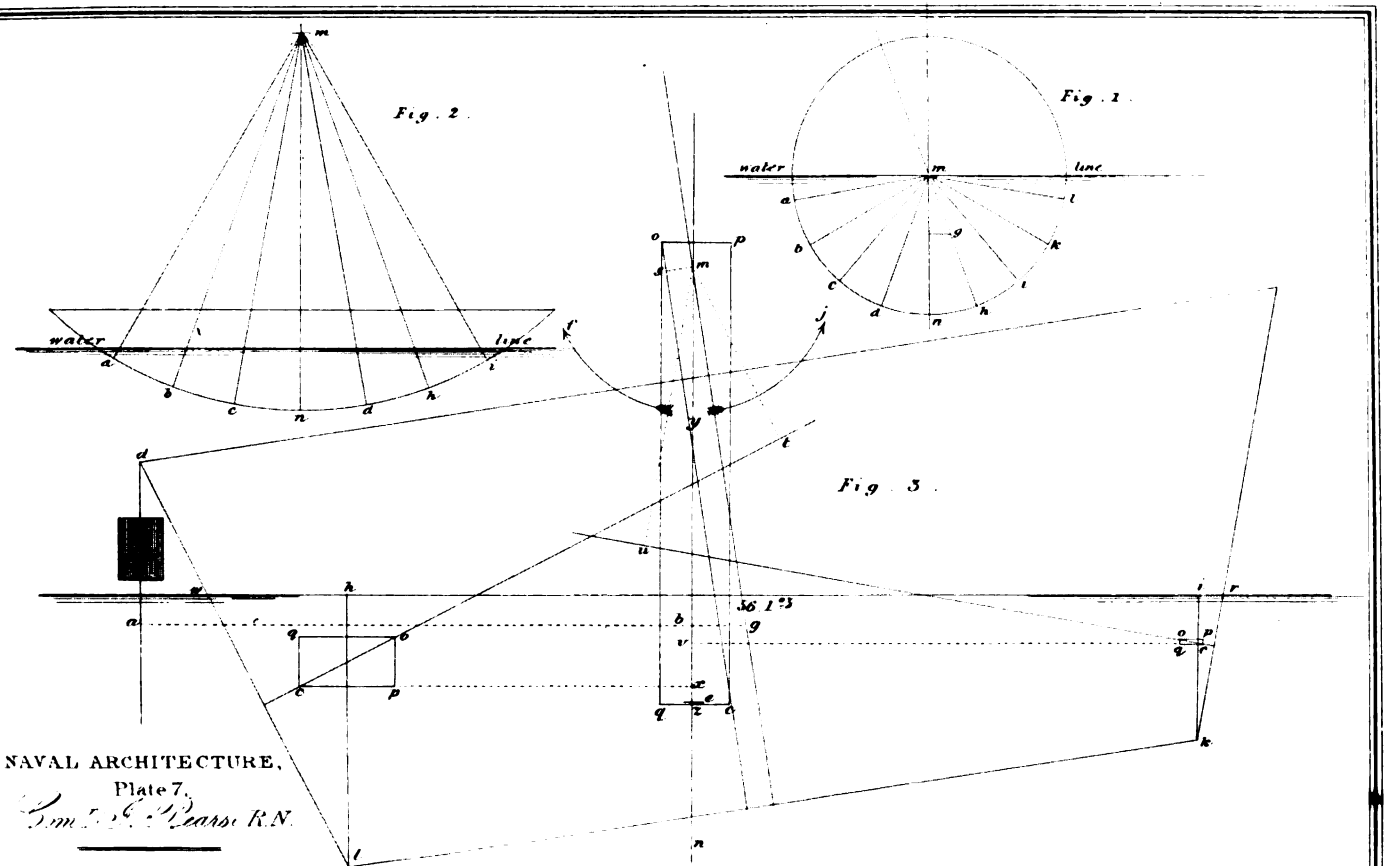
0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds—detached passing clds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
· Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, *i.e.* from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of the six hours, and both together denote the whole interval. They are intended to express the time nearly when rain fell. Thus, 2) signifies that rain fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained the whole six hours from 6 A.M. to noon; (3) ditto from noon to 6 P.M.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.



NAVAL ARCHITECTURE,

Plate 7.

Jmes C. Pearse R.N.

Pub.d for the Proprietors of the Nautical Magazine by Simpkin & Marshall 1854

C Bradbury.

THE

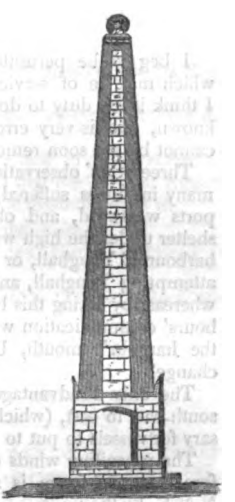
NAUTICAL MAGAZINE.

AUGUST, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

39. Improvement of Beacons. *Nelson's Pillar, the Kicker Tower, and the Beacon on the Hoe.*



A Committee of the Elder Brethren of the Trinity House have lately returned from a voyage of inspection in the English channel, to consider the colouring of beacons in such a manner as to render them more readily to be distinguished under different states of the atmosphere. The first result of the committee's deliberations has been a proposal to the Lords Commissioners of the Admiralty to paint Nelson's pillar red and white, in the manner described in the annexed sketch; a proposal which has been approved of by their Lordships, and which will accordingly be carried into effect. The middle part of the column will be white, the red being outside. It has also been wisely determined on by the Brethren, to erect an iron railing round the pillar, for the protection of its base; a measure which we are rather surprised was not adopted before.

It is also intended that the Kicker Tower shall be raised twenty feet.

And the beacon on the Hoe, at Plymouth, is to be raised ten feet.

Both of these latter marks are to be painted red and white, in alternate horizontal stripes.

40. Ballycotton Bay, *South Coast of Ireland, a safe resort in Westerly Gales.*

Compass Bearings.

We are very desirous of calling the attention of our numerous nautical readers, who may be in command of vessels, to the following extract of a letter from Lieut. Samuel Colston, R.N., to Commander Henry Parker, R.N., and forwarded by this officer to the Secretary of the Admiralty. Lieut. Colston points out distinctly the disadvantages to outward-bound vessels of not taking shelter in Ballycotton bay, when, being to windward of it, they may be compelled to bear up by westerly gales. The judicious and very praiseworthy remarks of the Lieutenant, the result of considerable experience, and which his zeal for the safety of shipping has thus induced him to make known, we are quite sure need only being pointed out, to be seen by our commanders in all their importance; and we have no doubt Lieut. Colston will soon have the satisfaction of witnessing the good effects arising from his attention to the safety and interests of his fellow-seamen:—

Ballycotton, 23d June, 1834.

I beg to be permitted to add a few remarks on the bay of Ballycotton, which may be of service to commerce, and to seafaring people in general. I think it my duty to do so, from the conviction that the bay is not sufficiently known, and is very erroneously considered as dangerous—an opinion which cannot be too soon removed.

Three years' observation has convinced me that the mercantile interest has in many instances suffered, in consequence of vessels, when bound to Cork, or ports westward, and obliged to bear up by westerly gales, instead of taking shelter under the high western land of this bay, have run for the dangerous bar harbour of Youghall, or even farther eastward; thereby risking their safety in attempting Youghall, and possibly otherwise causing loss and delay to owners; whereas, by taking this bay, they would not only have been within two or three hours' communication with Cork, by land, and about ten miles distant from the harbour's mouth, but ready to take advantage of the first favourable change.

The only disadvantage of this anchorage is, that the wind setting in from south-east to east, (which wind, however, *very seldom* blows,) renders it necessary for vessels to put to sea as quickly as possible.

The prevailing winds on this coast are westerly throughout the year; therefore this anchorage is safe and convenient, with the wind from S.W. to N.N.E. by the north.

Vessels taking shelter here from a westerly gale, should anchor with the Government houses bearing S.S.W. to S.W., and the outer island S.E. to S.S.E., in about three fathoms, low-water. The bottom is smooth and even, of fine sand and clay, perfectly clean, and the holding-ground good.

The outside island is high, with a bold rocky coast, steep to, with deep water, and no dangers, so that a vessel, in taking the bay from the westward, may round the island close to, and find herself suddenly in smooth water.

A vessel attempting the sound, should keep the south-east island close aboard, as there is a dangerous reef of rocks which shew at low-water, from the north-east point of the inner island, running out E.S.E. to about mid-channel. The depth of water through the sound is from five to seven fathoms.

Should you approve of these observations, and consider that they may tend to benefit the public, I beg of you to make use of them as you may think most proper to that end.

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41. Tide-Signals at the Entrance of Rye Harbour, *Coast of Sussex.*

A telegraph, the frame and shutters of which are painted black, is erected at the mouth of Rye Harbour, near the flag-staff, to shew the flowing of the tide. When not in use, the shutters will hang vertically, the whole appearing entirely black; and when in use, they will be canted horizontally, so as to shew a circle of light through the frame, and will be worked as follows:—

When there is 8 feet water, One Shutter will be canted.
When there is 9 feet water, Both Shutters will be canted.
When there is 10 feet water, the Flag will be hoisted.
When there is 11 feet water, One Shutter will be canted.
When there is 12 feet water, Both Shutters will be canted.

So that the shutters, without the flag, denote under ten feet, and with the flag, above ten feet.

A Blue Burgee will be occasionally hoisted above the telegraph, to signify high-water at the pier-head.

A Black Ball will be hoisted near the harbour flag-staff in bad weather or low tides, to signify that the pilots cannot get off, and that the harbour cannot be approached in safety by strangers, or those not well acquainted with it.

By order of the Commissioners,
Henry Stocks, Harbour-Master.

At night two lights are shewn, when there is ten feet at the pier, which are kept up till the tide recedes to the same mark.

A. Kortright, Lieut. R.N.

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42. Observations on the Winds and Currents in the Gulf of Lepanto, *and the Anchorages of Vostizza and Patras. By Captain Sir John Franklin, Knt., commanding H.M.S. Rainbow,* 1832.

Compass Bearings.

The Morea and Roumelia castles, which command the entrance into the Gulf of Lepanto, are about one mile apart, the channel being very deep between them, so that a ship may approach either when about abreast of them, but not that of Roumelia on its western side, as the water is there shallow.

The Morea castle is in good repair, and is a very strong fort. There are thirteen guns mounted on it, fronting the sea, or that could at different angles bear on a ship. The Roumelia castle is very much out of repair: there are in it three guns, facing the sea. The only apparent danger in this gulf, between the castles and Vostizza, is a very dangerous spit running out from Drapano point, which must be carefully avoided, and this may be done by keeping in mid-channel, or nearer the town of Lepanto. Just to the eastward of Lepanto there is a sandy point, and a line of low shore which must not be approached too closely. In beating up or down, a ship should not stand nearer to this long low point than fourteen fathoms, as the water shoals suddenly; but a ship will be well clear of this shore by keeping mid-channel, or by using the lead carefully when standing towards it. I am told that the above-mentioned point forms a protection against north-east winds at the anchorage of Lepanto, but we could not stop to ascertain that fact. The point and shoal of Drapano appeared to us to be a mile more distant from the Morea castle, than laid down in the chart of Captain Smyth. Above Drapano the shore is bold all the way to Vostizza, and may be approached without fear. There are two or three bays in this part of the coast formed by projecting gravelly points, but the water in all of them is deep; and it is doubtful whether they could, with safety, be used as an anchorage, except as stopping places in a south-west gale.

Vostizza.—Vostizza bay is open to the northward, and is formed, like the others above-mentioned, by two projecting points about two miles from each other. The water is very deep, which is the principal objection to the anchorage. The first soundings gained will be about 30 fathoms, at ¼ths of a mile from the shore; and the best anchorage for a vessel of war would be in 17 fathoms, about 500 yards from the western shores, and 500 yards from the custom-house on the beach at the head of the bay. A ship moored in this situation would ride in safety, as the ground is very tenacious mud, and the winds, though they blow most violently at times from the N.E. and S.W. on the outside, scarcely ever reach home, nor send in a swell sufficient to hurt a ship. The S.W. winds send in the greatest swell, on which account it is advisable to anchor nearer to that side of the bay than in the centre of it. We were at single anchor in 19 fathoms, the bearings being—N.W. point of the bay, N. 27° W.; East point of the bay, N. 82° E.; the plane-tree S. 11° E.: in which situation we rode out heavy N. E. and S. W. gales, without experiencing any inconvenience. In waying anchor we were obliged to use a purchase.

Observations place the commandant's house by the great plane-tree in lat. 38° 15′ 18″ N. long. 22° 4′ 40″ E. The difference of longitude shewn by our chronometers between St. Andrea point, Patras, and this house, was 1° 15′ 8″.

Vostizza is abundantly furnished with excellent water, the principal fountain being close to the plane-tree. Fresh provisions may be obtained. There is no fortress at this place: the town is small and straggling, built on the hill above the beach; it contains three or four good houses. The store-houses of the merchants, and the custom-house, are on the beach; and the merchant-ships lie close to the wharfs. Vostizza is the great depôt for the shipment of currants in this gulf; to which place, those not grown in the immediate neighbourhood and plains of Vostizza, are brought in small Greek boats. The English merchants are almost the only purchasers of this fruit, though some small part is sent to Trieste in Austrian and Greek vessels. The quantity purchased by the English merchants this year was sufficient to load twelve or thirteen vessels averaging 150 tons, all of which were sent to London, where the

Morea currants fetch the highest prices. They likewise pay a heavy duty. Upwards of £98,000 was paid for duties this year, (1832,) on the currants, to the Treasury.

The town of Vostizza was occupied by about 300 Palikari, who have maintained it for the government in tranquillity in spite of many temptations held out to them from the revolters of Patras.

During our stay, a very large branch of the celebrated and often described plane-tree was blown down by the wind; and the whole tree bears marks of decay. It is said to have stood since the days of Pausanias.

The set of the current, as well as the rise and the fall of the water, in the gulf of Lepanto depends on the direction and force of the winds, the current running most strongly when the wind blows down the gulf. At Vostizza we found that a strong S. W. wind brought in such a body of water as to cause a rise on the beach of two or three feet, and that a gale from the N. E. caused a considerable falling of the water, but not quite equal to the rise produced from the above-mentioned circumstance. The currents in the gulf of Patras, particularly towards the head of it, near the town, are likewise governed by the wind, and follow its direction; but after a N. E. wind has blown with violence for some hours, and the body of water it has brought down the gulf of Lepanto has been thrown on the steep shores of the S. W. side of this gulf, a reaction in the water generally takes place, and the current returns against the wind to the N.E. Similar effects are produced by a continuance of strong breezes from the N. W. and S. W. the water is carried rapidly at its commencement, to the N. E. and forced into the gulf of Lepanto, till a reaction takes place, and then the current returns to the S. W. or westward against the wind. In calm weather we have remarked the drain of the water at the anchorage before Patras to be more frequently to the N. E. than otherwise, though it has often been observed running to the S. W. and S. E. The Greek boatmen say that in moderate weather the current is in general still about noon, and again from 7 to 8 P. M. which we have occasionally observed to be the case, but not so frequently as to lead us to suppose the current in this respect partakes of the nature of a tide, which its regularity of ceasing to run at these times would imply. These boatmen likewise say that the current almost constantly runs to the westward from point Bachiri, or downwards along the shore in front of Missolonghi as far as Oxia, and that the current takes a contrary direction with almost equal uniformity along the S. W. side of the gulf. For these seasons, they recommend that ships in beating up the gulf should keep nearer to the S. W. shore, after they have got well round and above the reef that extends from Cape Papas, and that, in beating out of the gulf, they should work on the Missolonghi shore. Between the months of April and September we have observed that, however strong the wind may have blown during the day, it has almost constantly abated at sunset, and that the wind has blown from the land during the night, on which account the boatmen and small vessels almost invariably leave Patras in the evening in going to Zante or any of the islands.

During the months of October, the winds were blowing almost constantly down the gulf of Lepanto, and generally with much force during the day, though they became moderate in the night. These N.E. winds came down very strong in November, though we have heard that the winds on the outside, which were blowing at the time from S. E. and S. W. being turned from these directions by the mountains that are near the gulf in the Morea. Contrary to the course in the preceding month, these winds did not abate during the night, but appeared to blow with nearly the same force down the gulf, and along the north shore of the gulf of Patras; though at the anchorage before Patras it was generally either a moderate breeze or calm during the night, with occasional

squalls of short duration. While these winds continued, no vessels could have beaten into the gulf, even the small trading boats were detained at its entrance many days. The current was running so strong to windward the whole of this time at the anchorage before Patras, that the ship seldom rode head to wind even in very strong squalls. The meeting of the current and wind caused the whole of the north side of the gulf below the forts to be in a foam, and also a considerable swell at the anchorage before Patras. The reason of this strong current we suppose to be—that the wind in the offing had been blowing strong from S. W. and prevented the escape of the water carried down this gulf by the N. E. gales.

PATRAS.—The snow remained stationary on the tops of the mountains after December began, and it occasionally descended as low as the lesser hills behind Patras, but at that time seldom remained in these places longer than a few days. When snow fell in any quantity on the hills, we had small rain at the anchorage, with very raw cold weather; the thermometer being occasionally as low as 36° in the warmest part of the day. The N. E. winds prevailed also in this month, and often blew very strong. Once only, on the 5th of December, a gale from the S. W. was felt at the anchorage, and this came in a very violent gust, like a whirlwind, by which two water-spouts were raised. Heavy lowering clouds, vivid lightning, and peals of thunder preceded, and gave such timely warning of the change, that any ship might have shortened sail.

The weather was in general fine during the months of January and February, but often very cold, the thermometer falling occasionally as low as 30°, at which time not only the mountains but the lesser hills were covered with snow. The N. E. winds were frequent, and often blew with violence along the Roumelia shore, while on the Patras side they only came as fresh breezes, to which double-reefed top-sails and top-gallant-sails might have been carried. In the month of March the weather was more unsettled, and the winds were variable; after the middle of the month, there were strong breezes from the S. W. for three successive days.

We embarked the Bavarian troops, destined to garrison Missolonghi, for the purpose of landing them on the opposite side of the gulf, and crossed over to the bay just to the westward of the high-peaked mountain, Palæo Vouna, in which bay, we were informed, the Turkish fleet used to anchor, and is called by the Greeks, Krio Nero. In the spot where 12 fathoms is marked in our chart, at ⅞ of a mile from the shore, we found only 5 fathoms, and before the top-sails, which were on the cap, could be got in, we were in 4½ fathoms water, in which we anchored about ½ a mile from the shore, having the following bearings—Extreme of sandy spot that forms one point of the bay, S.W. to W. The bluff and steep Cape of Palæo Vouna, that forms the other point of the bay, E. ½ S. Castle of Patras, S. E. ½ S. Cape Papas, W. S. W. In this situation there were only 3½ fathoms at a hawser's length astern, or in shore of the ship; and when we had veered to 72 fathoms on the best bower, in consequence of a violent gale coming on from the east, there were 3¾ fathoms on each side and astern, and four under the bow, with space to veer to 50 fathoms more cable before we should reach the ship's draught of water, 16 feet. The gale set in a very heavy swell, which prevented the ship being cast to seaward, and compelled us to remain at our anchors, the small bower having been also let go. The gusts rushed down the mountain like a hurricane the whole of the night, bringing with them great quantities of sand, and even gravel; and it was every moment feared the ship must have been driven from her anchors, in which case her destruction would probably have followed. The wind became moderate in the morning, and we were fortunately enabled to

cast the ship to seaward and stand over to Patras, where we learnt that the gale had been equally violent on that side of the gulf, that three vessels had been driven out to sea, and several houses blown down.

Though the ground in Krio Nero Bay is excellent for holding, I should not at all recommend any ship anchoring there, as they would most probably be caught in the strong N. E. winds. Nor is it advisable, on this account, for ships to anchor on any part of that coast between Missolonghi and the castles Roumelia and Morea.

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43. New Lighthouse at Port Dalrymple, Van Diemen Land.

Port Dalrymple, Van Diemen Land, December 12, 1833.

Sir,—I have the honour to inform you, for the information of my Lords Commissioners of the Admiralty, that the Light-house on the Low-heads, at the entrance of this port, is now completed, and is lighted pro. tem. by a number of small oil lamps, each having a tin parabolic reflector.

The lantern is placed about 135 feet above the level of the sea, and has the following magnetic bearings. From the

Hebe Reef, ...	N. 85 E.
West Head, ...	N. 71 E.
Windmill at George Town, . .	N. 32. 30 W.
Barren Joice, or, Tenth Island, .	S. 41. 30 W.
Five Mile Bluff, ...	S. 49. W.

I am, sir, your most obedient servant,

M. Curling Fuend, Lt. R.N. Port Officer.

To the Honourable Captain Elliott, Admiralty, London.

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44. The New Channel into the Mersey.

The following notice has been published at Liverpool :—

Dock Office, Liverpool, July 8, 1834.

The Trustees of the Liverpool Docks and Harbour hereby give notice, that the undermentioned additions and alterations, for the better guidance of the mariner into and out of the port, will be exhibited on and after the 1st day of August, 1834, viz. :—

"*Formby Light-house.*"—This building (hitherto known as Formby South-East Landmark) will present a steady yellow light, ranging twelve miles in a western aspect, between the points of S.W. and N.N.W. ¾ W.; which limits indicate respectively when a vessel is westward of Mad Wharf, and when she ought to shape the fairway course of S. by E. ¼ E. up Crosby Channel.

The most brilliant portion of the said light will be shewn down the New Channel, in concert with a Floating Red Light, exhibited from a single-masted vessel, (painted red, with a red flag to distinguish her by day,) moored, in sixteen feet at low-water, three miles and a half W. ¾ N. from Formby light-house, one-eighth of a mile southward of Jordan Flats, and half a mile westward of the Spit of Formby Bank. These lights, brought in a line, lead direct from seaward, upon a course E. ¾ S., to the entrance of, and through, the New Channel (which carries twelve feet at low-water, spring-tides, over its outer

and shoalest part) up to the Floating Light. Both the above lights may be discerned in clear weather as far as two miles westward of the North-West Light Ship.

The new Formby Red Light-vessel likewise serves (when brought in a line with the Black Rock Light) to lead through Jordan Flats, in seventeen feet water at half-tide, upon a S. by E. ½ E. course; and the narrowest part of this swashway is distinguished by two Nun Buoys, (white, with a black vertical stripe,) a quarter of a mile apart, and about three-quarters of a mile northward of the vessel, the passage being between the said buoys.

An additional Red Can Buoy is also placed on the western side of the Crosby Channel, to denote the easternmost elbow of Great Burbo. This buoy lies in sixteen feet, close to the bank, and bears from the Black Rock Light-house N. by W. three miles: it is the southernmost red buoy in Crosby Channel, and must always be left on the western hand.

The *Helbre Swash Marks* will be removed on the day above mentioned from Helbre Island; one to the small islet called The Eye, and the other to the flat shore immediately eastward, and at a quarter of a mile from Helbre Island; so that, when brought in a line, they lead direct from the North-West Light Ship, up Helbre Swash, upon the course of S. ½ E., to the first log-buoy on the south-west elbow of the East Hoyle Bank.

And, to afford the clearest illustration how the foregoing arrangements contribute to open the navigation into and out of the port at all hours of tide, the dock trustees have published a chart thereof, in conformity with the recent Admiralty Survey, by Lieut. Henry Mangles Denham, R.N., (under sanction of the Right Honourable the Lords Commissioners of the Admiralty,) upon a scale of four inches to the mile; which may be had of all the chartsellers in Liverpool.

Note—All bearings and courses in the above imply by compass.

By order of the Committee,

WILLIAM FOSTER, Secretary.

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45. NEW BUOY IN THE EAST SWIN.

Compass Bearings.

"*Trinity-House, London, 20th May*, 1834.

"Notice is hereby given, that this Corporation has caused a Buoy, coloured Red, and marked "Hook of Gunfleet," to be placed in 3¾ fathoms at low-water spring-tides; 230 fathoms from the Gunfleet Beacon, and with the following mark and compass bearings, viz.:—

Great Holland Church and the Gunfleet Beacon in one, bearing	N.N.W. Westerly.
Naze Tower	N. ¼ E.
Sunk Light	E. ¼ S.
Heap's Buoy	S.W. by W.
S.W. Gunfleet Buoy	W. ½ N. Northerly.

"By Order, "J. HERBERT, Secretary."

Maugham, the able chemical lecturer to the National Gallery of Practical Science. This light has long been known to the chemist, and Dr. Herschel stated many years since that it would probably one day become available for lighthouses: it is produced by bringing the positive and negative poles of the galvanic battery, when charged, into contact, and withdrawing them to a short distance, when a brilliant and intense light is emitted.

* See page 120, vol. ii. Nautical Mag.

HARRIS'S CONDUCTORS for SHIPS.

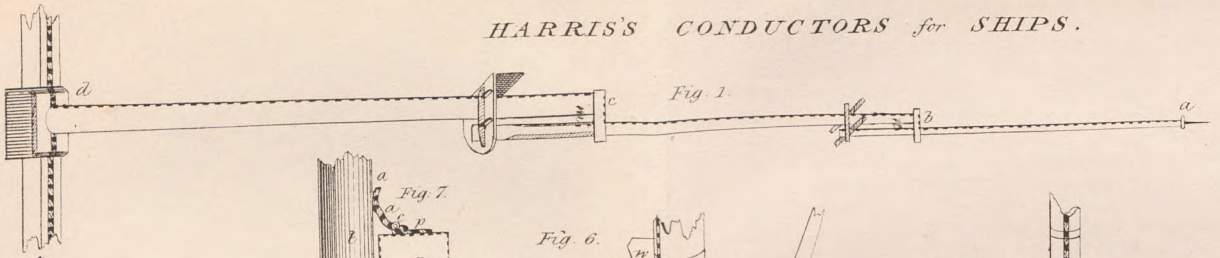


Fig. 1.

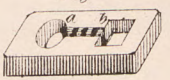


Fig. 3.

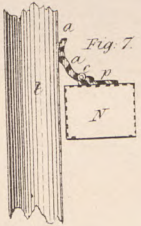


Fig. 7.

The marks
and
Shew the proposed course of the metallic bands.

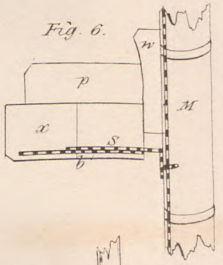


Fig. 6.

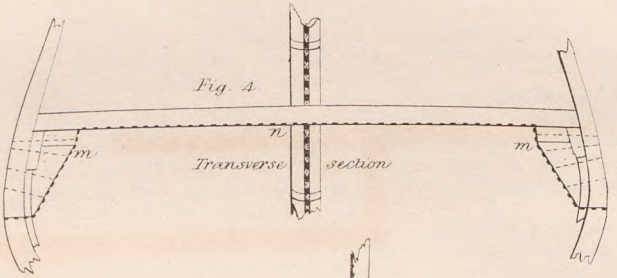


Fig. 4.

Fig. 8.

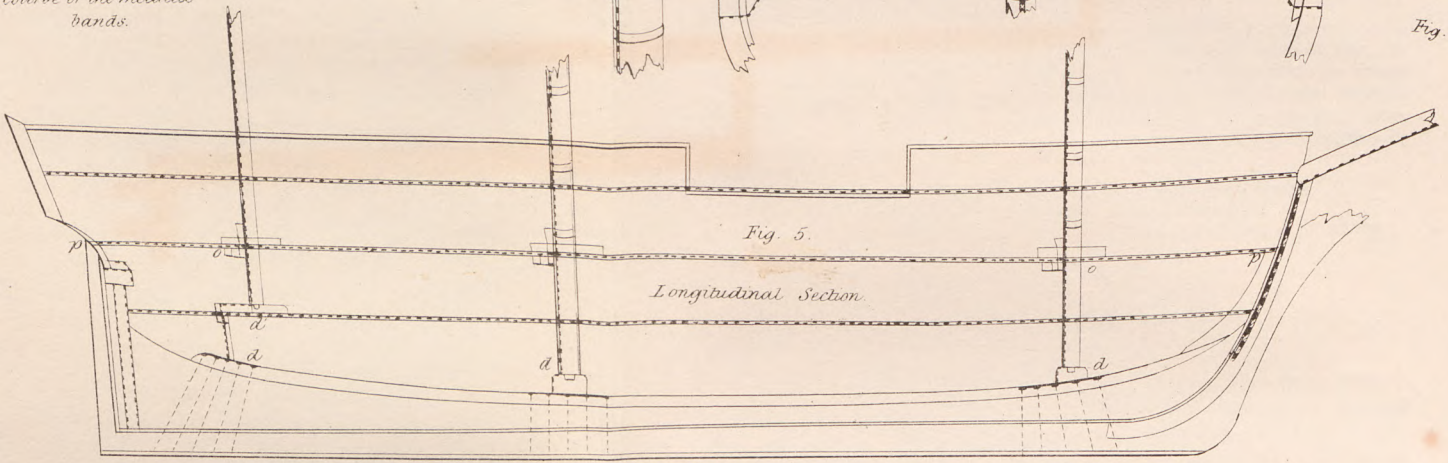


Fig. 5.

Longitudinal Section.

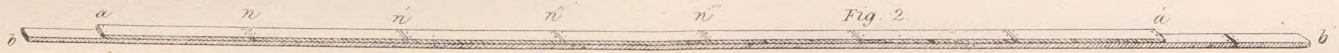


Fig. 2.

Sunk Light	E. ½ S.
Heap's Buoy	S.W. by W.

ORIGINAL PAPERS.

I.—On the Light produced by Voltaic Electricity, as applicable to the Illumination of Lighthouses. *By Mr. G. Halpin, Jun. Civil Engineer.*

Much attention has within the last few years been directed with beneficial effect to the improvement of the lights and their apparatus, whether reflecting or refracting, used in lighthouses.

Without referring to any remote period, we find that within the last twenty years the rude description of lens used in many of the British lighthouses, and the still ruder reflection of tin sheeted with small plates of looking-glass, have given place to the polygonal lens, and the highly finished and almost perfectly formed parabolic reflector of silver; while equal improvements have been made in the burners and other illuminating apparatus.

Vastly superior as are the latter to those formerly in use, and though adequate in the ordinary state of the atmosphere, they are not sufficient to penetrate to any distance those fogs to which the coasts of the British Isles are frequently subject. Many ingenious devices have, in consequence, been tried, to produce a light powerful enough to penetrate dense vapours; none, however, can as yet be considered to have practically effected this important object.

It is not within the limits of the present remarks to enumerate the many projects devised for this purpose. The most powerful hitherto laid before the public has been the Drummond light, so called from Lieut. Drummond having first called attention to its practical use, by placing it in the focus of a parabolic reflector, and constructing an extremely ingenious apparatus for directing the streams of the gases on the lime-ball; it produces a brilliant light, having much resemblance to that of the sun. The talented officer whose name it bears, has fully described its mechanism; and the careful experiments he made with it, in a paper communicated to the Royal Society, from which paper a full account of it was given in No. 13* of this Magazine.

Still more recent (we may say, indeed, of the present day) is the application for a similar purpose of the light produced from Voltaic electricity, for which we are indebted, as far as I am aware, to Mr. Maugham, the able chemical lecturer to the National Gallery of Practical Science. This light has long been known to the chemist, and Dr. Herschel stated many years since that it would probably one day become available for lighthouses: it is produced by bringing the positive and negative poles of the galvanic battery, when charged, into contact, and withdrawing them to a short distance, when a brilliant and intense light is emitted.

* See page 120, vol. ii. Nautical Mag.

Having suggested the propriety of measuring the intensity of this light, which has not to my knowledge been previously tried, such apparatus as had been made for its exhibition at the National Gallery of Practical Science was liberally afforded.* The experiments made have as yet been so limited, that any detailed account would be premature. The following are the general results of some experiments which I made, in conjunction with Mr. Maugham, at the Adelaide Gallery, in comparing the Drummond and Voltaic lights.

EXPERIMENT I.

Made with coloured glasses, the lights were eclipsed by intervening glass, in the following proportions:—

Drummond light eclipsed by . . . 100 glasses.
Voltaic . . . . . 125 glasses.

The glasses were too deeply coloured to afford the means of accurate measurement.

EXPERIMENT II.

Measured with a photometer, the intensities of the two lights appeared as follows:—

Drummond light = 100
Voltaic . . = 160

A level staging was erected between the two lights, on which the photometer was made to traverse.

EXPERIMENT III.

Measured by shades, the intensities of the two lights appeared,

Drummond light = 100
Voltaic . . = 150

The shades were given from a rule opened in a triangular form, on a (white) wall; the difference of colour in the shades was strikingly marked, that from the Drummond being a dark bluish grey, that from the Voltaic a deep reddish brown.

EXPERIMENT IV.

Measured with photometer.

Drummond light = 100
Voltaic . . = 156

In this, as in the other experiments, the Voltaic was measured at its maximum strength or flash.

It is necessary to remark, that those experiments were tried in a room not forty feet in length, and were not managed with sufficient nicety to ensure accuracy of measurement, as the difference of results proves. The lights also were of variable intensities, the gasometers being portable ones of small size, and the troughs of the battery of the common kind, both rapidly decreased in power.

* In common with others who have made experiments at this gallery, I have to acknowledge the facilities liberally afforded by Mr. Payne, the manager for the committee.

After a short exhibition of the light from the lime ball, the upper portion of the reflector was dimmed, while no such effect attended the other. From the briefness of the time of trial, no comparison of expense could be made. As to the comparative facility of managing the two lights in all their details, the Voltaic light has decidedly the advantage over the Drummond light, and even now may be considered to be almost free from difficulty.

It yet remains to be seen, what the practical effect of the Voltaic light will be when viewed at a great distance, and how far it will answer in damp weather, as the charcoal points required for it must be perfectly dry. It will also be necessary to construct the troughs of the battery on a particular plan, to allow of a means of preventing the rapid oxidization of the zinc. An ingenious mode of overcoming this has been suggested by Mr. Maugham. There is no other difficulty which may not be easily overcome, and in such manner as to render the application of this light available for practical use, and capable of being managed by the class of men who now have charge of the British lighthouses. It is peculiarly adapted for a flashing light, its greatest brilliancy being given in that way, though a steady light of considerable power can be maintained.

Lieut. Drummond has thus stated the intensity of his light, as compared with others:—

					Mean.
French lamp mean	11	observation by shadows	=	4·1	4
———	8	. . ditto.	=	3·8	
Oil gas	6	. . ditto.	=	0·85	
Lime	6	. . ditto.	=	263·9	264·1
———	3	by illuminated surface		264·4	

So that, taking the Drummond light as 264, the Voltaic would, from the experiments we have described, appear to be at least upwards of 300.

The results of these experiments seem so important, that, though by no means conducted on a scale of sufficient magnitude or accuracy, it will perhaps be useful to give them publicity, principally with a view to excite the attention of scientific and practical men to further inquiries as to the real nature of this light, and how far it can stand comparison with the Drummond and the Argand burner, both as to power and expense, and its applicability to the lens or reflector.

From the liberality and spirit of the different lighthouse boards, we may shortly expect a detailed statement of experiments, made on a scale commensurate with the importance of the subject. Even now, however, when we consider, on one hand, the quantity of oil used in the large lighthouses, its bulk and expense, on the other, the cheapness and portability of zinc, and that sea water may be substituted in the troughs of the battery for the dilute

acid generally used, it is not perhaps being too sanguine to contemplate, at no very distant time, the introduction of the Voltaic light, as an intermitting or flashing light, for occasional exhibition at least, into the large or leading sea lighthouses.

GEORGE HALPIN, Jun. Civil Engineer.

London, July, 1834.

II.—SUGGESTIONS FOR AVOIDING OR LESSENING THE DISASTERS INCIDENT TO A SEA LIFE.

(Continued from page 413, No. 29.)

No. 3.— *The Boats.—Quitting a foundering vessel, or a wreck, far from land.*

So many melancholy and heart-rending accounts have been published, of the dreadful sufferings experienced by mariners who have been constrained to take to their boats as a means of prolonging or of preserving their lives, that I shall not allude to any one of the events in particular, but proceed at once with the endeavour to point out the means for avoiding or of lessening the misery too often endured on such occasions.

Each boat, independent of her *breakers** of fresh water, should be provided with small boxes, made to fit under the thwarts, the stern-sheets, &c., containing provisions, (hereafter to be described,) and a small compass in the stern locker.

The necessity for each boat having a separate stock both of water and provisions is apparent from the circumstance, that, after leaving the ship, they are often separated, and never again meet; so that, on such an occasion, when one boat carries the whole supply, all the others are left destitute, and the people, except by the intervention of some fortuitous and providential occurrence, must either starve, or resort to that most dreadful of all dreadful calamities—the eating of human flesh! a condition forcibly expressed by Byron, in his Don Juan:—

> "——————— and you might see
> The longings of the cannibal arise
> (Although they spake not) in their wolfish eyes.
>
> At length one whisper'd his companion, who
> Whisper'd another, and thus it went round;
> And then into a hoarser murmur grew—
> An ominous, and wild, and desperate sound:

* I believe few merchant ship's boats are provided with these small casks; an omission which the crews of many of them have paid dearly for. Who deserves the blame, the ship-owner, or the master?

And when his comrade's thought each sufferer knew,
'Twas but his own, suppress'd till now, he found;
And out they spoke of lots for flesh and blood,
And who should die to be his fellow's food.

But ere they came to this, they that day shared
Some leathern caps, and what remained of shoes;
And then they look'd around, and then despair'd;
And none to be the sacrifice would choose.
At length the lots were torn up, and prepared."

* * * * *

Such must be the very acmé of all deplorable situations to which the sailor is subject, and the bare mention of which is enough to harrow up the soul, and to freeze the blood: indeed, it is too dreadful to dwell upon; but it is right that the commander of every vessel should reflect on it, and that he should know, that hitherto, by the negligence of those who ought to have provided against such calamity, the horrid event has repeatedly taken place. Can any stronger reason, besides the preservation of life, be urged for the general adoption of a plan to avoid it; and surely that is one which appeals most powerfully to our natural feelings?

In the distressing condition of boats quitting a foundering vessel, unprovided, perhaps some useful hints may be taken even from savage life.

The indigenous inhabitants of the southern shore of New Holland, when pressed by hunger on their excursions, use a belt, which they draw tightly around the stomach, to compress it; this, they assert, diminishes that uneasy sensation felt when the stomach becomes empty, and the gastric juice acts upon its coat. I do not know how far this may be consonant to the truth; the practical surgeon will be best able to decide the question. I am inclined, however, to think that habit has more to do with the circumstance than the savages are aware of themselves. Their precarious mode of life often reduces them to the necessity of enduring long privations from solid food; and this abstinence from a regular supply may habituate those people to withstand the want, with a degree of comparative ease not known to a European unaccustomed to such a mode of life.

The celebrated Mr. Bass, (who discovered the strait which separates Van Diemen Land from New South Wales,) with some companions, in one of their exploratory excursions, I believe to the Coal River, were preserved from starvation by the abstinence of one of the natives who had accompanied them. The party having buried a portion of the supplies at a certain spot on the route inland, proceeded to fulfil the object in view, which was to ascertain the position of a vein of coal.

On their return towards the coast, the party unfortunately either

got bewildered, and could not find out the place of deposit; or, if found, (for I do not recollect which,) discovered that the provisions had been devoured by the wild dogs. In this dilemma, the only plan which presented itself was, that of hastening in a direct line to the boat; but it became a question, whether, with water alone, the party (few in number) could support the fatigue of the journey, the stock which they had carried with them having been all, or nearly all, expended.

Whilst they were deliberating how to proceed, the native guide who was with them, to their agreeable surprise, produced from his pouch a very seasonable supply—enough, with care, to serve them until they could reach the boat. On questioning the savage, why he had laid by the store, he stated, that *a wise man always made provision for any case of exigency that might overtake him when performing a journey;* and, that having calculated upon the chance of not finding the deposit, he had, from the day it was made, husbanded a portion of his allowance, that he might be enabled to save the white people, who, he believed, could not endure fatigue for any length of time, without a regular supply of nourishing food. Some little curiosity being excited, to ascertain how he had supported himself during the time, he displayed the belt, (already spoken of,) by which he had compressed his stomach; and this, he said, had the effect of preventing the cravings of hunger; that a small portion only of his daily allowance was necessary to support him. He cheerfully gave up his store, to be divided among the party, and was, as may be supposed, rewarded for his prudence and generosity.*

As I have said before, I cannot pretend to determine the correctness of the inference, but I think that a sailor can do no harm, when in a desperate state of privation, to follow the plan of the savage, and "*take a reef in his stomach.*"

A smooth pebble kept in the mouth assuages thirst, by exciting a discharge from the salivary glands. This is an article which can be procured without cost. I have for many years been in the habit of carrying one in my pocket, never using it, however, but when within the tropics, and then only when walking on shore in the heat of the sun. I do not think it probable, that the excitement produced by the use of the pebble would be detrimental to the strength of an individual whilst in a state of destitution, provided some mode of assisting nature in her functions be adopted at the same time. I believe it has been determined, that moisture is in some way or other absorbed by the body, and that it is conveyed to the internal organs. Experiment has proved, that more urine is discharged by a person, than the quantity of liquid he has swallowed, in a given time. How this operation is carried on, whilst the insensible perspiration is constant by exudation through the

* I received the foregoing anecdote from a gentleman who was one of the party.

pores, I do not know; but I think it questionable, whether the former action does really go on during the heat of the day in any climate, and especially in the torrid zone, the very time when an unfortunate sufferer would require the most aid from moisture.

Two modes may be adopted, as likely to gain the desired end: first, by dipping the clothes into the sea, and wringing them before putting them on again. This operation, with rinsing the mouth every ten or fifteen minutes, without swallowing any portion of the salt-water, would, it is probable, afford some relief to the torment of thirst. I am aware, however, that where the sun's heat is powerful, the briny nature of the sea-water has the effect, when put upon the human body, of blistering or excoriating the skin; perhaps, therefore, the second plan would be found preferable—that of keeping the clothes dry, and merely bathing the body, but wiping it dry afterwards.

It is probable that some relief would be gained by either mode; whereas, to endure the pangs occasioned by thirst under a burning sun, without some experiment of the sort, is absolutely impossible, for any length of time, delirium assuredly following.

The very act alone of endeavouring to alleviate the misery felt, will give a spring to hope, and will calm the perturbation of mind, whilst it stimulates and elevates the tone of the spirits; an acquisition to be gained at almost any risk upon so desperate an occasion. To drink salt-water, will inevitably lead to a speedy dissolution. Some unhappy sufferers have resorted to the experiment of drinking their own urine for assuaging their thirst! This dreadful and disgusting alternative would probably prove little better than a solution of ammonia or hartshorn, under the state of bodily suffering endured, and if it had not a contrary effect to that desired, could at best but afford a very temporary relief.

Those persons who have visited the East Indies, may remember that the Europeans at Madras mitigate the effects of the hot winds which are prevalent during the period of the south-west monsoon, by placing *tatties*, or straw mats, along the western fronts of their dwellings, over the doors and windows, and which are kept constantly wet with fresh-water: the hot wind, in passing through these, produces such an evaporation that a great abstraction of heat takes place, and the inside of the mat is rendered quite cool.

Perhaps, if a sheet or table-cloth, or a thin sail, were, when possible, hung around the boat, and kept wet with sea-water, a similar good effect would be produced.

Tobacco.—The habit of using this extraordinary vegetable in the mouth is universal among seamen, (and pretty general also with the inhabitants of the West Indies,) to whom it has become as essential as tea to old women; but, whether it would be advisable to use it upon an occasion when little or no fresh water is to be

procured, becomes a question. The Indians of tropical America burn shells, and mix the powder with the tobacco leaf, holding a quid between the teeth and under lip, swallowing the saliva every now and then: it hinders the sensation of hunger, they say, for three or four days. A sailor experienced in its use will, perhaps, be the best judge of its effect under privation. It creates nausea in those who are not accustomed to its use: it will be well, however, to consider the old saying—"A desperate remedy is better than none."

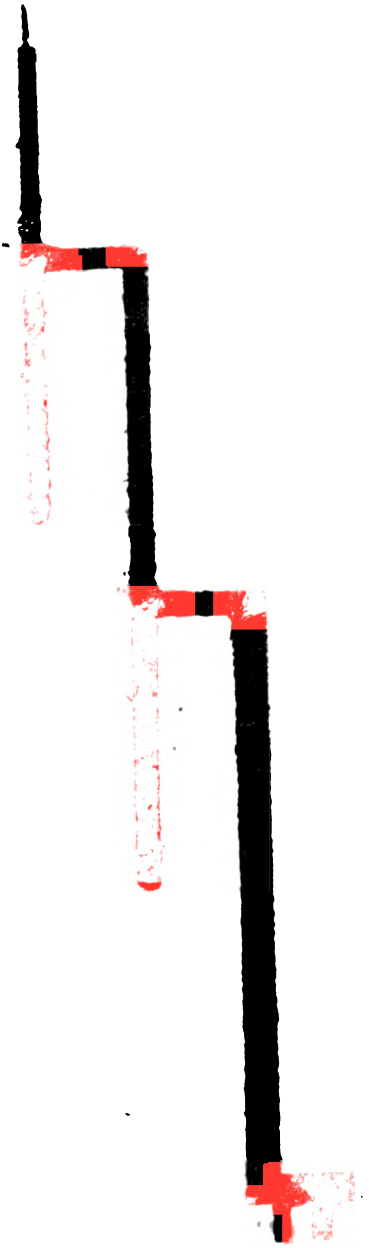
Portable Soup.—No vessel should be without a supply of this highly useful article of food. The cakes being small, and containing the concentrated essence of animal juices, is very nutritious, and consequently a small portion, at long intervals, held in the mouth until dissolved, and swallowed, will afford the means of preserving life. It may be packed in tin cases, *painted*, to prevent rust, and be kept in readiness to be placed in the boats when quitting the vessel, or it might always be kept in them, in the stern locker, under lock and key, and well secured from wet.

Gelatin.—This is a chemical preparation from ox-bones. It is manufactured extensively in France, as nourishing food for the inmates of hospitals, &c. It is, also, I believe, made in London, and alluded to by Sir John Herschel, in his Discourse on Natural Philosophy, when speaking of the transformations of chemistry, by which we are enabled to convert the most apparently useless materials into important objects in the arts. After adverting to the fact, that even linen rags are "capable of producing *more than their own weight* of sugar, by the simple agency of one of the cheapest and most abundant acids," he adds, "Who would have conceived that *dry bones* could be a magazine of nutriment, capable of preservation for years, and ready to yield up their sustenance in the form best adapted to the support of life, on the application of that powerful agent, steam, which enters so largely into all our processes, or of an acid at once cheap and durable." Nothing more, in the shape of recommendation of this article, need be said after such good authority.*

To the seaman it is invaluable, on account of its keeping good for a great length of time, as well as from its decidedly nutritive quality. It may be packed in portable tin cases.

Citric Acid.—To some constitutions, a small portion of lemon, or lime juice, or even orange juice, is a powerful stomachic, and elevates the spirits, when bark or other bitters fail. A few bottles of this liquid might prove of great value in a boat. Everybody knows that lemonade is universally used in tropical climates as a relief to thirst; and I believe I may safely say that few things are equal to it in that respect. It will be understood, of course, that the use of the acid can only be advantageous when diluted with

* Herschel's Nat. Phil. p. 65.



water. Upon the supposition that the *breakers* are always kept filled with fresh water, that necessary element for the support of life will be at hand, although in a small quantity, for this purpose.

I may mention here, in reference to the use of acids, that, in a French ship, of which I was joint prize-master, at the surrender of Cape Françoise, the water served out to the crew, and the troops that were on board, was always acidulated with vinegar, not only to correct the impurities, but, as the Frenchmen themselves said, the better to assuage their thirst, the heat of the weather being powerful at the time, and to them augmented by the crowded state of the vessel.

Cacao.—The cakes of this article, made up in oblong squares, and sold in England under the name of chocolate, at one shilling and four pence per pound, contains a great deal of nutriment in a small compass; and, being portable, may become of the utmost importance to a crew who are necessitated to abandon their vessel, and take to the boats. Small portions, masticated, and received into the stomach, will prevent the uneasy sensation of hunger, and no doubt sustain life for a long time. It forms the principal food of the old colonial Spaniards; and our men-of-war seamen on the West India stations, find the benefit at their first meal: by them, it is called "both meat and drink." Indeed, it was named by that prince of botanists, Linnæus, *Theo-broma*, or food for a god, from its very superior qualities.

I have heard it remarked, that cocoa is heating: I very much doubt it; at all events, its nutritive quality has never been disputed; and I strongly recommend the use of it to all my "brother-chips," as well as *good coffee*, in lieu of spirits,* a beverage every way superior.

In conclusion, I cannot help remarking, that it really appears surprising, that men who have had their minds directed to a subject so important to them in their capacity of seamen, by the frequent and fatal experience of others, should never think of providing against a similar misfortune happening to themselves. There cannot, indeed, be any excuse for a proportion of food and water not being constantly kept in the boats, or, at all events, in readiness to be placed in them on an emergency; and which, although necessarily small in quantity, might, with rigid economy, continue to support life until relief could be obtained; and let it be remembered, that those who have lived temperate lives are most likely to hold out longest. The frightful consequences of being unprovided have already been touched upon. Let the commander of a vessel but reflect, how much the horrors of such a

* I sincerely hope the *spirit* of the Temperance Societies will eventually spread its influence over our shipping, and relieve our tars of one of their worst faults—inebriation. The practice of issuing "raw spirits" to the men, and even to the boys, is very censurable.

situation as we have been contemplating would be lessened, and what a load of anxiety it would remove from the minds of those who have to counsel and direct on such occasions, and we are sure he never would put to sea without being well prepared for the event.

(To be continued.)

III.—REPLY TO THE REMARKS OF MR. HENWOOD, *Naval Architect, which appeared in the Nautical Magazine for June, and shewing that the point which experiment determines to be the place of the Metacentre, is the Centre of Equilibrium of all the operating forces. By* COMMANDER JOHN PEARSE, *Royal Navy.*

THE great importance of ascertaining whether the axis of rotation of a ship passes through its centre of gravity, or through the metacentre, Mr. Henwood so fully admits, that he says, "If Captain Pearse has indeed discovered that the axis of rotation passes through the metacentre, then, verily, must the subject be reconsidered and examined, and the whole theory of naval architecture be completely regenerated."

That some great error does exist in the theory, is notorious; and, as it is a subject of such vast importance, and a national question, it ought therefore to be considered without prejudice in favour of any theory whatever.

A ship is considered as a mechanical body, and the relative forces of all the powers which operate in producing motion, or in establishing equilibrium, are estimated agreeably to the laws of mechanics. Therefore, as no mechanical body whose centre of gravity is in the axis of rotation, either possesses stability, or the property of vibrating, it is inconsistent with those laws to suppose that a ship could possess those properties, if the axis of rotation passed through its centre of gravity.

In all cases of controversy, opinions advanced can only be confuted by stronger and more conclusive argument; so, also, the correctness of results derived from actual experiments, made with care, and consistent with existing laws, can only be disproved by means more positive than those by which they have been produced.

In the first place, I shall reply to the remarks on an observation in the Nautical Magazine, No. 25, namely, "that the direction of the centre of effort of the water does not always pass through the centre of gravity of the part immersed." Now, I candidly admit this to be an error, and that it proceeded from inadvertently supposing, when a ship is inclined, that the cubic contents of the part immersed on one side of the vertical which represents the mean

direction of the force of the water, ought to be equal to the cubic contents of the part immersed on the other side, but which a very little consideration would have proved to be incorrect. It was an error, however, that does not in the least affect a single result of any of the experiments which have been made; for, in every diagram published, illustrative of the various experiments, the place of the vertical line which represents the mean direction of the force of the water, was determined by experiment; and it has been repeatedly and plainly shewn, that, in every case the relative forces of the opposite powers are equal, when estimated by the distances of the directions of their respective centres of effort from that vertical.

Mr. Henwood, in stating what is meant by the metacentre, observes, that "the metacentre accordingly is constantly changing its situation as a ship revolves on her longitudinal axis; and it is not coincident with the vertical and longitudinal plane which divides the ship into two equal and similar parts, unless the angle of heeling is infinitely small. If, therefore, the axis of rotation passes through the metacentre, this axis must be continually varying its position whilst a ship inclines, and will always, at a finite angle of heeling, be situated above the centre of gravity, and out of the middle place of the ship."

Now, the arguments, and the explanatory diagrams of authors, clearly demonstrate, that when a ship is inclined, the place of the metacentre is that point where the mean direction of the vertical force of the water intersects an imaginary line passing through the centre of gravity of the ship, and dividing it into two equal and similar parts, as represented by the line *g m* in figure 4, of the Nautical Magazine, No. 22; and it is evident, that, however great or small the inclination may be, the mean direction of the vertical force of the water, which, in the figure before referred to, is represented by the line *n m*, must intersect some part of the line passing through *g m*. If, therefore, Mr. Henwood means that the metacentre is not in any part of this line, by saying "it is not coincident with the vertical and longitudinal plane which divides the ship into two equal and similar parts, unless the angle of heeling is infinitely small," and that it is "out of the middle plane of the ship," it is clear that he is in error. And, with respect to the metacentre changing its situation as the ship revolves, it is produced by the action of the water, and is only a change in the point of that support which the force of the water constantly supplies.

Mr. Henwood then procceds thus: "If the axis of rotation passes through the metacentre, as the mean vertical pressure of the water is always in the vertical line passing through the metacentre, it is evident the upward pressure of the water, when a ship has inclined, can have no effect in restoring her to an upright position; so that, in fact, she can have no force of stability, and conse-

quently the smallest impulse of wind acting to incline the ship must inevitably overset her."

Now, if this be correct, there can be no truth in the laws of gravitation. Chapman says, "When a ship heels, it ought to have a tendency of itself to resume the position it had when at rest; that is to say, the centre of gravity ought to be so situated, that the *effort* of the *weight* of the ship may concur with *that* of the *water* to right it;" and, "that the centre of gravity must necessarily be situated below the metacentre, in order that the ship may be able to float upright." And Mr. Henwood himself says, "the mean vertical pressure of the water is always in the vertical line passing through the metacentre." When, therefore, a ship is inclined, and the whole force of the water, which is equal to the weight of the ship, is as concentrated, and constantly acting as a support in the vertical of the metacentre, there can be no truth in the laws of gravitation, if the weight of the ship, acting at its centre of gravity, and in a *different vertical* from that in which the supporting power of the water is concentrated, does not constantly press downwards, and thereby *resist inclination*, and produce what is called *stability*.

Mr. Henwood then says, "The point *m*, which, on page 576, vol. ii. of the Nautical Magazine, Captain Pearse has called the metacentre, is obviously not the metacentre corresponding to the inclination of his model." Now, Captain Pearse earnestly solicits the strictest investigation of all his experiments, and ventures to assert that they will be found perfectly correct, and strictly consistent with the laws of mechanics, and the principles of hydrostatics.

Figure 7, in the Nautical Magazine, No. 22, represents the same model and the same experiment as that to which Mr. Henwood's remark alludes; and figure 4, in the same plate, represents a similar experiment, with a model differing in form, size, and weight. The inclining weight *w*, of figure 7, is, however, only thirty-two ounces, and not forty-eight, as engraved. Now, the weight of the model is 361 ounces; and this weight, multiplied by the distance *g c*, of the centre of gravity *g*, from the vertical line *m n*, which represents the mean direction of the force of the water, is the moment of stability at the inclination represented; and this moment or relative force is equal to that of the inclining weight *w*, of thirty-two ounces, multiplied by the distance *a b*; and the same as regards the experiment represented by figure 4; that is, the weight of the model $= 446 \times g\,c = 48 \times a\,b$. The models were in a state of rest in the positions represented, in consequence of the equality of the opposite powers; and the laws of mechanics teach us that the relative forces of powers operating in the way represented, on a body which revolves or vibrates, are estimated by the distances of the directions of their respective centres of effort from the

axis of rotation, or from a vertical line passing through it. Now, this vertical, in each of the figures 4 and 7, is represented by the line *m n*, and which represents also the mean direction of the force of the water which supported the models.

There can be no error in those experiments, for the centres of gravity of the models are easily, and to the greatest nicety, found by suspension; and the exact weights of the models and the inclining weights being known, as well as the horizontal distance in each, between the vertical directions of the efforts of the weight of the model and the inclining weight, the correct place of the line *m n* is easily ascertained; for there is only one point in the horizontal distance between the vertical directions of the two efforts through which that line can pass, so that the relative forces of the opposite weights shall be equal, when estimated by the distances of the directions of their respective centres of effort from it. Therefore, as the weight of the model, multiplied by the distance *g c*, is equal to the inclining weight, multiplied by the distance *a b*, with the line *m n* in the position represented; as it is evident that the point of support is in this vertical, and that the force of the water furnishes the support; it is evident, also, that the line *m n* represents correctly the mean direction of the force of the water, and that the point *m*, where it intersects the line *g m*, is the place of the metacentre.

As regards the resistance of the water to leeway tending to produce inclination, I perfectly agree with Mr. Henwood. But, the laws of mechanics, as well as experiment, prove the equation of equilibrium which he has given to be erroneous; for, by that equation, the relative forces of the wind, and the resistance to leeway, are estimated by the perpendicular distances of their mean directions from the centre of gravity of the ship, which is not the point of support, but the point at which the weight of the ship exerts its power in opposing inclination, and as a moving force in restoring the ship to an upright position, when the inclining power is exhausted, or removed; whereas, to be consistent with the laws of mechanics, the relative forces of all moving powers must be estimated by the perpendicular distances of their mean directions from the point of support which the vertical force of the water supplies.

In the equation before us, two inclining powers, "the wind and the resistance to leeway," are supposed to act; but, as when only one inclining power is employed, it is its relative force; and when more than one is employed, it is the sum of their relative forces, which is equal to the moment of stability; it is evident that, in explanation, and as regards the laws of mechanics, it is quite immaterial whether one or more forces are employed, and that it is immaterial also whether inclination is produced by the force of the wind, by any other power applied to the mast, and at right

angles with it, or by a weight applied, and acting in a vertical direction, as in the experiment represented by figures 1 and 4, in the Nautical Magazine, No. 22.

Now, according to the equation in question, the weight of the model represented by figure 4, multiplied by the distance *g c*, should be equal to the inclining weight *w*, multiplied by the *whole* of the horizontal distance between the vertical efforts of the opposite weights, *a g*. And, again, with respect to the experiment represented by figure 1, the weight of the model, multiplied by the distance *g m*, should be equal to the inclining weight *w*, multiplied by the *whole* of the distance *k g*. It does not, however, require a moment's consideration to be satisfied that such a theory is erroneous, and inconsistent with existing laws. And the experiments clearly prove, that, as regards the one represented by figure 4, the weight of the model, multiplied by the distance *g c*, is equal to the inclining weight *w*, multiplied by the distance *a b only*; and, with respect to that represented by figure 1, the weight of the model, multiplied by the distance *g m*, is equal to the inclining weight *w*, multiplied by the distance *k m only*: and the reason of this is obvious; for, in each the vertical line *n m* (the position of which establishes a perfect equality between the relative force of the weight of the model, acting at its centre of gravity *g*, and that of the inclining weight *w*, acting at *k*) necessarily represents the mean direction of the supporting power of the water, and which always passes through the metacentre. In fact, the error proceeds from improperly considering the centre of gravity of the ship, which is only a *single part*, to be the point of support, the axis of rotation, and the centre of equilibrium, in place of the metacentre, which is the centre of gravity of the *whole system*, or of all the operating forces.

In the experiment represented by figure 1, the utmost power of the levers *g m* and *k m* were brought into action; and, in figure 4, the distance *g m* is the actual length of the lever at which the weight of the model acted, and the distance *g c* a true measure of its power in the position represented; so, also, the distance *a b* is only a measure of the power of the lever to which the inclining weight *w* was applied, and whose actual length, properly and consistently with the laws of mechanics, is the distance from *m* to a point where the continuation of the line *a k* would intersect that of the line *g m*; and, if figure 1 was at a less inclination, the distances *g m* and *k m* would still be the actual lengths of the levers to which the opposite powers are applied.

There are, however, other forces to be considered, which act in opposition to each other, and whose relative forces must be equal, when estimated by the distances of the directions of their respective centres of effort from the axis of rotation, namely, the forces proceeding from the supporting power of the water.

If all the transverse vertical sections of the immersed part of a ship were segments of circles, as in figure 1 in the accompanying drawing; and, as the efforts of the water are perpendicular to the surfaces with which they are in contact, they would act in the directions represented by the lines *b m*, *c m*, *d m*, *h m*, &c. &c.; those directions would all concentrate in the centre *m*, which is the metacentre of such a body, and the vertical line *m n* would represent the mean direction of the force of the water. Now, the absolute forces which are not perpendicular to the surface of the water, produce horizontal and vertical efforts; and the relative forces of those efforts, which are opposed to each other, are equal when estimated by the distances of the directions of their respective centres of effort from the point *m*; and the results would be similar, if the longitudinal vertical sections of a ship were segments of circles, as represented by figure 2.

Let a cask, which turns round its centre, be ballasted so as to give it good stability. That it may possess this property, however, its centre of gravity *g*, figure 1, must be situated below the metacentre *m*. This would prevent it from making entire revolutions round its centre *m*, but produce no change in the place of the axis of rotation, as the situation of that point is governed and determined by the form of the part immersed, and the action of the water on it, and is entirely independent of the place of the centre of gravity *g*; and when inclined as represented, the relative forces of the opposite efforts of the water would not be found equal, if estimated by the distances of the directions of their respective centres of effort from the centre of gravity *g*.

In a ship, however, the directions of all the efforts of the water do not concentrate in one point, but they are so opposed to each other that their relative forces are equal, when estimated by the distances of the directions of their respective centres of effort from the metacentre.

Figure 3 represents a model weighing 56,1 ounces, and the centre of gravity of which is at *g*. It was inclined longitudinally, by a weight of 5,5 ounces, suspended at *d*, when the surface of the water was at *w r*. Now, as the vertical line *m n* divides *a g*, which is the whole of the horizontal distance between the vertical efforts of the opposite weights, so that the weight of the model, multiplied by the distance *g b*, is equal to the inclining weight, multiplied by the distance *a b*; and as the supporting power of the water is evidently between those two weights, it is plain that the line *n m* must represent the mean direction of its vertical force, and that where it intersects the line *g m*, which passes through the centre of gravity *g* of the model, is the place of the metacentre.

As the breadth of the model is the same in every part, the point where the centre of gravity of displacement is situated in the posi-

tion represented, is easily ascertained by finding the centre of gravity of the surface *w r k l*, and which proves it to be at *e*, and in the same vertical *n m* which the experiment determined to be the mean direction of the vertical force of the water.

Now, the distance *g m* is the actual length of the lever at which the weight of the model acted, and the horizontal distance *g b* a true measure of its power. So, also, the distance *a b*, by which the inclining weight is multiplied, only represents the power of the lever, and not its actual length, but which properly is the distance from *m* to a point where the lines *a d* and *g m* would intersect. It is therefore evident that the metacentre is the centre of gravity of the whole system, or of all the operating forces; that it is the centre of effort of all the weight or pressure; and, as the principles of hydrostatics require it to be, is in the same vertical as the mean direction of the supporting power of the water. It is obvious, also, that the weight of the model, acting at its centre of gravity *g*, and the inclining weight, acting at *d*, constantly exerted their powers to make the model turn, in opposite directions, round a certain point, and that, as the model was in a state of rest in the position represented, in consequence of the equality of the relative forces of those powers, and of their relative forces being estimated by the perpendicular distances of the directions of their respective centres of effort from the metacentre *m*, or from a vertical line passing through it, it is plain that that point is the centre of motion, and of equilibrium of the two forces. It is absolutely necessary, also, that the point which is the axis of rotation should be the centre of equilibrium of all operating forces, or of all those which have a tendency to make the body turn; therefore, the opposite forces, proceeding from the supporting power of the water, must be in equilibrium, and have the axis of rotation for a centre; and we will now proceed to shew that it is so.

The weight of the model, 56,1 ounces, plus the inclining weight, 5,5 ounces, is equal to 61,6 ounces, and which is equal to the weight of water it displaced. As only three surfaces were immersed, which produced vertical efforts, or which had a tendency to make it turn in a longitudinal direction; and as those surfaces were planes, the absolute efforts of the water may be reduced to three, namely, those acting on *r k*, *k l*, and *l w*.

The vertical force of the water must be equal to the whole of the weight opposed to it. The vertical effort of each part is in proportion to the quantity of water displaced by it. And, as the breadth of the model is the same throughout, the cubic contents of the three parts, represented respectively by the surfaces *w h l*, *h i k l*, and *i r k*, are easily found. And which are as follows, namely, that of the part *h i k l* is 95,1 cubic inches; that of the part *w h l* 10,4 cubic inches; and that of the part *i r k* ,9386 cubic inches; making together 106,4386 cubic inches of water

displaced, and which is equal to 61,6 ounces. As the vertical efforts of the three parts bear the same proportion to each other as the cubic contents do, we may, therefore, take the latter to represent the former. Consequently, 95,1 will represent the vertical effort of the part *h i k l*, whose mean direction *c p* passes through the centre of gravity *c* of that part, 10,4 will represent the vertical effort of the part *w h l*, the mean direction *c q* of the effort passing through the centre of gravity *c* of that part, and ,9386 will be the vertical effort of the part *i r k*, its mean direction *c p* passing through the centre of gravity *c* of that part. The vertical efforts, however, proceed from the absolute forces of the water, which act on the surfaces *k l*, *w l*, and *r k*; the mean directions of which forces pass respectively through the centres of gravity of the parts *h i k l*, *w h l*, and *i r k*; and in the directions *c s*, *c t*, *c u*, which are perpendicular to the surfaces on which the forces respectively act. And, as those absolute forces produce horizontal efforts, as well as vertical efforts, they are, therefore, diagonals of parallelograms, the sides of which represent the vertical and horizontal efforts which they produce. As, therefore, the amount of the vertical effort on each part is known, the absolute forces which produce those efforts are found, by simply forming the parallelograms, as represented in the drawing. They are easily found by calculation also, and are as follows, viz. 96,22 for the absolute force *c o*, which acts on the surface *k l*; 22,9 for the absolute force *c o*, on the surface *w l*; and 5,542 for the absolute force *c o*, on the surface *r k*.

Now, the force on *k l*, acting in the direction *c s*, and the force on *r k*, acting in the direction *c u*, are constantly exerting their powers to make the model turn round the point *m*, in a direction from *y* to *f*. Whereas, the force on *w l*, acting in the direction *c t*, is constantly exerting its power to make the model turn the contrary way, and in a direction from *y* to *j*. And the relative forces of those opposite powers are equal, when estimated by the distances of the directions of their respective centres of effort from the point *m*. Consequently, the force which acts on the surface *k l*, in the direction *c s*, multiplied by the distance *s m*, plus the force on *r k*, in the direction *c u*, multiplied by the distance *u m*, is equal to the force on *w l*, acting in the direction *c t*, multiplied by the distance *t m*. And, according to the same laws, the vertical effort *c q* of the part *w h l*, multiplied by the distance *c x*, plus the horizontal effort *c q* of the part *h i k l*, multiplied by the distance *z m*, plus the horizontal effort *c q* of the part *i r k*, multiplied by the distance *v m*, is equal to the horizontal effort *c p* of the part *w h l*, multiplied by the distance *x m*, plus the vertical effort *c p* of the part *h i k l*, multiplied by the distance *c z*, plus the vertical effort *c p* of the part *i r k*, multiplied by the distance *c v*.

It is, thus, clearly demonstrated, that the point *m*, which the experiment determined to be the place of the metacentre, is the centre of equilibrium of the forces of the water; and that, consistent with existing laws, the vertical line *m n*, which is the mean direction or resultant of those forces, passes through that point. It has also been proved, that the point *m* is the centre of equilibrium of the weight of the model, and the inclining weight; and that the centre of effort, or mean direction of the weight or pressure, is, consistently with the principles of hydrostatics, in the same vertical as, and directly opposed to, the mean direction of the supporting power of the water. Hence, *m* is the centre of equilibrium of all the operating forces, and, through which, the resultants of those forces pass.

Mr. Henwood says, "It is not clearly explained by Captain Pearse how the longitudinal metacentre is to be found." It must be evident to every one who has read the papers, that the principal object has been, to determine whether the axis of rotation passes through the centre of gravity of the ship, or through the metacentre. The imperfections in the theory of naval architecture do not proceed from any difficulty in finding the place of the metacentre, or from trifling errors which may exist in the methods which are known. And it is immaterial, whether the longitudinal metacentre, or point of stability, of Bouguer, is or is not the same as that determined by the experiments. But we may very safely conclude, from Bouguer's introducing into his works the ingenious, but simple, mechanical method of the celebrated P. Hoste, (agreeably to which all the experiments have been made,) that they are one and the same. For Bouguer does not question the truth of that method, on the contrary, introduces it to shew how the stability of a ship may be found by experiment. And the palpable discrepancy which Mr. Henwood imagines to exist between Bouguer's and my meaning of the term metacentre, is easily removed by that eminent author's own words. In giving an explanation of the method of P. Hoste, in his Traité de Méchanique et de Dynamique,* p. 211, he says, "The vertical force *(poussée)* of the water will serve as a *fulcrum*, (*hypomoclion*) it will sustain the weight of the ship, and the inclining weight; and the moments of those two weights require to be equal, that is to say, (we will here substitute figure 4, in the Naut. Mag., No. 22, for the explanatory one in the work from which we quote,) that the inclining weight *w*, multiplied by the distance *a b*, be equal to the weight of the ship, multiplied by the distance *g c* of its centre of gravity *g*, from the vertical *m n* on which the force of the water exerts itself." And again, at p. 212, he tells us, "The weight *w*, multiplied by the distance *a b*, is the moment of the ship, or its actual stability. For this will be the product of

* An illustration of this method is given in an abridged translation of Duhamel's and Bouguer's Works, by Mungo Murray.

its weight by the distance of its centre of gravity *g* from the vertical *m n*; the greatness of which product depends on the actual inclination."

It does not require a single observation to prove, how strictly Bouguer's illustration accords with the explanations of all my experiments. For the vertical which he speaks of is that which passes through the metacentre, and from which he calculates the relative forces of the opposite powers. And it is evident, that the true meaning of an author is easier and more satisfactorily obtained from his explanation of a simple mechanical experiment, than from reasonings on an imperfect and complex theory. The method is so simple, that if one of the points, "the metacentre, or the centre of gravity," and the weight of the ship is known, the other point, and the stability of the ship, may be found. And as it would be inconsistent with existing laws, to suppose that the motions of a ship can be governed by those laws in one direction, and not in another, it is evident that the same points may be determined by similar means, longitudinally as well as transversely.

I have never supposed that Bouguer and Chapman were of opinion that the metacentre is the axis of rotation; but their arguments tend to prove that there is a point, considerably elevated, which may be considered as stationary, and which is at variance with their opinions, that the centre of gravity of the ship is the axis of rotations. Mr. Henwood admits that, "in any revolving body whatever, the axis of rotation is the most nearly quiescent point, or line, in the body." And what are the arguments of Bouguer and Chapman? Simply this, namely, that when a ship sails with the wind aft, if the mean direction of the force of the wind intersects a certain point, its power does not produce inclination longitudinally; but if the mean direction of the force of the wind intersects above that point, then the ship will incline towards the head; and if, on the contrary, the mean direction of the force of the wind intersects below that point, the after-part will be further immersed. Consequently, the point alluded to must be stationary. And what do the laws of mechanics teach us? Plainly this, viz. that the only point, in a body which revolves, that the mean direction of a power can intersect without producing motion, is the axis of rotation; and that if the mean direction of an effort intersects a point on either side of the axis of rotation, then motion is produced. Therefore, as there can be but one stationary point, and as the experiments prove that point to be the metacentre, existing laws, as well as the admission of Mr. Henwood, fully justify me for having quoted the arguments of those eminent authors in support of my position.

But, with respect to the admission, that the most nearly quiescent point is the axis of rotation, we will again refer to figure 1, in No. 22 of the Nautical Magazine. In which *a b n* represents a

model floating in an upright position, when its centre of gravity was at *c*, and the surface of the water at the line *l o*. And *d h i* represents it at an inclination of 90 degrees, produced by a weight applied to the mast at *k*, when *p r* became the water-line. Now, the centre of gravity was at *c*, before the inclination, and in the same *vertical* as the point *m*; but when the model was inclined, its centre of gravity was at *g*, and in the same *horizontal plane* as the point *m*. And it is evident, that this is the most simple and satisfactory way to determine which is the most stationary point, and which proves to be the metacentre: for the inclination caused the point *m* to descend only the small distance between the two water-lines *l o* and *p r*; and this small descent of *m* proceeded from the increase of displacement which was produced by the addition of the inclining weight. Whereas the centre of gravity ascended the *whole* distance *c m*, minus only the small distance between the water-lines *l o* and *p r*.

The vertical force of the water cannot resist inclination, in the way which some appear to imagine; it only affords a support for the body to turn on: and as the vertical force of the water is always equal to the whole of the weight or pressure opposed to it; and as the mean direction of this force is always in the vertical line which passes through the metacentre; it is impossible that any point in that vertical can descend when a ship inclines, unless it be caused by additional weight, or vertical pressure, as in the experiment: and, consequently, the centre of gravity rises: and the weight of the ship acting at this point, and, according to the laws of gravitation, by constantly exerting its power to descend, produces that resistance to inclination which is called stability. And when a ship is inclined, the vertical force of the water cannot lift or raise it, to restore it to an upright position; its power only extends to supporting the body, and is only equal to the weight or pressure opposed to it: neither does a ship require to be raised at any part by the force of the water, to restore it to an upright position: on the contrary, the CENTRE OF GRAVITY OF THE SHIP, as is clearly seen by figure 1, REQUIRES TO DESCEND. And it is evident, when the inclining power is exhausted, or removed, that the weight of the ship, which is constantly exerting its power at the centre of gravity, causes this point to descend; turning, at the same time, and as the ship resumes an upright position, round the METACENTRE, which the vertical force of the water renders stationary.

Mr. Henwood puts a construction on some parts of my arguments, that is at variance with what the experiments prove. For my stating the moment of stability of a ship to be its weight multiplied by the horizontal distance of its centre of gravity from the vertical of the metacentre, is strangely construed into a tacit admission, that the axis of longitudinal rotation passes through the

centre of gravity of the ship. And this, together with my considering the longitudinal metacentre to be the axis about which the ship revolves in that direction, is construed into a supposition that a ship has two distinct and widely-separated axes of rotation, at the same time, parallel to each other. It is, however, difficult to imagine how such constructions could be formed, from the explanations of such simple experiments.

(To be continued.)

IV.—On the Protection of Ships from Lightning. *By William Snow Harris, F.R.S., &c. &c.*

(*Continued from* p. 407, *No.* 29.)

No. IV.

Method of application of fixed and continuous conductors of Electricity, to the defence of Ships from Lightning.

49. The application of a lightning rod to a building or ship must be always considered as a means of rendering more efficient the conducting power of the general mass, so as to admit of such intense discharges of atmospheric electricity to become readily transmitted and diffused, (25) as could not otherwise pass without intermediate explosion and damage, for it must never be forgotten, as already observed, (15) that the materials of which buildings and ships are constructed, are equally with metals open to the action of lightning, and are alone capable of transmitting considerable quantities of natural electricity. (37) (v). It may hence be fairly inferred, that, by completing a perfectly continuous and efficient line of conduction from their most elevated points to the base on, which they happen to be placed, the damage which so frequently occurs might become either greatly palliated or altogether avoided.

50. Although the efficient application of lightning rods to buildings on shore is always judicious, and the resulting advantages fully apparent, yet on ship-board, where the effects of lightning are the most to be dreaded, the introduction of this method of defence has been *slow* and *imperfect*. On shore, stationary elevations may be defended by means of rigid metallic rods, which may be either perpendicular, or carried over projecting portions of the edifice, without impairing their efficiency. On ship-board, however, the case is widely different. The masts, though erect, consist of many distinct portions; these it is often necessary to *move* one on the other, and sometimes to *remove* altogether: they are also liable to damage from wind, and a variety of accidents. The quantity of cordage, too, and canvass, so constantly about the

masts, renders the application of lightning-conductors in ships somewhat difficult.

51. With a view of meeting those complicated conditions, (50) the lightning-conductors intended to be employed on ship-board are usually constructed of long metallic links, or chains, formed of wire, about the size of a goose-quill, so as to constitute a flexible line of metal; they are sometimes made of iron: but those directed to be employed in his Majesty's navy are of copper; they are attached to a short hemp cord, are packed in a box, and are supposed ready for use when occasion requires: they are then hoisted by the signal-halliards, or some other convenient line, to the masthead.

52. Such conducting chains, however, beside being uncertain in their application, are, in a variety of instances, extremely ill-adapted to the circumstances under which they are placed; e. g. they are open to every sort of mechanical violence incidental to the position of a ship's rigging; they are very liable to be deranged in their situation, more especially in gales of wind at night, when the ship is undersail; and when, perhaps, it is requisite to remove the higher portions of the masts altogether, or shorten others. The great want of continuity, also, in every kind of chain, is to a certain extent unfavourable to the rapid transmission of electrical discharges, whilst the electric matter, in becoming sensible at the points of junction, frequently disunites the chain at each link by its expansive force. (22) (u) (45) (i). The protection, likewise, which this may possibly afford, is not unfrequently altogether disregarded; for, as is justly observed by the late Mr. Singer, in his work on electricity, partly from inattention and partly from prejudice, they frequently remain in their cases in the ship's hold, during long and hazardous voyages, quite unheeded: unless, indeed, some unexpected damage occurs, calculated to bring them into notice. The truth of this is very apparent in the case of the New York packet ship, already cited. (22) (t) (u). In this case the conducting chain, at the time of the first explosion, was carefully stowed away in its box below, although set up in time to parry the second explosion (u).*

53. The above considerations, together with the damage which so frequently occurs to ships in thunder-storms, are sufficient inducements for attempting the application of such permanent conductors on ship-board, as may at all times be capable of affording the required security, which, being always in place, and always ready to meet the most unexpected danger, would not be dependent on the exertions of individuals for their proper employment.

54. In order to effect this, it becomes necessary, as already

* For a minute account of the circumstances of this case, see the Liverpool Chronicle. May 1827.

observed, (26) 1st, to perfect the conducting power of the masts, 2d, that of the hull, and unite into one great conducting mass the ship and the sea. The conditions to be fulfilled in completing the conducting power of the masts are these.—The conductor *should* be *continuous and direct* from *the vane spindle at the masthead*, should *be permanently fixed throughout all its extent; must admit of the motion of one portion* of the mast on *another, and not interfere in any way with the standing* or *running rigging:* and, in case of the removal of any part of the mast either, by accident or design, *the continuity of the remaining part must still remain perfect, determine the course of the lightning, and transmit it securely to the sea.* It may not, therefore, be altogether useless to describe such a conductor as may fulfil these conditions, and thereby protect the ship.

55. The conductor, which we are are about to describe, is completely identified with the mast itself, that is to say, with its various parts, so as to form a portion of them. Adequate metallic connections are provided in the caps through which they slide, and similar connections through the keel and other parts, with the copper expanded on the bottom. We have, then, under all circumstances, a continuous metallic line, A B C D, fig. 1, which will transmit the electric matter directly to the sea: for it constitutes at all times, and under every position of the masts, the line of least resistance to the electrical diffusion. (23)

56. An experimental illustration of this reasoning is here annexed: the gold leaf on the accompanying paper was originally perfect throughout; a powerful discharge of electricity has been passed over the gold, from the top to the bottom, in order to shew by its oxidation the course of the electric matter. We suppose the lines to represent here the masts partially struck, and to occupy the positions seen in the figure. It may be observed, that the gold is oxidated only in the line of least resistance; the portions supposed below the caps remain perfect—a striking confirmation of the reasoning before advanced (21) (23). Whatever position, therefore, we suppose the sliding masts to assume, whether partially struck or otherwise, there is still a perfect line of conduction remaining; since that portion of the mast and conductor, below the cap, is no longer in the line of action, it has consequently no longer any influence on the passage of the electric matter up to the point of fusion of the conductor.

57. The conductor itself is of a superficial kind, and consists of two laminæ of sheet copper, *a a*, *b b*, fig. 2, laid one on the other in lengths of about 4 feet, the laminæ are so placed, as to admit of the closed joints of the one falling on the continuous portions of the other, as represented in the figure. The width of the plates varies from an inch and half to six inches, according to the size of the mast to which they are intended to be applied, and they are

together 3-16ths of an inch in thickness, the upper layer being one-eighth of an inch, and the lower one-sixteenth. The laminæ are riveted together at the points of junction, $n\,n'\,n''\,n'''\,n''''$, of the upper plates, so as to form an elastic and connected line.

58. In constructing this conductor, and applying it to a given mast, the plates are first hollowed to a convenient curve, by hammering them longitudinally upon curved indentations in a large block of wood, small holes being punched at the edges of the upper plates, four inches or more apart. When thus prepared, they are laid in place upon a long straight bench, and riveted at the points $n\,n'\,n''\,n'''$, &c. fig. 2, as already stated. The whole is now laid with the curved part inside in a neat dovetail groove, ploughed in the aft side of the mast, about ¼ of an inch in depth, and is beat down in place with mallets, so as to present a fair surface, somewhat within that of the mast. When secured in its position, holes are punched in places, through the thin plate of copper beneath, and the whole finally secured by short copper nails.* A line of metal applied in this way to a mast is of great advantage to it, as will be eventually shewn.

59. The conductor is turned over the respective mastheads above, and is secured on the opposite side, and is made to extend on the sliding masts, from the masthead, to a little below the point of junction with the cap, when the mast is quite elongated, as in *a n*, *b m*, fig. 1. The caps are prepared in a somewhat similar way; by carrying a double band of copper over the cap between the square and round hole, as at *a b*, fig. 3. This band is connected with a copper lining in the aft side of the round hole, and, after being completely carried through the square hole, is secured on the under side. When the cap, therefore, is in place, a direct connection is established with the conductor on the next mast, as at *b* and *c*, fig. 1. The step of the lower mast is armed with a double copper band, in a similar way, which passes from beneath quite over and in the step itself, so as to connect; when in place, the conductor turned round the heel of the mast with the wide copper band on the keelson, as at *d*, fig. 1 and 5.

60. In fitting the lower masts of large ships, which are embraced by iron hoops, it is merely requisite to continue the under laminæ between each hoop, which should be the thicker of the two, and pass the upper one over all. The laminæ, as in the other cases, are turned completely round the heel of the mast, and over the masthead.†

61. The conducting communications are made perfect in the hull, as follows: 1st, doubled copper bands, 6 inches in width, are secured upon the keelson, so as to embrace 5 or 6 keelson bolts

* The groove, previously to applying the metal, is freely painted over with white-lead.

† When the mizen-step is not on the keelson, metallic connections are continued to the keelson-bolts and other points in any convenient direction.

on each side of the mast-step: these bands pass directly under the step, as at *d d*, fig. 5; in addition to which, it may be connected with one or two additional bolts, driven through the keelson upon transverse bolts passing horizontally through the main-keel. If, however, the keelson-bolts have a direct communication with the copper inserted between the main and false keels, the latter are not requisite. 2d, Similar bands are led transversely under the beams, where the masts pass into the hull, and are connected one on each side with the iron knees and other metallic fastenings in the side, as in *n m*, fig. 4. Other bands are led out from the fore-mast to the stem, and from the mizenmast to the stern of the ship, and connected with the metallic bolts and other connections in these parts, as *o p*, *o p*, fig. 5. The conductor on the masts is connected directly with these bands by a flat sliding bolt, or otherwise by a sliding plate of metal, *s*, fig. 6; according to a plan proposed by Mr. Rice, of his Majesty's dock-yard at Chatham; which admits of any required alteration in the rake of the mast, and has, beside, other advantages: by means of these metallic bands, therefore, the masts and hull may be considered as tied into one grand conducting mass—a condition of the utmost consequence, as the operation of the conductors is really little more than a rapid diffusion and equalization of the electrical action going on between the surface of the sea and the clouds (19), and by which the dense and concentrated explosion is either avoided altogether, or otherwise greatly moderated.

62. We have hitherto omitted all consideration of the bowsprit, which, in large ships, has a considerable elevation; it seems therefore desirable to complete also its conducting power. The laminæ of metal are to be led along the under part of the jib-boom and bowsprit, in the way already described (58), and finally connected at the stem-head, with the copper placed over the timber ends; by a conducting line, the electric fluid will be readily transmitted to the sea. The liability of the bowsprit of large ships to be struck by lightning, is exemplified in the following extract of a letter from Admiral Colpoys, who commanded H.M.S. Sultan, to Capt. Fanshawe, of the royal navy.—

(o) "We were struck by lightning in the Sultan, whilst lying in Mahon harbour: our sails were loose, and the weather, becoming squally, it became requisite to furl them; the lightning *struck the flying jib-boom*, shattered it and the jib-boom to pieces, passed over the forecastle, and fell at some distance on the quarter of the ship *into the water: all the men* who were out stowing the sails, (nine in number,) were either killed or severely injured."

63. The unequal size of the sliding masts may sometimes place the metallic conductors about the caps at a short distance from each other: this, however, is of no great moment, the distance at any time being necessarily very small, compared with the great

extent and continuity of the general mass in all other respects. It may, however, be easily avoided by means of a metallic drop of the form *a c*, fig. 7, which is fixed on the cap by means of a metallic plate connected directly with the conducting bands. This drop is so contrived as to bear freely, by means of a stout hinge, against the conductor on the aft side of the succeeding mast, at an angle of about 50°, but which readily varies with any change in its position. This drop is about 6 inches wide, ¼ thick, and of a convenient length; it is rounded at that portion which bears against the conductor, as shewn in the figure.

64. The known effects of pointed bodies in moderating the violence of electrical explosions, renders it desirable to provide at all times a good pointed termination to the conductor; for which purpose, the vane spindle, fig. 8, is applied to the royal-mast by means of a screw cut in the spindle at *s*, and a nut inserted in the head of the mast in which the conductor terminates; a similar nut is inserted into the other mastheads, so that, in case of the removal of either of the upper masts, the spindle may be removed to the lower ones.

65. When the masts are in place, the system of defence above mentioned will be complete: the conductor, as thus constructed, will pass from the vane-spindle, fig. 1, along the aft sides of the royalmast and top-gallantmast, being connected in its course with the copper about the sheave-holes. The copper lining in the aft side of the hole, in the cap through which the top-gallantmast passes, continues the metallic connection over the cap to the aft side of the topmast, and so on to the bands under the beams, fig. 4, and to the keelson, fig. 5, which have general connection with the different masses of metal in the ship and with the sea.

66. The conducting power of metallic bodies appears to vary considerably, and the differences become more sensible in proportion to the quantity of electricity transmitted: when the quantity is extremely great, copper has a decided superiority over every other metal except silver; it is therefore, on this account alone, well adapted for the purpose of a lightning-conductor; compared with iron, a metal frequently employed in the construction of lightning-conductors, it was found in some particular cases to resist the heating effect of a given charge, in the ratio of 5·1.* Dr. Priestley has observed, that the force required to fuse a copper wire of a given diameter would most probably dissipate an iron wire of twice that diameter.† Mr. Singer also observes, that when a conductor is wholly of copper, it may be thinner than if made of iron.‡ The following table shews the dimensions of the conductor just described, on one mast of a frigate of 50 guns, as compared with the small copper links usually recommended; together with

* Transactions of the Royal Society, for 1827, p. 22. † Priestley's History of Electricity.
‡ Singer's Electricity.

the dimensions of a copper or iron rod, equivalent to the same conducting power, taking the conducting power of iron to copper as 4 : 1; to which is added, the quantity of metal contained in a copper rod of half an inch in diameter, of the same length as the new conductors, and which is considered by many as adequate to conduct without fusion any discharge of lightning hitherto experienced.

TABLE I.

NEW CONDUCTORS.		Present Conductors, ¼ diameter.	Equivalent in Iron Rod.		*Equivalent Copper Rod.	Copper Rod of ½ inch diameter.
Estimated in	Cub. Ins.	Cubic Inches	Cub. Ins.	Diametr.	Diameter.	Cub. Inches.
On Royal Pole. 18 feet 3 inches long, Mean width, 2 ins.	82	10·5	328	1·38	,69	42
On Topgall. Mast. 17 feet long . . . . , Width, 2·5 inches .	95	10	380	1·54	,77	40
On Top Mast. 50 feet long . . . . , Width, 4 inches . .	450	19·2	1800	1·95	,97	117
On Lower Mast. 93 feet long . . . . , Width, 6 inches . .	1255	54·7	5020	2·20	1·20	219
Total	1882	94·4	7528 =	2·116	= 1·058	418

References to the Plate.

Fig. 1—Represents the conducting-line *a b c d* extending from the vane spindle to the keelson.

Fig. 2—Represents the conductor previously to being inserted in the masts, and riveted at the points *n n′ n″*, &c.; *a a′* the upper lamina, *b b′* the under.

Fig. 3—The cap: *a* the connection between the round and square hole.

Fig. 4—A transverse section, shewing the lateral communications; *n m*, *n m*, with the ship's side, and metallic knees.

Fig. 5—A longitudinal section, shewing the connection with the keelson bolts *d d d*, as also with the step of the mizen-mast *d′*, and the longitudinal connections *o p*, *o p*, with the stern and stem. In this section, also, is seen the conductor on the bowsprit, and the communication along the stem to the water-line.

* The diameter of the total equivalent in iron and copper rod, are deduced from the total quantity of metal in the new conductors, which is therefore equivalent to rods of iron or copper of 2·116 or 1·058 inches in diameter respectively supposed to extend the whole length of the mast.

Fig. 6—The method of communication from the conductors on the masts, to the auxiliary branches under the beams: *m* the mast, *w* mast-wedge, *p* mast-partner, *x* beam, *s* sliding-plate, resting on copper-plates, secured in the batten *b*, and connected with the branch conductors in the beam *x*.

Fig. 7—Shews the position of the metallic drop on the mast-heads; *a c* the drop; *t*, the top-mast; *n*, a portion of the cap between the holes; *p*, a metallic plate.

Fig. 8—The vane spindle: *s*, the screw by which it is secured in the head of the masts.

67. The advantages of a conductor constructed according to the foregoing method are these: it is always in place, and ready to meet the most unexpected danger; the standing and running rigging is never interfered with by it; whilst the perfect continuity of a conductor, under all the varying positions of a ship's mast, is effectually preserved. It is permanently fixed throughout its whole extent, is continuous from the sea to the mast-head, and is connected with an adequate combination of conductors in the hull, of sufficient capacity to dissipate the most powerful discharge of lightning yet experienced; it is capable of resisting great external force, whilst, by presenting a fair surface, sunk rather beneath the surface of the mast; the parrels of the yards traverse it with ease, and, being secured in short lengths, so as to form a series of close joints, it readily accommodates itself to any curve the mast can stand under. It gives additional strength to the mast, as will be hereafter shewn, and has the capital advantage of being applied immediately to the object to be defended.

68. The objections which have been advanced to the system of defence here proposed, will be considered in the concluding paper.

V.—On Illuminating Buoys for Inshore Navigation.

To the Editor of the Nautical Magazine.

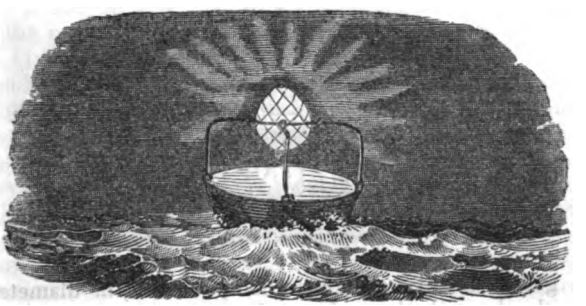
Sir—On reading the interesting communication respecting the proposed light-house on the Beeves rocks, &c., when I arrived at the passage which recommends a buoy to be placed over the Herring Rock, the idea immediately struck me, (probably from having the singular natural phenomenon just before spoken of, a light, as it were, in the mind,) that it may be possible to discover some ingredient, or material, that would have the power of making the buoy appear luminous, so that it would become a *sure* guide as well by *night* as by day, to the pilot, of the *exact* position of the danger upon which it is placed.

Such an idea, if hazarded a few years ago, would, perhaps, have been laughed at and ridiculed, as absurd; but we now live in a

wonder-working age. We have reason, from what *steam*, so long known to cook-maids alone, has effected, to think it practicable; and indeed more so still, if all that is stated of Lieut. Drummond's light be correct.*

Perhaps, Mr. Editor, this hint may not be lost upon some of your readers who may be versed in chemical experiment. The individual who succeeds in rendering buoys luminous would confer a most important service on navigation, and consequently on his country; the desire of which, when divested of the dross of self-interest, is one of the purest and most honourable traits of ambition that can actuate the motives of men.

I shall not speculate further, than merely to observe, that, during moonlight nights, a cut-glass globe, crowning a buoy, by reflecting and refracting the rays of light, would probably become a conspicuous object on the dark surface of the water: in the absence of the lunar rays, the emission of light from the globe would of course cease, unless something could be devised for continuing a similar effect from within the glass.



Would that singular substance obtained from bones and charcoal, and known by the name of *phosphorus*, if introduced within such a globular body, answer? and how often would it require to be renewed? Has the luminous matter in the glow-worm, the lanthorn-fly, and the fire-fly, been ever analyzed?

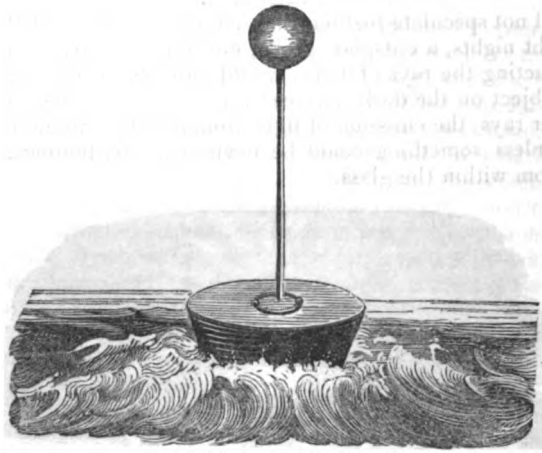
The rest, Mr. Editor, I must leave to your ingenious readers.

A TAR.

The remarks of our worthy correspondent, "A Tar," deserve consideration. Some method of rendering buoys more conspicuous, when at a distance, than they usually are at any time, if successful, would be a valuable boon conferred on inshore navigation, and we

* The brilliancy of the light emitted by this lamp is so great, that it may be seen effectually, by the naked eye, at the extraordinary distance of one hundred and twenty miles. And by its aid, print of an ordinary size may be read at a distance of nine miles. The advantage of such a lamp in a light-house, which is, we believe, the principal object the inventor has in view, it were unnecessary to point out.—*Observer, 23d March.*

hope some master-mind will yet succeed in devising the means of effecting it. We have had the above wood-cut made of our correspondent's sketch, and have added to it the following, of a plan which we think would be worthy of trial at the entrance of some seaport of this our maritime nation. The difficulty of distinguishing buoys, sometimes even by day, is well known, and, following the steps of "A Tar," we would suggest a common spherical glass globe, of moderate thickness, to be silvered *inside* in the manner of looking-glasses, and placed on the upper end of a staff fixed to the buoy.



The globe should be about a foot, or more, in diameter, and sufficiently elevated above the surface of the water to be clear of the spray. Thus, a reflected ray of light would be seen in all directions. By day the globe would appear like a little sun, and by night there would be some light reflected from the moon. We throw out these hints, with the view of contributing to the improvement of navigation, and shall consider ourselves fortunate, if some spirited individuals would make the experiment with a leading buoy at the entrance of one of our harbours.

IV.—Proposals for a Board of Control over Merchant Shipping.

Sir,—In your report of the proceedings at the anniversary dinner of the Royal Humane Society, at the City of London Tavern, on the 16th of last April, you have given an abridged statement of the remarks made by Captain Hyland, in which he declaims

against the present system of having merchant-ships navigated by incompetent persons, and without the requisite nautical instruments, as a system most baneful in its effects, and highly calculated to cause an immense loss of human life.

Whatever approbation may be bestowed on Mr. H. for his humane and very just remarks, by that Society, or the national institution for preventing the loss of life by shipwreck, as also by the crews and passengers of ships; I fear he will get very little praise from ship-owners, ship-builders, underwriters, collectors of duties, and many others, too numerous to mention; for his observations are prejudicial, and diametrically opposed to their interests. It may or may not be the interest of ship-owners to fit out their ships, and send them to sea at as little expense as possible, particularly as far as regards the supplying them with a sufficient quantity of the necessary nautical instruments, and with properly qualified men to navigate them. These two points are never inquired into by the surveyors of Lloyd's. It is not their province; and as the ship is well insured, (perhaps to double her value,) if she be lost, the owner is a gainer, and cares little about the passengers and crew which may be lost with her.

Mr. Hyland's observations are clearly against the interest of ship-builders; for if ships were not lost, there would not be a tenth of the employment for them there is at present. And as to the underwriters, they will be very little obliged to him, for it is evident, that if the property lost yearly amounted to more than the premium they receive, they could not stand it; therefore it must be clear that they are gainers, for the more ships that are lost, and the greater the risk, the greater premium they will demand. *Their system of insurance is nothing more nor less than* A COMPLETE GAMBLING CONCERN, a system which countenances destruction by wholesale, to at least 1500 lives yearly, but which happens to be protected by the laws.

What laws, may I ask, are there for protecting the lives of the crews and passengers of ships? None whatever. Perhaps it may be thought right to keep this as a kind of safety-valve, to get rid of an over-abundant population; besides which, the loss of ships causes an increased demand for stamps, as no document whatsoever, connected with shipping, can be had without one. But, in addition to this, it also increases the demand of every article and material necessary for the outfit of other ships, to supply the place of those which have been lost. It likewise increases the duties upon the next cargoes which may arive, as the prime cost will rise in proportion to the quantity remaining in market; so that it may be very fairly asserted that none of the parties above stated lose a single fraction by the unnecessary loss of shipping,—and the loss of life is a subject which never troubles them.

Now, Mr. Editor, the only sufferers are the *public*, and the

crews and passengers of the ships lost. The public suffer; as the value of the ship and goods lost, of course goes to increase the price of the remaining goods for sale, for the deficiency must be made up, and that, too, out of their pockets. I certainly agree with Captain H. and think, that, at least for the preservation of the lives of the passengers and crews of ships, there should be a board of control established, where every master and mate should pass an examination before the ship be cleared out at the custom-house, and the master should also hand in a certificate from a surveyor of that board, of his having inspected the vessel before she was loaded, and again when she was ready for sea, declaring that she be strong and well fastened, and supplied with every instrument, provision, tackle, and apparel, which might be considered by that board as absolutely requisite for the voyage on which she might be bound.

Surely an act ought to be obtained to this effect, as well as the tonnage act which has been passed relative to emigrant ships. Where is the use of securing the comforts of emigrants, if their lives are to be sacrificed to a few paltry pounds sterling?

I remain, Sir, yours, &c. &c.

AN OLD SAILOR.

The terms of the following petition so completely coincide with the spirit of our correspondent, "An Old Sailor's" letter, that we consider it entitled to a place in our pages, as shewing the feeling on this subject generally of the population of one of our largest trading ports, viz. Sunderland:—

"That your petitioners feel themselves grievously oppressed, by having to go to sea in many vessels quite unseaworthy in hull and stores, or with deficient crews, and often much overladen and ill commanded; so much so, that the lives of your petitioners are often unnecessarily precariously placed, and many of our near relations or companions have become victims to a premature death in consequence thereof.

"That your petitioners feel aggrieved, that, when any crew or part thereof are lost at sea, no legal inquiry is made into the cause of such seamen being lost, save and except when any are cast on shore dead; then the coroner sits on them, and the verdict "found drowned" is invariably given, without ascertaining, or even inquiring into, the cause of their being dead, or the state of the vessel they were drowned from; but we are fully aware, that, were a strict inquiry made into many cases of the loss of life at sea, that many unprincipled, as well as unseamanlike practices, would be brought before the bar of public opinion, which would scout the perpetrators thereof, as beings unfit to associate in human society.

"That your petitioners are aware that it may be stated, that

they are not compelled to engage in such vessels, (which is true,) but stern necessity often compels seamen to engage, trusting that the weather and sea may prove favourable: at other times, we are engaged on a tide's sail, or on shore, and from thence taken to sea in a boat to join the vessel already there, which immediately sails; and this often at midnight, and, ere morning light appears, we are often buffeting the sea in a tempest, and, to our misfortune, in an old crazy vessel, scarcely able to float in a river, and from which we cannot retract, although every thing in the vessel, stores, crew, and officers, are quite the reverse from that which we were led to believe by the owner, commander, or his agent, who engages us, the seamen, on shore.

"That your petitioners humbly submit to your honourable house, that the present mode of unwarrantable insurance of the vessels, and the management of them being in the hands of many no way acquainted with the necessary equipment, or the seaman's skill required to contend with the sea in bad weather, is the sole cause of our manifold misfortunes; and it is also the cause of the present degradation to which the mercantile marine of this kingdom has of late years fallen.

"Your petitioners therefore humbly pray that your honourable house may be pleased to cause a legal inquiry to be made after us when lost at sea, and also be pleased to appoint an experienced Nautical Committee, to examine the vessels, their stores, the number of the crew, their berths, and into the abilities of the commanders and officers: and from such committee's report may your honourable house be pleased to enact a law which will prevent the inexperienced, thoughtless, or others, sending vessels to sea in an unfit state, whereby your petitioners are likely to meet a premature death, or other sad misfortune."

THE ENGAGEMENT BETWEEN THE FLEETS OF DONNA MARIA AND DON MIGUEL.—A good picture in aquatinta, by W. J. Huggins, (about to be published) of the glorious Victory of Admiral Napier over Don Miguel's fleet on the 5th of July, 1833. Mr. Huggins has grouped the conflicting ships with his usual good taste, and has chosen equally well the best opportunity for representing them, namely, at the moment of boarding. The disparity between the respective forces has not suffered in Mr. Huggins' hands, it being evident in the picture, as it was in fact, that something was required to enable the Rainha de Portugal to cope with her huge opponent; and that was, the intrepid courage of British seamen. It is a spirited picture, and will become a favourite.

Table VI.

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

1 Copenhagen foot = 1·0269906 English foot.
1 English foot = 0·9737096 Danish foot.

Danish or English Ft.	English Feet and Dec. parts.	Danish Feet and Dec. parts.	Danish or English Ft.	English Feet and Dec. parts.	Danish Feet and Dec. parts.	Danish or English Ft.	English Feet and Dec. parts.	Danish Feet and Dec. parts.
1	1·027	0·974	38	39·026	37·001	74	75·997	72·055
2	2·054	1·947	39	40·053	37·975	75	77·024	73·028
3	3·081	2·921	40	41·080	38·948	76	78·051	74·002
4	4·108	3·895	41	42·107	39·922	77	79·078	74·976
5	5·135	4·869	42	43·134	40·896	78	80·105	75·949
6	6·162	5·842	43	44·161	41·870	79	81·132	76·923
7	7·189	6·816	44	45·188	42·843	80	82·159	77·897
8	8·216	7·790	45	46·215	43·817	81	83·186	78·870
9	9·243	8·763	46	47·242	44·791	82	84·213	79·844
10	10·270	9·737	47	48·269	45·764	83	85·240	80·818
11	11·297	10·711	48	49·296	46·738	84	86·267	81·792
12	12·324	11·685	49	50·323	47·712	85	87·294	82·765
13	13·351	12·658	50	51·350	48·685	86	88·321	83·739
14	14·378	13·632	51	52·377	49·659	87	89·348	84·713
15	15·405	14·606	52	53·404	50·633	88	90·375	85·686
16	16·432	15·579	53	54·431	51·607	89	91·402	86·660
17	17·459	16·553	54	55·457	52·580	90	92·429	87·634
18	18·486	17·527	55	56·484	53·554	91	93·456	88·508
19	19·513	18·500	56	57·511	54·528	92	94·483	89·581
20	20·540	19·474	57	58·538	55·501	93	95·510	90·555
21	21·567	20·448	58	59·565	56·475	94	96·537	91·529
22	22·594	21·422	59	60·592	57·449	95	97·564	92·502
23	23·621	22·395	60	61·619	58·422	96	98·591	93·476
24	24·648	23·369	61	62·646	59·396	97	99·618	94·450
25	25·675	24·343	62	63·673	60·370	98	100·645	95·424
26	26·702	25·316	63	64·700	61·344	99	101·672	96·397
27	27·729	26·289	64	65·727	62·317	100	102·699	97·371
28	28·756	27·264	65	66·754	63·291	200	205·398	194·742
29	29·783	28·238	66	67·781	64·265	300	308·097	292·113
30	30·810	29·211	67	68·808	65·239	400	410·796	389·484
31	31·837	30·185	68	69·835	66·212	500	513·495	486·855
32	32·864	31·159	69	70·862	67·186	600	616·194	584·226
33	33·891	32·132	70	71·889	68·160	700	718·893	681·597
34	34·918	33·106	71	72·916	69·133	800	821·592	778·968
35	35·945	34·080	72	73·943	70·107	900	924·292	876·339
36	36·972	35·054	73	74·970	71·081	1000	1026·991	973·710
37	37·999	36·027						

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

The Poetical Works of the Rev. George Crabbe, with his Journals and Letters, by his Son. Vols. iv. v. vi. John Murray, Albemarle Street.

The nature of our avocations forbids us to indulge in critique on poetic literature, and tells us, while we peruse it, that we may admire as much as we please, but may extract nothing. Yet must we find room to record the great and peculiar gratification which we have derived from the three volumes before us of this valuable work. That Crabbe is the poet of nature; that he explored, with the eye of a philosopher and a christian, the deepest recesses of the human heart, and delineated scenes before unattempted, with the powerful pencil of truth; is felt the more, in proportion as his poems are read. The concentration of thought also in some of his lines, is most striking, and many of them would form apophthegms worthy of association amongst the words of the most admired instructors of mankind. In the fourth volume is the tale of "The Patron," so eulogised by Sir Walter Scott, and so worthy of his eulogy. It is indeed a poem that should be read and *studied* by every youthful bard. But we have not perused *one* of Crabbe's Tales that is not fraught with a valuable and powerful lesson. It is true, that they often give pain, but the pain is satisfactory. It teaches man to feel for man, even for the wretch who owes his wretchedness to his own guilt. This is indeed the noblest exercise of compassion; and it is this which pervades the writings of the departed bard: beautifully has he expressed the sentiments which he aims to exemplify, even in his most satirical compositions:—

> "Is there a man that I would injure? No.
> I am to him a fellow, not a foe;
> A fellow-sinner, who must rather dread
> The bolt, than hurl it at another's head."
>
> *The Borough, page 95, vol. iv.*

In spite of ourselves, we have been betrayed into a quotation. After this, we should scarcely venture to say more; yet we must add, that the poem entitled the "World of Dreams," is full of beauty of a totally different character from that which distinguishes his *Tales*. It is such a pouring out of the poetic spirit as Byrom might have indulged in his most imaginative mood, and such as he might have recurred to with pride in the midst of his proudest celebrity.

We shall look for the appearance of the other two volumes with anticipations commensurate with the pleasure we have already experienced; and, in the mean time, we cannot but congratulate the reading public on the prospects of so great an acquisition to the stock of true *English* poetry, as this edition of the Life and Writings of Crabbe, prepared by a son so eminently qualified, by deep and refined filial affection, as well as literary power, to be the biographer of such a father.

NEW CHARTS.

CHAUSEY ISLETS. By Captain Martin White. 1827. (Size, twenty-one by twelve inches.) Admiralty.

This plan shews, on a good-sized scale, (about two inches and a half to the mile,) the various channels between the islets and rocks of the Chausey Archipelago.

A Chart has been published, at Liverpool, of Lieut. Denham's Survey of the Entrance to that port. It is on a large scale, and shews the leading lights and marks, depth of water, &c. in the new channel.

SHEATHING.—An experiment is about to be tried on the "Ant," a vessel of one hundred and sixty-six tons, to be launched from Portsmouth Dock-yard, the last day of the month, by sheathing her bottom with Mossleman's patent zinc. The sheets are about the thickness of a two-ounce sheet of copper, and are fastened to the bottom with nails of the same material. In every other respect the bottom is prepared in precisely the same manner as if it were to be coppered.

The cost of this material, without labour, is nearly one-third that of the copper sheathing, but the ultimate advantage of sheathing ships' bottoms with it will of course depend on durability, and the loss sustained in the re-manufacture of the article. The patentee recommends a composition of his own invention, with which this sheathing is to be coated every two or three years. This he expects will materially assist to preserve it.

We have the satisfaction of adding to our last the following Subscriptions for the Orphans of the late LIEUT. BUTCHER, R. N. collected by Lieut. William Poore, R. N.

Lieut. W. Poore,	6	0	Mrs. Pitman,	5	0
Mrs. Wm. Poore,	4	0	Lieut. Chas. Criswick,	5	0
Miss Louisa Poore,	2	6	Comr. Clark,	8	6
Lieut. Charles Thompson,	7	0	Miss. Jeffreys,	5	0
				£2	3 0

NEW LIGHTHOUSE.—On the 11th of June, the foundation-stone of a new Lighthouse on Point Lynas, Anglesea, was laid by Lieut. Denham, employed in the survey of the western coasts of Great Britain. We understand that this officer had the satisfaction of determining the site of the Lighthouse.

NEW CHANNEL INTO THE MERSEY.—We have been much gratified at hearing that the services of Lieut. Denham, in his minute survey of the entrances to the port of Liverpool, have been appreciated by the residents of that place. In the course of his survey, Lieut. Denham discovered a new channel into the river Mersey, between the Great and Little Burbo banks, with deeper water in it at all times of the tide, than in any other channel into this second port of Great Britain. Having surveyed it, he proposed a method of lighting it, so good in many respects, that it was forthwith adopted; and, by an advertisement in the first part of our work, will be in use after the first of August. For these services, Lieut. Denham has been presented with the freedom of Liverpool by the Mayor and Corporation.

EXPERIMENTS WITH DENNET'S ROCKETS.—The following particulars of some experiments made at Newcastle, on the efficiency of Mr. Dennet's rockets for conveying a line from the shore to a stranded vessel, will be interesting to our nautical readers. The superiority of a rocket over a spherical shot, in making its way through a resisting medium such as the atmosphere, could never be doubted, the form of it alone being in its favour. We sincerely wish every possible success may attend Mr. Dennet's efforts, and that of the Society which is promoting them in so laudable a design; and we shall consider it one of our first duties to assist them at all times as much as we can:—

The great and humane invention of a simple, portable, and efficient apparatus for forming a speedy communication from the shore to a wrecked or stranded ship, in those cases of distressing accidents and calamities which so frequently occur off our coasts, has at last been completed by the perseverance and ingenuity of Mr. John Dennett, of the Isle of Wight. The public are familiar with the merits of Captain Manby's apparatus, to effect the same object, and which has been for some years in use at Tynemouth, and other stations in the neighbourhood, under the auspices of the Committee and Members of the Shipwreck Society. In order that a fair trial might be made of the comparative merits of Mr. Dennett's and Captain Manby's apparatus, an interesting exhibition of their respective powers took place on the Herd Sand, South Shields, on the 9th July. There were present the Committee and Members of the Shipwreck Society, the Master and Brethren of the Trinity House, the Shipowners' Society, together with a large concourse of the respectable inhabitants of Newcastle, Shields, Sunderland, and the surrounding neighbourhood. Captain Manby's apparatus was superintended by the officers and men of the coast-guard stationed at Tynemouth, who are of course conversant with the method of using it; Mr. Dennett's rockets were fired under his own inspection, that gentleman having been induced to visit Newcastle for the purpose. The following is an accurate account of the operations, collected from our own personal observation:—

The experiments commenced with a shot from Manby's apparatus, directed so as to carry a line between two objects placed on the beach to represent the length of a ship, at a distance of 200 yards: owing to too small an elevation being given to the mortar, the shot fell short of the object. Mr. Dennett, who directed the rocket apparatus in person, then fired one of the rockets, which went off most beautifully, falling considerably beyond the objects, and nearly in the centre of them, and the line fell on the beach between them. The range of this rocket was 314 yards, and its success was greeted by a burst of cheering and applause from the assembled multitude. A second rocket was fired with a view to show the precision with which rockets can be used; its line of direction did not vary from that of the first more than about four yards at the spot where it fell; its range rather exceeded that of the first, being 321 yards; whilst, owing to the strength of the breeze, the line was carried a little to leeward of the objects. A second shot was now fired from Manby's apparatus, with an increased elevation of the mortar, and an increased charge (10 oz.) but with a much better effect than before; the shot fell a few yards beyond the objects, and placed the line well between them; the range of this shot was about 220 yards. Another rocket was now sent off, with the intention of placing the line between the objects, its direction being altered to allow for the breeze; in this instance, the rope was well placed between the objects, and the range of the rocket was 310 yards; it fell before the composition was entirely expended, an attempt having been made to check the progress of the line after the rocket had passed over the marks. At the third shot with Manby's apparatus, the large line was attached, but on firing it parted near

the shot. Mr. Dennett now fired a rocket without any rope attached to it, to show the resistance the rocket has to overcome when it has a rope to carry out. This rocket went away with a most magnificent flight, cleaving the air, and ascending to a height of several hundred feet in its course, until its progress was nearly lost to the sight; the presumed range of this rocket was considerably above 2,000 yards; it passed over the heads, and fell several hundred yards beyond some men who had gone out for the shot that had broken away from Manby's apparatus. At this period rain was beginning to fall, and the experiments closed, the company bestowing three hearty cheers on Mr. Dennett and the rockets before they separated, and strongly expressing the delight and satisfaction they had experienced.

The merits of Mr. Dennett's plan may be briefly summed up. When the men appointed to attend each apparatus were in travelling order, and directed to advance to the station appointed for the experiments, the immense advantages to be gained in actual service by the superior portability of the rockets, were at once apparent to the commonest observer. Two men, with the greatest facility, took six rounds of rockets, (each having three,) most conveniently stowed in cartouches, strapped on their backs. The men also carried between them six poles, to which was attached a light chest, containing two hundred fathoms of line, coiled in a peculiar manner, ready for running out, without danger of fouling; and over these was laid the iron frame, or stand from which the rockets are fired. The load to be thus transported is only one hundred weight and two quarters; whilst that of Captain Manby's mortar, and its six corresponding rounds of ammunition, balls, and stores, is little less than six hundred weight, and required the aid of ten men to remove it to its appointed place, nor has this duty ever been performed by a smaller number. On arriving at the spot, the rocket could have been ready for firing in two minutes; but from the anxiety of the spectators to examine it in every part, it was some time before the ground could be cleared for commencing operations. When one or two rockets had been discharged, the most sceptical were convinced that an opinion previously entertained in this neighbourhood, *that the rocket would be uncertain in its direction*, had no foundation; and that, in precision of aim, it is fully equal, if not superior, to Captain Manby's apparatus. In extent of range, it has a decided advantage; and, from the lesser angle with which it flies, a smaller quantity of rope is taken out, and the liability of the rope being taken to leeward of the object fired at, by the action of the wind, is thereby much reduced. It has also another advantage over every other means yet introduced for saving the lives of seamen, in cases of shipwreck during the night; for the explosion of the composition casts so strong a light, that not only the crew in the ship, but the operators on shore, will be instantly enabled to discover whether the shot is a successful one. From the portability, simplicity, and lightness of Mr. Dennett's apparatus, we do not see why ships navigating our coasts ought not to be provided with it; and thus an instant communication be effected, in cases of danger, *from the ship to the shore.* For the above interesting experiments, the public is indebted to the spirit and enterprise of the Shipwreck Society; a most useful and important institution, which, we regret to add, does not receive a tithe of that support from the public which the extent of its operations, and the *invaluable* nature of its services, so imperatively demand. This society has not only incurred great expense in purchasing, but its members have been at considerable personal inconvenience in testing various means devised for snatching our brave sailors from the horrors of shipwreck, and, even in cases where destruction seemed inevitable, it has been the means, under Providence, of restoring many individuals to their families and friends. It is therefore to be hoped, that the

committee having introduced to the notice of the public, a very superior agent for opening a communication from the shore to a ship in distress, the public will not be backward in placing funds at the disposal of the Shipwreck Society, to enable them to procure an adequate supply, not only for their present stations, but even to extend its usefulness to other parts of our dangerous coast. Mr. Dennett attended a meeting yesterday, at the Trinity House, at which the subject of devising the best means for immediately extending the adoption of Rocket Stations on this part of the coast, was taken into consideration, and the resolutions passed as follows:—

"1st, That a letter be written by the Secretary to the Central Committee of the Royal National Institution in London, stating the conviction of this committee, arising from the experiments made on the 18th instant, of the superiority of Dennett's rockets over Manby's apparatus, and requesting the sanction of the Central Committee to six sets of the rocket apparatus being procured for the stations of this society.

"2nd, That the thanks of this Association be presented to Mr. Dennett, for his ingenious invention of the rocket, and its effective application to the saving of lives from shipwreck, and also for his great services in superintending the trial of the rocket apparatus made on the Herd Sand on Wednesday the 18th instant."

N.B. In consequence of the foregoing resolutions, and of the successful trial of Mr. Dennett's rocket apparatus therein referred to, the Central Committee in London have ordered several sets to be made, and to be stationed at various places in the district of Newcastle; which will add considerably to their annual expenses for life-boats, reward for saving lives, &c.

This Institution is supported entirely by voluntary contributions. Subscriptions are received by Messrs. Willis, Percival, & Co., bankers, Lombard-street.

The office of the Institution is at No. 20, Austin Friars, London.

Steam Navigation to India.—The following are the resolutions of the Committee on Steam Navigation to India, as reported in the House of Commons:—

"1. Resolved, that it is the opinion of this committee, that a regular and expeditious communication with India, by means of steam-vessels, is an object of great importance both to Great Britain and to India.

"2. Resolved, that it is the opinion of this committee, that steam-navigation between Bombay and Suez having, in five successive seasons, been brought to the test of experiment, (the expense of which has been borne by the Indian Government exclusively,) the practicability of an expeditious communication by that line during the north-east monsoon has been established.

"3. Resolved, that it is the opinion of this committee, that the experiment has not been tried during the south-west monsoon; but that it appears from the evidence before the committee, that the communication may be carried on during eight months of the year, June, July, August, and September, being excepted, or left for the results of further experience.

"4. Resolved, that it is the opinion of this committee, that the experiments which have been made have been attended with very great expense; but, that, from the evidence before the committee, it appears that by proper arrangements the expense may be materially reduced; and, under that impression, it is expedient that measures should be immediately taken for the regular establishment of steam-communication with India, by the Red Sea.

"5. Resolved, that it is the opinion of this committee, that it be left to his Majesty's Government, in conjunction with the East India Company, to consi-

der whether the communication should be in the first instance from Bombay or from Calcutta, or according to the combined plan suggested by the Bengal Steam Committee.

"6. Resolved, that it is the opinion of this committee, that by whatever line the communication be established, the net charge of the establishment should be divided equally between his Majesty's Government and the East India Company, including in that charge the expense of the land conveyance from the Euphrates on the one hand, and the Red Sea on the other, to the Mediterranean.

"7. Resolved, that it is the opinion of this committee, that the steam-navigation of the Persian Gulf has not been brought to the test of experiment; but that it appears from the evidence before the committee, that it would be practicable between Bombay and Bussorah during every month in the year.

"8. Resolved, that it is the opinion of this committee, that the extension of the line of the Persian Gulf by steam-navigation on the river Euphrates, has not been brought to the test of experiment; but that it appears from the evidence before the committee, that from the Persian Gulf to the town of Bir, which is nearer to the Mediterranean port of Scanderoon than Suez is to Alexandria, there would be no physical obstacles to the steam-navigation of that river during at least eight months of the year—November, December, January, and February, being not absolutely excepted, but reserved for the results of further experience.

"9. Resolved, that it is the opinion of this committee, that there appear to be difficulties on the line of the Euphrates from the present state of the countries on that river, and particularly from the wandering Arab tribes, but that those difficulties do not appear to be by any means such as cannot be surmounted, especially by negotiations with the Porte, Mehemet Ali, and the chiefs of the principal fixed tribes; and, that this route, besides having the prospect of being less expensive, presents so many other advantages, physical, commercial, and political, that it is eminently desirable that it should be brought to the test of a decisive experiment.

"10. Resolved, that it is the opinion of this committee, that the physical difficulties on the line of the Red Sea appearing to be confined to the months of June, July, August, and September, and those of the river Euphrates to the months of November, December, January, and February, the effective trial of both lines would open a certain communication with the Mediterranean in every month of the year, changing the line of the steam-vessels on both sides according to the seasons.

"11. Resolved, that it is the opinion of this committee, that it be recommended to his Majesty's Government to extend the line of Malta packets to such ports in Egypt and Syria as will complete the communication between England and India.

"12. Resolved, that it is the opinion of this committee, that the expense of this experiment by the Euphrates has been, by an estimate which the committee has subjected to the examination of competent persons, stated at £20,000, which includes a liberal allowance for contingencies; and the committee recommend that a grant of £20,000 be made by Parliament for trying that experiment with the least possible delay."

Ships' Stores: *Roasted Coffee.*—By a recent Treasury Order, a drawback of 6 pence per lb. (being the import duty on British Plantation coffee) is allowed on all roasted coffee shipped as stores.

SEA WATER MADE FRESH.—"On June 29th, a number of scientific gentlemen inspected Messrs. Wells and Westrup's patent machine for converting sea-water into excellent fresh water, which was exhibited in a vessel moored in the river, near Westminster bridge. The conversion is effected by distillation, the condensation being produced by passing the pipe by which the steam is carried off, through the side of the vessel into the river, and returning it into the vessel again at a sufficient distance for condensing the steam, which then flows out in a stream of pure fresh water. The top of the cistern in which the sea-water is boiled, is formed to allow cooking-kettles to be placed in it, and, of course, any thing contained in them may be boiled by the heat of the steam, so that the cooking for a ship's company may be performed by the same process that shall supply them with a sufficient of fresh water. The process converts nine-tenths of the sea-water contained in the cistern into pure fresh water in about twelve hours. The cistern by which the process was performed on Saturday, contained about 133 gallons, and in twelve hours about 120 gallons of fresh water was produced. The gentlemen present all tasted the converted fresh water, and pronounced it excellent. Their Majesties and many of their friends, at a dinner party, a short time ago, tasted the converted water, and all agreed that it could not be distinguished from the best naturally fresh water. The invention combines simplicity and utility in a high degree, and may, on many occasions, prove an incalculable benefit to the class of men to whom this country is so much indebted for its greatness and its security."—[We give the above paragraph just as it has appeared in most of the London papers, and also in many of the provincials; and as the subject, viz. "the conversion of sea into fresh water," concerns the well-being of our seamen, so does it interest us. Now, with regard to the novelty of the idea, we will merely state the fact, that in the year 1822, his late Majesty, George IV., issued his commands to a Mr. Fraser, engineer, to fit up the Royal George yacht with a cooking apparatus of his (Mr. Fraser's) invention, previous to his Majesty's trip to Scotland. With regard to its efficiency, we would observe, that on returning from Scotland, the king sent for Mr. Fraser, and complimented him on his invention; at the same time acknowledging, that better dressed viands he had never the pleasure of partaking of. Now, in addition to dressing the King's food, it performed the same office to his extensive suite, the officers and also the seamen of the yacht, amounting altogether to several hundred persons, and could have distilled every day a sufficient supply of fresh water for the officers and crew. We say *could*—why they *did not* might be thus explained:—it is well known that water becomes insipid in direct proportion to its purity; hence the distaste for distilled, when pure fresh-drawn water, from natural sources, can be procured. That the apparatus can perform what we have stated, we pledge ourselves, having witnessed the distillation and partaken of a well-dressed joint that was prepared at the same time. Of Mr. Fraser's, we know but little beyond what we have already stated—but we believe that intrigue had much to do in preventing the more extensive use of his invention. Perhaps the patent for it has lately expired. ED.]—*Plymouth Journal.*

We have in our own possession testimony still more favourable of the complete efficiency of Mr. Fraser's invention, and hope to see him shortly applying it to a good purpose.—ED. N.M.

BREAKING THE LINE.—This celebrated naval manœuvre, which has caused so much conversation in naval circles, and articles in periodical publications, as also the merit of its first adoption, we can set at rest from undoubted authority. Without a wish to withdraw one laurel from the glorious achievements of the British navy, still, every man and every country deserve the meed of praise

for what they have done. Some time ago, Sir Howard Douglas claimed the honour of having suggested it to his admiral, and for the *first time* it was performed. Such is not the fact, and we have the following particulars from a highly respectable officer, who was in the action fought between Sir Edward Hughes and Admiral Suffrein off the Coromandel coast. The French Admiral had captured the Hannibal on his passage from the Mauritius to the Coromandel coast, and had ten ships. He kept a good deal north, to pass the English admiral unperceived, who was waiting for his appearance in Madras roads with nine ships. Sir Edward Hughes got under way and pursued, thinking that Admiral Suffrein intended to secure Trincomalee. In a day or two Sir Edward came up with him, and, when in line, the French admiral placed himself ahead, and engaged the Worcester, Sir Edward's ship, by which he brought nine vessels to bear on five, and at that time the French powder was far superior to the English. Towards the evening, admiral Suffrein took the lead, and glided down with wonderful precision, and dashed through the English line by cutting off three vessels. The Minorca and Burford, Captains Gell and Reinere, without orders, and when the commodore had struck, bore down, and saved the three vessels cut off. This was the first instance of "breaking the line," and our respectable informant (who has been grossly ill-used after long and arduous service) says that Admiral Suffrein was, without exception, one of the greatest naval commanders that ever lived. Had he possessed the sailors the English fleet had at that time, no other commander of the day could have coped with him.—*Jersey Paper.*

The following is an interesting extract from the *Times*:—

By a comparative statement of the arrivals, tonnage, and settlers, at the port of Quebec to the 1st of June each year, from 1817 to 1834, it appears that the number of settlers which arrived during that period amounted to 72,165, conveyed in 3,098 vessels, being on an average 24 persons in each vessel. The following are the details:—

Years.	Vessels.	Tonnage.	Settlers.
1818	94	24,340	1,003
1819	155	38,419	1,879
1820	208	56,718	986
1821	110	28,219	573
1822	140	38,270	759
1823	133	34,167	2,526
1824	46	12,207	90
1825	224	60,347	2,517
1826	229	64,794	3,429
1827	184	40,081	4,176
1828	205	54,938	3,676
1829	208	58,693	4,792
1830	44	10,142	380
1831	342	94,472	18,231
1832	298	84,615	13,970
1833	161	42,856	2,216
1834	317	92,401	9,962
Total	3,098	835,679	72,165

Ships employed as troop-ships are in future to be under the orders of the respective Superintendants of the dock yards, and not under the Commander-in-Chief.

Admiralty Court Decisions.

High Court of Delegates, Sergeant's Inn. Prize Money.—The Court sat on Friday to hear an appeal from the decision of the late Sir Charles Robinson, Judge of the Admiralty, promoted by Sir F. Collier, Commander of his Majesty's ship Sybille, against the Lords of the Treasury. Sir F. Collier who commanded on the African station in 1829, despatched from Fernando Po a boat, belonging to the Sybille, in command of Lieut. E. Harvey, to detain all vessels trafficking in slaves, and to bring the Paul Pry boat, which the Commodore had purchased as a tender to the Sybille, from Sierra Leone. Mr. Browne, an officer of the Sybille, while in charge of the Paul Pry, had captured the Donna Barbara, bound to the Brazils, with 357 slaves, and he gave the vessel into the custody of Lieut. Harvey. The vessel was condemned by a mixed British and Brazilian commission, and the slaves were emancipated. Sir C. Robinson had decreed that the commander, officers, and crew of the Sybille were not entitled to a moiety of the proceeds of the slave ship, or to the bounties on the slaves. Sir F. Collier now appealed against this decision. Dr. Addams contended that every encouragement should be given for putting a stop to the slave-trade, and that as the capture was made by a boat belonging to the Sybille, the officers and crew were entitled to a reward. The practice of allowing boats belonging to ships of war to go in quest of slave vessels had been productive of the best results. During the seven years prior to the adoption of this plan, the whole squadron captured only 9,769 slaves, while in three years after the adoption of the plan 12,470 slaves were seized and emancipated. The King's Advocate said, the Paul Pry was 1,500 miles from the Sybille when the capture took place; she had never been near the ship of war of which the appellant was commander, nor was there any authority for stating she was a tender to the Sybille : under these circumstances, and as the Paul Pry was not part of the squadron, he trusted the Court would pronounce against the appeal. Their lordships pronounced for the appeal, reversed the sentence of the court below, retained the principal cause, and decreed a moiety of the proceeds of the Donna Barbara, her tackle, &c., and also the bounties for the slaves on board her, to be paid to Sir F. A. Collier, commander of his Majesty's ship Sybille, to be distributed amongst the said commander, officers, and crew of the Sybille.

The Triune: Collision.—In this case, the Triune and the Triton, each laden with coals, left the Tyne on the evening of the 12th of February last, bound for London. The wind was adverse, and, whilst sailing on opposite tacks, the two vessels came in collision, on the night of the 13th, off the Durham coast, and the Triton was sunk. The question as to which vessel was to blame was, as usual, embarrassed by the discrepancy between the witnesses on either side.

It was admitted, however, that the Triton was on the starboard tack, and had the best of the board; and that the Triune was on the larboard tack, and therefore, according to maritime custom, was bound to give way; but the witnesses differed as to whether this should be done by luffing up or wearing. The vessel was struck on midships.

The King's Advocate and Dr. Addams, for the owners of the sunken ship, contended that there had not been a sufficiently good look-out on board the Triune; that the accident had arisen from this cause, and the consequent indecision and vacillation of the Triune's crew, who put the helm first a-lee and then a-weather; that if there were two modes of avoiding the danger, and, as in the present case, the best was not adopted, the consequence of such error in judgment and practice must be suffered by the party guilty of it.

Dr. Dodson and Dr. Nicholl, for Mr. Wardell, the master and part owner of the Triune, argued that the evidence clearly shewed the accident to have arisen from the conduct of those on board the Triton; that the Triune did perfectly right in bearing up, and therefore that ship was not answerable for the accident.

Sir J. Nicholl called for the opinion of the two Trinity-masters who sat as assessors on the nautical points; and these gentlemen having declared their opinion to be that the loss of the Triton was owing to no defect of seamanship in those on board of her, but to the want of an equally good look-out on board the other ship, and that if the Triune had borne up in time the collision might have been avoided, and the learned Judge concurring in that opinion, the Court pronounced for the damage, and referred the question of the value to the registrar and merchants.—*Times.*

THE EFFORT.—SALVAGE. This was a case of derelict. The Effort, the vessel salved, of 345 tons, was bound, with a cargo of timber, from New Brunswick to North Shields or Liverpool. She became waterlogged, and was abandoned by her crew on the 17th of January, in the Atlantic, in lat. 50. long 17. She drifted about for near a month, and in the beginning of February was seen floating in the Irish Channel, at the mercy of the wind and weather. On the 12th of February this fact was reported at Liverpool, and two branch pilots, Brown and Bennett, in the Mary Ann, a smack of 38 tons, went in search of the vessel, which they discovered on the 15th, with only one mast standing, and stripped of its rigging by some other vessels. They got a hawser on board, and towed the vessel towards Milford. The Waterloo, another small smack, of 15 tons, offered assistance, which was declined, but was employed to get a cable and anchor. The Cheerful, a revenue cutter, of 170 tons, which was going with despatches to Port Island, agreed, in consideration of a sum of money, to take the derelict in tow from the Mary Ann, provided the latter would carry the despatches to Port Island. The Cheerful accordingly towed the vessel into a place of safety in Milford Harbour on the 10th of February.

After hearing the King's Advocate for the salvers in the Mary Ann, the Admiralty Advocate for the Waterloo, and Dr. Philimore and Dr. Haggard for the owners of the ship and cargo.

Sir John Nicholl recapitulated the facts, and considered that the vessel was manifestly derelict; that there had been a sufficient degree of promptitude on the part of the pilots; that it was a meritorious service on their part, and that the Mary Ann was in possession of the derelict when the Waterloo tendered assistance, which, not being wanted, she had therefore a right to refuse. In such cases of salvage, by the old law of the Admiralty, a moiety was decreed in all cases; but it was now held that the amount of salvage should depend in some degree upon the circumstances of the case. At the same time, there were few cases, if any, in which more than a moiety had been given, and few in which the salvage awarded had been less than one-third. Looking to the circumstances of this case, he thought it one in which a full moiety ought to be given. In apportioning the salvage, the agreement between the Mary Ann and Cheerful was not before the Court, which must consider the Mary Ann as the principal salvor. He therefore awarded four-eighths of the sum awarded to the Mary Ann, three-eighths to the revenue cutter, and the other eighth to the Waterloo (which had endeavoured rather to obtrude and force its assistance,) and to the three-oared gig, after deducting the expenses they incurred.

NAVAL REGISTER.

COMMISSIONERS *for executing the Office of* LORD HIGH ADMIRAL *of the United Kingdom of Great Britain and Ireland.*

The Right Honourable George *Baron* Auckland.*
Sir Thomas Masterman Hardy, Bart. G.C.B, *Rear-Admiral of the White.*
George Heneage Lawrence Dundas, *Rear-Admiral of the Blue.*
Sir Samuel John Brooke Pechell, Bart., K.C.H., C.B., *Captain, R.N.*
Henry Labouchere, Esq.
Maurice Frederick Fitzhardinge Berkeley, Esq., *Captain, R.N.*

THE ROYAL NAVY IN COMMISSION—JULY 21ST, 1834.

Flag-Ships.		*Stations.*
CALEDONIA,	120	Mediterranean.
HASTINGS -	74	Tagus.
ISIS - -	50	Cape, and Africa.
MELVILLE -	74	East Indies.
OCEAN - -	80	Nore.
SAN JOSEF -	110	Plymouth.
SPARTIATE -	74	South America.
THALIA - -	46	Cape, and Africa.
VERNON - -	50	N. America & W. Indies.
VICTORY - -	104	Portsmouth.
WINCHESTER	52	East Indies.

ACTÆON, 26—Hon. F. W. Grey, March at Constantinople. Ordered home.

ALFRED, 50—Capt. R. Maunsell, 15th July arrived at Sheerness from Malta: left it 12th June, and Gibraltar 21st.

ALGERINE, 10 — Lieut. Com. G. Stovin, Chatham.

ALLIGATOR, 28—Captain G. R. Lambert, 14th Feb. arrived at Sydney from Hobart Town.

ANDROMACHE, 28—Capt. H. D. Chads, C.B. 1st April arrived at Rio; 12th sailed for China.

ARACHNE, 18—Com. J. Burney, 31st May at Havana.

ASIA, 84—Captain P. Richards, 11th July arrived at Spithead, with Rear-Admiral Parker, C.B. Left the Tagus on 2d. 13th July sailed for Chatham, to pay off; 15th arrived at Sheerness.

ASTREA, 8—Capt. A. King, Falmouth, superintendent of Foreign Packets.—Capt. A. King, who has been appointed superintendent of the Packet Establishment at Falmouth, entered on his official duties on 1st July.

ATHOL, *Troop Ship*—Mr. A. Karley, 30th March arrived at Barbadoes, and placed in quarantine, having measles on board.

BELVIDERA, 42 — Capt. C. B. Strong, 4th April arr. at Madeira; 6th April sailed for Barbadoes; arrived 12th May.

BLONDE 46—Capt. F. Mason, C.B., sailed 11th April for Rio, from Jamaica.

BRISK, 3—Lt. Com. J. Thompson, Gold Coast.

BRITANNIA, 120—Captain P. Rainier, 16th June at Scio.

BRITOMART, 10—Lieut. W. H. Quin, Cape of Good Hope.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 10th Nov. left Sydney for New Zealand, having touched at King George Sound in Sept. previously.

BUZZARD, 10—Lieut. Com. W. C. Burbidge, Portsmouth, fitting.

CALEDONIA, 120—Flag of Vice-Adm. Sir Josias Rowley, Bart., G. C. B., appointed 18th Dec. 1833—Captain T. Brown, 16th June at Scio.

CANOPUS, 84 — Hon. J. Percy, 6th June left Gibraltar for Malta; 16th June arr. at Malta from Gibraltar.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 12th July returned to Sheerness, having attended her Majesty on her voyage to Helvoetsluys. See *Royal George.*

CEYLON, 2—Lieut. J. G. M'Kenzie, Malta.

CHALLENGER, 28—Capt. M. Seymour, 16th Feb. arrived at Valparaiso, from the Falkland Islands and Rio; 25th sailed for Coquimbo.

CHAMPION, 18—Com. Hon. A. Duncombe, March at Barcelona.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, 15th April at Sierra Leone.

CHILDERS, 16—Com. Hon. H. Keppel, Portsmouth, fitting.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

COCKBURN, 1 — Lieut. Com. C. Holbrook, Lake Ontario.

COLUMBINE, 18—Com. T. Henderson, Sheerness, fitting.

COMUS, 18—Com. W. P. Hamilton, 16th June arrived at Newfoundland, from Halifax.

CONWAY, 28—Capt. H. Eden, 18th March left Rio for Pacific.

CRUIZER, 18—Com. James M'Causland, 11th May at Port Royal, Jamaica: arrived there on the 7th, from Aux Cayes.

CURAÇOA, 26—Capt. D. Dunn, ordered home. 31st Jan. at Calcutta.

DISPATCH, 18—Com. G. Daniell, 28th May at Port Spain, Trinidad.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, ordered home. 23d Feb. at Valparaiso; 24th sailed for Callao.

EDINBURGH, 74—Capt. James R. Dacres, 3d June at Spezia; 16th June at Scio.

ENDYMION, 50 — Capt. Sir Samuel Roberts, C.B., 16th June at Scio.

EXCELLENT, 58 — Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, Bight of Benin.

* Successor of Sir James Graham.

FAVORITE, 18—Com. G. R. Mundy, 5th June left Malta for Nauplia.

FIREFLY, 2 — Lieutenant J. M'Donnel, 19th March arrived at Jamaica, from Honduras. The Firefly captured, on the 25th of May, after two days' chase, the Portuguese schooner Despiche, with 215 slaves on board, which arrived at the Havannah on the 31st of May, in charge of Mr. Henry M. Lockyer, mate of the Firefly, and was to proceed on the 3d of June to Nassau, to land the cargo of human beings, and then to proceed with the vessel to the Coast of Africa, for condemnation.

FLY, 10 — Com. P. M'Quhae, 5th Nov. at Bermuda.

FORESTER—Lieut. G. G. Miall, 4th April at Simon's Bay.

FORTE, 44—Captain W. O. Pell, 15th May arrived at Barbadoes, from Jamaica; 2d June at Port Royal, Jamaica.

GANNET, 18 — Commander J. B. Maxwell, 27th May sailed for West Indies.

GRIFFON, 3—Lieut. J. E. Parlby, 2d April in the Bight of Benin.

HARRIER, 18 — Com. S. L. H. Vassal, Dec. in the Straits of Malacca; 31st Jan. at Madras; arrived 22d Jan.

HASTINGS, 74—Flag of Rear-Admiral W. H. Gage, appointed 9th April, 1834—Capt. H. Shiffner, 2d July in the Tagus, from Spithead: arrived 28th June.

HORNET, 6—Lieut. Com. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, Dec. in Straits of Malacca; 31st Jan. at Calcutta.

IMOGENE, 18—Captain Hart, (*act.*) 8th March expected at Bombay.

ISIS, 50—Flag of Rear-Admiral F. Warren, appointed 5th Aug. 1831—Capt. J. Polkinghorne, 29th May at the Cape, from Ascension: arrived there 4th May.

JASEUR, 18—Com. J. Hackett, 10th July at Gibraltar.

JUPITER, *Troop Ship*—Mr. R. Easto, 26th June arrived at Plymouth, from Corfu; last from Cork.

LARNE, 18—Com. W. S. Smith, 11th May at Port Royal: arrived there on the 6th, from Chagres. 31st May at Havana.

LYNX, 10—Lieut. Com. H. V. Huntley, at Ascension 2d April. To sail on 5th for the Cape.

MADAGASCAR, 46 — Capt. E. Lyons, April at Nauplia.

MAGICIENNE, 24—Capt. J. H. Plumridge, ordered home. 7th Feb. at Madras. arrived 30th Jan.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74—Capt. H. S. Marsham, 11th July arrived at Plymouth from Gibraltar. Left Malta 12th June. Passenger, Lady Stoddart. 17th moved into Hamoaze.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., appointed 16th Dec. 1831—Capt. H. Hart, 8th March left Bombay for Madras.

PORTSMOUTH, *Yacht*—Lieut. Com. J. Maitland, Portsmouth.

NIMBLE, 5 — Lieut. C. Bolton, 18th Jan. arr. at Jamaica, from Nassau.

NIMROD, 20 — Com. J. Mc. Dougal, 6th June sailed with the Stag from Cascaes Bay, for Genoa.

NORTH STAR, 28 — Capt. O. V. Harcourt, Portsmouth, fitting. To convey W. Hamilton, Esq., Minister Plen. to Buenos Ayres.

OCEAN, 80—Flag of Vice-Admiral Sir Richard King, Bart. K. C. B., appointed 23d July, 1833—Capt. E. Barnard, Sheerness.

ORESTES, 18—Com. H. J. Codrington, Portsmouth, fitting.

PEARL, 20—Com. R. Gordon, 11th May at Port Royal, Jamaica.

PELORUS, 18—Com. R. Meredith, 2d April at Prince's Island.

PICKLE, 5 — , 19th March arrived at Jamaica.

PINCHER, 5—Tender to flag-ship, 18th Jan. arr. at Jamaica, from Carthagena.

PIQUE, 36—Capt. the Hon. H. J. Rous, Hamoaze, fitting. (See account of her launch in our next.)

PORTLAND, 52—Captain D. Price, Plymouth, fitting.

PRESIDENT, 52—Capt. J. M'Kerlie, 29th May sailed for Halifax.

PRINCE REGENT *Yacht*—Capt. G. Tobin, C.B. Deptford.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. Sailed for West Indies.

RACER, 16—Com. J. Hope, 2d June at Port Royal, Jamaica.

RAINBOW, 28—Capt. Thomas Bennet, 22d May at Barbadoes; sailed 23d; 2d June arrived at Port Royal, Jamaica.

RAPID, 10 — Lieut. Com. F. Patten, 28th March at Rio.

REVENGE, 78 — Capt. W. Elliott, C.B., 2d July at Lisbon, from Spithead; 28th June arrived there.

RINGDOVE, 16 — Com. W. F. Lapidge, 8th June left Lisbon for Madeira.

ROLLA, 10—Lieut. Com. F. H. H. Glasse, 8th July arrived at Spithead from Lisbon; 10th moved into harbour.

ROMNEY, *Troop Ship*—Mr. James Wood, 22d June arrived at Spithead from Jamaica, with part of the 77th regiment; sailed 11th May: 24th June moved into harbour.

ROSE, 18—Com. W. Barrow, Sheerness, fitting.

ROVER, 18 — Com. Sir G. Young, Bart., ordered home. 8th May left Malta for Tripoli.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G. C. H., 5th July her Majesty, accompanied by the Duke of Saxe-Meiningen, attended by the Earl and Countess of Denbigh, the Earl and Countess of Erroll, the Earl and Countess Howe, the Earl and Countess Brownlow, Miss Bagot. Lord Frederick Fitzclarence, and Mr. Davies, left St. James's Palace at a quarter before nine o'clock, in a carriage and four, with an escort of Light Cavalry, for Woolwich. Her Majesty's suite followed in three carriages and four.

On arriving at the Royal Dock-yard, at Woolwich, the Queen embarked in the Admiralty barge, and, steered by Admiral Sir Thomas Hardy, (the Governor of Greenwich, as the King's coxswain,) went on board the Royal George, which had been elegantly fitted up for the reception of her Majesty and suite. The yacht was afterwards taken in tow by the Phœnix steam-vessel.

The Lord Mayor, as Conservator of the river Thames, and Chief Magistrate of the

city of London, attended her Majesty to the boundaries of his jurisdiction, near Southend, in the county of Essex. Every exertion was made to testify the respect of the citizens of London for her Majesty, who seemed perfectly conscious of the sincerity of the public demonstration of attachment. The Lord Mayor, on taking leave, assured her Majesty that it was with the deepest regret he contemplated her departure, and he hoped that her absence would not be long, but that she would speedily return to adorn and elevate the sphere in which she moved, and to benefit all ranks of society by her example.—Her Majesty replied—"I am truly grateful, my Lord Mayor, for this proof of your kindness and respect, and I assure you that I shall be most anxious to return as soon as possible to England."—The Lord Mayor and Aldermen then kissed her Majesty's hand, and left the royal yacht. The Queen was so much affected at the interview that she shed tears. The Queen was attired in a white silk bonnet, white veil, a dark spotted shawl, and slate silk dress, and appeared in the enjoyment of health and spirits.

The royal yacht was out of sight, from the Nore, at half-past five. The Earl and Countess of Denbigh, the Earl and Countess of Errol, the Earl and Countess Howe, the Earl and Countess Brownlow, and Miss Bagot, will accompany the Queen to Saxe-Meiningen.

At 4 in the afternoon of the 6th, the royal squadron arrived at Helvoetsluys. At the Sunk Light-vessel, the Castor and Medea, in addition to the Water-Witch, Vice-Commodore the Earl of Belfast, (yacht squadron,) and Firebrand, which had attended her Majesty from Woolwich, joined company with the royal yacht. Her Majesty was attended by the Earl of Belfast as Vice-Chamberlain of the Household.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

ROYALIST, 10—Lieutenant R. N. Williams, 18th March off Oporto; 24th March in the Douro. Ordered home.

SAMARANG, 28 — Captain C. H. Paget, Pacific.

SAN JOSEF, 110—Flag of Admiral Sir W. Hargood, G.C.B., G.C.H., appointed 27th April, 1833—Capt. G. T. Falcon, Hamoaze.

SAPPHIRE, 28 — Capt. Hon. W. Trefusis, 15th March expected at Port Royal. Ordered home. At Vera Cruz 20th May. Daily expected.

SARACEN, 10—Lieut. Com. T. P. Le Hardy, 5th June arrived at Lisbon from Cadiz.

SATELLITE, 18 — Com. R. Smart, ordered home: 21st April at Bahia, from Pernambuco.

SAVAGE, 10—Lieut. R. Loney, 5th May arr. at Plymouth; 7th July arrived at Portsmouth.

SCORPION, 10—Lieut. Com. N. Robilliard, see Packets.

SCOUT, 18 — Com. Hon. G. Grey, 10th May had sailed for Alexandria and Constantinople, from Gibraltar.

SEAFLOWER, *Cutter*, 4—Lieut. Com. J. Morgan, 28th June sailed from Spithead, on a cruise.

SEAGULL, 6—Lieut. Com. W. Parsons, Sheerness, fitting.

SERPENT, 16 — Com. J. C. Symonds, 18th March sailed on a cruise, from Barbadoes.

SKIPJACK, 5—Lieut. Com. W. H. Willes, (*act.*) Bahamas.

SNAKE, 16—Com. W. Robertson, March at Rio Janeiro.

SPARROWHAWK, 18—Com. C. Pearson, 16th June at Bahia. Arrived 1st June.

SPARTIATE, 74—Flag of Rear-Admiral Sir M. Seymour, Bart., K.C.B., appointed 6th Dec. 1832—Captain R. Tait, 28th March at Rio Janeiro.

SPEEDWELL, 5— Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieut. C. H. Norrington, Portsmouth station.

STAG, 46—Capt. N. Lockyer, C.B., 3d June in Cascaes Bay, with Don Miguel on board, the late pretender to the crown of Portugal, he having embarked on the 1st. 6th June sailed for Genoa.

SWAN, 10—Lieut. J. E. Lane, at Sheerness May.

TALAVERA, 74—Capt. E. Chetham, C.B., 16th June at Scio.

TALBOT, 28—Capt. F. W. Pennell, Hamoaze, fitting.

THALIA, 46—Capt. R. Wauchope, Chatham, fitting for the flag of Rear-Admiral P. Campbell, C.B.

THUNDERER, 84—Capt. W. F. Wise, C.B., 16th June at Scio.

TRIBUNE, 24—Capt. J. Tomkinson, Chatham, fitting.

TRINCULO, 18—Com. Warren, (*act.*) 4th May arrived at the Cape, from Ascension; 29th lying there.

TWEED, 20 — Com. A. Bertram, ordered home; 2d June at Jamaica.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, C.B., 15th June arrived at Malta from Gibraltar.

TYRIAN, 10—Lieut. Com. E. Jennings, Plymouth, fitting.

VERNON, 50 — Vice-Admiral Sir G. Cockburn, G.C.B., appointed 6th Dec. 1832—Capt. , 1st May at Bermuda.

VESTAL, 26 — Capt. W. Jones, 30th April left Bermuda for Barbadoes; 8th May arrived.

VICTOR, 18—Com. R. Russell, June sailed from Pictou, in the Gulf of St. Lawrence, on a cruize.

VICTORY, 104—Flag of Admiral Sir T. Williams, G.C.B., appointed 23d Jan. 1833—Captain R. Williams, Portsmouth.

VIPER, 6—Lieut. L. A. Robinson, 11th June arrived at Plymouth, from Lisbon and Falmouth, with Sir John Campbell.

VOLAGE, 28 — Capt. G. B. Martin, C. B., April, at Corfu.

WASP, 18—Com. J. S. Foreman, 20th May arrived at Barbadoes, from Bermuda.

WILLIAM AND MARY, *Yacht*—Captain S. Warren, C.B., Woolwich.

WINCHESTER, 52—Capt. E. Sparshott, K.H. Chatham, fitting for the flag of Rear-Adm. Hon. Sir T. B. Capel, K.C.B.

WOLF, 18 — Com. E. Stanley, Plymouth, fitting: 25th June undocked.

ZEBRA, 16—Com. R. C. M'Crea, Chatham, fitting

Steam Vessels.

Alban—Lieut. A. Kennedy, 30th Oct. at Demerara, from Berbice: ordered home.
Blazer—Chatham.
Carron—Lieut. Com. J. S. Duffil, 29th April at Malta.
Comet—Woolwich.
Confiance, 2—Lieut. Com. J. M. Waugh, 2d July sailed from Woolwich, with Capt. A. King, C.B., appointed to superintend Foreign Packet Station.
Dee, 4—Com. W. Ramsay, Plymouth, fitting for West India station.
Firebrand—Mr. J. Allen, Woolwich.
Lightning—Mr. T. Allen, Woolwich.
Medea, 6—Com. H. T. Austen, 5th July attending on her Majesty. River Thames.
Messenger, 1—Com. Mr. J. King, Channel Station: running between Thames, Portsmouth and Plymouth, and Milford.
Meteor—Woolwich.
Phœnix—Com. R. Oliver, 5th July attending on her Majesty. River Thames,
Pluto—Lieut. T. R. Sulivan, ordered home: 2d April at Prince's Island, Coast of Africa.
Rhadamanthus—Commander G. Evans, 11th May at Port Royal, Jamaica; 30th May arrived at Barbadoes, in ten days from Jamaica.
Salamander—Commander W. L. Castle, Channel Station. 12th July at Portsmouth; 15th returned there from Jersey, and left for Woolwich.
Spitfire, 6—Lieut. Com. A. Kennedy, Woolwich, fitting.
Tartarus—Launched at Pembroke 21st June. This vessel is built of larch.

Surveying Vessels Abroad.

Ætna, 6—*Act.* Commander W. Arlett, 6th June at the Gambia, from a survey of the river Cacheo, and the adjacent coast and shoals about Cape Roxo. The Ætna had lost in this service sixteen of her crew, among whom are Mr. Thomas, (Mid.) and the Boatswain, by a fall. She is daily expected.
Beacon—Com. R. Copeland, surveying in the Archipelago.
Beagle, 10—Com. R. Fitz-Roy, surveying the coasts of Patagonia and Chili.
Fairy, 10—Commander W. Hewett, surveying the North Seas.
Gulnare, *Hired Schooner*—Captain H. W. Bayfield, surveying the Gulf of St. Lawrence.
Investigator, 16, — Mr. G. Thomas, surveying the Shetland Islands.
Jackdaw—Lieutenant Com. E. Barnett, 11th May at Port Royal, from Nassau, refitting. Surveying the Mosquito coast.
Mastiff, 6—Lieutenant Com. T. Graves, surveying in the Archipelago.
Raven, 4—Lieutenant Com. H. Kellet, in company with the Ætna.
Thunder—Com. R. Owen, 11th May at Port Royal, refitting, from Nassau, previous to sailing for the Musquito coast.

Officers Employed in Surveying at Home.

Com. W. Mudge; *Assistants, Lieuts.* J. Harding, G. A. Frazer.—Coast of Ireland.
Lieutenants, M. A. Slater; W. L. Sheringham, H. C. Otter.—East Coast of Great Britain.
Lieutenants, H. M. Denham; C. G. Robinson.—West Coast of Great Britain.

Lieut. Denham has been presented with the freedom of Liverpool, by the Mayor and Corporation of that place, for discovering a new channel into the Mersey, far superior to that previously used.

Paid Off.

Donegal, 78—Captain A. Fanshawe, 26th June arrived at Plymouth; moved into Hamoaze; 7th July paid off. In the former part of that day, Captain Fanshawe presented two medals to seamen of that ship. One of them was given to Edmund Robinson, able seaman, with a gratuity of £5, with a pension of £15 per annum; the other was given to Richard Jacobs, captain of the mast, and a gratuity of £5, with a pension of £15. These awards for long service and good conduct are judiciously granted by the Admiralty, and, trifling as they may appear to some, we can assure our readers, that the medals are highly prized by the men; and no duke ever appeared at the King's levee with more gratulation on receiving the garter, than our jolly tars among their messmates, adorned with medals for servitude and good conduct. The effects must be self-evident.

We are informed, that, of all the ships paid off at this port for some time past, none of their crews equalled the conduct of the men of the Donegal; they were sober, orderly, clean, and sailor-looking men. The greatest regularity prevailed throughout—the certain effect of system and high discipline. These generous fellows subscribed £24 towards that laudable and highly beneficial institution, the Seamen's Hospital Ship at Greenwich, which affords relief to distressed seamen of all nations and colour, whether from merchant-vessels or men-of-war.—*Plymouth Journal.*

Pylades, 18—11th June, in Hamoaze.—The petty officers and seamen of H.M.S. Pylades, on being paid off on the 26th of June, presented their first Lieutenant, R. Robinson, Esq., with a handsome sword, cocked hat, and pair of gold epaulettes; the sword bearing the following inscription:—"A tribute of respect from the Petty-officers and Seamen of H. M. S. Pylades, to Lieut. Robinson, for his gentlemanly and officerlike treatment towards them.—June 26, 1834."
Raleigh, 18—At Sheerness.

Commissioned.

Algerine, 10—At Chatham.
Pique, 36—At Devonport.
Tyrian, 10—At Devonport.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Lieutenants—P. S. Nott; J. Ingledue.

APPOINTMENTS.

AFRICAN, St.V.—*Mast.* J. Rundle; *Assist. Surg.* S. Brenan.

ASTREA, 6—*Capt.* A. King; *Surg.* W. Porteous.

BRISEIS, *Packet*—*Assist. Surg.* J. Henry.

BUZZARD, 10—*Lieut. Com.* W. C. Burbridge; *Master*, J. Pyke; *Surg.* C. Dickson; *Purser, (act.)* W. Taylor; *Mates*, J. N. Knowles, W. Morris.

COAST GUARD—*Commanders*, H. Layton, *Killibegs;* D. Ross, *Dublin;* W. Finlaison, *Skibbereen. Lieutenants*, W. C. Boyce; J. Campbell; J. Jones, *(d)*; J. Pyne; T. H. Holman.

COLUMBINE, 18—*Lieuts.* T. P. Thompson, H. Johnstone; *Master*, A. Rolls; *Surg.* J. W. Armstrong; *Assist. Surg.* R. L. Birthwistle.

DEE, *St. Ves.*—*Mate*, E. R. Connor.

ECLIPSE, *Packet*—*Surg.* P. Sherlock, M.D.

ESPOIR, 10—*Master (act)* G. Grant; *Assist. Surg.* W. White.

GANNET, 16—*Lieut.* F. G. Bond.

HARPY—*Lieut. Com.* E. Youel.

HASTINGS, 74—*Lieuts.* J. E. Bingham, E. S. Reynolds; *Mid.* F. G. Leigh.

LAPWING, *Packet*—*Surg.* W. Ekin, M.D.

LION, *R.C.*—*Lieut.* C. France.

NORTH STAR, 28—*Surgeon*, A. M'Laren; *Schoolm.* T. Hogan.

OCEAN, 80—*Lieut.* G. T. Dashwood.

ORDINARY—*Chatham, Lieut.* A. Plymsell. *Sheerness, Capt.* T. F. Kennedy; *Surgeon*, W. Watt, M.D.

ORESTES, 18—*Lieut.* B. E. Tireling; *Surg.* R. Maxwell; *Mates*, F. A. Ellis, Sir J. W. Nicholson, Bt.; *Mast. Assist.* J. Bodie.

PELORUS, 16—*Lieut.* R. T. Eyre.

PIQUE, 36—*Capt.* Hon. H. J. Rous.

PRESIDENT, 52—*Capt.* James Scott.

REVENGE, 78—*Lieut.* Thompson.

ROSE, 18—*Lieut.* R. A. Cartwright; *Mast.* J. S. Taylor; *Surg.* E. Jeffery; *Assist. Surg.* A. Lyon.

SAN JOSEF, 110—*Mate*, J. Rhode.

SAPPHIRE, 28—*Lieut.* P. Duthy.

SAVAGE, 10—*Sec. Mast.* N. B. Peirce.

SEAGULL, 6—*Lieut. Com.* W. Parsons; *Master*, J. Brown; *Surg.* A. Linton.

SPEEDY, 8—*Clerk*, J. Nott.

SPITFIRE, *St.V.*—*Lieut.* A. Kennedy; *Surg.* A. Gilchrist, M.D.

TALBOT, 28—*Lieut.* D. Curry; *2d Lieut. Mar.* F. E. L. Craig; *Mast. Assist.* F. H. Niblett.

THALIA, 46—*Lieuts.* H. J. Puget, H. Johnston; *Master*, E. Gulliver; *Surg.* J. Armstrong; *1st Lieut. Mar.* H. B. Skinner; *2d Lieut. Mar.* W. S. Budd; *Assist. Surgeon*, D. Deas.

TRIBUNE, 24—*Master*, A. M. P. Mackey; *2d Lieut. Mar.* C. Pegus.

VICTORY, 104—*Mate*, W. Loring.

WINCHESTER, 52—*Lieuts.* T. Lyell, J. G. Dickson, L. Browell, Lord C. Paget, G. A. Henry, C. Edmunds; *Surgeon*, J. Hately; *Purser*, P. T. Forest; *Assist. Surgs.* A. R. Bradford, R. M'Lean.

WOLF, 18—*Lieut.* W. Critchell; *Master*, R. Wilson; *Mast. Assist.* J. Paul.

ZEBRA, 16—*Lieuts.* N. Lefevre, H. Gaitskill; *Master*, R. Rogers; *Surg.* A. Gordon; *Purser*, W. Finlayson; *Assist. Surgeon*, J. Gorthy.

The Royal Naval Charitable Society has to record another of those munificent acts which his Majesty is so liberal in displaying; and when we reflect to whom the objects of our Sovereign's selection will be devoted, it will be the more duly appreciated. At a quarterly meeting of the society, held on Monday at the Thatched House Tavern, Rear Admiral Sir J. T. Rodd in the chair, the secretary read a letter from Sir H. Wheatley, stating that his Majesty, as patron, had commanded a donation of 100*l.* to be given to the Society, and that his name should be entered on the list as an annual subscriber of 50*l.* On the motion of Lord Radstock, a dutiful address was unanimously agreed to be presented to the King, for his gracious consideration in furthering the object of the institution. Vice Admiral Sir J. P. Beresford was then elected a vice president, in the room of C. E. Nugent, admiral of the fleet, who declined serving; and, after some other routine business, the meeting was adjourned to the 13th of October.

SHIPS' WATER.—We understand that Mr. Biddlecombe, second master of the Blonde, has invented a mode by which the water-tanks in ships' holds may be filled and emptied by means of Truscott's pump-hose, without taking off the round lids now fitted to tanks; an operation which always caused a loss of water by the ships' rolling, besides the liability of rats, vermin, or dirt getting into the tanks. The invention has been approved of by the officers here, appointed by the Admiralty to inspect it.—*Hants Tel.*

FALMOUTH, 20TH JULY.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
PIKE	Lt. Com. A. Brooking..	18 July	———	———	15 Aug.
LEVERET	Lt. Com. G. Traill	4 Feb.	15 April	St. Ubes	———
NAUTILUS	Lt. Com. W. Crooke ..	28 June	4 July	Lisbon	26 July.
VIPER	Lt. Com. L. A. Robinson	4 July	———	———	1 Aug.
CONFIANCE	Lt. Com. I. M. Waugh..	14 July	———	———	11 Aug.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

FLAMER, st. v...	Lt. Com. C. W. Griffin	3 July	———	———	23 Aug.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

LAPWING	Lt. Com. G. B. Forster	12 May	———	———	14 July.
REINDEER	Lt. Com. H. P. Dicken	9 June	———	———	11 Aug.
DUKE OF YORK	Lt. Com. W. James....	5 July	———	———	6 Sept.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

SHELDRAKE	Lt.Cm.A.R.Passingham	26 May	———	———	18 Aug.
STANMER	Lt. Com. R. S. Sutton..	23 June	———	———	16 Sept.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

SPEY	Lt. Com. R. B. James..	12 May	———	———	8 Aug.
SKYLARK	Lt. Com. C. P. Ladd ..	10 June	———	———	16 Sept.
LYRA	Lt. Com. J. St. John ..	5 July	———	———	11 Oct.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet.]

REYNARD	Lt. Com. G. Dunsford..	22 March	21 May	Vera Cruz	26 July.
GOLDFINCH	Lt. Com. E. Collier, ...	19 April	31 May	Havana	23 Aug.
ECLIPSE	Lt. Com. W. Forester..	26 May	———	———	29 Sept.
PANDORA	Lt. Com. W. P. Croke..	21 June	———	———	25 Oct.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

PIGEON	Lt. Com. J. Binney....	4 April	22 May	Rio Jan.	22 Aug.
MELVILLE	Lt. Com. C. Webbe	9 May	———	———	26 Sept.
MUTINE	Lt. Com. R. Paule	6 June	———	———	24 Oct.
CAMDEN	Com. Mr. J. Tilley	4 July	———	———	21 Nov.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St.Martin's-le-Grand.

IN PORT.

AFRICAN, St. V.—Lt. Com. J. West, 11 July arrived from Lisbon.

BRISEIS—Lieut. Com. J. Downey, 3d June arrived at Falmouth.

COLUMBIA, St. V.—Lieut. Com. B. Apline, 20 July ar. at Falmouth from Mediterranean.

ESPOIR—Lieut. Com. W. C. Riley, 7th July arrived from Lisbon.

FIREFLY, St. V.—Lt. Com. T. Baldock, 15th June arrived from Mediterranean.

NIGHTINGALE—Lt.Com.G. B.Fortescue, 17th May arrived at Falmouth.

OPOSSUM—Lt. Com. R. Peters, 8th July arr. at Falmouth from Jamaica.

PELHAM—Lt. Com. H. Carey, 8th July arr. at Falmouth from Leeward Islands.

PLOVER—Lieut. Com. W. Downey, 6th July arrived at Falmouth from Mexico.

RINALDO—Lt. Com. J. Hill, 16th July arr. at Falmouth from Brazils.

SAVAGE—Lieut. Com. R. Loney, 22nd June arrived at Falmouth from Lisbon.

SCORPION—Lt. Com. N. Robilliard, 3d June arrived at Falmouth.

SWALLOW—Lieut. Com. S. Griffith, 4th June arrived at Falmouth.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 446.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
234 Agenoria	Whiteway	Liverpool	Newfndld.	Off C. Spear	16 May	By ice, crew saved.
235 Astrea	———	Limerick	Quebec	St. Lawrence	———	232persons drownd.
236 Catherine	———	I. Man	Liverpool	Off Liverpool	8 July	6 drowned.
237 Cherub	Welch	Glasgow	Quebec	St. Lawrence	5 May	Crew saved.
238 Emilie	Cringle	Dundalk	Ayr	Bl. Rock Sand	11 July	Crew saved.
239 Favorite	Gatton	London	Newfndld.	Newfoundld.	15 May	By ice, crew saved.
240 Fidelity	Clark	Dublin	Quebec	Scatery I.	10 May	Crew saved.
241 Harris, R.W.	Forrie	Liverpool	Quebec	47 N. 50 W.	23 April	By ice, crew saved.
242 Isabella	Morrison	Drogheda	Quebec	St. Paul's	May	7 drowned.
243 James	Laidler	Limerick	Quebec	St. Lawrence	———	256persons drownd.
244 Jane	Crooks	Workingtn.	Quebec	St. Paul's	7 May	
245 Julia	Barker	S. Leone	Sunderland	Goodwin S.	15 June	Crew saved.
246 Langan, C.	Simpson	Liverpool	Philadelph.	At Sea	———	Abandoned.
247 Laurel	Smith	Blyth	———	Gunfleet	18 June	Crew saved.
248 Margaret	———	Belfast	St. John's	C. Sable	8 May	6 drowned.
249 Moon	Phillips	Sunderland	Quebec	St. Paul's	May	
250 Patriot	Anderson	Aberdeen	Quebec	C. Gasper	7 May	
251 Proselyte	Turnbull	Limerick	Quebec	Newfoundld.	10 May	Crew saved.
252 Sarah	Rennison	Plymouth	Quebec	Plymouth	13 June	Crew saved.
253 Scarbro'Casl.	———	Hull	Montreal	At Sea	30 ——	Abandoned.
254 Sisters	———	Liverpool	———	C. Africa	April	

FURTHER PARTICULARS OF WRECKS.

We have seen several accounts of four wrecks on St. Paul's Island, which all took place in the first week of May. Three of the vessels lost are the Jane, of Workington, Captain Crooks; the Moon, of Sunderland, Captain Phillips; Isabella, of Workington, Captain Morrison, from Drogheda, with 130 passengers (7 drowned;) and a bark unknown.

The following is the substance of Captain Crooks' statement:—"The Jane sailed from Workington on the 10th of April, had a fair run to near St. Paul's, when, on the 7th instant, in a very dark and sleety night, the vessel struck, at about 12 o'clock, with a tremendous crash on the rocks, although we had been steering wide of the island, after a good observation. Though immediately under high cliffs, we could not see the land. The vessel filled with water immediately, and the boats floating on deck, we embarked in one, from which, after suffering a raging sea and snow-storm during four hours, we landed; and, climbing up the rocks for three hours, at length reached the station-house, where Mr. Perry kindly received us, and supplied us with clothing and provisions, having saved nothing whatever.

"We soon met Captain Phillips, of the Moon, which had been wrecked about 60 fms. from us—all hands saved; next found Captain Morrison, of the Isabella, from Drogheda, with 130 passengers, seven of whom had been drowned. A fourth vessel, supposed a bark, name not ascertained, was also wrecked; but, as none of the crew were forthcoming, we suppose they were lost. The Jane was wrecked at the north-east end of the island—the Moon, about 30 fathoms from the Jane—and the supposed bark, among the three, as we found many things not belonging to any of the three vessels."

Extract of a letter from Captain Anderson, of the Patriot, from Aberdeen to Quebec:—"Cape Rosier, (Gaspe,) May 9th.—I am sorry to inform you that I had the misfortune to run my vessel ashore on Wednesday night, (7th,) during a dense fog, on the reef lying off this cape, and in two hours after she was full of water. We are getting the materials out as fast as possible, but I can hardly say there is a possibility of saving anything."—*Nelson's Quebec Gazette.*

The James, Captain Laidler, sailed the 8th of April from Limerick, for Quebec, in ballast, consigned to Mr. Curry, with 230 passengers, experienced rough weather, with variable winds, until the 27th, when it commenced blowing a tremendous gale at N.W. About noon the vessel was struck by a heavy sea, which broke right over her, took away everything that was not lashed off the decks, and most of the lee bulwarks, and topgallant quarter-boards, and threw the ship nearly on her beam ends; after which, perceiving her to be making considerable water, set the pumps on — found them choked — hoisted them up—put baskets on the ends, and put them down again. The suction of the pumps, on rubbing against the floor timbers, injured the bottom of the baskets, and the pumps choked again. This was repeated 8 or 10 times, with similar ill success; then removed some of the casks forward, and got some of the passengers to assist the crew to bail, in doing which several of them got injured by the rolling of the casks, and they left off working, when the water of course increased; tried the pumps once more, by hoisting them a foot higher, but still they choked, and further

efforts was entirely useless. At this time, (5 p. m.) there were eight or nine feet of water in the hold, and the ship lurching nearly on her beam ends, we found it impossible to save her.

Shortly after this, a vessel hove in sight, to the northward, standing towards the James. Endeavoured to bear down to her, but found the James would not answer her helm, having so much water in. Continued towards her in the best way we could, until 7 p. m., when Captain Laidler thought it best, as night was approaching, and no possibility of saving the James, to take the jolly-boat, and proceed to the vessel bearing down towards them, which proved to be the Margaret, Captain Wake, of Newcastle Previous to leaving the James, Captain Laidler exhorted the passengers to assist the crew in getting the boats out, but their answer was, "The sea is so rough, we are sure to be drowned, and we may as well die on board as in the boats;" when Captain Laidler told them that he intended to take the small boat, and that their chance would certainly be much better in large ones. Capt. Laidler got on board the Margaret about 8 p. m. Captain Wake immediately hoisted a light, and stood towards the James, as near as the wind would admit, it still blowing very hard. The James's crew, (nine of whom were on board,) including the first and second mate, never answered the light, although she was not more than two miles distant, and visible to the Margaret's crew until half-past 8. Captain Wake steered all night as near as possible in the direction of the sinking vessel, but the light was not answered, and nothing was afterwards seen of either the James or her boats. The wreck occurred to the eastward of the bank of Newfoundland.

Quebec Exchange Register.

THE THAIS PACKET.—It is well known to our readers that this vessel has not been heard of for some months; and the conclusion arrived at is, that she is lost. If this wanted confirmation, it is possible that the following may in a great measure suffice:—On the 5th of April, a strange boat was discovered by the officer of the preventive station in Roundstone-Bay, on the coast of Galway, Ireland, high and dry on some rocks, a short distance from the land. They immediately rowed to her, and on examination thought she was a foreign-built boat, being, as they reported, "sealed outside with diagonal planking," but on opening a piece of the painter which was attached to the boat, the king's mark was discovered, and, on further search being made, additional proof was found of her identity as belonging to his Majesty. This they reported to their superior officer, and by him to the Board of Admiralty, who immediately wrote to this yard, where the Thais was fitted out, to ascertain the nature of the boats which were supplied to the Thais when she was fitting here, when it was found that a 21-foot boat was issued to her, of Mr. Johns', the master boat-builder's new construction, viz., double diagonal planking. This being so stated, the board ordered the boat to be sent round for the purpose of being fully identified, and which the Jupiter landed this week at the dock yard, and was identified by Mr. Johns. It is firmly believed by all who are conversant with the subject, that, had this boat been built of the old construction, she must inevitably have gone to pieces; as it was, she merely sustained an injury on the larboard bilge, through settling upon a sharp-pointed rock. We forgot to mention that soon after the officers leaving her, the people came down and got her ashore, and succeeded in dragging her some distance up the country, under the impression that she was a foreigner, until convinced to the contrary.] This case tends most materially to prove the loss of the Thais, and of the probability that this is the identical boat in which the unfortunate sufferers attempted to save their lives; but, owing to the sea running at the time, the boat filled and they perished. In the second place this severe trial must tend to elevate the opinion entertained of the efficacy of Mr. Johns' system of boat-building, for, although stove, she can be made as efficient as if the accident had not occurred, in two or three days—Our readers will likewise remember our observation a short time since on an improvement by Mr. Restarick on Mr. Johns' system; we will only add, that experience has confirmed the opinion we then entertained.

Plymouth Journal.

By the Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, &c.

Whereas we have thought fit to revise and amend the second section of the fourth chapter of his Majesty's regulations for his service at sea relating to salutes, you are hereby desired and directed to consider the said section as cancelled, and to substitute in its room the accompanying Regulations, which are to be strictly observed on board all his Majesty's ships and vessels on all occasions on which salutes shall be fired.

Given under our hands the 23d June, 1834,
T. M. HARDY,
G. H. L. DUNDAS.

To all Flag-Officers, Commanders-in-Chief, Captains, and Commanding Officers, of his Majesty's ships and vessels.

By command of their Lordship's,
GEORGE ELLIOT.

REGULATIONS FOR HIS MAJESTY'S SERVICE AT SEA. CHAPTER IV. CEREMONIES AND DISTINCTIONS.

§ II. *Salutes.*

1. On all occasions on which salutes shall be fired, as hereinafter directed, they shall consist of the following number of guns:—

	Guns.
To his Majesty, or any member of the Royal Family	21
To the Flag of the Lord High Admiral	19
To the Flag of an Admiral of the Fleet	17
To the Flag of an Admiral	15
To the Flag of a Vice-Admiral	13
To the Flag of a Rear-Admiral, or to the Broad Pendant of a Commodore of the First Class	11
To the Broad Pendant of a Commodore of the Second Class	9
To a Captain *(as a return salute)*	9
To a Commander, or a Lieutenant Commanding *(as a return salute)*	7

The Lord Lieutenant of Ireland shall be saluted, within the harbours of that part of the United Kingdom, with such number of guns as he is or shall be entitled to from his Majesty's forts and garrisons in Ireland.

To an Ambassador, or a Duke, or to a Governor of one of his Majesty's Colonies or Foreign Possessions, being a Peer	15
To all other Peers, and to the First Commissioner of the Admiralty, to an Envoy Extraordinary, or to a Governor of one of his Majesty's Colonies, or Foreign Possessions, not being Peers	13
To any Chargé des Affaires, or other Minister under the rank of Envoy Extraordinary	11
To a Consul-General, or to a British Factory	9
To a Consul	7

2. Whenever His or Her Majesty shall arrive at any of the ports of the United Kingdom, they shall receive, on their first arrival, a royal salute from all his Majesty's ships then and there present; and again on their Majesties' final departure.

3. Whenever His or Her Majesty shall go on board any one of his Majesty's ships or vessels, the royal standard shall be hoisted at the main-top-gallant-mast-head of that ship or vessel; and at the same time, the flag of the Lord High Admiral at the fore-top-gallant-mast-head, and the Union Jack at the mizen-top-gallant-mast-head; or, if in a smaller vessel, in the most conspicuous part of such vessel; and a royal salute shall be fired from her on their going on board, and on their leaving her; and every other ship or vessel of war present shall fire a royal salute, on the royal standard, the flag of the Lord High Admiral, and the union jack being hoisted; and all the ships and vessels of war present shall fire such further royal salutes on their Majesties quitting the ship, or passing in their boats, or on such other occasions as the Commanding Officer shall think proper to direct.

4. Whenever any other of the members of the Royal Family shall arrive at any of the ports of the United Kingdom, they shall receive, on their first arrival, a royal salute from all his Majesty's ships then and there present; and again on their final departure.

5. Whenever any of the members of the Royal Family shall go on board any of his Majesty's ships or vessels, the royal standard shall be hoisted at the main-top-gallant-mast-head of that ship or vessel, and a royal salute shall be fired from the ship or vessel in which they have embarked, on their going on board, and on their leaving the said ship or vessel.

6. On the days appointed for the celebration of the birth, accession, and coronation of the king; of the birth of the queen; of the restoration of King Charles the Second; and of the discovery of the gunpowder treason; a royal salute of twenty-one guns shall be fired by every ship and vessel of war in port, by direction of the senior officer present.

7. Whenever the flag of the Lord High Admiral shall be hoisted on board any ship or vessel of war, it shall be saluted by such ship or vessel only with the number of guns before ordered; and such further salutes, of nineteen guns each salute, shall be fired, on the Lord High Admiral, or the Commissioners for executing the office of Lord High Admiral, leaving the ship, as may be directed.

8. Whenever the flag of an Admiral of the Fleet shall be hoisted, it shall be saluted by the ship or vessel of war bearing the flag or pendant of the officer next in seniority to him, with the number of guns ordered in the foregoing scale.

9. Whenever an Admiral, Vice-Admiral, Rear-Admiral, or Commodore of the First Class, shall hoist his flag or broad pendant, he shall be saluted with the number of guns to which his flag or broad pendant is entitled by the said scale, by the ship or vessel of war bearing the flag or pendant of the officer next in seniority to him.

10. Whenever a Flag-Officer or Commodore of the First Class shall hoist his flag or broad-pendant in the presence of another Flag-Officer or Commodore of the First Class, or shall meet another Flag-Officer or Commodore of the First Class, the junior of the two shall salute the senior, provided they have

not been saluted by him since their having hoisted a flag or broad pendant, with the number of guns to which his flag or broad pendant may be entitled.

11. If there be more than one Flag-Officer or Commodore of the First Class present, when a Flag-Officer or Commodore of the First Class shall hoist his flag or broad pendant, the senior Flag-Officer or Commodore of the First Class only shall exchange salutes with the officer hoisting his flag or broad pendant, (the junior of course saluting the senior;) and other flags and broad pendants, and private ships, shall not salute on such occasion.

12. If there be more than one Flag-Officer or Commodore of the first Class in squadrons that shall meet, the senior Flag-Officer or Commodore of the First Class of the one squadron, shall salute the senior Flag-Officer or Commodore of the First Class of the other squadron only, (the junior officer of the two squadrons saluting the senior;) and the other flags, broad pendants, and private ships, shall not salute.

13. Whenever any ship or vessel of war shall join or meet a Flag-Officer, or Commodore of the First Class, for the *first* time, she shall salute such Flag-Officer or Commodore (provided there be no senior flag or broad pendant present) with the number of guns to which his flag or broad pendant may be entitled. If more than one ship or vessel shall, at the same time, so join or meet a Flag-Officer or Commodore of the First Class, and if the said ships or vessels so meeting or joining shall have been placed under the orders of the senior officer in command of one of those ships or vessels, such senior officer only shall salute the flag or broad pendant; but if the said ships or vessels are under separate and distinct orders, the salute shall be fired by each of them.

14. The Captain of one of his Majesty's ships shall not salute the Captain of another of his Majesty's ships in any part of the world.

15. The royal standard does not return salutes.

16. Whenever a junior officer shall salute the flag of the Lord High Admiral, or of any flag officer, or the broad pendant of a Commodore of the first class, a salute shall be fired, in return, consisting of the number of guns to which the rank of the officer who fired the salute shall be entitled, according to the scale in article 1.

17. Whenever a Captain, Commander, or Commanding Officer of any of his Majesty's ships or vessels shall salute the flag of the Lord High Admiral, or of any flag officer, or the broad pendant of a Commodore of the first class, a salute shall be fired, in return, by the ship carrying the flag or broad pendant saluted, consisting of nine guns, if the salute was fired by a Captain, and of seven guns, if the salute was fired by a Commander or Commanding Officer; and in case more than one ship saluted the flag, (as mentioned in article 12,) a salute shall be fired in return, as an answer to the whole, consisting of two guns less than the number to which the flag saluted is entitled by the scale.

18. When Flag Officers or Captains are saluted by merchant ships, they shall return such number of guns as they shall think fit, not exceeding five to a single merchant ship, or seven to several ships.

19. When an ambassador, or a peer, or a governor of any of his Majesty's colonies or foreign possessions, or the First Lord Commissioner of the Admiralty, or an Envoy Extraordinary, or a Chargé des Affaires, or other minister, shall embark on board any one of his Majesty's ships or vessels of war, for the purpose of proceeding on any voyage in performance of public service, a salute shall be fired, on his going on board, and on his quitting the ship or vessel, according to the said scale; and whenever any one of the above persons may *visit* any of his Majesty's ships, a salute shall be fired, on his leaving the ship, of the number of guns to which he is entitled, according to the said scale; but if he visit, on the same day, several ships of any squadron, or in the same port, he shall be saluted by only one of them.

20. His Majesty's Consuls, or a British Factory, may be saluted with the number of guns established by the said scale, on their embarking in, or leaving any of, his Majesty's ships; but this is to be done only in foreign ports, and only once during the ship's stay in such port.

21. His Majesty's ships shall not, on any account, salute any of his Majesty's forts or castles in the United Kingdom.

22. His Majesty's ships shall not, on any account, lower their top-gallant-sails, nor their flags, to any foreign ships whatever, unless the foreign ships shall first, or at the same time, lower to them their top-gallant-sails or flags.

23. When a British ship shall anchor in any foreign port or road, the Admiral, Captain, or officer commanding, shall ascertain, previous to his saluting, what number of guns will be returned, as well from the citadel or fort of the place as from any ship of a Flag-officer of the nation to which the port belongs; and he is to salute, in each case, with the same number of guns, not exceeding, however, twenty-one. But no officer is to salute, without receiving an assurance that an equal number of guns will be fired in return. In the event of there being already in the port a senior officer of his Majesty's ships, his directions on the subject are to be followed; such senior officer having informed himself of the custom there in like cases, and of the particulars above mentioned.

24. When a foreign ship of war shall anchor in any British port, and shall be willing to salute the commanding-officer of his Majesty's ships there, such commanding-officer, of whatever rank he may be, shall return an equal number of guns with that given by the foreign ship, not exceeding, however, twenty-one.

25. All British officers saluting foreign ships at sea, shall give and receive an equal number of guns, whatever the rank of the respective officers may be, not exceeding, however, twenty-one.

26. If a foreigner of high distinction, or a foreign flag, or General Officer, shall go on board any of his Majesty's ships, he may be saluted, on his leaving the ship, with such a number of guns as from his rank and quality may be proper, not exceeding fifteen guns,

excepting in the case of the members of the royal family of such nation, when the number may be extended to twenty-one guns, but never more: and the captain of a foreign ship of war may be saluted, on his visiting one of his Majesty's ships, if such a compliment shall have been paid to the captain of one of his Majesty's ships, on his visiting a ship of the nation to which such foreign ship may belong.

27. None of the before-mentioned salutes shall be fired without due communication by signal, or otherwise, being made to the commanding officer present, excepting in cases of salutes in compliment to the said commanding-officer himself, in conformity with the foregoing regulations.

28. Frequent accidents having occurred during the firing of salutes in small vessels, by the haste with which the guns are re-loaded, none of his Majesty's ships with less than ten guns are in future to fire a salute which requires the guns to be re-loaded, unless in a case where such an omission cannot be explained without giving offence to a foreign power or flag.

Births.

The lady of Captain William Hobson, R.N. of a daughter.

On 14th July, the lady of Lieut. Eversfield, R. N. of the Coast Guard Service, of a daughter.

At Budleigh Salterton, the lady of Lieut. Clay, R.N. of a son.

On the 5th of July, at Kensington, the lady of Lieut. Patrick Inglis, R.N. of a son.

At Torrington, Mrs. Colby, the wife of Com. Colby, R.N. of a son.

At Ryde, the lady of Captain H. Mason, R.N., of a daughter.

On the 2d of June, at Brighton, the wife of Hugh Nurse, Esq., Commander, Royal Navy, of a son.

Marriages.

At Falmouth, Mr. A. Thomas, R.N., to Fanny, eldest daughter of Mr. Bawden, R.N.

At Stoke Church, on the 12th of July, Mr. John Phillips, R.N., to Mrs. Fagan, relict of the late Mr. Fagan.

At Stonehouse, Lieut. Walker Taylor, R.N. to Elizabeth, daughter of the late Captain Pellowe, R.N.

At the Chateau de l'Isle de Noé, (Gers,) on the 3d of July, Captain R. H. Manners, R.N., to Louisa-Jane, eldest daughter of Le Comte de Noé Pair de France.

Deaths.

At his residence, Mile-end, near Portsmouth, on the 15th June, Mr. John O'Brien, Purser, R. N. (1804,) after a painful and lingering illness, which he bore with great patience and resignation, leaving a wife, two sons, and a large circle of friends, to lament their loss.

At Stonehouse, after three years' severe illness, Captain John Pilfold, C.B., R. N., aged 65. This officer had a medal for the battle of Trafalgar, having commanded the Ajax, 74, as First Lieutenant on that day, in the absence of his Captain, and was promoted to the rank of Post Captain for his gallant conduct on that occasion.

At Guernsey, Captain F. White, Commander of his Majesty's Weymouth packet, Flamer, aged 52.

On the 3d of July, at Saltash, aged 71, John Evans, Esq. R.N., many years secretary to the late Hon. Admiral Cornwallis, with whom he served in India and the Channel Fleet.

At Dartmouth, Captain H. P. Jauncey, R.N., aged 59.

Lately, at Minorca, on board the Harlequin yacht, Dr. George Thompson, R.N.

At Gillingham, James Scott, Esq., Purser, of H.M.S. Ocean.

Lately, off the coast of Portugal, John Isatt, Esq. Surgeon, R.N., in charge of a convict-ship bound to New South Wales. The ship endeavoured to put into the Tagus, to procure another medical superintendent, but easterly winds compelled her to bear up for Madeira and Rio Janeiro.

On the 16th of February last, at Porto Praya, Cape de Verds, in his twentieth year, Mr. James Warner Thomas, Midshipman of his Majesty's ship Ætna, the deservedly beloved son of Lieut. J. R. Thomas, R.N. This estimable and most promising young man caught the yellow fever while on service in command of one of the barges of the Ætna, employed in examining the river Cacheo, on the coast of Africa. He was justly appreciated and esteemed by his Captain, and admired and beloved by his messmates, and the crew of his ship.

On the 2d of April, at Simons Town, Cape of Good Hope, deeply lamented, John Payton Lamey, Esq., secretary to Rear-Admiral Frederick Warren, Commander-in-Chief, and Purser in the Royal Navy. (1806.)

At Bishopstoke, Commander James Rogers Drew, R.N.

In London, in the 84th year of his age, Sir Gilbert Blane, Bart. Sir Gilbert was Physician to Lord Rodney, in the action of the 12th of April, 1782, and received a pension for a wound received in the service.

On the 7th of April, whilst on his passage from Fernando Po to Ascension, on board the William Harris transport, Lieut. W. Steevens, agent of that ship, aged 52.

At Dover, Commander Rose, R.N.

At Boulogne, Lieut. Garbett, R.N.

At Edinburgh, G. Sinclair, Esq. R.N.

At Malta, Peter Marshall, Esq. M.D., Surgeon, H.M.S. Acteon.

Lately, at Harwich, Commander Mark Lucas, R.N.

On the 18th of January, at sea, on his voyage from Bombay to Bushire, of a fever taken at Muscat, Captain Frank Gore Willock, R.N., aged 47 years.

On the 29th of March last, on board the Spartiate, at Rio Janeiro, Mr. J. Hawker, Purser, R.N., son of H. Hawker, Esq., late of Soberton.

A few days since, at Gillingham, James Scott, Esq., Purser of H.M.S. Ocean.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

JUNE, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength.			
		9 A.M.	3 P.M.	9A.M.	3P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
1	Su.	30·30	30·28	60	74	48	74	S.E.	S.	3	3	B.	Bm.
2	M.	30·20	30·16	68	75	50	78	S.	S.	3	4	B.	B.
3	Tu.	30·06	30·06	69	65	55	73	S.W.	S.W.	2	2	Bc.	Or (3
4	W.	29·98	29·92	64	67	50	70	S.W.	S.W.	3	5	B c.	Or (3 (4)
5	Th.	29·71	29·81	62	60	49	63	S.W.	N.	4	4	B c p ' 2)	B c.
6	F.	30·06	30·12	62	66	43	67	N.	N.	3	4	'B c.	B'c.
7	S.	30·12	30·08	61	67	45	68	N.E.	E.	3	3	Bcv.'	Bcv.'
8	Su.	29·92	29·85	59	76	47	77	N.	N.	2	2	Bc.	Bc.
9	M.	29·75	29·72	65	73	50	75	S.W.	S.W.	2	4	Bc.	Bc.
10	Tu.	29·69	29·65	62	67	53	70	S.W.	S.W.	6	6	O.	Bcqp (3)
11	W.	29·70	29·70	58	60	47	63	S.W.	S.	6	8	Bc.	Bcqp (3)
12	Th.	29·77	29·74	57	62	44	62	S.W.	S.W.	5	7	B c.	Oqp (3 r(4)
13	F.	29·74	29·82	60	65	50	65	S.W.	S.W.	4	4	Oq.'	Or 3) d'(4)
14	S.	29·92	29·86	64	71	56	73	S.W.	S.	5	4	Od (2	Bctlphr (4
15	Su.	29·90	29·88	62	75	55	75	S.W.	S.W.	6	6	Bc.	' Bc.
16	M.	29·68	29·65	62	63	57	64	S.W.	S.W.	6	8	Bcp 2)	Bcqp (3 d(4
17	Tu.	29·74	29·80	57	60	52	62	W.	W.	8	8	Bcqp 2)	' Bcq.
18	W.	30·06	30·06	64	62	50	67	S.W.	S.W.	5	7	Bc.	Oqpd 3) (4
19	Th.	30·11	30·11	68	73	58	74	S.W.	S.W.	7	7	B c.	B c.
20	F.	30·11	30·06	66	76	52	79	S.	S.	2	2	B. '	Bc'm.
21	S.	29·86	29·86	76	84	63	86	S.W.	S.W.	6	5	Bcm.	Bcm.
22	Su.	29·95	29·97	64	72	60	73	S.W.	S.	3	3	Or (1	O.
23	M.	30·24	30·24	62	73	51	73	W.	S.W.	1	1	Bcm.	B c.
24	Tu.	30·32	30·31	66	67	52	69	S.W.	S.W.	3	4	Bc.	B c.'
25	W.	30 35	30·33	62	72	57	73	S.W.	S.W.	2	2	Od (2	B'cm.
26	Th.	30·22	30·18	65	72	59	73	S.W.	S.W.	5	6	Bc.	O.
27	F.	30·11	30·17	62	60	55	64	N.W.	N.W.	7	6	Oqp 2) r(1	Oq.
28	S.	30·25	30·18	57	69	46	70	S.W.	S.W.	3	3	Bcm.	Bcm.
29	Su.'	30·19	30·24	65	72	51	73	E.	N.E.	3	3	B c.	Bc.
30	M.	30·39	30·37	64	68	44	68	N.E.	N.E.	3	4	Bcv.'	Bcv.

JUNE—Mean height of the Barometer, 30·010 inches; Depth of Rain fallen, 0·40 inch; Medium of Thermometer in the shade, 61·2 degrees.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds—detached passing clds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
· Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, *i.e.* from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of the six hours, and both together denote the whole interval. They are intended to express the time nearly when rain fell. Thus, 2) signifies that rain fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained the whole six hours from 6 A.M. to noon; (3) ditto from noon to 6 P.M.

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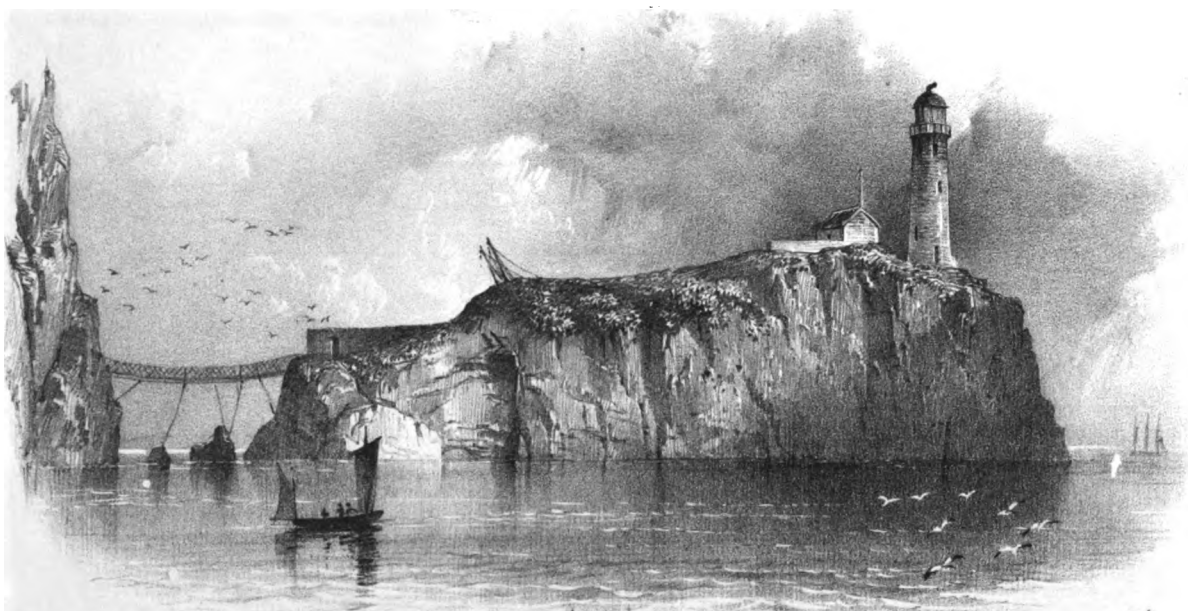

On Stone by T. Hagha.

Day & Haghe Lithrs to the King.

SOUTH STACK ROCK.

Publ.d for the Proprietors of the Nautical Magazine by Simpkin & Marshall. 1834

THE

NAUTICAL MAGAZINE.

SEPTEMBER, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

46. Remarks on the Navigation *between Tripoli, Malta, Naples, the Dardanelles, and Sea of Marmora, with the Anchorage off Therapia, and the prevailing Winds found there. By Capt. The Hon. F. W. Grey, in H.M.S. Actæon.*

Compass Bearings.

Tripoli to Malta, Seven Days.—On the morning of the 1st of January, 1833, we were under way from Tripoli, with a fine breeze at west, and, after clearing the reefs, we steered over N.N.E. till 8 o'clock the next morning; when, with the wind at N.W., the west end of Gozo bore N.E. by N. twelve miles. At 11, we were in the entrance of the channel between Malta and Cumino; the wind light and variable, and so baffling, that we were thrown by the swell close to the low rocky point marked Sghaita, and with some difficulty towed clear of it. The water off this point is deep, having eight and nine fathoms close to it; but, after passing, it shoaled quickly to five, and, in standing across, with a light breeze, we carried seven and eight fathoms half channel over, as near as I could judge, to where twenty-five is marked in the chart; the water deepening as we neared Cumino; and, in standing back again, we shoaled in the same manner. Afterwards, in standing through the channel, when abreast of the bay, between the points marked Tandor and Lovia, and one-third channel over from the Malta shore, we suddenly shoaled to nine and five fathoms, gradually deepening as we kept off shore.

The course through this channel also appeared incorrect. The wind drawing gradually round to east, south-east, and south-west, we crossed Ball's bank in eleven fathoms, and at five were becalmed off the entrance of the harbour, into which we towed and warped by 8 h. 30 m. In this passage, we experienced a set to the *eastward* of a mile an hour. With westerly winds, I should recommend the Cumino passage, rather than going round the east end of the island, where a strong lee current will be met with.

Malta to Naples, Four Days.—We remained in Malta harbour till the 25th of January, having been detained the last three days by a strong easterly wind; and on that day we were towed out by the Meteor, against a good deal

of swell, and a fresh north-west wind. At 6 P.M. we made sail on the larboard tack, but, being baffled by the wind, which was squally and variable, we made little progress till 8, when Valetta light bore S.W. by S. six miles. The wind then drawing round to N.E., we steered over N.N.W. ½ W. for the coast of Sicily. At 7 A.M. of the 26th, Alienta bore N. N. E. about seventeen miles, and we ran along shore N.N.W. ½ W. and N. by W. ½ W. with a fresh breeze at N.E. and E.N.E. At noon, the latitude observed was 37° 22′ N.

Cape St. Marco	N.E. ¾ N.
Cape Bianca.....	E. by S. ¾ S.
Sciacca.....	N.E. by E. 8 or 9 miles.

At 4, we passed about three miles from the low sandy point of Cape Granitola. We then steered N.W. ½ N. twenty miles, till 8, when Maritimo bearing N. ½ W. we altered course to N. and passed with a fresh breeze at S.E. between Maritimo and Favignana. At 11, being well clear of the islands, we hauled up N.E., with the wind at S.S.E.

At noon, on the 27th, we were in lat. 39° 14′, and long. 13° 12′, the island of Ustica bearing S. by W. ½ W. ten or eleven leagues. We ran all night to the N.E. with a light southerly breeze, and at daylight, on the morning of the 28th, passed between Capri and Cape Campanella, and at 11, anchored in twelve fathoms in Naples Bay.

Mole Light-house.....	N.W. ½ N.
Castle del Ovo	W. by S. ½ S.

In this passage, nothing occurred worthy of remark; all our observations agreed very exactly with the bearings of the places marked in Captain Smyth's chart. On leaving Malta, I had intended to make the passage by the Faro, but finding the wind inclined to draw to the eastward, I steered over for the Maritimo passage; and, from the success which attended it, I should be inclined to recommend it as the preferable passage.

NAPLES.—The anchorage in the bay of Naples at this season, being very much exposed, it was an object of importance to get the ship into the Mole; and it may perhaps be useful to mention, that the permission for this purpose is obtained by the consul, and, that, on his application to the Minister of Marine, every assistance is afforded by the dockyard. A lump was sent to us early on the following morning, to convey our powder to a magazine at Posilippo; hawsers were laid out in readiness, and the master of a corvette sent to take the ship in. We let go our anchor at the entrance, and hauled in, mooring with a stream-cable, for a bow-fast, and two bower cables of a Neapolitan frigate, for quarter-fasts. It was necessary to make an application for permission to use these cables, which is much preferable to laying an anchor out for the larboard quarter-fast, as, from the number of cables and anchors about, it would be very difficult to lay it clear. The stern moorings are of the most consequence, as the heaviest breezes come from the S.E. and S.W., and, having good scope of cable on the bower-anchor, a ship is well secured to the northward.

Water we obtained from a tank-vessel belonging to the dockyard; and I cannot speak too highly of the readiness with which all our requests were granted, and our wants supplied, by the intendant of the arsenal.

The water at the entrance of the Mole is very shoal, the deepest being twenty-four feet, close to the Mole-end; the bottom is soft mud, and, although we took the ground with our heel in going in, we had no difficulty in hauling clear. We remained in the Mole till the 26th of March. The weather during the time, upon the whole, was fine, with occasional gales of wind from the

westward. The prevailing winds were westerly and south-westerly, the latter generally accompanied with rain.

ANCHORAGE IN NAPLES BAY.—On the 26th we hauled out of the Mole, and on the 27th we received Prince Charles on board, and ran over to Sorrento, returning the same evening to our anchorage off the town.

Our anchorages in the bay were as follows:—

First.		
Mole Light-house.....	N.W. ½ N.	12 fathoms.
Castle del Ovo (Point).....	W. by S. ½ S.	
Second.		
Mole Light-house.....	N.W. ½ N.	11 .....
Point del Ovo	S.W.b.W.½W.	
Third.		
Mole Light-house.....	North.	
Point del Ovo	W. by S. ½ S.	13 .....
St. Elmo	N.W. ½ W.	

These are all good berths; the best I think are, with Point del Ovo from W. by S. ½ S. to W.S.W. and the Mole Light-house from N. to N.W., in twelve to fourteen fathoms. You should not bring Point del Ovo as far to the westward as W. by S., as you will then run the risk of dropping your anchor upon some of the wrecks which lie between the following bearings:—

Light-house	W. ½ N. to N.W. ½ W.
Point del Ovo	W. by N. to W. by S.

In from eighteen to twenty-five fathoms.

CHART OF THE BAY.—A very good plan of the anchorage, marking the positions of these wrecks, made by order of the Government in 1821, and published in 1824, with very full directions, (published also by authority in 1828,) may be bought at Naples.

We remained at our third anchorage till the 6th of April; on the 2d, we had a very heavy gale from the southward, which threw a heavy sea into the bay, but the ship rode very easily.

NAPLES TO THERAPIA.—On the evening of the 6th we were under way, with a moderate breeze at north-east, and passed between Capri and Cape Campanella. The rock laid down in this channel, in the Admiralty chart, I believe, certainly has no existence. After clearing the island of Capri, we steered to the southward, with a fresh breeze from the eastward, which in the morning fell light, and at noon of the 7th we were in lat. 39° 10′, long. 14° 47′, Stromboli bearing S.S.E. ½ E., Felicudi S.W. ¼ S. We stood to the southward, with the wind at east and south-east, till 7, when we had approached near Salina. The wind drawing round to the southward, we fetched close to Stromboli, and, during the night worked through, between that island and Panaria—the wind baffling and variable, as I believe it generally is among these islands. At 8 next morning, (the 8th,) east end of Stromboli N. b. E. ¼ E. eight miles. North end of Panaria, N.W. by W. ½ W. During the forenoon the wind was off the land, but variable and baffling; and by 12 we had only gained seven miles,

Stromboli bearing.....	N. ¼ W.
Volcano South Point	W. by S. ½ S.

At 2 o'clock the wind shifted suddenly to the N.W., and at 4 we entered the Straits of Messina, with a fresh breeze. We rounded the Faro close, and, after standing on a short time, tacked to the northward, and stood close in to the beach. The wind inside being light and baffling, we kept along the Sicilian shore, and at 6, light variable winds, nearly calm, we had approached close to Messina, with the intention of anchoring, when the breeze from the N.W. coming down fresh, we bore up, and made sail out of the straits.

After rounding the Faro, I observed that the vessels which kept on the Calabrian shore, carried a steadier breeze than we did on the Sicilian, and, while we were nearly becalmed off Messina, they were running through with a fine breeze.

At 8, Cape del Armi bore E. by S. four or five miles, and at 9 we hauled up S.E. by E. for Cape Matapan, with a fresh breeze from the westward, and a heavy head swell, which prevented our carrying so much sail, or making so much progress as we otherwise should have done. At noon of the 9th, we were in

Latitude by { D.R. 37° 40′ / Obs. 37° 04′ } Longitude by { D.R. 17° 55′ / Chron. 18° 00′ }

Shewing, what I have always experienced in this part of the Mediterranean, a set to the south-east.

We carried a fresh breeze all the afternoon; at 8 altered course to E.S.E., and in the first watch had squally unsettled weather, with rain and lightning, which, by 12 o'clock, cleared away to a fresh north-wester, and fine weather. At 9, not making the land as we expected, we hauled up east, and at 10, E.N.E. At noon, blowing strong from north-west the land ahead, we were as follows:—

Latitude by { D.R. 36° 39′ / Obs. 36° 13′ } Longitude by { D.R. 22° 10′ / Chron. 22° 8′ }

having been set twenty-six miles to the southward in the last twenty-four hours. We, in consequence, hauled up N.E. and N.E. by N. for the Gulf of Kolokythia, and at 3 h. 30 m. hauled to, the wind under Cape Matapan blowing a heavy gale from N.W.

We lay by during the night, and at 4 A.M. made sail, with a moderate breeze at N.E., and worked through the Servi passage. Meeting a heavy northerly swell as we opened St. Angelo, we worked up during the day against light northerly winds, and at noon of the 12th Cape Botte bore W. by S. ¼ S.; Cape St. Angelo S. ½ W. We ran up with a light sea breeze during the afternoon, and at midnight were off the island of Hypsali, and, working up against the light variable winds so prevalent in this gulf at night. At 7 o'clock of the 13th we anchored off the town of Nauplia. We only remained at this anchorage till the morning of the 15th, when we were under way, running out of the gulf with a westerly breeze, which, after foiling us for a short time, off Spezzia, carried us through the Spezzia and Hydra passage, and up the Gulf of Egina, and at 8 o'clock we came to an anchor in Salamis Bay, in eighteen fathoms water, blowing strong from the westward.

Soon after daylight we were under way, with a strong breeze, and ran into the Pirœus, and shooting up to the weather shore, anchored in seven fathoms and a half. At 4 h. 30 m. the next morning, (the 17th,) we were under way, and ran out of the Pirœus, with a light air. During the day we had light southerly winds, and by the next morning we cleared the Zea passage. We continued advancing slowly through the Doro passage, with light variable airs, till 8 o'clock on the morning of the 19th, when we got a breeze from the south-

ward, which, by 1 A.M. of the 20th, carried us up to Cape Baba. The wind then drawing round to N.E. we worked up inside of Tenedos, passing between the town and small rock, and a little after noon anchored in Basika Bay, in seven fathoms and a half, with

Sigean Promontory	N. ¼ E.
Small Rabbit Island.....	N.W. by W. ½ W.
Town of Tenedos	S.W. by W.

There we remained quite sheltered from the N.E. winds, which blew fresh during the 21st and 22d. On the morning of the 23d we were under way, and, working up with a moderate breeze, at noon we entered the Dardanelles, with a north-west wind, and ran up on the European shore, till nearly as high as Point Barbiere, when the wind coming from the N.E., we stood across, and anchored off the white cliffs, in ten fathoms.

Southernmost of the two large White Cliffs	E. ¼ N.
Point Barbiere	N.N.E. ¼ E.
Valley opposite.....	N.N.W. ½ W.

The next day we were under way twice with southerly winds, but each time the wind failing, we were forced to return to the anchorage off the cliffs.

First Bearings at Anchor.

Southernmost of the Two White Cliffs....	S.E. ½ E.
Point Barbiere	N. by E. ¼ E.

In ten fathoms and a half, rather close to the shore.

Second Bearings at Anchor.

South Cliff	E. ¼ N.
Point Barbiere on with Nagara Point	N.N.E. ¼ E.

In thirteen fathoms—a very good berth.

We remained at this anchorage the two following days, and I measured a base upon the low flat ground of Point Barbiere, with the intention of making a plan of this anchorage, but, from the ship's company being attacked by the influenza, which put upwards of sixty men in the list at one time, and which scarcely a man or officer escaped, I was fearful of exposing the boats' crews to the cold north-east winds, and therefore gave up the idea.

From the slight examination I was enabled to give, it appears to me that the best anchorage is with the white cliff mentioned above bearing from E. to E. by N. in ten to thirteen fathoms. To the eastward the shoal runs further off shore, (full 250 fathoms,) and is steeper to approach. Round the bight, where the low land forming Point Barbiere runs out, it does not extend more than 150 fathoms; but from the point itself a spit runs a considerable distance to the south-west. It does not appear to run out into the strait to any distance; in fact, the current runs so strongly close to the point, that the water must be deep.

On the afternoon of the 26th, we were again under way, with a fine breeze from the southward; but it again failed us before we had passed the formidable current, and we hauled over for the European side, and anchored about a cable's length from the shore, in fourteen fathoms, a little to the eastward of the large valley opposite Point Barbiere, marked in the chart Soundéré, with Upper Castle of Asia N.E. by E. I would recommend to ships in fine weather rather to anchor on this shore, than to cross to the white cliffs, as the wind at times comes from the north-west, and enables them to get up as high as the

castles, by keeping the European shore on board; and I have seen no instance of the wind coming from the south-east, so as to give the advantage to a ship on the southern shore. The water here is not so deep as, from the height of the land, I had expected to find it. Off the entrance of the stream which runs down the valley, a shoal runs out a short distance: the holding-ground appears good. There is anchorage all along this shore, from Point Barbiere up to the castles; in the bay below the castles, in from seven to thirteen fathoms; but in most places it is necessary to approach the shore very closely, to get into a moderate depth.

We remained at this anchorage, with variable weather, and north-east winds, till the morning of the 30th, when a fresh southerly breeze enabled us to pass the castles, and at 2 we passed Gallipoli, and steered E.N.E. This course carried us five miles to the northward of Marmora, and at 8, having passed the centre of the island, we altered course to east, and ran fifty-one miles, and then, seeing the land, we hauled up N.E. At 4 h. 20 m. Point Stefano bore N.W. two miles; at 6 we passed the Sultan's palace; at 7 h. 50 m. came to off Yelikeni Point. The next morning we shifted our berth to off Mezar Bournou Point.

THERAPIA, MAY 1st. to JAN. 1st. 1834.—During the summer months our anchorage was at about 1¼ cable's length west from the point of the Asiatic shore off Therapia; both in order to be near the palace, and from its being considered much more healthy to be in the full draught of the sea-breeze, than by a nearer approach to the marshy ground at the entrance of the river, to run the risk of the fevers so prevalent in all the valleys and low grounds in the month of August. Whether owing to this precaution, or not, during the whole summer we had only one case of fever, and that, although severe, not fatal.

The holding ground is not of the best kind; but with a good scope of cable (we veered to 100 fathoms chain) there is no risk of the ship driving, certainly, not with westerly and southerly winds, which alone would be dangerous; and the current, with few exceptions, I believe I might say during the summer without an exception, running constantly down, a ship never goes near her anchor. The shoals a-head in a great measure prevent the risk there might otherwise be of vessels coming down running on board. In fact, I recommend this anchorage as much the best in summer.

Upon our return to the Bosphorus in November, we took up a berth with the above point N.N.W. of us, about 1¼ cable's length from the mouth of a river; and we have found it so sheltered, that in the heavy gale of the 15th and 16th of December, which did so much damage in the Black Sea and Archipelago, the ship rode perfectly easy, without veering any cable. A French brig-of-war, in Therapia harbour, rolled very heavily, and had great difficulty in keeping clear of the two or three other vessels lying there. In the month of May, and beginning of June, the weather was cold and rainy, the N.E. winds being often accompanied by cold damp fogs from the Black Sea. From the beginning of June till the middle of September, there was no rain, the weather fine, and the heat seldom oppressive. Towards the end of September the weather broke up, and we had squalls and rain; and in the beginning of October the weather was variable and unsettled. From the 12th of October to the 8th of November, we were absent from the Bosphorus.

On the 9th and 10th of November the wind was southerly, with fine weather; and from that time to the 3d of December the N.E. wind blew almost without interruption, sometimes fresh, and cold. During the month of December the wind was generally from the southward; on the 13th it blew fresh from the westward, and the same night shifted suddenly to the N.W. and then N.E., where it freshened up by the following night to one of the

heaviest gales known here for many years, accompanied by heavy rain and sleet. On the 16th it moderated, and again came from the southward. On the 26th it blew fresh from the S.W., and in the night the wind again suddenly shifted to the northward, and blew hard for two days from N.E. when it again came to the southward.

The following table shows the prevailing winds.

TABLE OF WINDS—THERAPIA, 1833.

Month.	North to East.	South to West.	Calm & Var. Airs.	Greatest Duration. North to East.		Greatest Duration. South to West.	
May 31 days	24days	3 days	4 days	14th to 26th . .	13 days	. . . . .	1 day
June 30 days	24 ..	4 ..	2 ..	24 June to 4 July	11 ..	14th to 15th . .	2 ..
July 26 days—sailed the 26th	14 ..	7 ..	5 ..	21st to 26th . .	6 ..	9th to 11th . .	3 ..
August 22 days—absent 1st to 4th; 24th to 30th	17 ..	4 ..	1 ..	5th to 14th . .	10 ..	. . . . .	1 ..
Sept. 30 days	21 ..	9 ..	0 ..	19th Sept. to Oct. 12th	24 ..	13th to 18th . .	6 ..
October 12 days—sailed the 12th	12 ..	0 ..	0 ..			. . . . .	0 ..
Nov. 23 days—returned the 8th	18 ..	2 ..	3 ..	11th to Dec 2d two days calm	22 ..	9th to 10th . .	2 ..
Dec. 31 days	9 ..	16 ..	6 .	14th to 16th . .	3 ..	17th to 22d, one calm day	6 ..
May to September inclusive, 139 days	100 ..	27 ..	12 ..				
Oct. 12 days	12 ..	0 ..	0 ..				
Nov. and Dec. 54 days	27 ..	18 ..	9 ..				
Total days, 205	139 ..	45 ..	21 ..				

SEA OF MARMORA, July the 25th to the 4th August.—On the morning of the 26th we were under way from Therapia with the sea-breeze, and ran down to Constantinople, where we anchored in 17 fathoms, with the following bearings—

Leanders Tower ..... S.E. by E.
Seraglio Point ..... S.S.W.
Gun Wharf ..... W. by N.

This berth, which we took up in order to be near the Malabar, is a very bad one. The bottom is very loose, and the ship, lying just between the current and the eddy, is constantly sheering about, and, from the same causes, it becomes difficult to get under way without running the risk of getting foul of some of the vessels in the port. This we experienced, as, although there was not much wind, the anchor came home with thirty fathoms of chain out, and it was only by getting sail upon the ship very quickly that we cleared the Malabar.

We were under way at 5 P.M. of the 27th, and, after passing the Malabar, forced to haul nearly to the wind to clear the Seraglio Point, upon which the current set with great velocity. We then steered W.S.W. with a moderate breeze at E. and at 1 A.M. having run 33 miles from San Stefano, we hauled up W. by N.½N. for the passage between Marmora and Artaki, running under easy sail.

At 4 .....N.E. Point of Marmora ..... N.W.½N.
Centre of Artaki ..... W.½S.

At 5 we hauled in for the N.W. Point of Artaki with a moderate breeze, which freshened and drew in as we got into the Narrows between Liman Pasha and Artaki: we gave a good berth to the point to the eastward of the village marked in the chart Tarradich, off which a shoal appears to extend a considerable distance, and then hauled up for Artaki—the squalls coming down so heavily off the high land as to bring us under double-reefed topsails and foresail. As we approached Artaki the wind fell light, the same strong breeze apparently blowing astern of us; and at six on the 20th we anchored with the following bearings, in sixteen fathoms—

S.E. Minaret in the town	N.E. ¾ N.
S.W. point of the bay	S.E. by E.
Island	S. by W.

The western point of the bay of Artaki is formed by a small island with two or three olive trees on it. About two cables length S.W. from the island there is a patch of rock, having only eighteen feet water on it. Between it and the island the water is deep. Not knowing of the existence of this rock, we must have passed nearly over it, and anchored about half a cable's length to the southward of it, in sixteen fathoms, muddy bottom, and good holding ground. The best anchorage, I am told, is more in the centre of the bay.

(To be continued.)

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47. Verification of the Shoal seen in 1797 off Cape Antonio, in Cuba. *From a Correspondent.*

In 1827, the ships Clara, Captain Thomas, and the St. Vincent, Captain Geen, both of Bristol, ran over a shoal to the N.N.W. of Cape Antonio, about fifteen miles distant: the bottom was plainly seen, and Captain Geen sounded in five and six fathoms water, sandy bottom, and was two hours running over it.

The ship William Miles, Captain Escott, passed over it in 1829. Depth five fathoms; Cape Antonio at the same time bearing S.S.E., fifteen or sixteen miles distant.

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48. Rock off Vilha do Conde. *Coast of Portugal. Ship struck.*

Compass Bearings.

In a former number we communicated to our readers the first intelligence of the existence of this dangerous bank. We have since obtained the following particulars of it from the remarks of His Majesty's Ship Orestes, Captain Glascock:—

At 6 h. 15 m. P.M., when in stays, and hauling the head-yards, the ship struck the ground twice in a few seconds, with the north part of the village of Vilha do Conde bearing E. ¼ N.; south part of ditto, E. ¼ S. off shore three miles and a half. This bank is steep to, as at one cable's length no bottom could be obtained with the hand-line. To avoid this shoal, ships in the neighbourhood of Vilha do Conde should not approach the shore nearer than four and a half or five miles.

ORIGINAL PAPERS.

I.—The South Stack Rock.

On the shores of our island, characterized as they are, in many parts, by bold and romantic scenery, there are places which, although at the first glance they scarcely appear to possess any claim to our attention beyond others, are found on a closer inspection to deserve our especial regard. Peculiarity of situation, geological structure, beauty or sublimity of scenery, in addition, perhaps, to historic or legendary association, raise them at once into pre-eminence, and place them among those objects which seldom fail to excite the admiration of the traveller.

Of such a nature is the South Stack Rock, on the coast of Wales, (a view of which is given in this number,) and to which we propose adding a short account, acknowledging, as the principal source of our information, a very interesting paper on this subject in Blackwood's Magazine for Feb. 1831.

The South Stack is a small rocky hummock, forming the western extremity of Holy Island, with which, in coming from the westward, it appears connected, until a nearer approach to Holy-head Bay discovers it to be separated from it by a narrow opening. A light-house is now erected on the rock, and a commodious communication with the main land is also established, by means of a bridge, of which, as well as of the light-house, we shall take further notice as we proceed.

If our limits permitted, it would be worth while to trace the shore from the harbour of Holy-head, but we must confine our attention principally to the South Stack, and to that portion of the coast to the north-east of it commencing with a small insulated rock called the North Stack.

Between this rock and the main land there is a passage, but so narrow, that, unless the water be perfectly smooth, an inexperienced navigator might hesitate to attempt it, even in a boat; and yet, through this channel, fringed as it is with rocks, starting like shark's teeth from its yawning sides, it is on record that a large cutter passed, in a heavy sea. She was a post-office packet, conveying the mail from Dublin to Holy-head, and had by some means got embayed, without a chance of weathering the land on either tack; the ground also being such as to render a resort to her anchors quite hopeless. At this critical juncture an experienced sailor, acquainted with the coast, stepped forward, and urged the possibility of escape, by attempting this passage. To hesitate was death—the forlorn hope was decided on; and, with a ready confidence peculiar to British seamen in the hour of peril,

the order was given, "up with the helm," and away the bounding vessel flew towards the terrific chasm on which every eye was riveted. For a minute, their fate hung upon a hair; in another they were in safety; and within an hour the cutter was safely moored in the harbour.

On passing this opening to the southward, the eye rests on stupendous rocks, piled above each other; the lower range broken into fissures, forming natural vaults and caverns of the most magnificent and picturesque description. Immediately to the left, one called Ogo Vaur (or the large cavern) actually perforates the base of the high headland, called Morva Llwn, or the bare headland of the boundless sea. Not far from it, there is another, called the Parliament House, which will amply reward the candidate ambitious of taking a seat in it, and which is far more worthy of inspection than its namesake, St. Stephen's Chapel. Here the empire of birds commences, and is continued with little interruption, though with singular selection and variety, for a considerable distance along the coast. Having left the caves of the North Stack, this rugged amphitheatre of rocks affords other features of interest. The eye in its progress is attracted by an extensive surface of recently exposed rock, displaying the mighty power of the electric fluid, which, in an instant severed an enormous superficies, and shattering thousands of loosened fragments, hurled them like pebbles to the bottom, where they remain the everlasting record of an event occurring on the 29th of Dec. 1833, the effects of which were also most singularly exhibited at the signal-station on the neighbouring mountain. It was soon after midnight, on that dreadful night, when the lightning seemed to be in action over the whole body of the mountain, that a servant-girl, sleeping with two children in the signal-cottage, was roused to a sense of her danger by a crash which shook the house to its foundation. The lightning stripping the shutters, and displacing a large bow window, entered the bed-room of the signal-man, who was asleep, with his two other children, one of whom, and the father, were scorched, the latter from the middle of the thigh, in a spiral form, up to his neck, burning several holes in his flannel waistcoat, which, with the shock, rendered him for some time senseless. On examining the room, it was found that the bed-posts were all broken, the curtain-rods melted, the pillow of the bed ripped up in all directions, the clock-case and the bell shivered to atoms, the wainscot and the dresser behind it cut to pieces, the front door forced some yards out, a large shelf above the kitchen fireplace forced through the front window, and three of the beams that supported the deck roof broken, thrusting all the others out of their sockets. It then tore a hole through a twenty-inch stone wall, and made its way into another bed-room, where it shivered to pieces all the furniture, iron pots, earthenware, &c.; also, the

wainscoting of the bed-room in which the servant-maid and children lay, but without doing them material injury. It then made its way through another twenty-inch stone wall, into the store-room, where it wrenched from the wall a large cupboard, shivering to pieces its front, shelves, and all the paint-pots, glass, &c. that it contained; then through the foundation of the building, and, destroying large stones, it finally furrowed up the pavement, and disappeared through a potato clump twenty yards off. It is a singular fact, that the only article untouched was a chest, containing some dozen cartridges used for the signal-guns, which, had they exploded, would have blown up the building, and destroyed every individual in it. A brass pan was also blown from a shelf, bottom upwards, upon a turf fire, blazing on the hearthstone; thereby preventing that destructive element from doing further mischief. The servant, after recovering from her fright, called to her master, but receiving no answer, scrambled over the wreck, and succeeding in taking him out, placed him under a wall some yards from the place, and then carried two of the children, and led the other two, all with scarcely any clothing, to a house at the foot of the mountain, full half a mile distant. Then returning to her master, she found him still senseless in the place where she had deposited him: by proper treatment, he was gradually restored, though for a time it was feared that he would lose his sight; this, however, he at length recovered, with the exception of an occasional weakness, which still remains.

Resuming our route along the shore, about the middle of the bay there is a chasm, so uniformly regular and direct, that its formation can scarcely be accounted for by any other theory than an actual secession of the originally united parts forming the line of precipice—a phenomenon not unfrequent in several similar mountain ranges, and peculiarly applicable to this, which bears throughout unquestionable marks of having been exposed to upheavings and concussions, fully sufficient to rend in twain far mightier mounds.

This singular fissure, cleaved in so direct a line from the summit to the base, forms, or rather did form, a passage of communication of no small celebrity in ancient days, and retaining its odour of sanctity till a very recent date. It is known by the name of Ogo Llochwydd, and the particulars connected with its past and present notoriety deserve a moment's notice.

A spring of crystal-water filtering through the deep strata, formed a small well at the bottom, which, in all probability, at a very early period, attracted that notice which, at all times, and in all countries, wells and fountains in singular situations, particularly if difficult of access, have invariably received. The next step, and the natural consequence in dark ages, was a chapel for the accommodation of pilgrims; and here, accordingly, the well at the

bottom was in due time supported by a chapel at the top, called Capel Llochwydd, which name, a remnant of ruins, situated just at the higher opening of the gorge, still retains.

What was the nature of its early virtues, tradition has not handed down; but, till within sixty years, for time unknown, the lonely chapel and its well were the resort of the lads and the lasses of the island, who, at a certain annual festival called sillia mic rariah, corresponding to the wakes in the northern parts of England, and held during three successive Sundays in July, assembled in troops to ascertain the matrimonial contingencies awaiting them. Each diviner into futurity, of either sex, descended the chasm to the well, and there, if, after having filled the mouth with holy water, and grasped two handfuls of sand from the brink of the charmed font, he or she could accomplish the re-ascent without squirting out the one, or scattering the other, each might look forward with a fair hope of becoming bridegroom or bride before the close of the year. About sixty years ago, however, the incumbent of the parish disapproving of these superstitious ceremonies, reduced the chapel to ruins, and concealed the well by filling it with rubbish. The fountain was again cleared after some years; but time has pressed with so relentless a hand on the long-neglected pathway, that few candidates, under any circumstances, much less with water-tight mouths and unclenching hands, would now venture with a prospect of success to ascend the precipitous pass of Ogo Llochwydd.

At no great distance there is a solitary escapement, on which, during a tempestuous night in March, 1808, a luckless sloop, driving before a snow storm, strewed her broken timbers; it was no subject of congratulation, that the ill-fated crew reached the land in safety, doomed as they were to suffer a protracted and more bitter fate; for, when the morning dawned, they were discovered frozen in the attitudes in which death had assailed them.

The captain seemed to have patiently resigned himself to what was irremediable. He was found stretched at the foot of a rock, under which he vainly sought shelter, his head resting on his hands, having breathed his last in a frozen sleep. Of his companions, some had struggled, some more, some less, amidst the snow, vainly attempting to reach the summit. One poor fellow had nearly succeeded; he must have persevered gallantly through the night, but was doomed to follow the fortunes of his messmates, leaving his remains within a few yards of a place of safety, which he was destined not to attain.

On a nearer approach to the South Stack, every part of it assumes more importance and interest. On the left, the headland precipices rise abruptly from the water's edge. In front, the light and airy bridge springs from rock to rock, while on the right, a

dark deep cavern forms the aperture of another natural tunnel, similar to that of Ogo Vawr, penetrating through the north-eastern side, and curving in a south-easterly direction, where it opens in a little gulf, the sea rolling through it, I believe, without interruption. From the mouth of this cavern, a tolerably easy ascent is practicable, by means of a rude flight of steps, to the summit level of the island, near to the spot on which the suspension bridge terminates.

On crossing this bridge to the main land, the visiter will find a commodious zig-zag passage of 374 steps hewn out of the rock, commanding at its various angles and windings a near and picturesque view of precipices on every side; and he may perhaps have an opportunity of witnessing the frightful risks to which human beings will fearlessly expose themselves in search of eggs or samphire, (erithmum maritimum,) equally "dreadful trades." That nine-tenths of these adventurers do not come to untimely ends, must be matter of astonishment to all who see on what apparently rotten or slender tackling their existence depends. Held on by an urchin or two, heedless of consequences, and often inefficient in bodily strength, a lad will lower himself with perfect *sang froid* down the face of a precipice, enough to curdle one's blood to look upon, and on reaching a ledge, barely wide enough to admit the foot of a goat, away will he scramble, with or without the rope, according to circumstances, to pillage the nest of a gull, which, if aware of its own powers, might not only baffle his attempt, but flap him headlong to the bottom. Wonderful, however, to say, very few fatal slips are on record; but narrow escapes naturally enough occur frequently.

In alluding to the bridge, and the light-house establishment of the South Stack, it will be interesting and proper to advert to the causes which brought them into notice.

On casting an eye over the chart, it will be seen that every vessel, in her passage up St. George's Channel, for any of the ports to the eastward of her course, such as Liverpool for instance, after taking her departure from the Smalls' light, off Milford Haven, must steer nearly in a direct line for the Skerries, on the north-west coast of the island of Anglesey, which must of necessity bring her almost in contact with the western extremity of the projecting range of this and the neighbouring rocks; and that, in consequence, the whole flood-tide setting into Caernarvon Bay, a vessel, even with due allowance for clearing Bardsey Island, must be seriously affected by an indrift; but, should she avoid this, and have run nearly across Caernarvon Bay, another assault is made on her when within three leagues of the head, by the reflux of an ebb-tide, also making into the bay. These contending currents are probably the predominant causes of that dangerous race, the influence of which in gales of wind is by no means confined to

the immediate point of collision between the counter currents, but extends far out to sea, over a considerable space.

Those who have experienced eddies of this description can alone appreciate their overwhelming powers: of this now under our consideration, it is asserted that it once swallowed up a brig which by some luckless chance got entangled in the vortex: after a brief struggle, she yielded to her fate, foundering in a sea of foam, before the eyes of a spectator on the heights. It may be feared, indeed, that feats of this appalling nature are not unfrequent in the long dark nights of winter, as scarcely a year passes without the melancholy sight of broken spars and lacerated rigging from time to time thrown up from its fretful cauldron. It is stated by Captain Evans, the Harbour Master of Holy-head, that, previous to the exhibition of the light on the South Stack, scarcely a winter passed in which the fishermen and neighbouring peasantry have not fallen in with floating fragments, or various articles of merchandize, belonging to vessels which had gone down in the race, unseen, unpitied, and unaccounted for. The dead set of the currents up channel was long ago verified, by the circumstance of several butts of sherry being drifted on shore, on various parts of this coast, which were ascertained to have been part of the cargo of a ship wrecked off the Scilly Islands about a fortnight before. There are many other anecdotes related, to confirm the danger of this indraft. During an intense fog, several vessels were saved from destruction, by the timely warning given by a fisherman who was examining his lobster-baskets near the shore, and whose attention was arrested by the sound of voices of the crew on board the foremost vessel. Another anecdote deserves to be mentioned, which, though it terminated less fortunately, as far as the vessel was concerned, was certainly one of the narrowest escapes in the annals of shipwrecks. In April, 1826, the Alexander, brig, from Jamaica to Liverpool, made Bardsey light, and shaped her course for the Skerries, with a strong breeze at S.S.W., hazy weather. At 10 o'clock she shortened sail, soon after which a rock was observed close on her larboard bow, and breakers right ahead; the alarm was given, and the affrighted passengers hastily dressing themselves, prepared for the worst.

In a few minutes the master came down, announcing the grateful intelligence that the danger was over, and they again retired in confidence to rest; but they had scarcely done so when the vessel struck violently abaft, and the cabin was almost immediately filled with water, compelling them to seek instant safety on the quarter-deck. The brig, when the first alarm was given, had hauled to the wind with the intention of gaining an offing; but, as in the confusion they omitted to brace up her yards, she took aback, and getting stern-way, grounded on the cliff. After a few heavy blows, she swung round with her broadside to the shore, and there

remained, beating violently with her masts and yards entangled in the projecting rocks.

By this time the passengers had assembled round the master, who stood irresolute, until the chief mate assured them that the spritsail-yard lay upon a low table rock, upon which he thought it possible to conduct the women and children. A young lady from Kingston was the first to offer, and with much difficulty reached the rock in safety; when the gallant mate returned to the wreck, and finally succeeded in landing two other ladies, three children, and a Spanish and English merchant. The master and the crew then followed, and just as the last man landed, the yard was carried away, and all communication with the wreck was cut off. Nineteen persons were thus huddled together at midnight on a ledge of rock just sufficient to hold them, but compelled to remain in the exact position in which they were first landed, lest by the slightest movement they should precipitate the person before them into the sea. The night was dark, and no one but the watch on deck had any covering beyond their night clothes. But all these miseries were trifling, compared with the terrible anxiety with which they watched the flowing tide, with an apparently inaccessible cliff behind them, and the water even then curling at their feet; it was too clear that another half hour's flood must sweep them all into the sea. At length, when the level of the water was only a foot and half below them, with inexpressible joy and thankfulness, they observed it first to pause, and then gradually, but perceptibly, to recede. Just before dawn, the chief mate and a boy with great difficulty scaled the cliff, and calling up the country people obtained ropes, by which the whole party were drawn up in safety, with the exception of one individual, whose thigh was fractured by a splinter from the rock.

Under such circumstances as are here detailed, the necessity of a light became manifest. It was a matter of much importance to all vessels, but more especially to the Post Office packets, compelled, as their commanders were by the nature of the service, when exposed to thick weather or particular winds, (knowing the character of the coast right ahead,) to make the Skerries, or, at other times, to land the mail and passengers at the back of the Head.

Impressed at length with the obvious advantages, not to say the necessity of the case, the Trinity House finally entered into the views of Captain Evans, and decided upon adopting his suggestions, assigning to his superintendence the preparatory operations, which were commenced in May 1808, when temporary shelter was erected for the accommodation of seventy men, who were only allowed to absent themselves from the Saturday evening till the Sunday morning. At this period, the landing place on the north side, indifferent as it still is, was then altogether im-

practicable, and an insecure footing was attainable on the south-east side alone. The difficulties of landing being thus so great, and the power of supplying this large population so precarious, it was found to be absolutely necessary to provide against this inconvenience. Accordingly, a canvass hose, 900 feet in length, was made to communicate with a small tarn, about 800 feet from the summit of the nearest headland, descending thence at a sharp angle the remaining 100 feet till it reached the island; in connexion with this hose a stay and traveller were rigged, by which various articles were conveyed to and fro. An active young man, on one occasion, having received the intimation of his mother's sudden illness, resolved to trust himself to this aerial conveyance, and actually made his way up this terrific path, and safely landed himself on the mountain brow.

As the works proceeded, the necessity of a more frequent and certain communication naturally increased. Accordingly, in the course of the summer, an ingenious old millwright, in conjunction with Captain Evans, planned a small box or cradle, which was suspended on two strong stays running through sheaves, and swung across the chasm a distance of 150 feet, being made fast to the nearest projecting point of the mainland rocks, from whence an ascent was practicable. This cradle, although an improvement, was by no means a bed of roses, before experience and practice had vouched for its security. Workmen, lowered by ropes, were constantly employed in forming a more commodious stair-case on the broad face of the rock, from which, in January 1829, a shorter passage, 120 feet in length, was effected. To this cradle, which received various improvements, at the expiration of five years succeeded a regular foot bridge, of the most simple, primitive, and picturesque construction. Strong cables were thrown across, over which planks were laid, and on either side a light balustrade of stout net-work was raised, the whole secured, and the vibratory motion in part counteracted by long guys, made fast to appropriate points on either side. Over this, those possessing tolerable nerves might trip comfortably enough, for there was no real danger, though to some the passage was still a matter of hesitation. But whether from the march of intellect wishing to meet the advancement of the times, or whether to rival in its way the gigantic undertaking over the Menai on the opposite side of the island, the bridge which succeeded the primitive cradle has itself been superseded by an elegant structure on the true scientific principles of permanent suspension bridges.

But to return to the lighthouse. So rapidly were the works carried on, that on the evening of February 9th, 1809, the light was exhibited for the first time. The lantern is elevated above the sea about 200 feet. The reflectors cover three triangular surfaces, which revolve by clock-work machinery, shewing a full face every two minutes, which may be distinctly seen from a

ship's deck at the distance of about nine leagues. The tower is a substantial stone building, with walls at the lower part five feet thick; but, solid as was this foundation, it was found on trial not to be sufficiently dense to keep out the pelting of the winter gales, when the waves, bursting upwards, dashed their spray with such inconceivable force, that the water actually filtered through, and kept the interior in a constant state of moisture; so much so, as to excite an apprehension that it might seriously injure the masonry. A variety of remedies were suggested, and the most experienced opinions taken. Copper bolts were inserted, on which a casing was to be made fast. Persons were despatched from London with a mixture of pulverized iron, Parker's cement, ashes, and sand. With this composition every crevice and interstice was carefully filled, and the whole smoothed down to a uniform surface, which set and became firm as stone itself; but all to no purpose; for, to the general astonishment, water was still forced through, and the interior walls were as damp and trickling as ever. Captain Evans went to London, and reported the case to the Trinity House Board: small slates were then recommended as an additional casing, but the blast of the first hurricane ripped them away like shreds. In this dilemma, when in the multitude of counsellors no wisdom had been found, an old carpenter, employed in repairing a window-frame and door-case, which he knew to have been set up above forty years, at a mansion in the neighbourhood, remarked, that every part of the casing below ground was in a state of decay, whereas the other parts, which had been coated with a mixture of painting oil, white-lead, and sand, remained as sound as ever. Happening at this juncture to meet Captain Evans, he mentioned the fact, which thus accidentally suggested a similar application to the lighthouse. Accordingly, a mixture was prepared, consisting of sand from Port Davaich, free from sea-water, which, after being thoroughly dried in an oven, was well sifted. Two men were then employed to paint as far as they could reach with a mixture of white-lead and oil; and then over this glutinous surface the sand was dashed on, and left to dry and harden for five or six days, when the process was repeated. To the surprise of all, two coats were found fully sufficient; for since that time, the water has been effectually excluded, not a drop of water ever penetrating within.

Exclusive of this tower, there are two dwellings for the accommodation of the light-keepers and their families, and another on a small scale, fitted up by Captain Evans for his own use, when detained by business on his frequent visits to the island. And thus a spot, hitherto rented at £1. 1s. for the summer pasture of a few sheep on its scanty patches of grass and thrift, became at once an object of public interest and importance.

II.—The Bahama Islands.

To the Editor of the Nautical Magazine.

Sir,—It was with satisfaction that I observed in your last number, a straight-forward, gentlemanly reply from Captain R. Owen, to the observations made by an "Old Stager," on the erasing of doubtful dangers from the chart; because it convinced me that Captain Owen appreciated the motive which induced the "O. S." to touch upon the subject. The gallant Captain may rest assured, that the "O. S.," although of humble talents, whenever he ventures to wield his pen, does so from more honourable motives than those of mere idle scribbling or meddling. Captain Owen has confirmed his former opinion, that such a danger as the "Cuidado" does not exist; a determination which, no doubt, will be received with the confidence due to the research made, and to the local knowledge, clear judgment, and talents of so experienced an officer.

I must beg permission, Mr. Editor, to extend this letter, in order to make a few remarks on a sentence in the reply. Wherein Captain Owen states that the "O. S." has fallen into an error in supposing that the "Chesterfield Rock," near the south-east part of Long Island, is in the Bahamas.

On reference to the former communication, it does not appear that the "O. S." expressed such a supposition, although, perhaps, such may be inferred. He, nevertheless, certainly considers Long Island as forming one of the Bahamas; and the rock in question being an appendage thereunto, he consequently considers as also appertaining to those islands. That we have no standard guide in these matters, is, Mr. Editor, greatly to be regretted.* The geographer, as also the hydrographer, hitherto has either followed some favourite arrangement of his own, or has copied the predecessor most admired; and thus we find them often at variance with one another.

"When 'Cosmographers' disagree, who shall decide?"

Whether those islands, which are based upon the two principal banks, with the single islands, (Out Islands, locally,) that are extra-tropical, shall be considered alone as constituting the Bahama Islands; or the whole chain from the Florida Channel to the easternmost banks and cays, be included; seems to have been, and to be, a matter of opinion, and will probably continue to be so as

* The geographical societies (including the individual naval hydrographers) of the principal maritime nations of Europe, combining their talents, may be considered as the most eligible source whence a thorough revision, and proper arrangement of the systems, should be effected, and which afterwards would become the undeviating guide for students, writers, &c. &c.

long as we are destitute of a competent authority to fix and settle these points, in spite of common sense, learning, and the industry of individual research. "Custom"* gives her sanction to the latter; and, from the accompanying official document, it will also be seen, that the principal islands of the chain are statistically classed under the general denomination of Bahamas. Indeed the natural disposition of banks, detached groups, and single islands of the chain, forming a gentle curve from the north-westward to the south-eastward, free from any great break, or divergency, admits, if I may presume to express individual opinion, of the simplest mode of designation, i.e., to be comprehended under one general proper name, by which confusion is best avoided.

If any good could arise from forming a division, geographically, the most obvious designation, perhaps, for each division would be, respectively—"The Western Bahamas," and the "Eastern Bahamas," allowing the line of demarcation to be the seventy-fourth degree of longitude, which passes through the Crooked Island Passage: such would be preferable to the tropic limit, as that not only severs the Great Bank, but also one of the islands.

I do not know, Mr. Editor, whether I have received a correct impression of Captain Owen's meaning, when pronouncing the "Old Stager" in error. The words are plain enough to be understood, but there follows no explanation as to *why* the "O. S." is wrong. I conclude, however, that Captain Owen considers the Bahamas to extend no further to the south-east than Exuma, or, in other words, not to reach within the tropic. If I am right in this, I must confess, with all due deference, that such, according to my conception, would not be of sufficient force to bear him out in his correction; because there are more than one opinion on the subject, writers of note differing as to the arrangement; and it appears that the Government includes the islands of the chain, whether extra or inter-tropical, under the general name of Bahamas. In now noticing the subject, it is not merely to satisfy myself that I do so: the point is of interest to all who desire to obtain correct information where doubt exists; and it is highly probable, that nine seamen out of ten (and I dare say the natives too) consider the islands, taken collectively, to be Bahamas.

I shall esteem it a favour, Mr. Editor, if you will afford some explanation, so as to set me right, if I am wrong; for, as I do not pretend to any extraordinary depth in geographical knowledge, I am therefore open to conviction.

I have, Sir, the honour to be,

14th July. AN OLD STAGER.

* The lawyers cherished *Dame!* I am fully aware, that we shall find *her light*, generally; a mere "will o' the wisp," with respect to the names of places, and the classing of islands.

A Return made of the Population of the Island of New Providence in December, 1816.

Name.	Whites.	Free Blacks.	Free Coloured People.	Black Slaves.	Coloured Slaves.	Foreigners.	Total.
New Providence . . .	1720	565	509	3044	146	100	6084

A Return made of the Population of the other Bahama Islands in June, 1812.

Names.	Whites.	Free Blacks and Colord. People.	Slaves.	Total.
Harbour Isle, and Cays adjacent .	661	52	539	1252
Watlings Island	21	5	486	512
Crooked Island .	23	53	1142	1218
Long Island . .	141	67	734	942
Rum Cay . . .	7	..	177	184
Exuma, and Cays	96	55	1261	1412

Names.	Whites.	Free Blacks, and Colord. People.	Slaves.	Total.
Heneaga (Mr. Mortimer . .	1	..	28	29
Caicos	32	6	521	559
Turks Island .	540	87	1308	1935
St. Salvador . .	54	58	662	774
Eleuthra . . .	576	143	1098	1817
	2152	526	7956	10634

Total Population . . . . 16,718.*

III.—Directions for Tide Observations. *By the Rev. W. Whewell, M.A., F.R.S., Fellow of Trinity College, Cambridge.*

(Continued from page 171, No. 25.)

The Diurnal Difference of the Tides.

The diurnal difference is a difference of the two tides on the same day, and may be explained as follows:—

1. If the moon moved uniformly in the equator, and the sun did not affect the tides at all, the tides would be at a later and later hour every day, by about forty-eight minutes; they would be at a later and later hour every *half*-day by about twenty-four minutes: thus, if the tide were at 6 h. 19 m. in the morning, it would be at 6 h. 43 m. in the evening; at 7 h. 7 m. next morning, and so on.

If the sun affected the tides, (as he does in fact,) but if both he and the moon moved uniformly in the equator, the times of the

* Captain Tuckey states the population, in 1803, to have been 14,318.

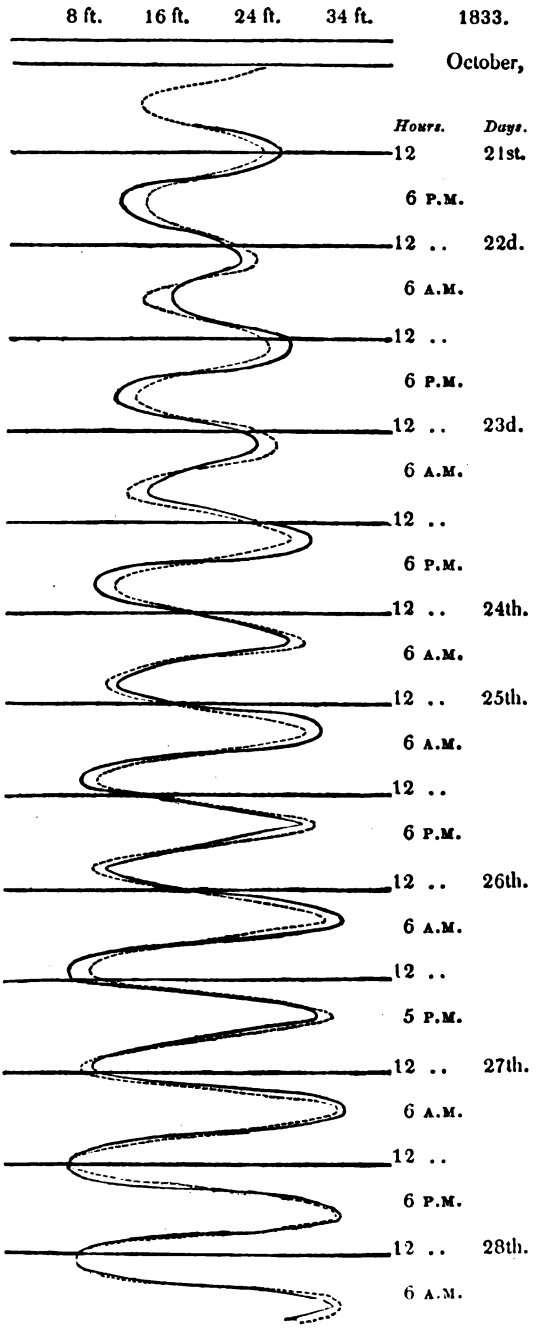
tide would be affected by the seminenstrual inequality, which has already been explained; and the time of high-water would be later on each day than the time of the corresponding high-water on the preceding day, by an interval varying from thirty-five to seventy-eight minutes, as has been also shewn. In this case, the two tides which *immediately* succeed each other, would be later on each *half*-day by half the above quantities, namely, by seventeen minutes and a half, and by thirty-nine minutes at spring and at neap tides, respectively. So that, at spring-tides the times of high-water might be at 2 h. 33 m. in the morning, 2 h. 50½ m. in the evening, 3 h. 8 m. the next morning, and so on; and, at neap-tides the times of high-water might be 9 h. 27 m. in the morning, 10 h. 6 m. in the evening, 10 h. 45 m. next morning, and so on.

On this supposition, the height of high-water would go on increasing regularly from neap-tides to spring-tides, each tide being higher than the preceding; and, after passing its maximum, the height would go on decreasing with the same regularity.

2. The moon and the sun, however, are not generally in the equator, but have north or south declination. In consequence of this circumstance, two successive tides are not governed by the same rule; one of them happens when the moon is on the same side of the equator as the place of observation, and one happens when the moon is on the opposite side of the equator. These conditions will make two successive *semi*-diurnal tides differ, both in time and height, from the regular progress above described.

3. This difference is more conspicuous in the heights than in the times of high-water. Its effect upon the heights has been noticed at various places, (as Liverpool, Bristol, Plymouth, Calcutta, &c.) and has been described by saying, that, in one half of the year the evening-tides are higher than the morning-tides, and in the other half of the year the morning are higher than the evening-tides.

4. The effect of this inequality is exhibited to the eye in the curve which is drawn by a self-registering tide-gage, constructed upon the principle described in the Nautical Magazine for October, 1832. The curve which is thus produced is represented in the annexed figure, and the fact which it indicates may be understood by means of the following explanation:—Suppose a point to rise and fall vertically with the rising and falling surface of the water, and, in doing this, to trace a line upon a vertical board. Suppose, also, the board to move along in a horizontal direction, with a constant and uniform motion. Then, the tracing-point will mark a sinuous curve upon the board; the curve will have a succession of highest and lowest points, which mark high and low water; and the intervening horizontal spaces will mark the intervals of time between those high and low waters, two high waters occurring in the horizontal space which represents one day.



If the two high-waters on the same day were of the same height, the curve would be a figure such as is represented by the dotted line; the distances of the summits of the curve, above and below the straight line of mean heights, increasing uniformly from neap to spring-tides, and then decreasing again in the same uniform manner, and so on.

But, in consequence of the diurnal difference of the height of the tide, the summits of the curve will be alternately beyond and within the places which this uniform progression would give them, as is represented by the dark line.

5. The black line in the figure represents the curve actually produced by a self-registering tide-gage which has been erected in the river Avon, four miles and a half below Bristol, at the expense of the Bristol Institution. The machine resembles in its principle those described in the Nautical Magazine for October, 1832, and in the Philosophical Transactions for 1831; the motion of the surface of the water being reduced in amount, and transferred into a horizontal direction, by machinery, and the surface on which the line is traced being wrapped round a horizontal cylinder which revolves uniformly. Various modifications on the construction of the machines above referred to have been introduced into the Bristol machine by Mr. Samuel Stutchbury, the curator of the Bristol Institution, and Mr. James Sheriff; who have superintended the erection of the machine, and the observations which have been made by means of it. The difficulties of the construction were in this case increased by the magnitude of the tide, which rises thirty-five feet at springs; and, for the same reason, the diurnal difference of heights, and other features of the phenomena, will be exhibited on an unusually large scale; so that the results of these observations will probably be of great service to science.

6. In the figure, the distances from 22nd to 23d, from 23d to 24th, &c. are to be supposed to be each divided into twenty-four equal parts, for hours, and the time of high or low water will be known by the point of this scale to which the summit of the curve corresponds. In this way, it will be seen, that in this instance all the tides which are higher in consequence of the diurnal inequality, are afternoon-tides; the forenoon-tides being lower for the same reason.

7. The afternoon-tides would be higher than the forenoon-tides for several months in succession; and this would happen by the semi-diurnal inequality's *skipping* a tide, when the afternoon-tide passed into the ensuing morning. Thus, if the tides were, on

	A.M.	P.M.
Sept. 13	10 · 34	11 · 12*
.. 14	11 · 49	———
.. 15	0 · 24	0 · 50*
.. 16	1 · 15	1 · 37*

the diurnal inequality would augment the P.M. tide of Sept. 13, and the P.M. tide of Sept. 15, though there are two tides between these two.

8. The amount of the diurnal inequality would diminish as it approached the day when it thus skipped a tide, and the amount would increase when this day was past. About a week afterwards the difference would be at its greatest value, after which it would diminish again, and so on.

9. According to theory, the diurnal difference of the tides ought to vanish when the moon is in the equator, and to pass from one tide to the next tide but one, when she passes from one side of the equator to the other. Therefore, the day when the semi-diurnal difference skips a tide will occur at a different period of the lunation at every different season of the year. Thus, at the equinoxes, the *skip* of the diurnal difference will take place at new and full moon, that is, at spring-tides, nearly. But, in June and December the moon passes the equator when she is about six hours from the sun; therefore, the *skip* takes place at neap-tides, nearly, and the spring-tides at those seasons are affected by the full amount of the diurnal difference.

10. If we suppose the tide to take place when the moon is on the meridian, the spring-tides take place at twelve o'clock, nearly; and, therefore, in June and December the diurnal difference, which affects the alternate tides for several days in succession, before and after the spring-tides, will augment some morning and some afternoon tides. And the same would be the case at whatever hour the tide were to take place, except the skip of the semi-diurnal difference could always take place when the tide is at noon; and it cannot do this, because the tide is at noon for a given age of the of the moon; but the moon crossing the equator (to which time the skip corresponds) takes place at different ages of the moon in different seasons of the year.

Therefore, the statements which have been above referred to, according to which the tides at Liverpool, Bristol, Plymouth, &c., are affected by a difference according as they are forenoon or afternoon tides, are probably not exact; and the difference of the two tides on the same day is governed by some other rule than that which has thus been asserted.

11. The rule according to which the difference of two tides on the same day is governed, according to experience at any place, may be made out, if we have a sufficient series of good observations of the tides at that place; for instance, two or three years' observations, carefully made.

It would be very curious and important, both for theory and for practice, to be able to obtain this rule from experience in particular harbours, and to compare the rule so obtained with the theory. Bristol, Plymouth, Liverpool, would be good places for such a

comparison. The London observations cannot be used for such a purpose; for the London tide is composed of two tides, distant half a day from one another, one of which comes through the Straits of Dover, and the other round the north of Scotland; and, by the mixture of these tides, the diurnal difference is obliterated.

Probably observations at any port in the south-west of Ireland would be well suited to shew the circumstances of the tides of this part of the ocean, before they are modified by entering narrow seas.

12. According to theory, there would be a diurnal difference in the time, as well as in the height of high-water; but no observations have yet been examined, so as to shew the actual existence of this inequality, and theory alone is not sufficient to guide us in this case.

IV.—On the Society Islands. *By an Officer lately of His Majesty's Sloop Zebra.*

On the 9th of April, 1832, his Majesty's sloop Zebra entered the reefs which surround the island Tahiti, (the Otaheite of Cook,) and cast anchor off the village of Papéete. The occasion of our visit arose from the vessel having sprung a leak, by which she made about twenty inches water in twenty-four hours. It was considered proper to lighten her, by landing the provisions, stores, &c.; which was no sooner made known to the queen, Pomare Valimi, than she directed every assistance to be afforded us, and gave up one of her houses for the reception of our stores.

The geographical situation of the Society Islands, and lying, as they do, in the track of whalers, European and American; the capabilities of their soil; the salubrity of their climate; the good feeling of the natives towards us; and the rapidly increasing connexion between them and Australasia, combine to render them of the first importance to us, in particular, as being the first civilized people who visited them, with a view of ameliorating their condition, ascertaining their true character, and propagating the truths of Christianity among them. The natives feel the importance of establishing a friendly relationship with us: as children of our adoption, they look up to us with the veneration and affection due to parents. Nor should they look in vain; our exertions in their behalf should be continued, to shew practically the advantages of industry, and the good effects arising from temperance and civilization. It has been justly observed, "that the apparent apathy of the British Government will either throw them virtually into the hands of other nations, or be the fertile cause of endless disputes and dissensions in future years, when their capabilities are fully

discovered." These years, it is to be hoped, may never arrive; but, that, as protectors of the soil, we may justly lay claim, if not to the proprietorship, to the title of directors, as well as protectors. To this claim we are entitled, as well by virtue of our first connexion, as by our gradually increasing trade, and the general consent of the chiefs. The chiefs of New Zealand have already petitioned our Government to this effect; and in October, 1825, Pomare solicited our favour and protection of the Society Islands, and obtained the following answer:—

"*Foreign-Office, March* 3, 1827.

"Sir—The missionary, Mr. H. Nott, has delivered to me the letter which you addressed to the king, my master, on the 5th of October, 1825, soliciting his Majesty's friendship and protection, and also requesting permission to use the British flag. I have hastened to lay your letter before the king, and have received his Majesty's commands to acquaint you, that, while his Majesty feels every disposition to comply with your wishes, as far as can be done with propriety, he regrets, that, consistently with the usages established among the nations of Europe, it would be improper to grant the permission you solicit, to use the British flag.

His Majesty, however, commands me to say, that, although the custom of Europe forbids him acceding to your wishes in this respect, he will be happy to afford to yourself, and to your dominions, all such protection as his Majesty can grant to a friendly power at so remote a distance from his own kingdom. His Majesty has derived much satisfaction from the various accounts which have reached this, of the beneficial change which has taken place in the moral and social state of the islands under your government, and of the progressive advancement of your subjects in civilization, through the introduction of the christian religion, by means of the missionaries sent out from Great Britain. His Majesty trusts that the benefits which have been thus, through the exertions of the missionaries, derived from that religion, may be long continued to your dominion and people. I have committed this letter to the charge of Mr. Nott, who is about to return to Tahiti. He will present it to you, and will assure you more fully of the friendly disposition entertained toward you by the king, my master.

"In conclusion, I recommend you to the protection of the Almighty.

(Signed) "George Canning."

The title of King of the Society Islands is hereditary. The executive government, at the time of our visit, was vested in the queen and her council. The latter consisting of

Apaapa . . .	Secretary of State.
Arupaeo . . .	Governor of Tahiti.
Tepau . . .	A Judge.
Tehora . . .	A Supreme Judge.
Yati	A Judge.
Maré	A District Judge.
Utami	Ditto.

Queen Pomare Valimi was married to the chief of Riatea, but he possessed no power in Tahiti: he neglected and ill-used her,

and she consequently despised him. This chief had been some time at war with the chief of Rahaa, and was severely, if not mortally wounded, previous to our arrival; and one of the first questions put to us by her, was to know "if we had heard whether or not he was dead."

I was sorry to observe a division in the councils of her cabinet. The queen's mother was not so correct in her high station as she should have been, and was keeping about her and the court all the worthless characters of the island, to the exclusion of the well-informed and respectable chiefs. The legislative government, consisting of the House of Assembly, which is composed of the governors of each district, (who are appointed by the queen,) and two deputies, chosen by the natives. The seven supreme judges are hereditary, and have the power of bringing their sovereign to trial, and deposing him.

The Bow and Chain Islands are under the government of Tahiti, but the natives are a lawless set of people. A short time before our arrival, they had seized a ship called the Newtons, of Valparaiso, under Spanish colours, but belonging to British merchants at that place. They had plundered her of every thing, and sent her down to the queen as a present. Her majesty, however, had refused to accept her, and we found her lying at Papeète, in charge of Mr. Pritchard, the missionary. Our captain made an urgent remonstrance to the queen on this subject, and demanded that the plunderers should be apprehended and punished. To this her majesty gave answer:—"The offenders shall be brought to Tahiti, and judged by the laws of my land, and punished accordingly." She also continued—"Let Great Britain continue to assist me, and my people; let no other nation use me ill, that may have a desire to act in an evil manner towards me: but let Great Britain continue to assist me."

The following is an account of the population and produce of Tahiti and Eimeo, at the time of our visit:—Number of persons, 10,000, increasing since the abolition of infanticide, and the destruction of the stills. Imports—hardware, cotton, and cloth, by the European whalers; New England rum, by the Americans. Exports—rope, from the fibre of the cocoa-nut, (price 5 dollars per 100 lbs.;) sugar, of which twenty tons was made in 1831, (and almost any quantity can be made,) price 27s. per cwt.; cocoa-nut oil, arrow-root, tortoise-shell, pigs, bullocks, and poultry, in abundance; also goats. A very fine breed of horses and horned cattle: wood and water very plentiful. The natives make straw bonnets and plat, principally for their own use. The native cloth is disappearing, and European cottons are becoming general. The religion is under the guidance of the London Missionary Society, which has twelve European preachers, sixteen teachers, or exhorters, a church and school at each station, and the South Sea Academy

at Eimeo, for the children of Europeans and Americans. The following letter will shew the course of education adopted:—

"*Tahiti, April* 24, 1832.

"Dear Sir,—From conversation which I have had with you, it appeared to me that you felt a lively and deep interest in the systems of education in general, and of that pursued by us in the islands in particular. I will, therefore, without farther preamble, proceed to give you a brief and faithful account of the studies, &c., of the young ladies and gentlemen of the "South Sea Academy." I would premise, that the number under education for the last eight months was twenty-five; of whom fourteen were boys, and eleven girls. The average expense for each child was £4. 3s. 2d., i.e. for board, washing, books, paper, &c., the teacher's salary not being included, he receiving the same as the other missionaries, and on the same footing, viz.:—

Boys' Classes.

1st.—English language, grammar, and composition.
Latin ditto ditto.
Greek ditto ditto.
Arithmetic, the square and cube roots.
Trigonometry, plain and spherical, navigation, and the first branches of theology.

2d.—English language, and grammar.
Rudiments of the Latin tongue, and grammar.
Arithmetic, as far as the single and double rule of three direct.
Writing, geography, and mental philosophy.

3d.—English reading, and orthography; English writing, and arithmetic, as far as compound addition.

Girls' Classes.

1st.—English language, grammar, and composition; geography, chronology, ancient history, biography, arithmetic, needle-work, &c.

2d.—English reading, grammar, and writing; orthography, arithmetic, needle-work, &c.

3d.—English reading, orthography, needle-work, &c.

"The above general outline will give you an idea of the plan adopted by us in the discharge of our duties as teachers of the young ladies and gentlemen committed to our charge.

"With every feeling of respect,
"I remain, Dear Sir, yours truly,
"ALEXANDER SIMPSON."

There is also belonging to the academy a library, to which the charitably disposed are invited to contribute. Captain Macmurdo presented Langhorne's Plutarch, 6 vols.

I went to the native school, previous to divine service on Sunday morning, and was gratified in seeing about 180 adults and children of both sexes, separate from each other, under the immediate guidance of a native exhorter. We put several questions to them, on scriptural subjects, which they answered with much readiness, and to the point. Their conduct was more decorous than I have witnessed at Sunday schools even in England. From the school-

room they walked to church, in the most quiet and orderly manner. Divine service was then performed in the native language, and hymns were sung with much musical propriety. The queen, her mother, and aunt, arrived previous to the commencement of the service: we met them at the door, and had the honour of handing them to their seats; availing ourselves afterwards of their pew. They were neatly dressed, in the European style; and the attentive and decorous conduct of a native congregation of nearly 700 persons, would have put many an European congregation to the blush. After the termination of the service, they retired in the same orderly and quiet way, and their behaviour generally seemed to imply a desire "to keep the sabbath holy." Mr. Pritchard afterwards read the prayers of the established church to a congregation of about twenty Europeans and Americans. Many natives remained also, I suppose from curiosity. There is a good printing-press, from which many portions of the scriptures have been published. These consist of several elementary works, the Assembly's catechism, a collection of 236 hymns, the Gospels of St. Mark and John, the Epistles and the Revelation, and most part of the Psalms.

The Lord's prayer in the Tahitian language runs thus:—

"*Te Bure a Fatu.*

"E. to maton Medua, i te ao ra, ia raa to oe iva. Ja tae to oe ra han. ia haa paohia to oe hinaaro i te fenera nei, mai tei te ao atoa na. Homai na maton i teienei mahana i tei haa paohia ra o te mahana o te maa, o te mahana o tee maa. E. faaore mai i ta matouhapa, mai ta maton man amu tarahu i faaore atoahia e maton nei. E. eia ha e faarne ia maton ia roohia e te ati ra, efaaora ra ia maton i te ino; no oe hoi te han, e te mana, e te hanahana i te man ui atoa e ore e hope. Amene."

The odium thrown upon the moral and religious habits of these interesting people by a celebrated naval officer, as far as I have been enabled to judge, is unfounded; his conclusions are too hastily formed, and his censures too general; in which opinion I am borne out by the officers of the Zebra, as well as by Captain Waldegrave, of his Majesty's ship Seringapatam, who visited Tahiti in May, 1830. He says, "I made the tour of Eimeo and Tahiti, and had the pleasure of finding every missionary at his post, and of visiting every school, and entering every church, in the island; and I can truly state, that what I witnessed there gave me, and every officer who had the opportunity of seeing it, the most sincere gratification. The population of those islands was at one time most dissolute; the triumph of Christianity is now seen in the outward decorum observed in the general conduct of the natives. I never saw the sabbath passed with more propriety; I will not say that I did not also witness improper conduct; for it is impossible for any person to live long in any country without witnessing vice: I can, however, truly state, that the influence of the missionaries

must have been very great, to have formed the inhabitants to the degree of outward decorum which I witnessed; it should be remembered, that they worked alone; they had nothing but the strong religious principle of God to support them. They had also much to contend with, because every European, and, I regret to say, American whaler, brought with it a contamination, the effects of which it was frightful to witness; and, were it not for the power of the Holy Spirit, working with the missionaries, it would have been impossible that the natives should be impressed with religion, because at every instant one or other of these ships was introducing every incitement to immoral conduct. King Pomare destroyed the spirit-stills, but these whalers introduced ardent spirits, and continued to import them for the purpose of attaining those base objects, which, without the aid of intoxication, they could not attain.

"One thing made a great impression upon my mind—the missionaries were treated with the greatest respect by the natives. What could be the reason of this, but the uniform character of their lives. They were surrounded by every opportunity of gratifying any base propensity; but I can truly say, that I never saw any body of men more correct in deportment, nor any treated with more respect. They appeared not indeed the persons who ruled, but the friends of the king and the church. When differences arose, the missionaries were applied to, not as judges, but as councillors. I never saw a missionary lose his temper, whoever came, although they might interrupt him in his particular engagements."

This opinion, from a man of Captain Waldegrave's rank and character is decisive, but in regard to the importation of ardent spirits, which is the greatest curse which can be inflicted on these people; I know not how it can be prevented. Interest will prevail, and, while the Americans can procure a good-sized pig for a gallon of New England rum, which costs about 6d., this demoralizing traffic will be carried on. The natives, however, of the Bow and Chain Islands, are the principal purchasers, for there are generally a great number passing backwards and forwards.

The Royal Mission Chapel, built by Pomare the First, was originally 712 feet long, when it was first opened. It contained three pulpits, and separate congregations of about 2,000 natives. The length of it is now reduced to about 300 feet.

During our stay, the queen, accompanied by her mother, aunt, and a large party of nobles, came on board the Zebra. She was received with a salute, and military honours, and partook of as sumptuous a repast as our limited stock could furnish. And, as the Colonial Government had liberally supplied Captain Macmurdo with European articles of all descriptions, to the value of £80, as presents to the chiefs of the different islands, a selection was made, and presented to the queen and her attendants, differing in value

according to their rank. The females were elegantly dressed, in the European style; but the queen-mother, and aunt, had forgotten their shoes and stockings! Their feet, however, as far as their ancles, were neatly tattoed. A formal visit was made in return; and, with the hospitality of the missionaries, the twenty days we remained in this delightful island passed very pleasantly. When getting under way, it being nearly calm, the boats from three American whalers came alongside, unsolicited, towed us through the reefs out into the offing; and I believe they were very glad to get rid of us, for there is very little doubt that our presence had been unwelcome to them.

I may remark here, that the people of Pitcairn's Island, after a residence of five months at Tahiti, (during which period they had lost twelve of their number, and only had one born,) expressed a wish to return to their native island. The British Government had made arrangements for their supplies for one year, and the Tahitian Government had furnished them with all the means of providing for themselves in future. However, they were very unhappy, and neglected the cultivation of their ground. A subscription was set on foot for them, and 650 Spanish dollars were raised, the Pitcairn islanders furnishing an equivalent for 200; (this equivalent it appears was a portion of the copper saved from the Bounty;) and with this assistance they left Tahiti, in an American vessel, in September, 1831.

The smallpox had made great ravages in Otaheite, vaccination having been but little attended to, and there was no variola on the island. Elephantiasis is very prevalent, particularly among Europeans. We met with an extraordinary case of this disease, combined with hydrosarcocele.

It may be urged, that we have no right to interfere with the internal government of the islands in these seas, because they are monarchical. The Sandwich and Society Islands are so; but the Fejees, the Hapies, and the Marquesas are under an aristocracy of independent chiefs; while New Zealand is under a democracy. The Americans have long been aware of the importance of keeping up something more than a friendly intercourse with them, and the following correspondence has taken place on the subject:—

Translation of a Letter from Tamatoa, King of Raiatea, to Thomas ap Catesby Jones, Esquire, of the Peacock, United States sloop-of-war.

"Dear Friend—Great Captain of America—Our hearts are much gratified by the explanations you have given to our queries. I earnestly desire to be on most friendly terms with America. Continue to sail your ships to Raiatea and Tahna, without the slightest suspicion. We will receive them well, and treat them kindly. Should America be at war with any other lands, we will be decidedly on the part of America. Should you at any time be at war with Great Britain, our desire is to be at peace with both parties. But it is not

suitable for us hastily to determine. We will inquire the thoughts of England before we finally agree to that. Do not be offended at our not hastily agreeing to all your propositions.

"Wishing you health and peace in your voyaging,

"TAMATOA."

"A correct Translation.

"J. WILLIAMS, Missionary.

"Raiatea, 18th Sept. 1826."

"To His Majesty Pomare, the Third King of Tahiti, Moorea, &c. &c.

"I congratulate myself upon having the honour to command the first ship of war belonging to the United States of North America which has ever visited the kingdom of Tahiti, and return you my sincere thanks for the honour you have conferred on me by your visit to the Peacock this day.

"The Government and people of the United States have long felt a deep interest in the prosperity of these islands; and I have come, as it were, one who is to bear witness in a far distant land, of what our blessed Redeemer has done for the people of Tahiti; which people, I think, may justly claim to be the favoured of God. At your tender age, you cannot justly appreciate the inestimable blessing which the propagation of the gospel has poured upon your people; but it will be a proud theme of future contemplation to you, to know that your late illustrious and lamented father was an able instrument in the hands of his Maker to bring about this great work of the Lord. Let me conjure you, then, in this particular, to follow his good example, added to the natural talent which he possessed, and which you so largely inherit, you have an advantage never before enjoyed by any Tahitian—the advantage of an early and liberal education. Let, then, this pearl of high value be not cast before swine. Eagerly embrace every opportunity to gain knowledge—a knowledge of God and of man. Without the former, you will be unable to govern the latter.

"Kings were intended to protect and govern the people; and the knowledge of God will teach you to exercise this high prerogative with mercy, justice, and moderation. King Pomare, it is with the deepest interest I contemplate your high calling in this sublunary world. Use this distinction among men for their benefit; and never forget that kings were made for, and by the people, and not the people for kings.

"The time is fast approaching, when I must bid adieu to you and your people, most probably for ever; but, although we may never again meet on this side of the grave, be assured, the very kind attentions I have received from the people of Tahiti will never be effaced from my recollection.

"I should be doing violence to my feelings, were I to close this address without calling your Majesty's attention to, and invoking all your influence in behalf of these faithful ministers of the Most High, who have left country, home, and friends, to preach the glad tidings of the gospel to your people. To these faithful missionaries of the cross you owe every thing. It is to their labours, under the guidance of Divine Providence, that you now claim to rank among the civilized nations of the globe; and, above all, the kind friend who has adopted you as one of his own family, is entitled to your boundless and unceasing gratitude.

"King Pomare, I embrace this occasion to present to you a miniature likeness of the great father of my country, the illustrious Washington, a man whose character you would do well to study, and whose virtues the most favoured may be found to imitate.

"With sentiments of the greatest personal esteem, and a most earnest solicitation for the prosperity of your kingdom,

"I am, &c. &c.

"THOMAS AP CATESBY JONES.
"Captain United States Navy.

"On board the United States sloop-of-war Peacock,
in the port Papetee, Sept. 1, 1826."

"*Articles agreed upon between the United States of North America, by Thomas Ap Catesby Jones, their Representative, appointed to confer with the King, Council, and head men of Otaheite, and its dependencies, for the purpose of arranging certain interesting matters with the said King and Chiefs, &c. &c., on the one part, and the undersigned Regency of the other part.*

"Art. 1st.—The peace and friendship subsisting between the United States and their Majesties the Queen Regent and Pomare the Third, heir apparent to the throne of Tahiti, Moorea, &c. &c., and their subjects and people, are hereby confirmed, and declared to be perpetual.

"Art. 2d.—Their Majesties do hereby bind themselves to receive and protect a consul, or other agent, whenever the United States shall see fit to send such a person to reside near them, and to guarantee the fullest protection of both person and property of such consul or agent, and to allow to him all the rights, privileges, and immunities, which are granted to consuls of the most favoured nation.

"Art. 3d.—The ships and vessels of the United States, as well as their citizens, within the territorial jurisdiction of Tahiti, together with all their property, shall be invariably protected against all enemies of the United States in time of war.

"Art. 4th.—The contracting parties being desirous to avail themselves of the bounties of Divine Providence, by promoting the commercial intercourse and friendship subsisting between the respective nations; for the better security of these desirable objects; their Majesties bind themselves to receive into their ports and harbours all ships and vessels of the United States, and to protect, to the utmost of their capacity, all such ships and vessels, their cargoes, officers, and crews, so long as they behave themselves peacefully, and do not infringe the established laws of the land; the citizens of the United States being permitted to trade freely with the people of Tahiti in all foreign productions, *spirituous liquors of every description only excepted.*

"Art. 5th.—Their Majesties do further agree to extend the fullest protection within their control, to all ships and vessels of the United States which may be wrecked on their shores, and to render every assistance in their power to save the wreck, and her apparel, and cargo; and, as a reward for the assistance and protection which the people of Tahiti shall afford to all such distressed vessels of the United States, they shall be entitled to a salvage, or portion of the property saved; but such salvage shall in no case exceed one-third of the value saved; which valuation is to be fixed by a commission of disinterested persons, who shall be chosen equally by the parties.

"Art. 6th.—Their Majesties do further agree, and bind themselves to discountenance, and use all practicable means to prevent desertion from all American ships which visit the port of Tahiti; and, to that end, it shall be the duty of all governors, magistrates, chiefs of districts, and all others in authority, to apprehend all deserters, and to deliver them over to the master of the vessel they have deserted. And, for the apprehension of every such deserter, who

shall be delivered over as aforesaid, the master, owner, or agent, shall pay to the person or persons apprehending of every such deserter the sum of eight dollars, if taken on the side of the island near which the vessel is anchored; but if taken on the opposite side of the island, the sum will be fifteen dollars; and if taken on any other island, subject to Tahiti, the reward shall be twenty-four dollars; and shall be a just charge against the wages of every such deserter.

"Art. 7.—No tonnage dues or import shall be exacted of any citizen of the United States, which is not paid by the citizens or the subjects of the nation most favoured in commerce with Tahiti; and the citizens and subjects of Tahiti shall be allowed to trade with the United States, and her territories, upon principles of equal advantage with the most favoured nation.

"Done in duplicate, at Papèete, in the island of Otaheite, this day of September, A.D. 1826.

"THOMAS AP CATESBY JONES.

"POMARE.
"TATI,
"UTAAMI,
"RORA,
"VARRAATOA,
} Principal Chiefs of Tahiti.

"Witnesses, { J. M. ORMOND, / CHARLES WILSON, } Missionaries."

The conduct of Captain Jones was of the most benevolent kind; he is spoken of now with that reverence and respect which his conciliating and kind manner insured. Should we not imitate the Americans, then, in sending mild and temperate men among them. Consuls, or deputy-consuls, as the representatives of our sovereign, would be looked up to with a respect little short of adoration. Men of tried character and experience should be selected for this purpose; and a ship of war should at all times be among the islands, as well to countenance the representatives of our country, as to protect the natives from our own worthless convict countrymen, and others who infest the islands, and set the power of the chiefs at defiance. The natives bear with this conduct, because they revere the British character, among those islands where we are known. Where we are not known, such afflicting scenes as the Oldham's continually occur, in all of which the sufferers have been the aggressors; or, if not originating immediately with them, some injury has been inflicted upon them by a previous visitant. The vengeance of a savage is not marked by much discrimination; and satisfaction is sought for from the first hapless individual who has the misfortune to have a white skin. Thus, perhaps, after weeks, or months, or even years, of apparent oblivion, the tomahawk descends upon the head of the unsuspecting and innocent, while the guilty has escaped.

The following facts may be relied upon, in justification of the preceding remarks:—Many years ago, a small vessel belonging to Sydney touched at New Zealand, and bargained for a quantity of

potatoes. They were taken on board at the time appointed, and the captain put to sea, with the natives on board. These people, after importuning the captain in vain for payment of their produce, were obliged to leave the vessel, at the hazard of their lives. The violence of the gale compelled the vessel to return to the same place. The result may be readily anticipated; the crew was massacred, and the vessel destroyed.

A gentleman now in New South Wales, formerly a missionary at Tahiti, made affidavit several years ago, that, on his voyage to New South Wales, passing close to one of the South Sea Islands, the master deliberately fired one of the great guns, shotted, among a group of the natives, who had assembled on the beach, to see the ship sailing along their shore; and he assigned as his reason for this diabolical act, that he wished to impress the natives with a high idea of the superior power of Europeans!

It may be said, that we have long had a consul to watch over our interests, in the person of a Captain Charlton, residing at the Sandwich group. He might as well be at Kamschatka; no one respects him, either native or European. And, to prove, if further proofs were wanting, the necessity of a responsible person being appointed, the captain of the ship Venelia, in December, 1831, forced thirteen of his crew on shore at Tahiti, in defiance of the Government; and it was left for Captain Macmurdo, many months afterwards, to take away five of these men, and to represent the circumstance to the Admiralty. In consequence of this, and other unwarrantable acts of violation of the laws of Tahiti, the following memorandum was made in council:—

"We have agreed to the wish of the British Government, in receiving the Pitcairn's people, and in giving them land. We wish to live in peace, and behave well to the British flag, which we consider our real friend. We want an officer, a consul, at Tahiti, as representative of the King of Great Britain, that he may assist us: it is of no use depending on the consul at the Sandwich Islands; we have long known that we can obtain no advantage from him. We wish much that a British ship of war would come frequently to Tahiti, to take away to their own land, those bad foreigners who trouble us. We wish to do our duty towards the Britons. You are powerful and rich, but we are weak children.—On behalf of Pomare the Queen,

"Apaapa, Secretary of State.
"Tepau, A Judge.
"Arupaeo, Governor, and a Judge.
"Tepoea, One of the Seven Supreme Judges.
"Mare, A District Judge."

And, in 1832, the Queen writes—

"This is one thing I have to say to you: Let Great Britain continue to assist me, and my people; let no other nation use me ill, that may have a desire to act in an evil manner towards me. Let Great Britain continue to assist me. May you be saved by the true God.

"Pomare Valime, Queen."

Thus, it will appear that Otaheite, as well as New Zealand and Tongataboo, are desirous of giving all due preference to Great Britain, and wish to establish a mutual interchange of good offices, and mercantile connection; and, by establishing this friendly intercourse, the civil wars which have been, and are still carrying on, will be prevented; by kindness, good will, and respect to the rights of the natives; with a desire to co-operate with the missionaries, in making them acquainted with the art of civilization, and the habits of civilized life; and, above all, to instruct them in the true principles of Christianity and morality. Such a mode of instruction, by men of experience and good feeling, acquainted with the habits of savage life, would lead them to appreciate still more the power of England. The state of utter helplessness which is now felt in the islands, would be succeeded by a knowledge of their importance in the scale of the creation; and, while we are hailed by them as their moral instructors and their Christian deliverers, we should be performing the equally important part of protectors in their nonage.

V.—THE PIRATE.—*A Sketch.*

THE gong had just sounded eight bells, as Captain M. entered the cuddy, "care on his brow, and pensive thoughtfulness." So unusual was the aspect he wore, that all remarked it: in general, his was the face of cheerfulness; not only seeming happy, but imparting happiness to all around. "What has chased the smiles from thy face?" said one of the young writers; a youth much given to Byron, and open neckcloths. "Why looks our Cæsar with an angry frown?" But, poetry apart, what is the matter? "Why! the fact is, we are chased," replied the captain. Chased! chased!! chased!!! was echoed from mouth to mouth, in various tones of doubt, alarm, and admiration. "Yes, however extraordinary it may seem to this good company," continued our commander, "I have no doubt that such is the fact; for the vessel which was seen this morning right astern, and which has maintained an equal distance during the day, is coming up with us hand over hand. I am quite sure, therefore, she is after no good: she's a wicked-looking craft—at one bell we shall beat to quarters."

We had left the Downs a few days after the arrival of the Morning Star, and, with our heads and hearts full of that atrocious affair, rushed on the poop. The melancholy catastrophe alluded to had been a constant theme at the cuddy table, and many a face shewed signs of anxiety at the news just conveyed to us. On ascending the poop, assurance became doubly sure; for, certain enough, there was the beautiful little craft overhauling us in most gallant style. She was a long, dark-looking vessel, low in the

water, but having very tall masts, with sails white as the driven snow.

The drum had now beat to quarters, and all was for the time bustle and preparation. Sailors clearing the guns, handing up ammunition, and distributing pistols and cutlasses; soldiers mustering on the quarter-deck, in full accoutrements, prior to taking their station on the poop. We had 200 on board: women in the waist, with anxious faces, and children staring with wondering eyes; writers, cadets, and assistant-surgeons, in heterogeneous medley. The latter, as soon as the news had been confirmed, descended to their various cabins, and re-appeared in martial attire. One young gentleman had his "toasting-knife" stuck through the pocket-hole of his inexpressibles—a second Monkbarns; another came on exulting, his full-dress shako placed jauntingly on his head—as a Bond-street beau wears his castor; a third, with pistols in his sash, his swallow-tailed coat boasting of saw-dust, his sword dangling between his legs in all the extricacies of novelty—he was truly a martial figure, ready to seek for reputation even at "the cannon's mouth." Writers had their Joe Manton, and assistant-surgeons their instruments. It was a stirring sight, and yet, withal, ridiculous.

But now, the stranger quickly approached us, and quietness was ordered. The moment was an interesting one. A deep silence reigned throughout the vessel, save now and then the dash of the water against the ship's side, and here and there the half-suppressed ejaculation of some impatient son of Neptune. Our enemy, for so we had learned to designate the stranger, came gradually up in our wake: no light, no sound, issued from her; and when about a cable's length from us, she luffed to the wind, as if to pass us to windward; but the voice of the Captain, who hailed her with the usual salute, "ship a hoy!" made her apparently alter her purpose, though she answered not, for, shifting her helm, she darted to leeward of us.

Again the trumpet sent forth its summons; but still there was no answer, and the vessel was now about a pistol-shot from our larboard quarter. "Once more, what ship's that? answer, or I'll send a broadside into you," was uttered in a voice of thunder from the trumpet, by our captain. Still all was silent; and many a heart beat with quicker pulsation. On a sudden, we observed her lower steering-sails taken in by some invisible agency; for all this time we had not seen a single human being, nor did we hear the slightest noise, although we had listened with painful attention.

Matters began to assume a very serious aspect—delay was dangerous: it was a critical moment, for we had an advantage of position not to be thrown away. Two main-deck guns were fired across her bow. The next moment our enemy's starboard ports were hauled up, and we could plainly discern every gun, with a

lantern over it, as they were run out. Still we hesitated with our broadside, and about a minute afterwards our enemy's guns disappeared as suddenly as they had been run out. We heard the order given to her helmsman. She altered her course, and in a few seconds was astern of us.

We gazed at each other in a silent astonishment, but presently all was explained. Our attention had been so much taken up by the stranger, that we had not thought of the weather, which had been threatening some time, and for which reason we were under snug sail. But, during our short acquaintance, the wind had been gradually increasing, and two minutes after the pirate dropt astern, it blew a perfect hurricane, accompanied by heavy rain. We had just time to observe our friend scudding before it under bare poles, and we saw him no more.

VI.—The New Sheers in Woolwich Dockyard, *proposed and constructed by Mr. Oliver Lang, Master Shipwright.*

The accompanying drawing is a representation of the new sheers erected in Woolwich Dockyard, for masting ships, and other important purposes. By the manner in which they are arranged on the wall by which the basin is separated from the river, a ship may be masted on either side of it. The following descriptions refer to the letters in the sketch :—

A—Mast stepped in the pier.

B—Enlarged part of the Sheers, describing the manner of connecting the butt ends of the spars by the iron plates and dowels.

C—Ditto, shewing the iron straps, hoops, and bolts, in addition.

d—The form of eight square iron plates, let into the end of each spar—their thickness one inch and a half.

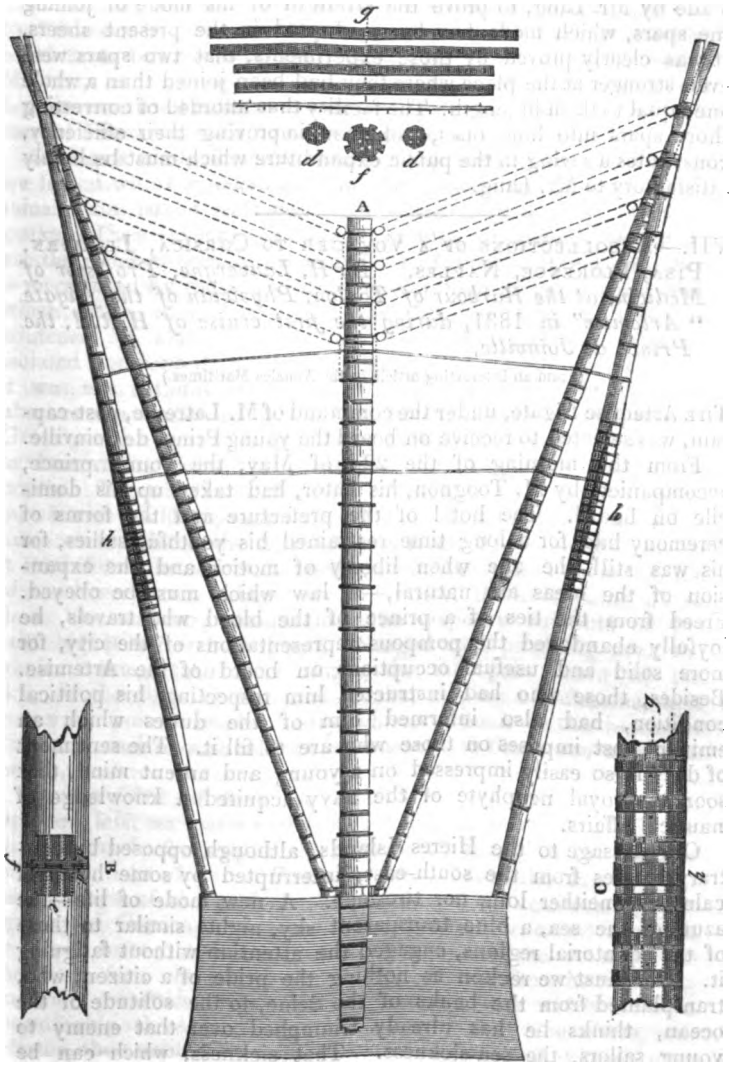
e—Iron dowels, two feet long, and four inches in diameter, fitted half their length into the end of each spar, and passing through the plates *d*.

f—Centre plate, with scores to receive the iron straps, through which plate the dowels pass, as well as through the plates *d*, for strengthening the butts—this plate is one inch and seven-eighths thick.

g—Iron straps for connecting the spars together, let in flush, and bolted through the spars, and through each other.

h—A broad thick hoop driven over the straps, at the butts of the spars and joints of the iron plates, to confine them, in addition to bolts and other hoops on the spars.

These sheers were proposed by Mr. Lang in May, 1831, and fitted between October, 1832, and November, 1833 : and we find, that so highly is this method approved of, that similar sheers are ordered to be constructed at the various royal dockyards. It is obvious, that where a ship can lie alongside a pier, that the plan is far preferable to that of placing the sheers in a hulk, as the space occupied by her is left clear, and uninterrupted. At



page 550 of our second volume, we noticed some experiments made by Mr. Lang, to prove the strength of his mode of joining the spars, which mode has been adopted in the present sheers. It was clearly proved by those experiments, that two spars were even stronger at the place where they had been joined than a whole one equal to them in length. The facility thus afforded of converting short spars into long ones, and even improving their efficiency, constitutes a saving in the public expenditure which must be highly satisfactory to Mr. Lang.

VII.—Recollections of a Voyager to Corsica, Leghorn, Pisa, Florence, Naples. *By H. Lauvergne, Professor of Medicine at the Harbour of Toulon, Physician of the frigate "Artemise" in* 1831, *during the first cruise of H.R.H. the Prince de Joinville.*

(From an interesting article in the Annales Maritimes.)

The Artemise frigate, under the command of M. Latreyte, post-captain, was selected to receive on board the young Prince de Joinville.

From the morning of the 22d of May, the young prince, accompanied by M. Toognon, his tutor, had taken up his domicile on board. The hotel of the prefecture and the forms of ceremony had for a long time restrained his youthful sallies, for his was still the age when liberty of motion and the expansion of the ideas are natural,—a law which must be obeyed. Freed from the ties of a prince of the blood who travels, he joyfully abandoned the pompous representations of the city, for more solid and usefual occuptions on board of the Artemise. Besides, those who had instructed him respecting his political condition, had also informed him of the duties which an eminent post imposes on those who are to fill it. The sentiment of duty is so easily impressed on a young and ardent mind, that soon the royal neophyte of the navy acquired a knowledge of nautical affairs.

Our passage to the Hieres Islands, although opposed by contrary breezes from the south-east, interrupted by some hours of calm, was neither long nor tiresome. A new mode of life—the azure of the sea, a blue transparent sky, nights similar to those of the equatorial regions, engaged the attention without fatiguing it. Nor must we reckon as nothing the pride of a citizen, who, transplanted from the banks of the Seine, to the solitude of the ocean, thinks he has already triumphed over that enemy to young sailors, the sea-sickness. That sickness, which can be compared to no other, but which has something of all of them, met our companions with the '*robur*' and the '*æs triplex*' of Horace.

On the 26th we made Corsica; an island destined to remain an exception to civilization in the midst of the civilized world,

and to be stationary in the progressive advance of modern society. I have previously observed, and I repeat it again, still more convinced of it, that Corsica belongs always to herself, and not to France; because a territory may be inhabited, without its inhabitants being subjugated. To found an empire in the hearts of men, is to render it lasting and flourishing. Corsica will become another France, but surrounded by sea, when the countryman of Fiumorbo shall be convinced that he is a Frenchman.

During a whole day, perched on the taffarel of the frigate, we traced with the naked eye the outlines of those superb mountains of this island from their first bases to their most elevated peaks. These cyrnean summits, planted at regular intervals, are the watch-towers of the island; and their picturesque effect is augmented by the snow which covers their indented sides, and which, when they reflect the rays of the sun, displays the whiteness of alabaster. Having been a traveller in this little isolated world, so ill known, but studied by some in perspective, it was not without emotion that I saluted after eight years of absence the peaks of Niole, the Monte-Rotondo, the Monte-Grosso, which seem, in our days, to have received a new claim to immortality from the great man of whom they were the cradle. What is the first aspect of Corsica? What conception on canvass could represent it?—None. Reader, have you sometimes contemplated the horizon when large dense clouds rise as it were from the waves, heaped one on the other, those of the of the lower strata being grey and misty, the next rising above them like ordinary mountains, the vapoury summits of the next higher series less dense, enlarged and presiding over the whole, tracing their lofty ridges on the pale azure of the sky, in the form of indented peaks, sloping undulations, and numerous points resplendently white. Such is the aspect of Corsica; such as it should be represented to those who have not seen it.

On the 27th of May we arrived in the gulf of Ajaccio. On our left we passed the *Iles Sanguinaires*, of which the Genoese made formerly their '*sanguinetto corse*,' as the Romans ought to have done at Thrasymenæ. Upon the first hills at the entrance of the gulf, the lineaments of the territorial physiognomy of Corsica are presented to the observer, a feature which he never loses; it follows every where, from the mountain to the plain, from the hill to the valley. Every where he finds this uniform, parasitical, luxuriant vegetation; one which devours unprofitably three-fourths of this virgin soil. The cistus, the arbutus, the terebinthus, seem here to have triumphed over man, since for thousands of ages the sickle of the reaper has respected them. Corsica, which Nature predestined to be the granary of an empire, has scarcely been able to supply the wants of her

own population. Nature and time have here asserted their dominion; the first in decreasing the number of her people, the last in keeping down a superabundant population which the land could not support.

For the last two years, the first sign of any habitation bordering this coast, is a sarcophagus, in which are deposited the mortal remains of Colonel Peraldi, a Corsican of a noble and ancient family, highly respected in the country. As the Count de Marbœuf is decidedly a branch of Buonaparte's family, they have erected to his memory a monument, which, it is said, is well worth visiting.

We had made some progress into the gulf, when the old pilot, Jean Bart, came on board. He is a French-Corsican, *a voix de ro-gomme*, of a becoming countenance, that is forbidding to a degree, health officer as well as pilot, and more vain of his titles than an ancient duke. Jean Bart Marignan, who for ten days had constantly visited Sanguinaires to look for the frigate, rejoiced when he saw us; moreover, he had a good heart, and was a frank, honest sailor-man. He came on board, went straight to the captain to explain his rank and high station; and while ordering the helm to starboard, he strove to ascertain if the prince was present. He scrutinized with his keen eye the staff which surrounded him, and perceived him, or rather guessed him out in his midshipman's costume. Poor Jean Bart, no sooner had he made him out, than with sparkling eyes and a flushed cheek, in a sepulchral tone of voice, he improvised his address. "My Prince," said he, "never has a Corsican pilot had so much honour as I; yes, never so much honour for a pilot. Long live the king—long, and long live the king!" Poor Jean Bart, how much did your emotion surpass your eloquence, when the Prince de Joinville, approaching you, thanked you for your sincerity, and sanctioned the honour which you courted.

The anchor was dropped off the city of Ajaccio, in presence of the assembled people on the mole. The cannons of the citadel saluted our arrival, the civil and military authorities came on board in an elegant barge, to pay their first duties to the Prince de Joinville. The appearance of Ajaccio, seen from the anchorage, is picturesque; it attracts the attention, and tempts the pencil, of the artist. Some 'mezzo palazzo' skirt the vast square of the quay, in the midst of which, a fountain of a fine imposing style of architecture has been constructed within these few years. These beautiful houses, built not far from the small huts of the peasantry, belong to the noble families of Corsica, who have descended from their aërial domains in the mountains to display to the eyes of the traveller a 'palazzo,' a 'castello,' with which their mountaineer ancestry had forgotten to emblazon their coat of arms. Ages have been required to introduce into Corsica the

taste for the 'palazzo;' nor has this taste yet penetrated a tract of some miles of territory. The vanity of a Corsican peasant will never bear the insignia of an inequality of condition which he has not deserved. These few words explain the enigma:—They give on one hand, the motive for the colossal buildings of Ajaccio; on the other hand, without accurately fixing the name and the connexions of the proprietors, they leave you to find it amidst twelve or fifteen historical names of the country.

On traversing the city, it was an amusement to remark the changes which it had undergone during my absence. The seminary, built by the order, and at the expense of Cardinal Fesch, occupies the most elegant part of the sea-side. A person would be deceived with regard to the object which the architect had in view, if he was not aware of it. The 'Fesch' seminary resembles rather large and elegant barracks, or a handsome theatre; but far too large for seven thousand inhabitants. This, with a superb prefect's hotel, which is finishing, and a mayor's house which is beginning, were the three modern buildings, the details of which attracted my attention.

I entered the church of St. Erasmus. *O tempora!* who would have believed it? in order to celebrate the arrival of the prince, the officiating clergyman had done what had never been seen there before. The naves, the pilasters, the galleries, the chief altar, the whole building, in short, was hung with the "tricoloured" flag. I shall be very much deceived if ever this curate is accused of moderation or a want of liberalism. I sallied forth from the holy place with white, red, and blue dancing before my eyes, when I met a priest in the costume of the Greek church. Who is this Spartan pope? I asked of the person that accompanied me: this man of years, with his bald head, and his white flowing beard, in a costume foreign to Ajaccio. He replied, "the minister of a Greek colony established at Carghese. He is at Ajaccio, to terminate there a difference between him and a Roman Catholic priest. The city Carghese possesses only one church; it serves for the celebration of the ritual of the two forms of belief; the converts to the church of Rome wishing to have the preference over their dissenting brethren, demand that the rites of the church of St. Peter may be performed before the prayers of the Greek minister. The latter claim the priority of possession and custom, which should constitute the law. At this moment," added my companion, "the matter is in litigation, '*et adhuc sub judicè lis est.*'"

The city of Ajaccio is not the gay place it was formerly, when the ships of France obtained there the enormous pines, which were transported at great expense from the vast forests of Aïtoun, of Bocagnana, and Vizzavone. These forests are beginning now to recover their former luxuriance. How many days must still pass over their sombre foliage, reduced as they have

been by the axe of the woodman, before we may obtain from them what the soil of France refused! When it is considered that the twelve forests of Corsica, well attended to, would supply the wants of a vast naval arsenal, perhaps even of all the harbours of France, it is surprising to see the neglect in which they are left. Nature had given to Corsica wood and iron. What more was wanted for the trident of Neptune?

The prior of the church of St. Erasmus was pointed out to us, in the course of our walks; the same person who had ornamented his church with the tri-colour. I don't pique myself as being versed in physiognomy, but if it were required of me to seek the characteristic traits of a mind truly liberal, I should not hesitate to offer that of the clergyman to the modern Lavaters, as a perfect type of this sort. Several anecdotes are told of him, which prove as much his hatred against the antiquated system as his prodigious attachment to the new doctrine. This ecclesiastic, a veritable exception from mankind, a liberal apostle, is one of the "lions" of our voyage.

My attention was engaged on him when the modest little street of St. Charles altered my projects. It is a street for ever memorable, and which the pilgrims of the world, when disembarked at Ajaccio, never fail to tread with respect. The street St. Charles, from fifty paces long to six or seven broad, in point of celebrity, disputes the palm with the most beautiful streets or quays in the world—as a pantheon of kings, and, far above them, he who signalized with his name the nineteenth century. We advanced with a religious respect as far as the door of the sanctuary: the faithful Osmanli in the courts of the temple of Mecca contemplates the tomb of the prophet with less veneration than did our little party here, composed of many persons of the staff of the frigate. But the inhabitants of the place are accustomed to see a host of visiters crowd into the narrow street of St. Charles. Ajaccio is really the Mecca of the European world. We requested permission to enter, of a good woman who kept the door, and a polite refusal dismissed us till the morrow. Sadly disappointed at this rebut, we retired with the project '*in petto*' to return to the rendezvous.

In less than an hour we had exhausted the sights of Ajaccio; the night closed in, and with it came the hour of the ball previously arranged. It is not on the coast of the island that an observer is permitted to seek the Corsican physiognomy in all its purity. The fair sex assembled in the hall of the prefecture were composed of French women, the daughters or wives of those employed in the civil service, or in the garrison; but a Corsican beauty may be sketched in a few words:—Height middling, graceful in her perpetual movement; form slender; a foot for the smallest shoe in the world; brunette in colour; eyes black, soft, and expressive; eyebrows well arched, and feasible, relieved by a

head of hair as black as ebony, with oval face, a little prolonged; temper the most sweet and benevolent. Such are the fair ones of Corsica.

It appears, that for some years the route from Ajaccio to Bastia has been practicable, at least in summer, but during the winter season the torrent streams inundate the road. I recollect, in 1823, preparations were made for the journey, as though it were a serious undertaking. "Is it still thus?" I inquired of a Corsican, vain of his country, as a financier of his gold. "Times are much changed," was his reply, "since your absence: bridges, roads, and district-administration of law, have remodelled the face of the country."

It is not possible to describe the feelings of our party, in finding ourselves in the little room where Napoleon was born. These, we exclaimed, are the walls which once protected the man whom the universe could not contain. The place of the bed on which he was born was before us; he who was equally a stranger to his species, as the Corsican shepherd is to his flock, which he governs at his will. A portrait of him was suspended from the wall. He who once had kings for flatterers, emperors for courtiers, at the very pinnacle of his power, disdained not to decorate *the asylum of his first years with his portrait.* The expression of the features is rather melancholy and meditative. His look is directed exactly to the door of the room, inspiring the visiter with an involuntary emotion; the history of the world passes before him.

A carronade, the top of which is formed of the *serpentino* marble of the country, and some chairs, are the few remains of the furniture belonging to his father. The visiters of Napoleon's birth-place not having been strictly watched, in their fanatacism they have carried off piecemeal his infant cradle, so that now it is dispersed in the *Armatory's** of Great Britain. Who will tell us the name of him who succeeded in abstracting the little bronze cannon which was still to be seen at the time when I visited Corsica?

To him who knows the history of the bandit *Tiodoro*, it may be interesting to know that his poniard, the invisible and prompt agent of his "vendette," was presented to the Prince de Joinville. He shewed it us the day after his departure, still ignorant, that in the staff of the frigate there was one who had seen Theodore in all the horror of his savage existence, and who had published in his "Archives des Voyages" some horribly dramatic scenes, of which this Corsican was the hero.

A poniard is considered in Corsica the most desirable present which can be offered to any one; perhaps the predeliction may arise from the defence it affords one from an enemy. The prince received another, elegantly finished, as a fellow to that of Theodore, which, setting apart its celebrity, will always represent the infancy of the art.

(To be Continued.)

* The same word as in the original.

Table VII.

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

1 Amsterdam foot = 0·9286784 English foot.
1 English foot = 1·0767971 Amsterdam foot.

Dutch or English Ft.	English Feet and Dec. parts.	Dutch Feet and Dec. parts.	Dutch or English Ft.	English Feet and Dec. parts.	Dutch Feet and Dec. parts.	Dutch or English Ft.	English Feet and Dec. parts.	Dutch Feet and Dec. parts.
1	0·929	1·077	38	35·290	40·918	74	68·722	79·683
2	1·857	2·154	39	36·218	41·995	75	69·651	80·760
3	2·786	3·230	40	37·147	43·072	76	70·580	81·837
4	3·715	4·307	41	38·076	44·149	77	71·508	82·913
5	4·643	5·384	42	39·004	45·225	78	72·437	83·990
6	5·572	6·461	43	39·933	46·302	79	73·366	85·067
7	6·501	7·538	44	40·862	47·379	80	74·294	86·144
8	7·429	8·614	45	41·891	48·456	81	75·223	87·221
9	8·358	9·691	46	42·719	49·533	82	76·152	88·297
10	9·287	10·768	47	43·648	50·609	83	77·080	89·374
11	10·215	11·845	48	44·577	51·686	84	78·009	90·451
12	11·144	12·922	49	45·505	52·763	85	78·938	91·528
13	12·073	13·998	50	46·434	53·840	86	79·866	92·605
14	13·001	15·076	51	47·363	54·917	87	80·795	93·681
15	13·930	16·152	52	48·291	55·993	88	81·724	94·758
16	14·859	17·229	53	49·220	57·070	89	82·652	95·835
17	15·788	18·306	54	50·149	58·147	90	83·581	96·912
18	16·716	19·382	55	51·077	59·224	91	84·510	97·989
19	17·645	20·459	56	52·006	60·301	92	85·438	99·065
20	18·574	21·536	57	52·935	61·377	93	86·367	100·142
21	19·502	22·613	58	53·863	62·454	94	87·296	101·219
22	20·431	23·690	59	54·792	63·531	95	88·224	102·296
23	21·360	24·766	60	55·721	64·608	96	89·153	103·373
24	22·288	25·843	61	56·649	65·685	97	90·082	104·449
25	23·217	26·920	62	57·578	66·761	98	91·010	105·526
26	24·146	27·997	63	58·507	67·838	99	91·939	106·603
27	25·074	29·074	64	59·435	68·915	100	92·868	107·680
28	26·003	30·150	65	60·364	69·992	200	185·736	215·359
29	26·932	31·227	66	61·293	71·069	300	278·604	323·039
30	27·860	32·304	67	62·221	72·145	400	371·471	430·719
31	28·789	33·381	68	63·150	73·222	500	464·339	538·399
32	29·718	34·458	69	64·079	74·299	600	557·207	646·078
33	30·646	35·534	70	65·007	75·376	700	650·075	753·758
34	31·576	36·611	71	65·936	76·453	800	742·943	861·438
35	32·504	37·688	72	66·865	77·529	900	835·811	969·117
36	33·432	38·765	73	67·794	78·606	1000	928·678	1076·797
37	34·361	39·841						

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

VINDICATION of the Captain and Crew of the smack Earl of Wemyss, which was stranded on the coast of Norfolk on the 1st Sept. 1833, &c. By Robert Lewins, M.D., &c. Second Edition. J. Burnett, Leith.

When first we heard of the melancholy affair of the loss of the Earl of Wemyss, and read in the public prints an account of the alleged behaviour of her captain and crew to their passengers, we confess that, with the feelings of a British sailor about us, we actually blushed for the blue jackets. So generally, and so strongly, was the voice of the whole public raised in condemning them, that we had pronounced our anathema against them, as unfit for civilized society, and destitute of all feeling, although in their outer forms they might be mistaken for British seamen. Now, we had fairly settled down into this opinion, on the authority, we must confess, of nearly the whole press of England; and on the authority of that press did we feel indignant at the very name of the Earl of Wemyss, and joined most heartily in exclaiming against all who belonged to her.

But here is a little work placed before us, bearing the motto, "Hear, and be just;" and we took it up precisely with the feelings we have described, quite expecting to meet with nothing that could alter our opinion. Alas, how soon we found that we had been grossly imposed on, with the multitude, and, that never had there been a case so *foully* misrepresented as that of the Earl of Wemyss.

What will our readers say, when they hear that *not one of the charges against Captain Nesbitt, or his crew, has been substantiated!* But we will enumerate those charges, and place against them the facts by which they have been controverted on oath.

It has been urged against Captain Nesbitt, first, "that he spoke in an unfeeling and unconcerned manner of the number of passengers drowned."—Not proved, and denied on oath.

2nd. "That he ate his breakfast (at the inn at Brancaster) with the coolness and collectedness of a butcher."—His breakfast (a sailor's, be it remembered) proved to be a *little milk and water*, swallowed with difficulty, in consequence of the long and severe exposure he had undergone.

3rd. "That he made no attempt to rescue the ladies, nor used any means to restore suspended animation."—It is proved that no human power could have rescued the ladies in time to save their lives. We might ask those who know any thing about the situation of the Earl of Wemyss, how the means of restoring suspended animation could have been applied, and if it would have been any use to have applied those means on shore, when they had been drowned four or five hours. Such a charge carries absurdity on the very face of it, when it is recollected that the vessel was frequently under water! But, to proceed with the charges.

4th. "That the filling of the cabin with water was in consequence of the skylights not having been battened down."—Proved that the skylight was secured when the storm came on, by *double covers*; that these were washed

away by its violence, but that the cabin was filled principally by damage the vessel had sustained in taking the ground, as the water came *bubbling up the skylight* from below.

5th. "That Captain Nesbitt had not taken proper care to prevent the ship from being plundered."—Proved that he had given up the charge to a person who shewed that he was agent for a company of underwriters, when he was unfit from exhaustion to protect his own property, or that of any person,* and remained so till three days afterwards, when his chest was restored to him, with every item in it, by the coast-guard people, who had protected it, with other property.

6th. "That he had not gone to his vessel since the accident, from Sunday morning (1st Sept.) until Tuesday (3d) afternoon."—Proved that he was unable to go until then, when he was conveyed to her in a carriage! but it was not necessary he should go, as he had left her in charge of a properly authorized person.

7th. "That he had said the sails of the vessel were not seaworthy."—Contradicted on oath, and the sails proved to be in good order, by a report from competent persons, ordered by the magistrates of Leith.

8th. "That he asserted a sea struck the ship, carried away the skylights, and filled the cabin with water."—A terrific sea did strike the vessel, and carried away the iron frame-work of the skylight covering, and of course part of the water went into the cabin. "Who could imagine the contrary, and who could have prevented it? But it is proved that the cabin was filled from a leak below, or how could the water "bubble up the skylight?"

9th. "That, in reply to a question as to the skylight not being covered over, Captain Nesbitt said he had nothing to do it with."—Denied by Capt. Nesbitt, and proved further that the skylight had been double covered, and to have covered it when the cabin was full of water, and a heavy sea rolling over her, would have been useless, and indeed impossible.

10th. "That a female passenger, who had been detected plundering, had received a guinea from the steward, by the Captain's order, and was sent out of the parish."—Proved that this woman was a pauper! sent on board by the Scottish Society of London; and a sovereign was given her by the underwriter's orders, she being perfectly destitute, to enable her to proceed on her journey, after the wreck, and for no other purpose!

We thought we had enumerated all the charges in this long list, and we are quite ready to meet any that may hereafter be brought against Nesbitt, by any person; but here is another, and we believe that completes them, in the shape of a question:—

11th. "Whether, after the vessel took the ground, it was possible to have had communication with the shore sooner than the time those landed who were saved?"—Now, in answer to this, it is proved by the coast guard that it was impossible. The *attempt was made* by some to wade to the vessel at the most favourable time, which was about one o'clock on Sunday morning, when it was blowing and raining in torrents. At this time, an attempt was also made by Captain Nesbitt to land with a boat: this too was found to be impossible; the boat was stove, and the men in her were saved with great difficulty.

And on these charges, accompanied by a mass of invective about unfeeling conduct, &c., was Captain Nesbitt and his crew to be condemned; and they were condemned without even a hearing; without even the opinion of a single nautical man! By whom? by the public. But well may the author of the

* All persons are cautioned, by notices from the Leith company, that they will not be responsible for property, unless entered and delivered into their charge, which, in the instance of the jewelry said to have been lost by Mrs. Pyne, was neglected.

Vindication exclaim *magna est veritas et prævalebit.* He has done a service not only to the objects of all this calumny, but to the seaman's real character; a service which should not be forgotten, and for which he deserves their's, and our warmest thanks. By a patient and careful investigation of this unfortunate affair, in all its various stages, he has rescued from shame and obloquy, the character of a worthy captain, and a worthy crew. For, until proof to the contrary is produced, we must say so; bearing in mind, that a male passenger (Mr. Gooch) was at the fatal moment rescued from the ladies' cabin by the crew, at the risk of their lives; and that, notwithstanding the long investigation at Dorking, and the proceedings at the two last Assizes at Norwich, nothing has been proved against them. They were so far helpless as to be unable to meet that all-powerful engine, the press, arrayed against them: but the cause was good—it was that of truth; and Mr. Lewins has had the satisfaction of laying it before the world—of healing the wounded spirit of Captain Nesbitt, and of hurling back on his accusers the stigma of shame which they had attempted to fasten on his name. And, to do so, they unworthily guided the public press: statements were made, and facts were suppressed. But the press, in its turn, has done its duty: a reaction has already taken place in public opinion, and it is already seen that Captain Nesbitt was a most injured man. It is satisfactory to know that he is again employed by the same company in whose service he was when the wreck took place, and, in justice to him, we shall conclude our notice of the "Vindication," (which is written with the feelings of a Christian,) by quoting the following letter from the undersigned nautical men, and masters of vessels, on the coast of Norfolk, addressed to a gentleman in Leith:—

"*Brancaster, 26th Dec.* 1833.

"Sir,—Having that impression on our minds, that there are *certain persons* wishing to implicate Captain William Nesbitt, and the crew, respecting the stranding of the smack Earl of Wemyss, on the coast of Norfolk, on the 1st of September last—

"We, the undersigned, as nautical men, and masters of vessels, on this coast, to the best of our judgment and belief, give it in as our opinion, that, *had we* been placed in the same unfortunate situation *as he was*, we should not have been able to have acted in any other manner than what Captain William Nesbitt did. After the sails being split and gone, he brought the smack up in the best water he could find, which proved inadequate for her to ride afloat at low water. She struck, and the captain was obliged to slip, and let her go up as high on the beach as the tide would carry her, for the preservation of lives and property.

"Charles Oakes, H. E. I. Service.
"Thomas William Forster, Act. V. A. Agent.
"Henry Ringwood.
"Joseph Dix, Master Mariner.
"Robert Ringwood, ditto.
"Francis Edmond, ditto.
"Thomas Bocking, ditto."

Belgium and Western Germany in 1833, including Visits to Baden-Baden, &c. By Mrs. Trollope, author of "Domestic Manners of the Americans." Two Vols. Murray.

Having so recently laid down that delightful work entitled "Bubbles from the Brunnens," (now in its second, and we hope shortly to be in its third and

fourth editions,) we felt little disposed to take up these volumes; but we soon found them not only interesting, but of a most useful kind. Mrs. Trollope evidently set out with the view of writing a guide book for travellers on the Rhine, determined to enrich it with historical sketches, and, above all, with those romantic stories of its numerous interesting objects that not only belong to them, but form, as it were, the connecting links of their existence. For the illustration of this, we must refer our readers to the work, which will well repay them to read; and those who contemplate a trip to the Rhine, will find that they should not go there without it.

AN APPEAL TO HIS MAJESTY'S GOVERNMENT and the Honourable East India Company for Justice to the Claims of the Honourable East India Company's Maritime Service to Compensation. By an Officer of the Service. Richardson, Cornhill. 1834.

A BRIEF STATEMENT, shewing the Equitable and Moral Claims of the Maritime Officers of the Honourable East India Company to Compensation. By C. Gribble, Chief Officer, &c. Richardson, Cornhill. 1834.

There can be no better proof of the justness of the claims advanced in these two well-timed productions, than the fact that those claims have already received some attention from the source to which they are directed. Those claims, we believe, have already undergone considerable discussion; but, with the broad fact before us, that the civil servants of the Company retire upon pensions of twice the value of the compensation here awarded to their naval officers, (and it is not difficult to decide which is the most harassing, trying, and arduous service of the two) with this fact before us, we cannot help expressing our surprise that such is the method adopted by men in their senses of requiting the services of those officers to whose invaluable qualities they owe their very existence and character as a company! It is to the officers of their naval service that the Company owe the credit of having aided government, during the war, with naval armaments, as well as for having conducted their own rich fleets in safety to and from their distant possessions. No doubt it was the duty of these officers to do so; we do not deny it, although in the first it might have been to their loss, — but what were the duties of their more fortunate brethren of the civil service compared to these. Such a discussion we must waive; convinced, as we are, that, in the balance of real service to the Company that demands compensation, they will cut but a sorry figure: and yet they are to be paid tenfold. We are sorry to see it,—we are sorry to see the Honourable East India Company of this favoured land discard thus a race of gallant, skilful, and honourable seamen now that they no longer require their services. And we hope (although we have no reason to think they will fully do it) that they will consider and amend their decisions.

Those of our readers who take any interest in the history of the East India Company's naval service, will find it ably treated on in the first of the above little pamphlets. It explains the whole system of the maritime service in regular ships and free traders, and sets out with shewing that there is no difference between officers serving in the Company's own ships, or in regular ships; and, whether in active service or not, that the officers were considered as the servants, and therefore under the control of the Company. It shews the various instances in which ships of the East India Company have

been called on to assist in our naval expeditions, and the authority exercised by the Company to enforce the services of their officers, and a variety of information on the subject; proving that the naval officers are most grossly treated by the miserable scale of compensation awarded to them for their past invaluable services.

LIFE AND POEMS OF THE REV. GEORGE CRABBE. Vol. VII. Murray.

The great and enduring merits of this popular work, claim our admiration with that of our numerous contemporaries. The language of praise has been already exhausted in expressing the feelings of its various readers; and it remains for us only to say, that we cordially subscribe to their sentiments, assured, that those will also be the sentiments of posterity, that they will be spontaneously produced in every breast capable of appreciating the faithful portraiture of nature, of being touched with sympathy by the delineation of human suffering, or of duly estimating manly and Christian feeling, conveyed in the clearest and most impressive language. These are the characteristics of that kind of poetry which "lives for ever," and they are those which distinguish the tales of the Rev. George Crabbe.

METEOROLOGICAL REGISTER.—We have just received the register alluded to in one of our advertisements. The difficulty of bringing a year's observations into a small compass has here been completely overcome, by means of signs and symbols, the impressions of which are conveyed to the mind sooner than by figures; and hence the observations of any day are clear and easily read; and hence also the facility of comparing the observations of one place with those of another, or those of one year with another, is effectually obtained. We recommend it to the attention of our readers, and refer our nautical friends to the remarks concerning them in the advertisement which accompanies it.

NAVAL ARCHITECTURE.—We hear that Captain J. D. Boswall, of the Royal Navy, has just produced a translation of the celebrated work on Naval Architecture by Paul Hoste, to which he has added his own remarks, and considerably improved the diagrams of the old edition. We believe, that for want of such a work, our naval constructors have been obliged to have recourse to the French copies; and we have no doubt that Captain Boswall's labours will be appreciated, but we are unable yet to speak of their merits.

LAUNCH OF HIS MAJESTY'S SHIP PIQUE.—On the 21st of July, the launch of H.M.S. Pique, of 36 guns, took place from Plymouth dock-yard, in the presence of an immense concourse of individuals. The arrangements for the distribution of the police under Lieut. Williams, their chief officer, were certainly very judicious, and the quietness and regularity which was the natural result, rendered the whole as agreeable and pleasant a sight as its well-wishers could desire, or the most ardent novice anticipate.

About ten minutes before the appointed time (five o'clock,) the Captain Superintendent Ross, C.B., Admiral Sir W. Hargood, Commander-in-Chief at this port, Captain Symonds, the present Surveyor of the Navy, and Capt. Phipps Hornby, of the Victualling Office, with a party of ladies and gentlemen, entered the enclosure which had been purposely erected to prevent the

curious from approaching too near, and thereby avoiding accident. Wine being brought, the party alluded to drank in the most enthusiastic manner "Success to his Majesty's Ship Pique"—after which the usual ceremony of "christening" was gone through very prettily by Miss Ross, the daughter of the worthy Captain Superintendent, by throwing against the bow of the ship a bottle of wine, at the same time exclaiming "Success to the Pique." It must be admitted that the young lady alluded to performed her task with more *savoir faire* than is usual on such occasions, for she succeeded at once in breaking the bottle and in sprinkling about a dozen gentlemen who did not calculate upon so much success. This imposing ceremony having been performed, they retired to a more convenient spot for witnessing the Launch, which certainly was as good a one as we ever witnessed; the effect of the most judicious arrangements of Mr. Watts, the foreman, and the master shipwright, Thomas Roberts, Esq. This veteran and truly efficient builder has, by this act, completed the fiftieth man-of-war launched since his elevation to the present honourable situation, to which ability alone had raised him. Every thing was conducted with regularity and precision, without noise and bustle, for all the shores, &c., were removed in the earlier part of the day, and the only thing left to be done, and which certainly cannot be avoided, was the splitting out of the blocks, which at proper intervals was done. Every thing being ready, just as the yard clock had done striking five, the master shipwright gave the command "out trigger, down dog-shore;" these being the final orders for the removal of all obstructions to her progress to the water, she presently began to draw down the inclined plane, and about half a minute elapsed when she glided most majestically into the water amidst the deafening huzzas of assembled thousands of persons. The kerchiefs of the ladies "floating on the breeze" demonstrated their delight at such a very imposing spectacle.

The following are her dimensions, and we have placed against them those of the Inconstant, now building at Portsmouth by Captain Hayes:

	Pique.		Inconstant.	
	Ft.	In.	Ft.	In.
Length on Lower Deck	160	0	160	0
of Keel for Tonnage	131	0	132	0
Breadth extreme	48	8	44	8
for Tonnage.....	48	3	44	0
Depth in Hold	14	6	13	9
Burthen in Tons	1622		1400	

Plymouth Journal.

Last week was launched from the building yard of Mr. White, sen. a remarkably fine ship, of 420 tons register burden, the property of Samuel Enderby, Esq. of London, whose name is pre-eminent in the Southern Fishery, of which he was justly denominated, and has ever since been esteemed, the founder, having in 1775, and many years previously carried it on with persevering spirit, when the United States was a Colony of Great Britain.—The ship is adapted for the South Sea service, and is the first that has undergone thoroughly Mr. Kyan's process for the prevention of dry rot, every plank and timber having been saturated with his patent solution, which has for its object the durability of property, and subsequent preservation of life.—She was very aptly and gracefully christened, "The Samuel Enderby," by Miss Garrett, daughter of Admiral Garrett.—*Hants Tel.*

We consider this as a most important experiment connected with naval

architecture, as one reflecting credit on the public-spirited proprietors, the Messrs. Enderby, and to the result of which we shall look forward with much anxiety.

MR. BETHUNE'S STEAMER.—At page 245 of No. 26 of this work, will be found an account of Mr. Burden's new steamer. The following description of a new one, taken from the Old Quebec Gazette, is interesting, as it surpasses that of Mr. Burden, although on the same principle. "We have examined the model of the boat now placed at the Exchange. It resembles in the build of its hull Mr. Burden's boat; but, instead of two barrels, it has *three*, and the wheels revolve on each side of the middle barrel. The draft of water is very little, and undoubtedly the speed of the boat would be great. It has also some advantages over the other boats in the arrangements above deck, offering a covered walk of 412 feet, &c. Upon the whole, Mr. Bethune's exertions deserve encouragement, and may lead to some real improvements. With the present overdone business in steamers, and the general depression of trade, it could hardly be expected that large investments would be made in a new scheme of this kind. What we want most, and what might afford some prospect of success, would be small boats, built as cheaply as possible, *for passengers alone*, and having great speed. Such improved boats run in several parts of Great Britain, and particularly on the Clyde in Scotland. Under present circumstances, such a speculation would also be very uncertain. But, ultimately, our *freight and passage* steamers must be replaced by those for passage only; without, indeed, rail-roads take the place of all descriptions of water carriage, the latter being certainly less rapid and more expensive.

We copy Mr. Bethune's own statement of the dimensions and properties of his model:—

Dimensions of the Model.—(*Scale, ¼ inch to a foot.*)

Centre Tube, length 220 feet. } Diameter 12 feet ed. at centre,		
Side Tubes " ed. 190 " } and 2 feet at the ends.		
Extreme length on deck	244 feet.	
Extreme breadth in centre	72	
Lower cabin, length.....	192	
do. { centre breadth	52	
do. { stern do.	37	
Upper cabin, length	182	
do. { centre breadth	40	
do. { stern do.	29	
Height of both cabins	7½	
Lower Wings, on deck	10	outside of cabin.
Fender outside of tubes	5	on each side.
Upper Piazza, breadth.....	8	
do. circum. or length of walk round	412	
Promenade deck, length	194	
Space between the tubes.....	13	
Proposed diameter of two Water Wheels.....	27	

Total weight of the three tubes, superstructure, and two engines of 50 horse power each,—on board, 275½ tons; which will displace 9875 cubic feet of water.

Draught of water, when light ..... 3 feet 9½ inches.
ditto, with 1500 passengers on board .. 4 .. 6 ..
Cargo required to sink the tubes to their centre, or to six feet draught of water ..... 336 tons

STEAM BOATS OF LAKE ONTARIO.—The following extract from the Quebec Mercury will convey to our readers some idea of the state of navigation on this noble lake, where, not thirty years ago, the Indian's bark canoe, and the flat-bottomed clumsy batteau of the Canadian, only disturbed its waters.

UPPER CANADA.

Prescott, River St. Lawrence, April 1.

The steamer *Brockville*, Captain Hilliard, made her first trip to this port on Thursday last. She proceeded yesterday afternoon on her first trip to the head of the Long Sault.

The steamer *Queenston*, Captain Sutherland, having undergone thorough repairs, will start for Hamilton on Monday the 7th instant, and continue running between York and Hamilton, where she is to be stationed during the season.

The *Great Britain*, Captain Whitney, will leave this port for the head of the lake, on Tuesday the 29th instant.

Steam packet *William IV.*, Charles Paynser, commander, will leave Prescott for the head of the lake, on Saturday the 5th instant, touching at Brockville, Gananoqui, and Kingston.

Kingston, Lake Ontario, (Chronicle) April 5.

THE STEAM BOATS.—The steam boat navigation has commenced. The *St. George* will commence her regular trips for the season on Friday, the 18th instant, as follows:—Will leave Prescott every Friday evening after the arrival of the Montreal stages, and will start by Saturday mid-day from Kingston for Oswego, and leave Oswego every Saturday night for Toronto, Burlington Bay, and Niagara. On her return trip, the St. George will leave Niagara every Tuesday for Oswego, Kingston, and Prescott, at which latter place she will arrive in time for passengers to take the Brockville steam boat on Wednesday evening. By this route, passengers will arrive at Montreal on Thursday evening.

The *Great Britain*, we perceive by the Grenville Gazette, will be ready to take her place on Tuesday the 29th instant.

The *William IV.* is expected here to-morrow or Monday.

The *Queenston* is to run hereafter at the head of the lake.

The new *Cobourg* has been looked for during the last three days.

On the American side, the *United States* has advertised her trips, by which she touches at Kingston the same as in last year. Of the route of the new boat *Oswego*, built at Oswego, we are not yet acquainted; nor of the steam-boats plying from Sacket's Harbour.

The indefatigable and successful *Sir James Kempt* pointed her prow towards her old acquaintance, the Bay of Quinté, on Thursday last.

Captain Gildersleeve, of the Kempt, is now building a steam-boat of a very pretty model, designed by Mr. Ewen. We are informed she will be called the *Cataraqui*.

The *Britannia* is already engaged in her trips.

Several improvements have been made to the new and very fast going boat *Kingston*, Captain Ives. Mr. Parker has some intention, we are told, of running her to the head of the Long Sault, if practicable.

The venerable *Toronto* or *Perseverance*, (we do not know which,) like the wandering Jew, we presume, is doomed never to die.

Mr. Drummond's steam-boats, the *Rideau* and *Margaret*, are fitting up, to be in readiness on the opening of the Rideau Canal.

A new boat, built by Messrs. Parker, Vanalstine, and Bennett, and intended for the Rideau, was launched this week, and called the *Thomas M'Kay*.

This vessel is 105 feet long, 28½ extreme breadth, 6½ feet depth of hold, and will be worked by an engine of 25 horse power. There are 20 berths in the gentlemen's cabin, and 12 in the ladies'; and both cabins are to be fitted up in a superior style for the accommodation of passengers. A promenade deck extends forward and aft over the boat. She draws 2½ feet aft, and 16 inches forward. We hope these spirited efforts to increase the trade on the Rideau Canal will be crowned with the success which they justly deserve.

The *Enterprise*, belonging to Perth, which was fitted up in our harbour last year, will also, no doubt, take her place on the line of the canal.

To the Editor of the Nautical Magazine.

SIR,—Your valuable publication being so laudably devoted to the interests of navigation, I offer no apology for requesting information, through its pages, as to the advantages of Dr. Inman's plan of arranging his Table of Latitudes and Longitudes Alphabetically instead of Geographically or Coastways? The latter system has, in my opinion, besides custom, the convenience of always giving you at one view all the information it possesses; while the other, if you do not find the name you first look for, never satisfies you that it has not the required information under some other word or letter, without actually looking through the whole list.

For example, I turn for "Sidney," (New South Wales,) then for "Port Jackson," at last finding it as "Jackson Port." For names combining the words port, cape, sea, are sometimes placed before, and sometimes after—as, Port Jackson, (Nova Scotia,) and Jackson Port, (New Holland.) Again, in looking for "La Guaira," (South America,) I am surprised not to find it. And, on referring to our old and valuable friend Norie, on looking down the coast I find "Guaira," and I readily admit that it was my ignorance in looking for the article "La" that caused my disappointment, but still maintain, that, the Doctor's work being professedly for practical men, my objection is still good.

Many more examples might be adduced, but I hope the above will explain my meaning, which is all that I require.

The alphabetical arrangement being only adopted in the Doctor's last edition, I presume it must possess advantages to be acquainted with, which is the chief object of this communication from

Your very humble servant,
A COLLEGIAN.

[It is, we believe, the most approved plan of the present day to arrange these tables alphabetically. When this is done with judgment, and references to the same place are repeated under its different words, it is, perhaps, after all, the best; as, supposing a person to be ignorant of the place, the position of which he is seeking, he may probably have to look through a page of names before he finds it, with the apprehension of having passed it over. But both have their advantages and disadvantages, the latter, we suspect, preponderating in the geographical arrangement.]

RIVER HUMBER—*New Beacon to clear the Inner Binks.*—A beacon, of an octagonal form, sixty feet high, and painted black, has just been erected on Clea Common. It is intended to lead vessels clear of the "Inner Binks." This they will do, by keeping Grimsby church on with the said beacon, bearing N.W. by W. ½ W.

NAVAL REGISTER.

COMMISSIONERS *for executing the Office of* LORD HIGH ADMIRAL *of the United Kingdom of Great Britain and Ireland.*

The Right Honourable George *Baron* Auckland.
George Heneage Lawrence Dundas, C.B., *Rear-Admiral of the Blue.*
Sir William Parker, Knt., C.B, *Admiral of the Blue.*
Sir Samuel John Brooke Pechell, Bart., K.C.H., C.B., *Captain, R.N.*
Henry Labouchere, Esq.
Maurice Frederick Fitzhardinge Berkeley, Esq., *Captain, R.N.*

THE ROYAL NAVY IN COMMISSION—AUGUST 21ST, 1834.

Flag-Ships.		*Stations.*
CALEDONIA,	120	Mediterranean.
HASTINGS -	74	Tagus.
ISIS - -	50	Cape, and Africa.
MELVILLE -	74	East Indies.
OCEAN - -	80	Nore.
SAN JOSEF -	110	Plymouth.
SPARTIATE -	74	South America.
THALIA - -	46	Cape, and Africa.
PRESIDENT -	50	N.America&W.Indies.
VICTORY- -	104	Portsmouth.
WINCHESTER	52	East Indies.

ACTÆON, 26—Hon. F. W. Grey, left Constantinople 3d July: 17th arrived at Malta; sailed for England 19th.

ALFRED, 50—Capt. Sheerness.

ALGERINE, 10 — Lieut. Com. G. Stovin, Chatham.

ALLIGATOR, 28—Captain G. R. Lambert, 24th Feb. left Sydney for New Zealand.

ANDROMACHE, 28—Capt. H. D. Chads, C. B. 6th May arrived at the Cape from Rio, on her way to Canton, with Lord Napier and suite.

ARACHNE, 18—Com. J. Burney, 29th June left Port Royal, Jamaica, for Carthagena.

ASTREA, 8—Capt. A. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Karley, 10th Aug. arrived at Portsmouth, from St. Kitt's, with invalids from 65th regt. Sailed for Plymouth.

BELVIDERA, 42 — Capt. C. B. Strong, 4th April arr. at Madeira; 6th April sailed for Barbadoes; arrived 12th May.

BLONDE 46 — Capt. F. Mason, C.B., 11th June expected at Rio.

BRISK, 3—Lt.Com. J.Thompson, Gold Coast.

BRITANNIA, 120—Captain P. Rainier, 25th June and 22d July at Vourla.

BRITOMART, 10 — Lieut. W. H. Quin, 6th June at the Gambia, about to sail for Sierra Leone.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 10th Nov. left Sydney for New Zealand, having touched at King George Sound in Sept. previously.

BUZZARD, 10—Lieut. Com. W. C. Burbidge, Portsmouth, fitting.

CALEDONIA, 120—Flag of Vice-Adm. Sir Josias Rowley, Bart., G. C. B., appointed 18th Dec. 1833—Captain T. BROWN, 25th June at Vourla.

CANOPUS, 84 — Hon. J. Percy, 3d July at Malta; 22d July at Vourla.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 12th July returned to Sheerness, having attended her Majesty on her voyage to Helvoetsluys. See *Royal George.*

CEYLON, 2—Lieut. J. G. M'Kenzie, Malta.

CHALLENGER, 28—Capt. M. Seymour, 16th Feb. arrived at Valparaiso, from the Falkland Islands and Rio; 25th sailed for Coquimbo.

CHAMPION, 18—Com. Hon. A. Duncombe, June on the coast of Spain; 10th July arr. at Malta from Marseilles; sailed for England 19th.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, 15th April at Sierra Leone.

CHILDERS, 16—Com. Hon. H. Keppel, 30th July sailed from Spithead for the Mediterranean. Passenger, Com. W. Holt, appointed to the Scout. 2d July left Plymouth.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

COCKBURN, 1 — Lieut. Com. C. Holbrook, Lake Ontario.

COLUMBINE, 18—Com. T. Henderson, Sheerness, fitting.

COMUS, 18—Com. W. P. Hamilton, 15th July left Conception Bay, Newfoundland, for the northward, to touch at Baccalieu, for the purpose of ascertaining some particulars respecting the wreck of an unknown brig.

CONWAY, 28—Capt. H. Eden, 18th March left Rio for Pacific.

CRUIZER, 18—Com. James M'Causland, 30th June at Bermuda. To be hove down, having got on shore at Trinidad.

CURAÇOA, 26—Capt. D. Dunn, ordered home. 12th April at Madras.

DISPATCH, 18—Com. G. Daniell, 30th June at Bermuda. Left Barbadoes 12th.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, ordered home. May at Valparaiso.

EDINBURGH, 74—Capt. James R. Dacres, 23d July at Vourla.

ENDYMION, 50—Capt. Sir Samuel Roberts, C.B., 22d July at Vourla.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, Bight of Benin.

FAVORITE, 18—Com. G. R. Mundy, 6th July at Smyrna; 7th sailed.

FIREFLY, 2 — Lieutenant J. M'Donnel, 19th March arrived at Jamaica, from Honduras. The Firefly captured, on the 25th of May, after two days' chase, the Portuguese schooner Despiche, with 215 slaves on board, which arrived at the Havannah on the 31st of May, in charge of Mr. Henry M. Lockyer, mate of the Firefly, and was to proceed on the 3d of June to Nassau, to land the cargo of human beings, and then to proceed with the vessel to the Coast of Africa, for condemnation.

FLY, 10—Com. P. M'Quhae, 28th June left Jamaica for Chagres.

FORESTER—Lieut. G. G. Miall, 15th May left the Cape for Ascension.

FORTE, 44 — Captain W. O. Pell, 1st July at Port Royal, Jamaica.

GANNET, 18 — Commander J. B. Maxwell, 22d July at Bermuda.

GRIFFON, 3—Lieut. J. E. Parlby, 2d April in the Bight of Benin.

HARRIER, 18 — Com. S. L. H. Vassal, 27th March left Singapore for Malacca.

HASTINGS, 74—Flag of Rear-Admiral W. H. Gage, appointed 9th April, 1834—Capt. H. Shiffner, 26th July in the Tagus, from Spithead: arrived 28th June.

HORNET, 6—Lieut. Com. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18 — Com. F. P. Blackwood, 2d April arrived at Madras from Trincomalee; 6th sailed on a cruize.

IMOGENE, 18—Capt. Hart, (*act.*) 29th March arrived at Bombay from Zanzibar.

ISIS, 50—Flag of Rear-Admiral F. Warren, appointed 5th Aug. 1831—Capt. J. Polkinghorne, 29th May at the Cape, from Ascension: arrived there 4th May.

JASEUR, 18—Com. J. Hackett, 10th July at Gibraltar.

JUPITER, *Troop Ship*—Mr. R. Easto, 26th June arrived at Plymouth, from Corfu; last from Cork.

LARNE, 18—Com. W. S. Smith, 11th May at Port Royal: arrived there on the 6th, from Chagres. 31st May at Havana.

LEVERET—Lieut. Com. G. Traill, 15th April St. Ubes.

LYNX, 10—Lieut. Com. H. V. Huntley, at Ascension 2d April. To sail on 5th for the Cape.

MADAGASCAR, 46—Capt. E. Lyons, 3d July at Patras; 1st Aug. at Nauplia.

MAGICIENNE, 24—Capt. J. H. Plumridge, ordered home. 5th April sailed from Bombay for African coast.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74—Capt. Sir W. A. Montagu, K.C.H. Hamoaze, fitting.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., appointed 16th Dec. 1831—Capt. H. Hart, 12th April at Madras.

PORTSMOUTH, *Yacht*—Lieut. Com. J. Maitland, Portsmouth.

NIMBLE, 5 — Lieut. C. Bolton, 18th Jan. arr. at Jamaica, from Nassau.

NIMROD, 20 — Com. J. Mc. Dougal, 20th July returned to Lisbon from Genoa.

NORTH STAR, 28 — Capt. O. V. Harcourt, 27th July sailed for Rio Janeiro, with H. Hamilton, Esq., Minister Plen. at Buenos Ayres, and P. Scarlett, Esq., for Rio Janeiro. Left Plymouth 31st July.

OCEAN, 80—Flag of Vice-Admiral the Hon. C. E. Fleeming, Capt. A. Ellice; Sheerness.

ORESTES, 18—Com. H. J. Codrington, Portsmouth, fitting.

PEARL, 20—Com. R. Gordon, 11th May at Port Royal, Jamaica.

PELORUS, 18—Com. R. Meredith, 2d April at Prince's Island.

PICKLE, 5—Lieut. Com. A. G. Bulman, 19th March arrived at Jamaica.

PINCHER, 5—Tender to flag-ship, 22d May at Bermuda; 13th June sailed from Barbadoes.

PIQUE, 36—Capt. the Hon. H. J. Rous, Hamoaze, fitting.

PORTLAND, 52—Captain D. Price, Plymouth, fitting. 11th Aug. moved into the Sound; 20th sailed for Mediterranean.

PRESIDENT, 52—Flag of Vice-Admiral Sir G. Cockburn, G.C.B., appointed 6th Dec. 1832—Capt. M. Sweney, arrived at Halifax, with General Sir Colin Campbell, and suite, previous to 1st July; 23d July at Bermuda. Flag shifted from Vernon 15th July.

PRINCE REGENT *Yacht*—Capt. G. Tobin, C.B. Deptford.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. 20th June at Bermuda.

RACER, 16—Com. J. Hope, 29th June left Jamaica on a cruize.

RAINBOW, 28—Capt. Thomas Bennet, 22d May at Barbadoes; sailed 23d; 2d June arrived at Port Royal, Jamaica.

RAPID, 10 — Lieut. Com. F. Patten, 28th March at Rio.

REVENGE, 78 — Capt. W. Elliott, C.B., 2d July at Lisbon, from Spithead; 28th June arrived there.

RALEIGH, 16—Com. M. Quin, Sheerness, fitting.

RINGDOVE, 16 — Com. W. F. Lapidge, 28th July arrived at Lisbon from Madeira.

ROLLA, 10—Lieut. Com. F. H. H. Glasse, 19th Aug. sailed for coast of Scotland, to protect the fisheries.

ROMNEY, *Troop Ship*—Mr. James Wood, 16th Aug. left Portsmouth for Leith, to embark troops.

ROSE, 18—Com. W. Barrow, 12th Aug. arr. at Spithead; 17th sailed for the East Indies, (to touch at Plymouth.)

ROVER, 18 — Com. Sir G. Young, Bart., ordered home. 3d July and 1st Aug. at Tripoli.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Wednesday 29th Aug. returned to Woolwich, with her Majesty, who was gladly received in the most flattering manner by many thousand spectators assembled there to witness her disembarkation. On Monday the Queen came down the Rhine in a steam-boat, and about nine at night embarked with her suite on board the Royal George yacht, at Helvoetsluys, where she remained until the following day. On Tuesday, at one, the Royal George, commanded by Lord Adolphus Fitzclarence, was taken in tow by the Phœnix steamer, and proceeded direct for the River Thames, accompanied by the Spitfire, another Government

steamer, which followed close astern, with the carriages and luggage of her Majesty on board. Her Majesty made a very pleasant trip to the Nore, where she was met by the Lord Mayor, Sheriffs, and Corporation of London, in the Magnet steamer, which left the pool as early as six on Wednesday morning, for the purpose of escorting the queen from the bounds of the city jurisdiction to Woolwich.

On the arrival of the aquatic procession at Woolwich, the Royal Artillery were drawn up in front of the arsenal, and the 4th division of Royal Marines, under the command of Colonel M'Claverty, assembled in the dockyard to receive her Majesty on landing. A detachment of the 3d regt. of Light Horse marched from Hounslow barracks to Woolwich, to form the escort of her Majesty; and, as early as seven, the queen's travelling carriage and four other carriages, left the royal stables at Pimlico, for Woolwich, for the purpose of conveying her numerous suite to London. On the royal yacht passing the arsenal, the artillery saluted her Majesty by repeated discharges, which echoed along the shores.

About half-past three, the royal yacht cast anchor off the dockyard, and the whole population appeared to have turned out to welcome her return to the dominions of her royal consort. The Magnet also cast anchor at the same time, and the Lord Mayor, accompanied by Sheriffs Harmer and Wilson, the Aldermen, and several of the Common Councilmen, proceeded in a boat to the royal yacht, for the purpose of congratulating her Majesty on her safe return. His Lordship addressed the Queen in a neat speech, in which he congratulated her on her return to the shores of Old England, and expressed the deep anxiety which the loyal citizens of London felt for her happiness and welfare. Her Majesty replied, that she felt grateful to the Lord Mayor and corporation of the city of London, for this mark of their kindness and respect, and assured his Lordship, that the enthusiasm and loyalty with which she had been received by the people would never be effaced from her memory.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, 18th March off Oporto; 24th March in the Douro. Ordered home.

Samarang, 28 — Captain C. H. Paget, Pacific.

San Josef, 110—Flag of Admiral Sir W. Hargood, G.C.B., G.C.H., appointed 27th April, 1833—Capt. G. T. Falcon, Hamoaze.

Saracen, 10—Lieut. Com. T. P. Le Hardy, 5th June arrived at Lisbon from Cadiz.

Satellite, 18 — Com. R. Smart, ordered home: 21st April at Bahia, from Pernambuco.

Savage, 10 — Lieut. R. Loney, 23d July sailed for the North American station, to touch at Salem.

Scorpion, 10—Lieut. Com. N. Robilliard, see Packets.

Scout, 18 — Com. W. Holt, 3d July and 1st Aug. at Alexandria.

Seaflower, *Cutter*, 4—Lieut. Com. J. Morgan, 28th June sailed from Spithead, on a cruise.

Seagull, 6—Lieut. Com. W. Parsons, Sheerness, fitting.

Serpent, 16—Com. J. C. Symonds, 3d July sailed from Barbadoes for Trinidad.

Skipjack, 5—Lieut. Com. W. H. Willes, (*act.*) Bahamas.

Snake, 16—Com. W. Robertson, March at Rio Janeiro.

Sparrowhawk, 18—Com. C. Pearson, 16th June at Bahia. Arrived 1st June.

Spartiate, 74—Flag of Rear-Admiral Sir M. Seymour, Bart., K.C.B., appointed 6th Dec. 1832—Captain R. Tait, 7th June at Rio Janeiro.

Speedwell, 5 — Lieut. Crooke, 20th Oct. at Rio.

Speedy, *Cutter*—Lieut. C. H. Norrington, Portsmouth station.

Stag, 46—Capt. N. Lockyer, C.B., 23d July returned to Lisbon from Genoa; 26th sailed; 7th Aug. arrived at Plymouth. Moved into Hamoaze.

Swan, 10—Lieut. J. E. Lane, at Sheerness May.

Talavera, 74—Capt. E. Chetham, C.B., 22d July at Vourla.

Talbot, 28—Capt. F. W. Pennell, Hamoaze, fitting.

Thalia, 46—Capt. R. Wauchope, Chatham, fitting for the flag of Rear-Admiral P. Campbell, C.B.

Thunderer, 84—Capt. W. F. Wise, C.B., 25th June and 25th July at Vourla.

Tribune, 24—Capt. J. Tomkinson, Chatham, fitting.

Trinculo, 18—Com. Warren, (*act.*) 4th May arrived at the Cape, from Ascension; 29th lying there.

Tweed, 20 — Com. A. Bertram, ordered home; 2d June at Jamaica.

Tyne, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, C.B., 3d July on her way to Vourla; 22d July at Vourla.

Tyrian, 10—Lieut. Com. E. Jennings, Plymouth, fitting.

Vernon, 50 — Capt. M'Kerlie, arrived at Spithead 9th Aug., having left Bermuda 23d July. Passengers, Mr. King, Mr. and Mrs. Grey, Mr. Shaw. 13th sailed for Sheerness.

Vestal, 26 — Capt. W. Jones, 30th June at Bermuda.

Victor, 18—Com. R. Russell, June sailed from Pictou, in the Gulf of St. Lawrence, on a cruize.

Victory, 104—Flag of Admiral Sir T. Williams, G.C.B., appointed 23d Jan. 1833—Captain R. Williams, Portsmouth.

Viper, 6—Lieut. L. A. Robinson, 12th July in the Tagus.

Volage, 28 — Capt. G. B. Martin, C. B., 3d July and 1st Aug. at Corfu.

Wasp, 18—Com. J. S. Foreman, 20th May arrived at Barbadoes, from Bermuda.

William and Mary, *Yacht*—Captain S. Warren, C.B., Woolwich.

Winchester, 52—Capt. E. Sparshott, K.H. Chatham, flag of Rear-Adm. Hon. Sir T. B. Capel, K.C.B.

Wolf, 18 — Com. E. Stanley, Plymouth, fitting: 25th June undocked.

Zebra, 16—Com. R. C. M'Crea, Chatham, fitting.

STEAM VESSELS.

ALBAN — Lieut. A. Kennedy, 30th Oct. at Demerara, from Berbice: ordered home.
BLAZER—Chatham.
CARRON—Lieut. Com. J. S. Duffil, 3d July at Malta. Arrived 30th June from Vourla; 28th July arrived at Malta from Smyrna.
COMET—Woolwich.
CONFIANCE, 2—Lieut. Com. J. M. Waugh, 2d July sailed from Woolwich, with Capt. A. King, C.B., appointed to superintend Foreign Packet Station.
DEE, 4—Com. W. Ramsay, Plymouth, fitting for West India station.
FIREBRAND — Mr. J. Allen, 2d Aug. left Woolwich with sealed orders.
LIGHTNING—Mr. T. Allen.
MEDEA, 6 — Com. H. T. Austen, 7th July returned to Portsmouth, from Corunna, which place she left on the 4th, at 10 A.M., and made the Needles on the 6th, at 9 P.M.
MESSENGER, 1—Com. Mr. J. King, Channel Station: running between Thames, Portsmouth and Plymouth, and Milford.
METEOR—Woolwich.
PHŒNIX—Com. R. Oliver, attending on her Majesty, River Thames.
PLUTO—Lieut. T. R. Sulivan, ordered home: 2d April at Prince's Island, Coast of Africa.
RHADAMANTHUS — Commander G. Evans, 1st July at Port Royal, Jamaica.
SALAMANDER — Commander W. L. Castle, Channel Station. 30th July left Portsmouth for Plymouth; 31st left Plymouth, with the Renown, 74, in tow, to be broken up at Deptford. 7th Aug. arrived at Woolwich.
SPITFIRE, 6—Lieut. Com. A. Kennedy. See Packet List.
TARTARUS—Launched at Pembroke 21st June. This vessel is built of larch.

SURVEYING VESSELS ABROAD.

ÆTNA, 6—*Act.* Commander W. Arlett, 9th Aug. arrived at Spithead. Left the Gambia 6th June; C. Blanco 7th July; and St. Michael, Azores, 22d July. The Ætna has completed her survey of the Bijooga islands, the first that has ever been made of this interesting and valuable group. To be paid off 25th Aug.
BEACON — Com. R. Copeland, surveying in the Archipelago.
BEAGLE, 10—Com. R. Fitz-Roy, surveying the coasts of Patagonia and Chili.
FAIRY, 10—Commander W. Hewett, surveying the North Seas.
GULNARE, *Hired Schooner*—Captain H. W. Bayfield, surveying the Gulf of St. Lawrence.
INVESTIGATOR, 16, — Mr. G. Thomas, surveying the Shetland Islands.
JACKDAW — Lieutenant Com. E. Barnett, 11th May at Port Royal, from Nassau, refitting. Surveying the Mosquito coast.
MASTIFF, 6 — Lieutenant Com. T. Graves, surveying in the Archipelago.
THUNDER — Com. R. Owen, 11th May at Port Royal, refitting, from Nassau, previous to sailing for the Musquito coast.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; *Assistants, Lieuts.* J. Harding, G. A. Frazer.—Coast of Ireland.
Lieutenants, M. A. Slater; W. L. Sheringham, H. C. Otter.—East Coast of Great Britain.
Lieutenants, H. M. Denham; C. G. Robinson.—West Coast of Great Britain.

PAID OFF.

ALFRED, 50—At Sheerness.
ASIA, 84—At Chatham.
COLUMBIA, St. Ves.—At Woolwich, 8th Aug. To be fitted as a troop ship, with a poop, for West India station, instead of the Blazer.
MALABAR, 74—At Plymouth, 24th July.
RAVEN, 4—Lieutenant Com. H. Kellet, arr. at Portsmouth, in company with the Ætna. Moved into harbour. Paid off 20th Aug.
RINALDO, Packet—At Plymouth.
SAPPHIRE, 28 — Capt. Hon. W. Trefusis, 26th July arrived at Portsmouth; 29th moved into harbour. Paid off 9th Aug.

COMMISSIONED.

ALFRED, 50—At Sheerness.
MALABAR, 74—Plymouth, 25th July.
RALEIGH, 18—Sheerness, 31st July.

TRINITY-HOUSE.—The Guild of the Holy Trinity, at this port, have presented the freedom of their Corporation, in a gold box, to Lord Yarborough, in the most handsome manner. His lordship and the celebrated Captain Ross are the only individuals upon whom this honour has been conferred for very many years. The immediate occasion of this presentation to his lordship arose from the liberal and truly noble reply which he gave to a request to be allowed to erect beacons upon his property on the coast. "Choose where you will," said Lord Yarborough, "I have been a sailor long enough to know the value of beacons to brother sailors, and to have felt the want of them myself." — *Hull Paper.*

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain—Hon. G. Grey.
Commanders—W. Shallard, W. H. Jervis, B. Walker, G. St. Vincent King, J. H. Priest.
Lieutenants—W. Stephens, N. Fowell.
Purser—J. Prance.

APPOINTMENTS.

ALGERINE, 10—*Clerk*, W. Weaver.
ARACHNE, 16—*Lieut. act.* G. Ross.
ASTREA, 6—*Purser*, S. Street.
BEACON—*Purser*, W. Brydone.
BUZZARD, 10—*Surg.* A. Lawrence.
CHILDERS, 16—*Col. Vol.* E. B. Rice.
COMUS, 18—*Mast.* F. W. Bateman.
CONFIANCE, 2—*Clerk*, W. P. Mundell.
COAST GUARD — *Lieutenants*, A. Webb, T. Edwards, S. G. Pullen, T. H. Holman.
CURAÇOA, 26—*Master*, H. Davy.
DEE, *St. Ves.*—*Master*, G. Wilson; *Assist. Surg.* M. Corry.
DISPATCH, 16—*Lieut.* J. Robinson.
EDINBURGH, 74—*Mate*, H. Lysaght.
EXCELLENT, 50—*Mate*, A. Bentall.
HASTINGS, 74—*Lieut. Super.* R. Bullen.
MAGICIENNE, 24—*Lieut.* A. Forbes.
MALABAR, 74—*Capt.* Sir W. Montagu, B.C.; *Com.* J. Forster; *Lieuts.* T. Eyre, J. Cornish, (*a*), J. Russell; *Master*, E. Lawkins; *Surg.* G. Johnstone; *Purser*, T. Jennings; *Assist. Surgs.* J. M'Conchey, J. Kettle; *Sec. Master*, F. Taylor; *Schoolm.* R. Scott.
MELVILLE, 74—*Master*, G. B. Hoffmeister; *Super. Clerk*, W. Lowther.
NORTH STAR, 28—*Lieut.* J. Dick.
OCEAN, 80—*Flag Capt.* A. Ellice; *Flag Lieut.* G. Loch.
ORDINARY—*Plymouth*, *Lieut.* Jas. Derriman.
ORESTES, 18—*Mate*, T. Baillie; *Mast. Assist.* H. A. Moriarty.
PICKLE, 5—*Lieut. Com.* A. G. Bulman.
RALEIGH, 16—*Com.* M. Quin.
ROMNEY, 30—*Mates*, C. D. O'Brien, D. P. Dumaresq.
ROSE, 18—*Lieut.* G. Lowe.
SAPPHIRE, 28—*Purser*, J. Prance.
SAVAGE, 10—*Sec. Mast.* N. B. Pearce.
SCOUT, 18—*Com.* W. Holt.
TALBOT, 28—*Lieut.* A. D. Carroll; *Assist. Surg.* G. F. Rowe.
THALIA, 46—*Lieut.* A. Milward; *Col. Vol.* E. Hill.;
TRIBUNE, 24—*Mate*, C. Schomberg.
TRINCOMALEE *Dockyard*—*Mast.* J. Higgs.
VICTORY, 104—*Assist. Surgs.* W. Lambert, J. H. Martin, H. Hammond; *Mast. Assist.* T. Walker.
WASP, 16—*Lieut.* J. B. Woodthorpe.
WOLF, 18—*Master*, D. Quinton.

SHORTSIGHTEDNESS.—The following instance of this failing contrasts well with the present state of our Australian colonies, and the constant communication which is going forward between them and the mother country. It is taken from the Gentleman's Magazine for Sept. 1786, vol. 56, p. 806, 807:—

"It has been seen in the public prints, that a plan for forming a settlement at Botany Bay for the restriction of felons sentenced for transportation, is actually to be carried into execution; but the plan is so wild and extravagant, that we can hardly believe it could be countenanced by any professional man, after a moment's reflection. Not the distance only, but the almost impracticability of crossing the line with a number of male and female felons, who, in their cleanliest state, and as much at large as can with safety be allowed them in gaol, and with frost, scarcely to be kept from putrid disorders, must for ever render such a plan abortive. The rains, tornedos, and heats that accompany these tempests, near and under the line, are often fatal to the hardiest navigator; besides the mountainous seas that are almost always to be encountered in passing the Cape, and in the latitudes in which the transports must pursue their course to Botany Bay, no man surely who had a life to lose, or a relative or friend that he wished ever again to see, would engage in so hazardous an undertaking. We may therefore venture to foretell, that, if any such desperado should be found, his fate, like that of Lunarde's late expedition, will for ever deter a second repetition. It is notorious, that the Dutch East India ships lose more than half the recruits they take on board for their settlements in India, in crossing the line, and before they reach the place for which they are bound. Yet this course to India is not near so dangerous as the course to Botany Bay. Add to these objections, that the natives are the most savage and ferocious of any that Captain Cook met with in exploring the eastern coast of New Holland."

FALMOUTH, 18TH AUGUST.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
AFRICAN, st. v...	Lt. Com. J. West	4 Aug.	8 Aug.	Off C. Finist	1 Sept.
CONFIANCE	Lt. Com. J. M. Waugh..	14 July	———	———	11 Aug.
SCORPION	Lt. Com. N. Robilliard.	8 Aug.	———	———	5 Sept.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

FLAMER, st. v...	Lt. Com. C. W. Griffin.	3 July	———	———	23 Aug.
SPITFIRE	Lt. Com. A. Kennedy ..	3 Aug.	8 Aug.	Gibraltar	23 Sept.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

REINDEER	Lt. Com. H. P. Dicken.	9 June	———	———	11 Aug.
DUKE OF YORK.	Lt. Com. W. James....	5 July	———	———	6 Sept.
PELHAM.....	Lt. Com. H. Carey	9 Aug.	———	———	11 Oct.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

STANMER	Lt. Com. R. S. Sutton..	23 June	———	———	15 Sept.
NIGHTINGALE..	Lt. Com. G. B. Fortescue	21 July	———	———	13 Oct.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

SKYLARK	Lt. Com. C. P. Ladd ..	10 June	———	———	16 Sept.
LYRA	Lt. Com. J. St. John ..	5 July	———	———	11 Oct.
BRISEIS.....	Lt. Com. J. Downey, ..	14 Aug.	———	———	20 Nov.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet.]

GOLDFINCH	Lt. Com. E. Collier,....	19 April	31 May	Havana	23 Aug.
ECLIPSE.....	Lt. Com. W. Forester..	26 May	———	———	29 Sept.
PANDORA	Lt. Com. M. P. Croke ..	21 June	———	———	25 Oct.
SWALLOW	Lt. Com. S. Griffith	21 July	———	———	24 Nov.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

MELVILLE.....	Lt. Com. C. Webbe	9 May	———	———	26 Sept.
MUTINE.....	Lt. Com. R. Paule	6 June	———	———	24 Oct.
CAMDEN	Com. Mr. J. Tilley	4 July	———	———	21 Nov.
PLOVER.....	Lt. Com. W. Downey ..	8 Aug.	———	———	26 Dec.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

COLUMBIA, St. V.—Lieut. Com. B. Apline, 20th July arrived from the Mediterranean.

ESPOIR—Lieut. Com. W. C. Riley, 7th July arrived from Lisbon.

FIREFLY, St. V.—Lt. Com. T. Baldock, 15th Aug. arrived from Mediterranean.

LAPWING—Lt. Com. G. B. Forster, 29th July arrived from Jamaica.

NAUTILUS—Lt. Com. W. Crooke, 31st July arrived from Lisbon.

OPOSSUM—Lt. Com. R. Peters, 8th July arr. from Jamaica.

PIKE—Lieut. Com. A. Brooking, 13th Aug. arrived from Lisbon.

PIGEON—Lieut. Com. J. Binney, 2d Aug. arrived from the Brazils.

REYNARD—Lt. Com. G. Dunsford, 5th Aug. arrived from Mexico.

SHELDRAKE—Lieut. Com. A. R. Passingham, 7th Aug. arrived from the West Indies.

SPEY—Lt. Com. R. B. James, 5th Aug. arr. from Jamaica.

VIPER—Lt. Com. L. A. Robinson, 5th Aug. arrived from Lisbon.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 507.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
255 Carrington	Nicker	St. Vincent	London	Not heard of	since	5th April.
256 Economy	———	Liverpool	Newfndld.	B. Newfndld.	July	
257 Elizabeth	———	St. John's	———	48 N. 44 W.	18 July	Waterlogged
258 Favorite	———	———	London	Swin	14 Aug.	Crew saved.
259 Industry	M'Neill	———	Liverpool	Wilmington	23 June	Crew saved.
260 Jean Stewart	Goodlet	Liverpool	St. Thomas	Barbuda	June	
261 Lambton	Of Sunder-	land	———	Staiths	19 July	Crew saved.
262 Nandia	———	Liverpool	Rio Jan.	Arklow B.	13 Aug.	Crew saved.
263 Robert	Embleton	———	———	Staiths	19 July	Crew saved.
264 St. Patrick	Sloop of	Dungarvon	———	Wexford	13 Aug.	
265 Sarah and Frances	———	Wexford	Liverpool	At Sea	10 Aug.	Run foul of.
266 Sicilian	Miller	Newcastle	London	Cross Sand	28 July	Crew saved.
267 Six Sisters	M'Ivor	Galipoli	Liverpool	Off Corfu	June	Abandoned.

TIDES OF THE AVON.—From the extraordinary quantity of rain which fell during the last two or three months, and the consequent swollen state of the Avon, a remarkable phenomenon, quite unusual in the ordinary state of the weather, has occurred in that river (and the same is reported of the Severn) with respect to the tide.

During the period of the continued freshes, the flood tide was not visible on the surface, but was nevertheless flowing beneath, lifting the incumbent water bodily upwards, without deranging its outward course. This operation of the tidal waters, called by seamen an under-set, is by the pilots and local navigators (barge and trow-men) denominated an "underground run."

On the turn of the tide, the combined velocity of the ebb and current of the river is stated to have been at the rate of between eight and nine miles an hour!

A similar phenomenon was noticed by Mr. Stevenson, civil engineer, in the river Dee, in 1817. His observations shew that the salt water insinuates itself under the fresh water, and that the river is lifted bodily upwards; thus producing the regular effect of flood and ebb tide in the basin at Aberdeen, while the river flows downwards all the while, with a current which seems for a time to increase as the tide rises.

CONCH DIVERS OF THE BAHAMAS. — In December 1821, one of his Majesty's ships, in going into the harbour of New Providence, struck on a bank, and rubbed off a sheet or two of her copper. The following morning, one of the divers being sent for, and supplied with hammer, nails, and sheets of copper, sunk himself to the keel, and, after two or three breathings at the surface of the water, made good the defects! He was afterwards required by the commanding officer to bend a hawser on to the chain-cable near the anchor, as it lay at the bottom in nearly four fathoms water. This he accomplished with much ease, and a seaman-like bend it proved on the anchor being hove up.

These divers, who are black men, and generally natives of the outer islands, are nearly six feet in height, with broad shoulders, and so accustomed to diving

for conches from their infancy, in from two to ten fathoms water, that they have habituated themselves to continue under water for as long a time, perhaps, as the pearl divers of India. They often take with them a hammer, and on finding a conch will break its shell, take out the fish, and prepare it for dressing before they rise; they will also take a bottle of any drinkable liquid, with the cork wired, and sink to the bottom in three or four fathoms, and, with a corkscrew, draw the cork, drink its contents, and rise with the empty bottle! Porter is always the beverage they solicit on these occasions.

Births.

At Florence, on the 25th ult., the lady of Com. G. Washington, R.N., of a son.

On the 30th of July, on board the Dreadnought, off Greenwich, the wife of Lieutenant Bowers, R.N., of a daughter.

At Southampton, the lady of Capt. Inglefield, R.N., of a son.

At East Looe, the lady of Captain J. Toup Nicholas, R.N., C.B., of a daughter.

Marriages.

On the 16th of June, at St. John's, New Brunswick, by the Rev. Wm. Willis, Captain John Townsend Coffin, R.N., second son of General Coffin, to Sophy Wallace, daughter of Lochland Donaldson, Esq.

At Stoke Church, Gosport, Mr. Joseph Hutchins, R.N., to Miss Mary Elliott, of Fratton.

At St. Luke's, Chelsea, Lieut. R. W. Innes, R.N., to Miss Charlotte Le Cren, of Greenwich.

Lately, Captain Harwood, R.N., to Julia, third daughter of Admiral Sir Lawrence W. Halsted, K.C.B., of Phœnix Lodge, Alton.

At St. Pancras, by the Rev. Dr. Povah, Captain John George Boss, R.N., M.P., of Ottington-Hall, in the county of York, to Elizabeth, eldest daughter of the late Thos. Wylie, Esq.

Deaths.

At the Admiralty-House, Sheerness, after two days' illness, of a violent attack of dysentry, Vice-Admiral Sir Richard King, Bart, K.C.B., Commander-in-Chief in the Medway; whose remains were interred at East Church, in the Isle of Sheppey, with military honours. This gallant and good officer was the eldest surviving son of the late Admiral Sir Richard King, who was created a Baronet in June 18, 1782, for his meritorious services in India. Sir Richard entered the service at an early age. After he attained post rank, he successively commanded the Aurora, Druid, and Sirius, in which latter ship he very smartly captured the Dutch ships Wookzamhead, of 26 guns and 100 men, and Verne, of 36 guns and 153 men, having 287 French troops, and 4000 stand of arms. Afterwards, in company with l'Oiseau, captured La Dedaigneuse frigate, 36 guns and 300 men. Sir Richard was also present at the capture of four French frigates in 1806, when Sir Samuel Hood lost his arm. Sir Richard commanded the Achille, 74, in the memorable battle of Trafalgar, in which that ship had thirteen men killed, and fifty-nine wounded. He was subsequently Captain of the fleet on the Mediterranean station; and having attained the rank of Rear-Admiral, August 12, 1812, he served during the remainder of the war, with his flag in the San Joseph, off Toulon. In 1816, he was appointed Commander-in-Chief in the East Indies; and in August, 1833, Commander-in-Chief in the Medway. Sir Richard succeeded to the baronetage on the demise of his father, in Nov. 1806; and was nominated a K.C.B. in 1815. Sir Richard married in Nov. 1803, Sarah, only daughter of the late Admiral Sir J. T. Duckworth; and secondly, May 16, 1822, Maria Susanna, daughter of his old friend and commander, Sir Charles Cotton, Bart. He has left a large family to bewail his loss. Sir Richard was in the 61st year of his age.

On the 31st of July, at his house, near Lewisham, in Kent, Captain Robert Rowley, R.N., in the 51st year of his age. He was constantly employed from 1800 till the peace of 1815; since then commanded the Egeria, and was Flag-Captain with Rear-Admiral Plampin, at Cork. He was a kind gentleman, and no officer in the service was more generally esteemed.

At Rotherhithe, on the 21st of July, after a few hours' illness, Lieutenant T. Brent, R.N., aged 39.

In Dublin, of cholera, Captain Christian, R.N., Assistant Inspector-General of the Coast Guard.

On the 18th of July, at Budleigh Salterton, aged 58, Lieut. E. K. Foley, Royal Navy, nephew of the late Admiral Sir Thomas Foley. (1803.)

July 27, at Litcham, in Norfolk, Captain T. E. Hoste, R.N., in the 40th year of his age.

Lately, at Malta, Lieut. John S. St. John, R.N., (1827,) son of the late Commander St. John.

In London, of cholera, Lieut. H. Studdy, Royal Navy.

On the 28th of July, Capt. George Sanders, R.N. (1800.)

At Minorca, Dr. G. Thompson, R.N.

On the 15th of Aug., at Mile-End, Portsea, after a lingering illness, borne with the most Christian fortitude, Mr. John O'Brien, Purser, R.N., aged 61 years.

On board his Majesty's ship Stag, on her passage from Genoa to Lisbon, Mr. James Loudon, Purser of that ship.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

JULY, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength.			
		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.
1	Tu.	30·27	30·21	62°	67°	48°	68°	N.E.	N.E.	3	6	O.	Od 4)
2	W.	30·06	30·05	62	72	55	73	N.E.	N.E.	4	4	Od (1	Bc.
3	Th.	30·06	30·04	60	72	56	73	N.E.	N.E.	3	3	O.	Bc.
4	F.	30·16	30·14	62	73	55	75	N.E.	N.E.	4	6	Bc.	'Bc.
5	S.	30 09	30·02	64	74	55	75	N.E.	E.	2	2	O.	Bcmr 4)
6	Su.	29·99	29·97	69	75	62	76	S.W.	S.W.	1	1	Bct p 2)	B'ctlp (3
7	M.	29·96	29·95	67	74	61	76	S.W.	S.W.	3	3	Bc.'	Bcp ' (4
8	Tu.	29·88	29·86	68	72	59	72	S.	S.	2	2	Bc p 2)	B c.
9	W.	30·12	30·15	61	65	54	67	W.	W.	3	3	'O.	O. '
10	Th.	30·06	30·04	65	71	55	72	S.W.	S.W	2	4	B c.	Oqv.
11	F.	30·11	30·04	65	72	52	72	S.W.	S.W.	2	4	B c'm.	Bc.
12	S.	29·84	29·82	70	76	53	77	S.	S.	4	5	' Bv.	'Bv.
13	Su.	29·89	29·89	65	73	59	74	S.W.	S.W.	3	4	B'c.	B'c.
14	M.	30·02	30·06	63	73	58	74	S.W.	S.W.	3	4	'Bc.	B c.
15	Tu.	30·23	30·21	67	76	56	76	S.W.	S.W.	4	6	B c.	Bv.'
16	W.	30·27	30·23	69	79	58	81	W.	W.	4	5	Bcv.'	Bv.
17	Th.	30·16	30·10	74	84	61	86	S.	E.	1	3	' B.	B.
18	F.	29·82	29·76	72	66	64	72	E.	E.	5	5	Og.	Or(3) qtlr(4
19	S.	29·50	29·60	63	59	59	63	S.W.	S.W.	6	8	Or (2)	O'r (3) r'(4
20	Su.	29·72	29·68	60	64	55	65	S.W.	S.W.	5	5	P 2)	P (3) r (4
21	M.	29·76	29·77	61	67	54	68	S.W.	S.W.	4	4	Odr' (1) (2)	' B c.
22	Tu.	29·93	29·97	66	73	54	74	N.E.	E.	3	2	B c.	Tlp ' (3
23	W.	30·06	30·03	67	74	55	75	S.E.	E.	2	1	Bc.'	'B c.
24	Th.	30·05	30·04	65	69	58	72	N.W.	N.	1	2	Bcm.	Bcm.'
25	F.	30·05	30·03	64	70	57	71	S.W.	W.	1	1	Bc'm.	B'cm.
26	S.	29·93	29·82	66	69	56	72	W.	S.W.	2	2	'O.	' O.
27	Su.	29·65	29·75	61	67	55	68	S.	S.	3	3	Or (1)	O.
28	M.	29·97	30·01	67	71	54	72	E.	E.	3	3	Bc.	Bcmtlr 4)
29	Tu.	30·00	30·00	71	75	61	78	N.E.	N.E.	3	3	Bcmtlr (1	Bcmtlr' (3
30	W.	29·87	29·93	68	72	63	73	S.E.	S.E.	2	5	O r (1)' (2	Bc.
31	Th.	29·84	29·80	64	71	60	72	W.	S.E.	1	2	Olr' 1) r (2)	Opt (3)

JULY—Mean height of the Barometer, 29·972 inches; Mean Temperature, or mean Height of the Thermometer in the shade, 64·9 degrees; Depth of Rain fallen, 4·85 inches.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

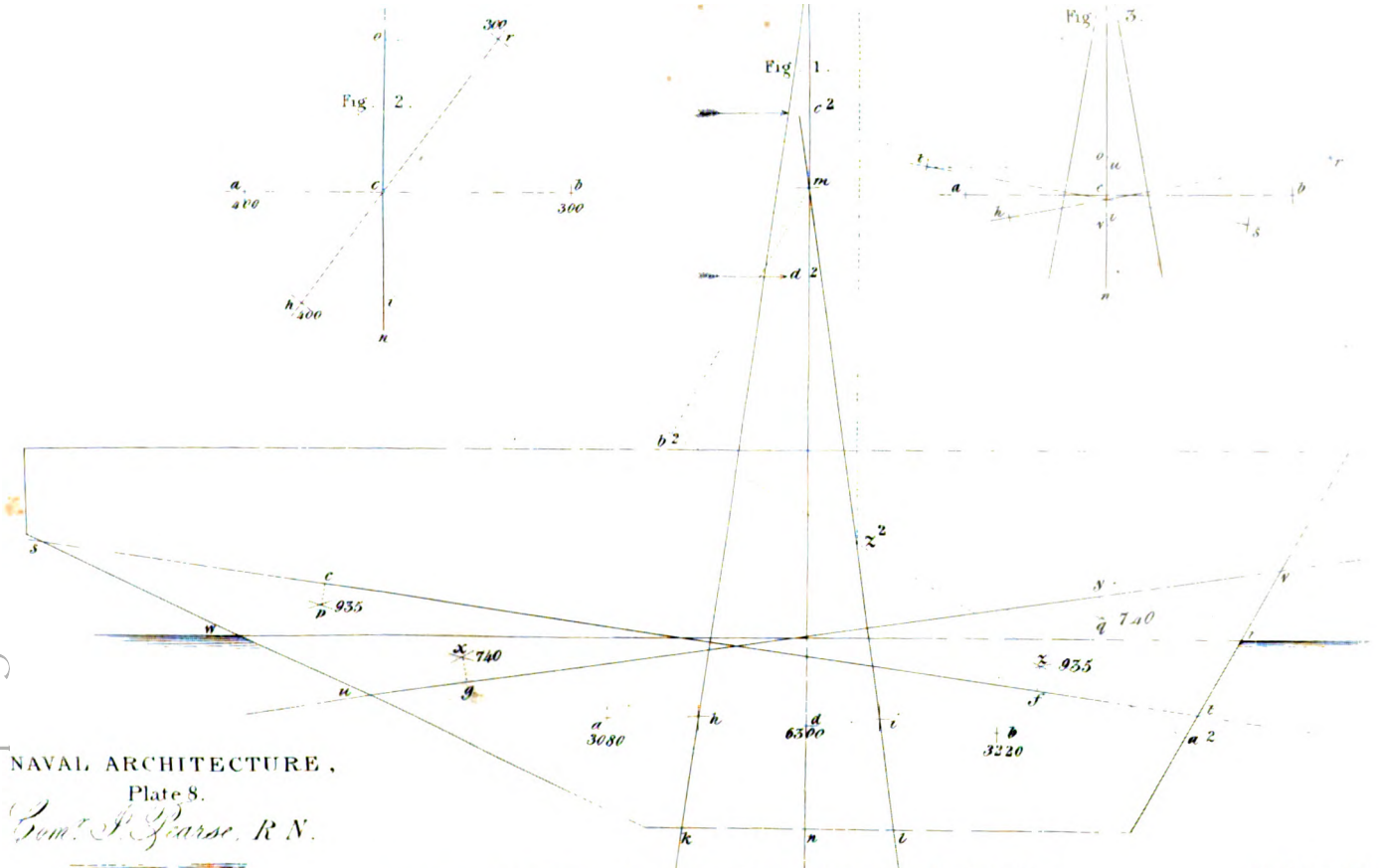
0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds—detached passing clds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
· Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, *i.e.* from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of the six hours, and both together denote the whole interval. They are intended to express the time nearly when rain fell. Thus, 2) signifies that rain fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained the whole six hours from 6 A.M. to noon; (3) ditto from noon to 6 P.M.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.



NAVAL ARCHITECTURE,

Plate 8.

Com.r J. Pearse, R.N.

Published for the Proprietors of the Nautical Magazine by Simpkin & Marshall, 1834.

Day & Haghe Lith.rs to the King

THE

NAUTICAL MAGAZINE.

OCTOBER, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

49. Remarks on the Navigation *between Tripoli, Malta, Naples, the Dardanelles, and Sea of Marmora, with the Anchorage off Therapia, and the prevailing Winds found there.*

(*Continued from* p. 407, *No.* 29.)

Compass Bearings.

The village of Artaki contains about 800 houses, and about 4000 inhabitants, partly Turks. Its principal trade is in wine, and a small quantity of oil and silk is also made. It is supplied with corn from the main land. The country appears to be exceedingly fertile, but the inhabitants are poor, although the revenue paid into the treasury is only 20,000 piasters. (about £220 sterling.)

A high promontory, with the ruins of an old fortification, or acropolis, forms the S.E. point of the bay; and an island lies off it, leaving a channel between, half a mile wide.

An intelligent fisherman told me that there is a bank of 4½ fathoms, a cable's length from the promontory. From this island, up to the head of the gulf, there are apparently no shoals of any consequence, and the soundings are regular. We anchored about a mile from the head of the gulf, and about half a mile from the beach, in nine fathoms, good holding ground. A ship may stand in by her lead without fear. Our object in anchoring here was to visit the ruins of Cyzicus, and I regret that I was prevented from devoting more time to the examination of them, as, from the hasty survey of a few hours, I am led to conclude that the trouble of a closer investigation would be amply repaid.

The town appears to have occupied the hill-side sloping down to the isthmus which separates the two gulfs, and to have been of considerable extent.

The wall, although completely overgrown with dwarf oak, arbutus, and other shrubs, may be easily traced along the northern shore of the isthmus, at that time probably covered by the sea, and from thence, after following the sea-shore for a short distance, it runs irregularly up the hill until it reaches a commanding point, when it again descends in the direction of the western gulf:—as the plain in that direction is covered with vineyards, I could not trace it far.

From the large slabs of granite visible in some parts of it, it must have been very solidly built. Both the slope of the hill and the plain towards the eastern gulf,

are covered with large mounds of ruins, so overgrown with shrubs as to make it impossible in their present state to recognize their original form. The theatre alone, which stands on the slope of the hill facing the south-west, can be distinctly traced. The form is perfect, and the dimensions are large; and it would probably well repay the trouble of clearing away the brushwood by which it is concealed.

At a short distance without the walls, and a little to the northward of where they reach their highest point, are the ruins of an amphitheatre, most beautifully placed in a ravine running towards the sea, and commanding a fine view of the plain and the western gulf. This building is oval, and the area has been formed out of a natural basin in the ravine, across which a double tier of arches has been carried.

Through the centre runs the bed of a mountain stream, now nearly dry, and formerly probably confined in regular channels, which I fancied I could partly trace, or perhaps carried under ground. The arches which formed the walls have all fallen in, and the greater part of the building is overgrown with bushes. Four or five masses of masonry, from whence the arches took their spring, still remain uncovered, and particularly a large one at the lower end, where the double arch has been carried across the stream.

The lower part is very solidly built of large squares of granite, and, from its size and height, it is visible at a considerable distance out to seaward.

In addition to the ruins I have mentioned, we also saw what appears to have been a large cistern, or reservoir of water, now nearly filled up, but still affording the most pure and cold water I ever drank; and, also, not far from the shore of the western gulf, a heap of ruins of some very large buildings. It is of an oval form, about two hundred yards long, and one hundred wide; and over the whole extent are strewed pieces of marble, many of which retain the marks of sculpture.

The only part that remains perfect are three galleries, now under ground, but nearly on a level with the surrounding country.

The centre one is about ten feet wide, and fourteen feet high, with a vaulted roof. A smaller one on each side, about six feet wide, communicates with it by a narrow passage, and the walls which separate them are from eight to ten feet thick, and have within them, on one side of the gallery, an ascending passage, probably a staircase, and on the other a well of very pure water. The centre gallery, where we entered, has an arched doorway, but appears to have been continued both ways for the whole length of the building. The furthest end is completely choked up by rubbish. The above description will give some idea of the formation of these vaults: what they may have been, I leave to better informed persons to decide; they are now inhabited by innumerable bats, of a very large size; and among the bushes we saw a young jackall.

About a hundred yards from these ruins, and farther from the sea, part of a wall may be traced, which I imagine to have been part of the wall of the town, which must have joined the sea-shore not far from this spot.

Throughout the whole extent of this plain, large pieces of granite and marble are everywhere met with; and I was told, that in the vineyards coins are constantly found, but, as there is no demand for them, no trouble is taken by the labourers to collect them.

We were under way the same afternoon, and ran out of the gulf, passing to the southward of the islands of Liman Pacha and Rabi, and hauling up round the west end of Kantalai. From thence we beat up all night, against a fresh north-east wind, but without finding any current against us. The next morning, in standing in for the island of Kalo Limno, from the north-west, we suddenly struck soundings in twelve fathoms, about three miles from the shore.

Tacking off, we deepened again, and, in standing in, we got bottom in fourteen fathoms coral, which, in the distance of a mile, shoaled to ten; and we anchored with the following bearings :—

South end of Kalo Limno.....	S. by E. ½ E.
North end ———	E. N. E.
Small house in a bay	E. ¾ S. about 2½ miles.

The same depth runs a long way in towards the north end of the island, which may be approached without fear, as no shoal appears to extend from this side of it more than a cable's length; and at from a quarter to half a mile I had seven fathoms, apparently sandy bottom. The island here is barren and almost uncultivated, but on the opposite side there is a snug little village, with a few boats hauled up on the beach, and corn-fields above it. Having ascertained that there is no shoal of any consequence here, we departed, and steered over for Mondania, where we anchored the same evening, in twenty-seven fathoms, a short half-mile from the shore, with the following bearings :—

North-west point (a bluff)	N.W. by W. ½ W.
Jetty at the west end of town	S.W. by S.
Village of Alloun Tach.....	S. E.

The bottom is very soft mud, but we had no difficulty in regaining the anchor. This would be a very bad anchorage in the winter, and the depth of water which runs close into the town makes it a disagreeable one at any time. This place is the sea-port of Brusa, and is of considerable size. The country round it is laid out in vineyards, interspersed with olives, and appears to be very fertile. Early the next morning, we mounted on very good horses, which in two hours carried us through a beautiful country, to the celebrated baths of Brusa. The first view of this town is quite the finest I ever saw. Upon surmounting a hill, the plain of Brusa lies spread out at your feet, with the beautiful Mount Olympus directly opposite you, and at its foot, (the dark hill rising almost perpendicularly above it,) stands the town; its white domes and lofty minarets beautifully contrasted with the dark cypresses, and the brighter green of the mulberries and walnuts, which cover the plain and the hill-side. The baths are about a mile from the entrance of the town, and are supplied by very copious streams of natural hot water, which has a sulphureous taste. I have been told, that in the most severe plagues which have visited Brusa, these baths have always been free from it, probably from the exhalations rising from the earth being unfavourable to the contagion. Upon entering the town, we found the khans deserted, and every body leaving, in consequence of a few cases of plague having made their appearance, and we therefore did not deem it prudent to remain, but returned to the ship the same evening. I regretted much not being able to ascend Mount Olympus; but in the town, with the exception of the mosques, there is little to be seen which may not be met with in any Turkish town.

The next morning, at nine, we were under way, with the sea breeze which here blows into the gulf, and ran up for Ghemlek; but when abreast of the shoal off Pouzla, the wind drew round to the eastward, and we had to beat in. After passing this shoal, which runs a long way off the low point, the shore is clear on both sides, the water deepest on the northern shore. We anchored nearly half-way between the town and the dockyard, in seventeen fathoms, muddy bottom, about half a mile from the beach, at the head of the bay.

Low sandy spit off Pouzla	West.
Dockyard flagstaff	S. by E.
South-east end of town.....	N.E. by E. ½ E.
North-west end of town	N. by E. ½ E.

The town of Ghemlek, built quite at the head of the Gulf of Mondania, is inhabited chiefly by Greeks, and is governed by a Turkish aga. The country round it is very fertile, and some trade is carried on in wine, oil, and silk. The dockyard hardly deserves that name, as it is merely an uncovered building slip, with a few sheds enclosed by a wall. A very fine ship, of the following dimensions, is now on the stocks, and expected to be launched in eight months :—

	French Feet.
Length of Lower Deck	186
——— Keel	166
Extreme Breadth	51·6
Lower Deck Beams to Keelson	23
Draught of Water.	
Forward	22·6
Aft	24

She is pierced for eighty-six guns, and is built by a Greek. Her great fault appears to be in her counter, which is immensely overhanging. Her timbers, up to the water-line, are all filled in solidly, and caulked. They are of oak, brought down upon carriages from Mount Olympus. The timber appears to be good, but little attention is paid to the seasoning of it. Her planking is of fir.

We were under way from this place again the same evening, at eight o'clock, with a fine breeze from the eastward, which we found did not extend beyond Pouzla; and during the night we had light airs and calms, so that by eight o'clock the next morning we were only off Mondania. In the afternoon, the sea-breeze came in, and we beat out against it, finding, as we got out, that it drew round to the regular north-east wind. We beat up during the night, and the next morning, with a light southerly wind, had nearly succeeded in getting within the Seraglio Point, when the wind failed us, and, coming round to the northward, we anchored off Knaikeni, in twelve fathoms, sand, with the following bearings :—

Tanaraki (Asia)	S.E. ½ S.
Scutari Barracks	N. E.
St. Sophia	N.W. ½ N.
Seven Towers	W. ½ N.

This is in general the best anchorage, as from it a ship will often fetch in after one or two boards, upon the Asiatic shore. The next morning, at daylight, a southerly wind enabled us to enter the harbour, and, after lying-to for an hour, to communicate with the Malabar, we ran up the Bosphorus, in a heavy squall from the westward, which carried us as far as the Castles, when it fell calm; but the current was so slack, that we did not lose any ground. A southerly wind again coming up, carried us to our former anchorage off Megar Bornou.

SEA OF MARMORA, August the 24th to 31st.—On the evening of the 24th Aug. we were under way from Therapia, with a light northerly breeze, and, running out of the Bosphorus, passed between Oxeia and Rata, and the Prince's Islands, hauling to the wind round Rabbit Island. In the morning, we were becalmed off Yalaro; and a light southerly wind springing up in the forenoon, carried us by four o'clock up the Gulf of Nicomedia, as high as Kilier Boorun, when the wind coming fresh down the gulf, we bore up, and ran back for anchorage. The northern shore of the gulf, as far as Kilier Boorun, appears

bold, and free from danger. This point runs a long way out into the gulf, and being covered with olive trees, has a very fertile appearance. From Kilier Boorun to Dit Boorun, the southern shore is high and bold, but the latter point is low, and runs out a long way, with a shoal extending some distance out from it. It would be very dangerous to approach at night, as the high land behind it would probably prevent it from being seen. Between Dit Boorun and Satath Boorun, the land forms a bight, with a low beach, from which, near Dit Boorun, a shoal runs out a considerable distance. In running along shore, at the distance of from half to three-quarters of a mile, we suddenly shoaled to nine fathoms, with discoloured water a short distance inside of us. As you approach Satath Boorun, the soundings are more regular, and the shoal-water does not extend more than from one to two cables, deepening gradually. About a mile and a half from Satath Boorun, a small farm-house stands about half a mile inland, with a remarkable clump of trees near it; and off this we anchored, in twelve fathoms and a half, sand and shells, about half a mile from the shore.

House on Dit Boorun	N.E. by E.
C. Bianca, or Yeldem Kaga	N.W.
Satath Boorun	N. E. N.

Here the water shoals regularly in towards the beach, and we found the same regularity all round the bight, to Satath Boorun. This point is low, and runs much further out into the gulf than it is marked in the chart—I should think fully as far as the shoal is laid down. Off the point, the shoal does not extend further than elsewhere, and to the westward of it about the same distance, but much steeper, having ten fathoms close to the edge of the shoal, and twenty a short distance from it. A small river falls into the sea at Satath Boorun, and a large one at Dit Boorun, both forcing their way through a number of small channels, and in the winter overflowing their banks, and inundating all the low land near their mouths. Between the hills and the sea, a strip of fertile land, varying from half a mile to a mile in width, is well cultivated, and produces a considerable quantity of corn and vegetables, for the supply of the capital, with which the communication in the summer is very easy, the north-east winds allowing the boats to fetch both ways.'

At 3 P.M. of the 25th we got under way, with a fresh north-east wind, and, after passing close to the two islets off Pouzla, hauled to the wind, to avoid the shoal which runs to the northward from Prinkipos, we passed close to the southward of the small rocks which lie off Maltépé, and which are quite bold, and then steered for the rock which lies off the Tanaraki: passing nearly half a mile from this rock, we steered for the Seven Towers, thinking we should thus clear the three fathoms bank; but we suddenly struck soundings upon it in five fathoms, and crossed it in three and a half, and four. Upon subsequent examination, we found that this shoal runs much further to the southward than it is laid down in the charts, and that, to avoid it, a ship must give the shore a berth of a good mile, or rather more, until the lighthouse bears nearly north. The least water we found on it is 3¼. She may then haul up for the rocks off Maltépé. After opening the harbour of Constantinople, we bore up, and ran out off San Stefano, where we cruised off and on during the night, and at daylight fell in with the Meteor steamer. After boarding her, we made sail, and fetched in a little to windward of the (Kutchuk Chekmadge) Ponte Piccolo, and worked up along shore, coming to an anchor off the Lanthorn. For the shoals off San Stefano and the Lanthorn, I must refer to the remarks of Mr. Robinson, master, who sounded them with considerable care.

Bearings.

Scutari Barracks	E. by N. ½ N.
St. Sophia.....	N.E. ½ N.
Seraskier's Tower	N. ½ W.
Seven Towers	W. ½ N.

In fifteen fathoms.

At 2 P.M. of the 28th, we were off again, and ran between the Prince's Islands and the main, with a fresh north-east wind, and, hauling up close to leeward of the rocks off Maltépé, we passed to windward of the shoal off Prinkipos, in eight fathoms, St. Sophia just shut in with the dark cypress trees of the Tanaraki Point. After passing close to leeward of the rocks off Pouzla, we had two or three casts, of from nine to fourteen fathoms. Cape Bianca, or Yeldem Kaya, appears bold, and free from dangers. At 6 h. 30 m. we came to, in thirteen fathoms, near our former anchorage.

Satath Boorun	W. by N. ½ N.
Cape Bianca	N.W. ¾ W.
Dit Boorun	N.E. by E. ½ E.
Farm-house abreast of the ship,	S. ½. W.

A little more than half a mile from the shore.

We remained here till the 30th, the wind blowing fresh down the gulf, and at 1 h. 30 m. we started with a light breeze, which soon freshened up to a good breeze from the eastward; we rounded the Tanaraki Point, at the distance of a mile in five fathoms, and hauling our wind close along the Scutari shore, fetched into the harbour without a tack, and came to in twenty fathoms.

St. Sophia.....	S. S. W.
Galata Tower	N. W. by W.
Gun Wharf	North.
Leander's Tower	E. by S.

This is a very good berth, without much current, and far enough in to be sheltered from the southerly wind. We found a dreadful fire raging at Constantinople: it had commenced at one o'clock in the afternoon, in a large musket manufactory by the water's edge, near the Fanar, and burnt with frightful violence till six o'clock next morning, when it was at last got under. According to the best information, about four thousand houses and twenty mosques were destroyed, besides shops, amounting to near a sixth part of Constantinople. The loss of life was not great. The next morning we were towed up the Bosphorus by the Meteor, and took up our old berth off Mezar Bournou.

THERAPIA TO VOURLA.—At 5 P.M. on the 12th of Oct., we got under way from Therapia, with a moderate north-east wind, which by daylight carried us past the island of Marmora. At 5 P.M., St. Stefano bearing N. by E. six miles, we shaped our course W. ½ N., which carried us about three miles to the northward of Marmora. At 5 h. 30 m., abreast of the island, having run by the log fifty-six miles, we altered course to W. ½ S. After passing Koras, the wind failed us, and at 8 h. 40 m. the wind being light from the westward, we anchored in thirteen fathoms and a half, Gallipoli light W. by S. six or seven miles. In starting in the morning, with the wind still westerly, we cast in-shore, and in two casts of the lead shoaled to seven fathoms, and in stays to four and a half, which shews that it is necessary to use some caution in approaching the shore here.

During the whole of the 14th the wind was light and variable, so that by

sunset we had only advanced half-way from Gallipoli to the Castles. At ten a light air enabled us to put the ship's head to the eastward, in order, if possible, to avoid being drifted into the Narrows before daylight; but, towards the morning, having approached Point Nagara, the current swept us quickly down, and by four we were abreast of the Point nearly in midchannel. We then tried to get the ship's head to the southward, that we might not be carried down upon the European shore, having fifty fathoms water, but the calm continuing, by daylight we were drifted close to the battery of Dyrmen Boorun, and should have been compelled to anchor, deep as the water was, had not a light breeze carried us off. The wind again failing, the current next set us very close to the Asiatic Castle of the Dardanelles, which we passed at the distance of a cable's length. A breeze then springing up fresh from the eastward, soon carried us clear of the straits. We rounded Cape Janissary, at the distance of a mile, and passed, as usual, between Tenedos and the small rock off the town. We ran to the south-west during the night, with a light breeze from the north-west, which, at 8 A.M. of the 16th, failed us. Cape Guardian S.W. ½ W.; south end of Skyros N.W. by N. During the day, the wind was light and variable, and at midnight we were close to English Island. In the morning we fell in with the Rainbow, and at eight, when near the island of Zea, having heard that the commander-in-chief was at Vourla, we bore up with a fine westerly breeze for the Doro Passage. At sunset, with a fresh breeze, we passed the Cologeri rocks, and at midnight, with a strong south wind, passed the north-east point of Scio. At 2 h. 30 m. we hauled to the wind under Cape Kurabournou, the squalls coming down very heavy off the high land, and at daylight were in the entrance of the Gulf of Smyrna. During the day, we worked up under Long Island, and at 2 h. 45 m. anchored in Vourla, in twelve fathoms.

Centre of Round Island	E. ½ S.
Vourla Custom-House	N.W. ½ W.
Obelisk.....	N.W. ½ W.

A very good outside berth.

On the 20th we ran up to Smyrna, with light airs, and anchored in eight fathoms and a half, with the following bearings :—

Tereed Point	E. by N.
Old Castle	S.S.E. ½ E.
St. James Castle	W. ½ S.

On the 24th we returned to Vourla, and anchored in nine fathoms and a half.

Centre of Round Island	East.
Vourla Custom-House.....	South.
Obelisk.....	N.W. ½ N.

I shall not attempt to make any remarks on the anchorages, with so short an acquaintance.

VOURLA TO THERAPIA.—At 4 A.M. on the 4th of Nov. we were under way, with a light air, and worked up between Long Island and Partridge Island. I saw no appearance of the shoals laid down off the south-east end of Long Island, the low points of which we passed very close. At one we got a fine breeze from the south-west, which carried us quickly out of the gulf: during the night we rounded Mytilene, and at daylight passed between Tenedos and the small rock. At 9 h. 30 m. we passed the Castles, and when within four

miles of Gallipoli the wind failed us, and during the night was baffling and variable, with rain, so that at 9 h. 30 m. the wind then blowing fresh from the northward, the Island of Adruces bore south-west one mile. During the day the wind freshened; at six we had made by the reckoning E. ¼ N. sixty-nine miles, never going less than seven knots. This course should have carried us nearly up to San Stefano, but instead we only fetched eight miles to windward of Kalo Limno, the weather thick and rainy. We then wore, and stood to the northward, and at nine, blowing very strong at N.N.E., we were brought under treble-reefed topsails and trysails. At daylight, rather more moderate, Kalo Limno S. by W. ½ W. twelve or fourteen miles, we made sail on the starboard tack, and at 10 h. 30 m. tacked about two miles to the westward of Selivica, and, carrying a press of sail, fetched along shore as far as Amasenen Bournou, from which, the wind moderating, and after dark falling light, with hard rain, we beat up, and at eight o'clock anchored off the Seven Towers. The next morning we started, with a light south-east wind, which failed us off the Seraglio Point; but in the afternoon a light breeze enabled us to make the anchorage off the Sultan's Valley, where we moored for the winter. In this last passage we certainly were set more to the south-west, between Marmora and San Stefano, than can be accounted for by any lee-way or inaccuracy in the reckoning; but it is the only time we ever experienced any current in the sea of Marmora.

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50. Beacon Buoys, Eastern Coast of Ireland.

The Corporation for Preserving and Improving the Port of Dublin, &c., give notice, that Beacon Buoys have been placed on the Arklow, Glassgorman's, and Blackwater Banks.

Their position, bearing, and distance are described as follows, by Mr. Halpin, the Inspector of Lighthouses, &c.:—

Arklow Bank.

A buoy is placed off the northern end of this bank, moored in 4½ fathoms at low-water. It bears by compass,

From Wicklow Head ..... S. ¼ E., distant 5 nautic miles.
.. Mizzen Head ..... East, ... 5 ....

The south end of this bank is marked by a floating light.

Glassgorman's Bank.

A buoy is placed off the north-east point of this bank, moored in 5 fathoms at low-water. It bears by compass,

From Arklow Rock ..... S. by E., distant 2¼ nautic miles.
.. Arklow Bank Floating Light, N.W. .... 4½ ....

Blackwater Bank.

A buoy is placed off the north end of this bank, moored in 4½ fathoms at low-water. It bears by compass,

From Arklow Rock ..... S.S.W. distant 17 nautic miles.
.. Arklow Bank Floating Light, S.W. .. 14 ....
.. Glassgorman's Bank Buoy.. S.S.W. ½ W. .. 15½ ....

A buoy is also placed off the south end of this bank, moored in 5 fathoms at low-water. It bears by compass,

From N. Point of entrance to Wexford Harbour E. ¼ S., distant 6 nautic miles.
.. Tuskar Lighthouse .... N.N.E., .. 10½ ----

The name of the bank is printed in large white letters on the broad end of each buoy.

By Order,

H. VEREKER, Secretary.

Ballast-Office, Dublin, 21st August, 1834.

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51. SUNKEN ROCK NEAR HOLYHEAD. *Ship Struck.*

The following information received from Captain A. Livingstone, is important to masters of vessels frequenting Holyhead bay. It is rather an extraordinary circumstance, that such a danger, in so frequented a situation, should never yet have appeared on the charts; but the respectable authority from whence it comes, is sufficient for us to warn navigators of its existence:

Communicated by Mr. Samuel Turner Owen, and master of the brig Shepherdess, of Biddeford.

On 10th January, 1830, having been windbound in Holyhead, and sailed from thence round to Liverpool, taking advantage of the tide, with the wind southerly. Sailed round Carmel Point, passed inside the West Mouse, in company with eight sail of vessels, and two pilot-boats.

About half a mile east-north-east (by compass) from the West Mouse, the brig struck upon a sunken rock, and there remained about ten minutes: had twelve fathoms water under the bows, and the same under the stern.

The rock is pyramidical, but split at the top, and the vessel as it were fell into the saddle. On the south pinnacle we had nine feet and a half, and on the northern ten feet; the vessel drawing twelve feet three inches aft, and eleven feet forward. When on the rock, the Skerries light bore W.N.W., by compass, and the West Mouse a finger's breadth open of Carmel Point.

On Mr. Turner's arrival in Liverpool, he reported the above to John Askew, Esq., harbour-master, and a committee of pilots were called on, but they never had known of such a rock.

Mr. Turner offered his services to Mr. Askew, to go with him, and sweep the rock, and repeated the offer since, but caanot learn that any steps have been taken in consequence.

Mr. Turner arrived here about five weeks since, and the pilot of the Shepherdess informed him that the steamer Gipsy, belonging to Sir John Tobin, Kt., had struck on the same rock. So, perhaps, it may now be inquired after by the local authorities.

The Shepherdess was ordered by Mr. Askew to be put on the Gridiron, to be examined, and was found to have the fore-foot damaged, so as to require to be replaced, and the middle of a plank on the larboard side scraped, as if with the pea of an anchor, so as to require a graving-piece of two feet in length.

Mr. Askew made no charge for the use of the gridiron.

ORIGINAL PAPERS.

I.—The Vallongo, or Slave-Market of Rio Janeiro; *with a word to the Anti-Abolitionists.*

Some few years ago it was my fortune to visit Rio Janeiro, the great emporium of Brazilian commerce. The slave trade was then in its full vigour there; and, under the Portuguese flag, all the enormities attending the importation of these wretched victims of human cupidity, was flourishing in root and branch. For, the pruning-knife which had been applied by the other states of Europe to this evil plant, served only to transfer some of its shoots to the nourishing soil of his most faithful majesty. He, it is well known, had as yet shewn no sympathy with the other European sovereigns who were desirous of abolishing slavery. Accordingly, at that *happy* epoch, a schooner had just arrived from Africa, with a full cargo of emaciated, forlorn beings, snatched from their native country, to cross hundreds of leagues of the ocean, pent together in as many square inches (nay, not so many) as the miserable stowage of so small a vessel could afford. Many of their number had, as usual, no doubt, died on the passage, while those who had the still greater misfortune to survive them, were, like so many scarecrows, sickly, and covered with bruises and putrifying sores, produced by the heavy fetters with which they were linked together. This is no overdrawn picture; and their condition was still more pitiable, as the unhappy creatures were destined for the Vallongo.

The slave-market or Vallongo of Rio consists of a narrow defile of miserable and filthy sheds, situated in the northern outskirts of the city. Curiosity may prompt the stranger to pay it *one* visit; but if a spark of philanthropy remains in his breast, his feelings will be too keenly lacerated, for him again to venture to the scene which this den of shame unfolds. His soul will sicken at the thought, unless, indeed, like another Howard, he might hope to bring some relief, some alleviation to prostrated humanity.

In the Vallongo are numbers of these wretched African negroes of both sexes, ranged on benches, for the buyers' inspection, naked to a single rag, in slavedom and captivity, far away from country and relatives. At times, a plaintive chant may be heard proceeding from a part of the benches, probably some fragment of a native song, which the memory of even the most abject delights to dwell on; but the more hopeless and forlorn their condition, the more touching and melancholy is the effect produced by such strains. The greater number of these captives consist of children under puberty; but adults of every age are also similarly exposed in the

Vallongo. I observed above half a dozen of the younger negroes seated round a large trencher, eating their favourite *cusens*—a glutinous mess, made from a vegetable substance, which they scooped up with their fingers, instead of a spoon.

Much has been said of the kind treatment the negro slave meets on estates, as well as generally in the Brazils. It is said, that their common comforts every way surpass those of their brethren in other countries; moreover, "that they are regularly instructed in the principles of the christian faith, and have prayers publicly read to them morning and evening." This may all be very well; but here, especially, fanaticism too often assumes the garb of religion: and what can these free sons of nature, in their slavedom, gain from a besotted priestcraft, with here and there, in one of a thousand, or so, a little of the true salt and savour of christianity? Verily, what they are led to consider as religion, consists of the glare and trappings of superstition—a picture of the Virgin, a broken cross, or the relics of a saint, they may come to behold with the same sort of awe as the idol which engaged their devotions in their native land; but little of genuine christianity can flow from masters who already trammel the body; and thus it must appear to the victims of slavery, would seek to despotize over the mind.

On inquiry, I found that the slaves whom I had previously observed in the great square, chained together, and carrying water for the public works, were not sold to government for that purpose, but were criminals undergoing the sentence of the law. This may have some excuse in justice, as many of the negro race in Rio are sunk as low in vice as in misery. But who can behold a fellow-being degraded as the natives of Africa are in the Vallongo; to say nothing of the sickly and crowded state of the vessels in which they are imported, and to which we have elsewhere adverted, without at once shutting his ears to whatever the sophist may advance for the expediency of a traffic abhorrent to every principle of humanity? *

Let us hope that we have now done with the dismal side of this most debasing of moral pictures, slavery; and we may well be excused for taking an exhilarating glance of the subject in the fair and free effulgence which a British legislature, the British nation, has thrown over it. Far be it from us to taunt our younger brethren of the Americas on their boasted freedom. They are on the march in which we have still the glory to take the lead; and a few years, we would fain hope, will see their citizens of every hue free denizens of half the globe, inbaling a purer air, and casting under foot the trammels of the bondman; till slavery be no

* Unhappily, instances are not wanting to shew the inhumanity of the slave-traders, in disposing of slaves as a cargo, on board their vessels. We need therefore merely refer to those given by Sir George Collier, when in command of the African station. (See Quarterly Review for October, 1822.)

more, or only heard of as a vestige of ancient vassalage; a scourge permitted for a season to devastate the earth, which had clogged, but could not impede, the destinies of mankind. A glorious era has indeed arrived; and, if heretofore we have in aught imparted evil, shall we not be swift to administer good? That land on whose soil no slave may tread, has again asserted the dignity of human nature; and in the enactment which sets free the negro race of her colonies, has called forward another act in the great drama of human life; a part which, if we may judge from the past, it seems her destiny to perform. Futurity is hidden from our view, but every moment that is passing fulfils the decrees of heaven, and,

——— "plies its sickle,
Emulous of time's immortal scythe."

But, if we have been emboldened to assume and maintain the 'vantage ground among the nations, in banishing from the light of day this "bloodiest record in the book of time," let us not be boastful. The example is set, let the world pursue it; especially that portion of it which holds the British name in consanguinity. It was a chaste and purely British muse that sung the words which now come home to many a glowing breast—

"I would not have a slave to fan me while I slept."

The nation has taken up the motto. Like the dove which returned to Noah in the ark, bearing the olive branch, is the message of freedom which she has wafted from these shores to her far and distant dominions, proclaiming peace and good will towards man.

The slave-trade is little or nothing abated in many quarters of the world; in the Brazils it still continues to flourish as much under the vaunted, but miscalled, regenerated regime of that fine country, as during any the most favoured period of the Braganzian dynasty. The foregoing sketch therefore reflects as much the present as the past condition of "the Vallongo," and the active state of the slave-trade at present in a land which professes to have made rapid strides in the march of freedom, and this too since the revolution which expelled Don Pedro, the first emperor of Brazil, and gave in the person of his son, (with certain limitations of his power, and supposed reformation of abuses,) a second emperor of the same name. Little does he read aright the moral turpitude and desperately hardened heart of the slave-merchant, who vainly imagines that all has been already effected that England can do, either morally or politically, individually or as a nation, on this great question. In a national point of view, indeed, decided as it has been, the subject of slave-emancipation need not be further agitated; yet, assuredly, it ought not to be thought the less interesting, now that it has assumed in its principles of good a less

questionable shape; and, by the force of example, a wider and more influential sphere of action. The voice of this nation has been repeatedly heard on it, and has at length gone forth to the uttermost ends of the earth, vested in an authority which (when contrasted with the customary conduct of mankind, where self, sordid self, is concerned) may, without desecration, be regarded as less of human than divine. Like the elements themselves, indeed, the minds of men would seem on the present occasion to have been immediately tempered and controlled by the Almighty.

Although, in the minds of some men, this once universally engrossing theme is still unfortunately as little at rest, and as exhaustless as ever; yet this warfare of opinion cannot last, being destined to disappear before the ameliorating influence of freedom, combined with civilization. The slave-trader, as well as his advocate, both at home and abroad, will find themselves placed by degrees in positions less tenable, as well morally as politically. Already, the latter, in their shifts for argument, have of late evinced symptoms of weakness, which, it is to be regretted, they have not had an earlier opportunity to betray. The lofty bearing of the subject will scarcely permit us to descend to such cavillings. Once for all, however, we will endeavour to meet them on equal ground.

It cannot have escaped the reflecting part of the community, that there are those amongst us, even now, who, on the subject of slavery, hold the false and dangerous views to humanity, which we had hoped time and experience, and the benign influence of christianity, had completely, and for ever, wafted away into the unfathomed depths of oblivion, as a wreck of the darker ages. One would naturally have been led to hope, that such sentiments had long since ceased to find an echo in the breasts of Englishmen, especially in those of our countrymen who have been reputed for wisdom, and looked on in this their day as lights of the world; and, that *they*, at least, would have been more the friends of suffering humanity. But, (oh! tempore! oh mores!) what shall we say to those master-spirits (as the phrase is) in this land of freedom, who, in these latter days, are wedded thus to dogmas, and enslaved by thought that savours so much of those which prevailed at the time of the discovery of America? Ashamed to retreat, lest they should be considered as beaten off the field, they are bold to uphold and avow sentiments pregnant with ills to their fellow-creatures, because at one time they have either favoured or maintained such views. Men, indeed, there are, even now, who in the face of heaven, and in despite of humanity, still cling with tenacity to every inch of ground; to every strong hold of argument; or, failing these, to every shift which the parrying weapon of ridicule can afford them, rather than own themselves vanquished on such a subject, and at once nobly surrender at discretion a point so

idolized and darling to their self-love; a point which can neither be advanced nor maintained by argument; and which, the more warmly they espouse, and fancy they contest, serves but the more to persuade the world around them of their likeness to that doughty rhetorician who, being

> "Convinced against his will,
> Was of the same opinion still."

Better for such men to employ their talents on less abstract, less antiquated, and more pleasing topics of discussion; to confine their walk within the sphere of literature and the belles-lettres, in which their sentiments and opinions might not only prove innocuous, but useful or amusing; than, with christianity ever on their lips, anon breaking down the strong holds of infidelity, and now going forth in exultation to flatter and uphold their brethren of mankind in their nefarious traffic in human flesh.*

Far be it from us, and from our friends, to rejoice at the flourishing condition of slavery, wherever it exists, or to chuckle at the tom-fooleries of England, in making a law that, as the advocates or abettors of slavery assert, will throw the balance of trade into the hands of slave-holding nations, by creating a fresh and increasing import of slaves from Africa to Rio Janeiro, (and elsewhere, no doubt,) that the young *brutes* may be trained to the cultivation of the sugar-cane, and the production and manufacture of sugar, for the supply of the British market with that staple of our West India colonies, now said to be neglected by the free labourer. The wise heads which proceed upon this data in drawing their inferences as to the effects of the slave emancipation act, merely look to the impetus or reaction of the moment, and no further; and, even to this extent, the inference they deduce is quite hypothetical, and, when brought to the test, will be found to have failed in point of fact. Their critical eye is evidently bedimmed, or of a focus which contracts the object of their contemplation to the littleness of view in which they are predisposed to behold it. Consequently, they cannot discern, that the beacon blaze which they have conjured up, and around which they now in imagination so wantonly flutter, is but a false light, which for a moment may seem to flare conviction on their argument. We doubt not, it will prove in reality to be but "a brief candle," which may, in this instance, perchance serve to lure the moth to its destruction: for this one gallant act of an enlightened nation, which they affect to ridicule, casts all minor considerations or consequences which affect, or seem to attend, the carrying such an act into execution, hundreds of years into the back-ground; only keeps in view the sound principles of good it is intended to promote; legislates not only for to-day or to-morrow; not only for this or that set of men, or opinions

* See Blackwood's Magazine for May last—Loudon, on the education of Gardeners.

of men, but, heaven-directed, for the general good of all mankind, and that for all coming ages.

But, if such contracted views as those we have touched on, are allowed to die a natural death, or sink betimes to rest in the minds that entertain them; these agitators (if, in aspiring to reach a subject now insuperably placed above their reach, they may attain the epithet) will perhaps learn too late, that common sense, which is the same at all times, and all over the world, is not to be ousted; and, above all, that the common sense of the British nation, now that she has matured her reason in so noble a cause, is not to be set at nought by their "wise laws, and modern instances." We have more than once had occasion to feel the uncharitable, and dogmatical, and questionable expositions, which from time to time proceed from a certain quarter, and withal to mark the air of distrust with which liberal opinion is regarded. But, in this age of intellectual emancipation, those who tamper with, or oppose its progress, had better be cautious how they lay the train which will one day burst with direful visitation on themselves.

Truth is said to lie in a well, and the position of truth sometimes requires more than argument to maintain it. We believe, that, if the subject of present discussion were once performed, it has long since been explored, and laid open. Its inherent truth is best displayed by the light of nature, fortified, it may be, by the exposition of experience, and the test of time.

The feudal system of Europe has had its day; and in those nations where free institutions prevail, has only left a few harmless fragments behind, in the shape of tenure-holding laws. The spirit of feudalism is of course more deeply infused, and pervades every link of the chain which holds society together in modern Europe; and, while lawful and necessary distinctions are regarded among men, is likely thus far to carry on its natural and salutary influence. In the iron sway of Russia, and in some other parts of the north of Europe, the feudal system is still exemplified in full force, in its worst features. But the arbitrary and tyrannic lordlings of the soil have, with the serf and bondman, elsewhere disappeared. To this extent, "the serpent error" is inlaid in the core of the system; and where civilization prevails to this extent, in time it will cease to be known; while the torch of truth and of freedom will one day amalgamate even the Russian boor into a shred destined to hold purer and living water. The same has now taken place in the case of the poor negro, and men are now regarded as brethren, "differing only in their hue." In the days of Columbus, and Las Casas, there were men who doffed their humanity as they would now have done their fashionable beaver, (had they lived in these times;) with equal donism and dandyism, would they have done this, and as freely; and, treating the subject as one of far less import, would they have given over the negro race to the scourge

of the whip, "the oppressor's wrong, and proud man's contumely," as of old they did the natives of America to the beasts of the field, pronouncing them like the brutes that perish, only fit to carry burdens. Let those who now-a-days hold similar views, or desire to follow in the same track, bring the comparison between themselves, and those their brothers of old, home to their own bosoms. By their holding such a course, let us ask what remains to derogate from their superior knowledge and enlightenment? For our part, we regard the case of the negro,* as well as the former savage† of America, as equally cases of conscience; and, the day is not far distant, when others will have no cause to boast of opinions less humane, when once enlisted in the social system, and contending for their civil rights and immunities, (if under the British flag at least,) so will all orders of British subjects be regarded. In this effulgent day and hour of our prosperity as a nation, let it not be that such oraculars, who would treat men otherwise, should con-

* Many are the incidents which prove (but which it is not necessary here to quote) that the blood of the negro beats as pure in his veins, and runs as high in the cause of humanity, as that of his white brethren. If this is admitted, and we believe it generally is, then, (whatever may be the extent or nature of the mental capacity of the negro race, and this they have had neither time nor opportunity heretofore to prove,) all is conceded which ought to induce a different conduct towards the black people, than has been pursued up to the period of the recent act of emancipation. The following circumstance took place in the streets of London not a month ago, and, being consistent with the knowledge of the writer, he may perhaps be pardoned here for stating it as a case in point:—

In the close of the evening, as I proceeded home, I saw by the side of the street a little boy, coiled up in a heap on the ground, with his head resting on his knees, or nearly so: in this attitude, he was apparently about to doze away existence in sleep, unheeded by the passing crowd, had it not been for one man, who was bending down, and was in the act of speaking to him when I came up. My attention was naturally excited, and when I reached the spot, the man was endeavouring to rouse the little fellow, and was speaking to him in a tone and manner the most humane. "Have you no home to go to? What are you doing there? Where do you live—have you no home to go to?" The boy did not lift up his head, but doxingly answered, "I am hungry." "Well, get up, get up, my good boy; get up, and go home," said the black man: for he was a *negro*, who thus addressed him. "And here," said he, "is a little bit of bread for you." With that, he took a small piece of bread from a little basket which he carried on his arm. The boy then got up, and went away. Many people were passing at the time, but did not seem to care for the boy, or to pay any regard to this virtuous action by one of a race so lately proscribed of humanity. For my part, I was both touched by the incident, and interested in the humane individual, who, although a *black man!* had thus been called on by the common claims of humanity to administer consolation and his mite to a poor destitute boy; and these he bestowed, not as the hypocrites do, to be seen of men. For his basket was but light, and he confessed to me he could ill spare the bread, for he had not had regular employment of late, and had a small family at home depending on him. I put to him various questions, which he answered. He told me he was married to a white woman; that he had formerly been steward of a vessel, but now wished to get into service, or other employment, in London; but would not object to go to sea again. I asked him his name and address, lest, I said, I might by chance hear of something to suit him. I warned him at the same time, that I had nothing in my power, and not to depend on my ability to serve him, however willingly I would do so if in my power. His name and address, —Peter Stevens, No. 118, (or it may be 18,) Kingsland Road.

† For an intelligent and unprejudiced report of the qualities, both corporeal and mental, of the North American Indians, we would refer the reader to "Halkett's Historical Notes respecting the Indians of North America; a work of much research, supported by the personal knowledge, and philosophical inquiry of the enlightened and philanthropic author. These aborigines are, in my opinion, the very nobles of nature. No uncivilized people ever came near them. At the close of the first chapter of the above work, Mr. Halkett says:—"It is unnecessary here to lay before the reader any additional passages from writers who have noticed the general character of the North American Indians. Similar extracts may be selected in abundance, from authors of the highest credit! That the civilization of a numerous race, gifted with the qualities which those writers have so ascribed to them, should have been obstructed, rather than promoted, by their communication with Europeans, affords matter of melancholy reflection. The fact, however, is not to be doubted."

tinue to be heard, or to take root in the free soil of old England, or to gain converts to their mischievous doctrines and opinions, either by the boast or exercise of their learning, the insidiousness of their satire, the poignancy of their wit, more than the force of their humanity in such a cause.

Note.—Since writing the above, we are happy to perceive, that our prediction has not proved vain, as to the re-action in the slave-trade in Rio, so exulted in, and referred to as matter of triumph, by the slave-abettors, as likely to carry away our sugar and colonial trade. It has proved, as we state, *the impetus of the moment;* and it appears the Brazilian Government have already taken measures to imitate England, in her liberal policy on the subject of slavery, declaring, in the first instance, all vessels, of all nations, trading in slaves, frequenting the ports of the Brazils, legally forfeited by the owners; and that they will accordingly be captured and sold as prizes. We expect, although it will necessarily be the work of time, the next step will be the manumission of all the slaves in the Brazils. But, as the blacks compose the greater proportion of the population, and vice and crime run riot amongst them, for want of proper education, and the bad policy pursued hitherto in their treatment, they, as a distinct race, will probably be allowed to decrease in number; or rather, the whites and natives of Brazil will be on the increase; and the eventual closer and more brotherly *amalgamation* of all ranks and kindred which compose the nation, will point out to future legislators the fitting moment for such a line of policy, in respect to the slave population, as that to which we have alluded, as likely, *in time*, to follow the measures already adopted by the Brazilian Government. Were that nation less priest-ridden, liberal laws might more speedily be brought into operation, and liberal institutions might be more freely organized, than in the present state of things we have either reason to expect, or the hardihood to approve or to recommend in the Brazils.

II.—Plan of the New Steam-boat on the Burden Principle, Built at Prescott.*

(From an American Paper kindly lent by a friend.)

A gentleman who has recently visited Prescott, and minutely examined the boat now† building in that harbour, by Mr. Sandford, upon a principle similar to Mr. Burden's but exhibiting many important improvements, has supplied us with some information on her construction, and probable powers of success in ascending and descending the Long Sault Rapids.* The length of this boat

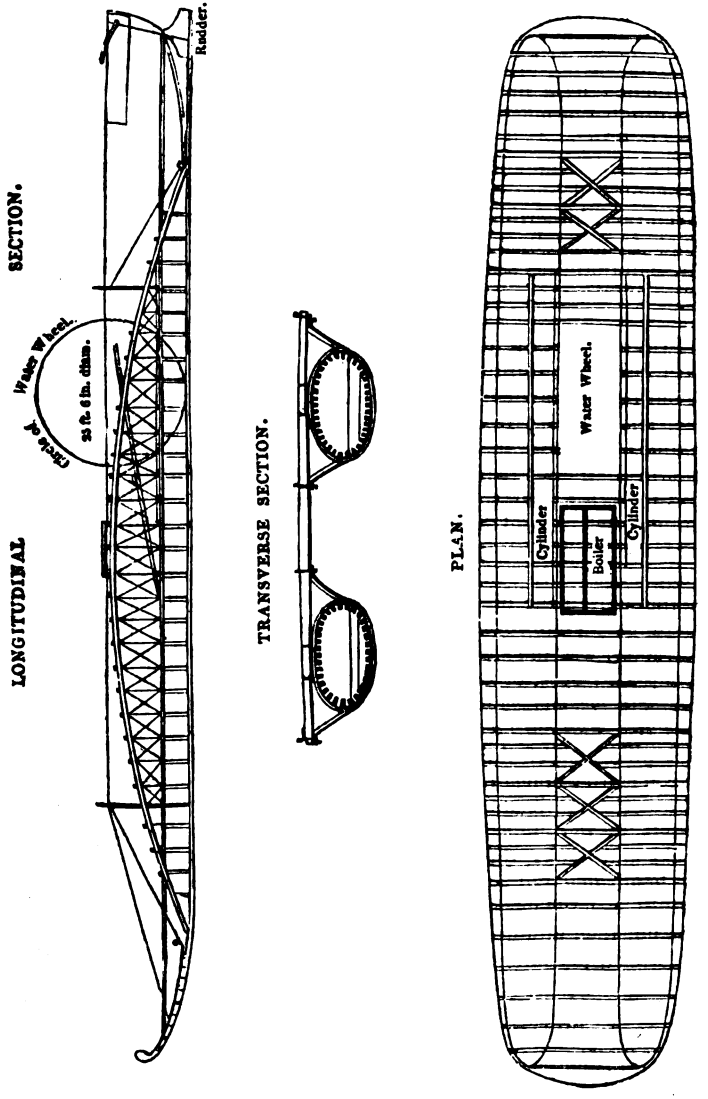
* River St. Lawrence. † July last.

is 179 feet in length, by 36 feet 6 inches in breadth, supported by two elliptical cylinders, 177 feet in length and 9 feet in diameter, flatter in the bottom than at the top, secured with wrought-iron hoops, placed eight feet apart, and planked with two and a half inch plank: the keel is formed of oak. The planks are secured to the hoops by screw-bits, driven from the outside, and screwed within with nuts. The two hulls are placed twelve feet six inches apart; and there are pine beams placed within the hulls, two feet apart, and bolted through the top of each hull with screw bolts, and braced with iron braces from the beam to the bulge of each hull, which are supported with an arch framing fore and aft, braced with diamond braces from the top of each hull to the underside of the arch, and an iron rod is pushed through at the junction of the braces, continuing to the keel, and secured with screws and nuts. The wheel, which is twenty-five feet six inches in diameter, is placed sixty-five feet from the stern, and the deck extends three feet at each end over the hulls. The after cabin is fifty-five feet in length by twenty-two in breadth, containing thirty-two berths, with a removable partition, which separates three lengths of berths for ladies. We have been informed by the architect of this enterprising experiment, that it will require 15,000 pounds weight to sink this boat one inch. Her bearings being sixty feet in length by eighteen feet in breadth, she will draw with all on board, wood and water included, twenty-four inches, and will be propelled by two engines of thirty horse power, connected with *one wheel*. The shaft of the water-wheel is placed about eight feet above the deck, in order to give a twenty-five feet wheel; and the engines are upon the deck, for the purpose of fastening them better: this produces an angle of about ten degrees. The air-pumps are within the trunk of the boat, worked by a lever-beam through a hole in the trunk.

The boilers are built upon the rail-road boiler principle; the outside of a cylinder form, of five feet six inches diameter, with twenty-eight flues, of seven inches diameter and thirteen feet long. A furnace is formed, the full size of the outside of the boiler. The whole length of the boiler is nineteen feet. They are placed forward of the wheel, side by side, so that one smoke pipe serves for both.

The engines are outside the boilers; and the wheel, boilers, and engines, are within the space of forty-six feet in length, by twenty in breadth. The whole of this beautiful machinery is worked in Mr. Hulbert's foundery at Prescott, and the skill and ingenuity of the young artist exhibits many improvements in the construction of steam-engines, which have received the unqualified approbation of Mr. Avery, of Syracuse. Mr. Hulbert has also a circular engine for the use of his foundery, which makes several thousand revolutions in a minute.

The annexed drawings represent sections of Mr. Sandford's boat :—



The machinery is simple, and by its power the several lathes employed in moving the brass, copper, and iron works of the machinery are set in motion, besides the various grinding-stones necessary for the sharpening of tools, &c. The beam of this engine resembles the shape of a cigar, and is of extra-ordinary strength, being entirely composed of wrought-iron, untouched by a file, but highly polished by the hammer alone. The number of machines engaged in the foundery alone varies from forty to fifty, and all of the most scientific class.

The most sanguine expectation of her success is anticipated; an event which cannot fail materially to change the principle of navigation, hitherto subservient upon the waters of the St. Lawrence to difficulties dangerous, and apparently unsurmountable. Mr. Sandford has secured a patent for his invention, which appears to justify the utmost public confidence.

First Trip of Burden's Steam-boat to Albany.—On 14th July, Mr. Burden, accompanied only by five or six friends, whom he had invited, and of whom we were one among the number, left the Dry Dock in his new steam-boat "Helen," at six minutes before seven A.M.; reached the North River, opposite the foot of Barclay-street, at twenty minutes past seven. The Erie, said to be the fastest boat on the river, had left this dock twenty minutes before, and was then in sight, six miles a-head. The two boats proceeded on in gallant style, attracting numerous persons along the wharves, to witness the race. One remarkable feature in the movement of Burden's boat, which struck every one on board as an improvement of a most important and highly novel character, was the smoothness with which her sharp-pointed cylinders glided over, or rather through the water, *like the sliding motion of a locomotive on a rail-road, causing not the slightest disturbance, and only a mere ripple.* There was nothing whatever of that piling up of the water on the bows, and corresponding gush on the stern; none of that fluctuation or swelling on the river which all other steam-boats cause, and which is perceptibly seen, as well as felt, by the craft in their vicinity, and even by those along the docks and banks, though they may be a mile distant. We passed the handsome and swift little steam-boat Champion, after a tough contest, near Dobb's Ferry, at forty-six minutes past seven. We had not then attained more than sixteen or eighteen revolutions of our wheel, per minute; nor was the steam fairly on, or twenty-two revolutions procured, till we neared Poughkeepsie, which we reached at twenty-two minutes past twelve. This is eighty miles, or half the distance from New York to Albany. We were now going at the rate of a mile in three minutes, or twenty miles an hour, and had come *within three miles* of the Erie. When we had every certainty of thus passing her in a very short time, the

gear of the cut-off valve suddenly gave way, at half-past one P.M., between Poughkeepsie and Lower Red Hook Landing, which immediately reduced our revolutions to sixteen, fourteen, and twelve.

At ten minutes before three P.M., finding our speed thus unhappily retarded by an unforeseen accident, we lay to, and repaired, and got under way again at thirty-two minutes past three. But in ten minutes it broke again, and thus, with every effort, and one of the boilers leaking, as it had done the whole distance from New York, we found it utterly impossible to obtain more than sixteen, and sometimes eighteen revolutions. Nevertheless, we resolutely pushed on, in spite of every difficulty. We passed over the shallow water from Hudson upwards, and the *overslaugh*, with the same ease and facility as if we had the deepest channels. This we were enabled to do *from the few inches of water we draw*, a fact which of itself speaks volumes, and is unprecedented in the history of other steam-boats on this river.

And thus, notwithstanding the most unfavourable auspices we had to contend against, and it may be said *two hours and a half detention*, taking the retarded operations of the engine into the account, we reached Albany at six P.M., about *three quarters of an hour* after the Erie. This boat was prepared before hand for the anticipated race, and had the advantage of her highly polished machinery by long use, and in the most perfect order, and she burned, we understand, large quantities of turpentine and tar, to accelerate the generation of flame—heat. Our machinery had never been fairly put to trial before, and, therefore, the reflecting part of the community may judge of the immense friction which a new engine must create, to say nothing of the leakage and the accident. The Helen, therefore, performed her first trip to Albany in nine hours! Will she not, when in ample order, and when these difficulties are removed and subdued, make the passage in eight hours, if not less? We believe she will.

This experiment, therefore, cannot be deemed conclusive.

All along the river, crowds manifested the deep interest they felt in our behalf, by cheering, waving flags, &c.; and at Catskill, Cocymans, and New London, cannon were fired from the docks in honour of our vessel.

There is not to be deducted more than ten or fifteen minutes from the Erie's time, for the few stops she made. We witnessed ourselves, that, at two or three places, she was not detained two minutes at each.

[In our last number, at page 565, are the dimensions of a steamer on this principle, proposed by Mr. Bethune, with three hulls! Verily, our transatlantic friends show a more enterprising spirit than cautious John Bull.]

III.—New Specula for Reflecting Telescopes, *employed by Professor Scarpellini at Rome.*

To the Editor of the Nautical Magazine.

Rome, June 1, 1834.

Mr. Editor,—Rome may seem an unlikely place to date a letter from, addressed to the Nautical Magazine, but, as I am aware your pages are open to all communications that tend to diffuse information, I venture to send you an account of a discovery lately made here by the Cavaliere Scarpellini, astronomical professor in this university.

It consists in the adaptation of *naro antico*, a species of compact black marble, which, although a soft stone, is capable of bearing a high polish, as the speculum for reflecting telescopes. Its great advantage seems to be, in giving the necessary quantity of light and distinctness, without any of the dazzling incidental to metal and other specula.

The professor has already made a trial of it on a small scale, for terrestrial purposes; and from his observatory on the Capitol, with a telescope of eight feet focus, I distinctly saw very small objects at Frascati, a distance of about twelve miles. He is now busily employed in working up a speculum of about thirty inches diameter, which will have fifteen feet focal length, and he is sanguine as to its success. What the result may be is doubtful, but, as it is a novel experiment, it may probably interest some of your readers.

Scarpellini's observatory above the hall of the senators on the Capitol at Rome, stands about two hundred feet above the level of the sea: it is well furnished with instruments, some of which were made under the direction of the professor himself, who is a good mechanic, and well known as an astronomer. The view from this spot overlooking the ruins of the ancient, as well as the whole of the modern city of Rome, and the surrounding campagne, you may imagine is one of the most interesting in Europe.

The course of winter lectures here, in the *sapienza*, or university, on all subjects, is just over. Many of them were very good; to a stranger, the most attractive were those of *Nibbi*, professor of archæology, on the antiquities of the city: not a dull, dry lecture, in a room; but he appointed his class to meet him one morning at the Coliseum, another at the Pantheon, a third on the banks of the Tiber; and there, with the ruins of the mighty city before him, as illustrations, his lecture made double impression on the minds of his auditors. It may be added, that all these lectures may be attended gratis—no fee of any sort whatever; a point not unworthy of imitation nearer home.

Mezzofanti, the polyglot linguist, who speaks every European, and many of the Oriental languages with fluency, has been

confined to his room for some weeks; he yesterday made his appearance again in his proper arena, the library of the Vatican, of which he is librarian. I had the good fortune of half an hour's conversation with him there, and he had the kindness to shew me some of the Hebrew, Syrian, and Greek bibles. MSS. Pliny, Virgil, and Terence; an illuminated Danti, Tasso, &c., treasures of that princely collection which contains upwards of 40,000 MSS. Mezzofanti spoke English with as much fluency as myself, and pointed out some peculiarities in the Welsh language, and even in dialects of English, of which I knew nothing.

The two great works going on here at present, are the rebuilding the old church of St. Paul, outside the walls, (destroyed by fire in 1823,) of which the new massive granite columns that divide the nave into three aisles, are nearly completed; and the other, the excavations at Tivoli, to form the course of the stream, and to cause it to cascade half a mile distant from the town, which the present waterfall is fast undermining. The tunnels, or excavations, are going on with spirit, and are expected to be finished in the course of next year.

I am, Mr. Editor, sincerely yours,

JOHN WASHINGTON.
Commander, R.N.

IV.—ON THE MOTIONS OF A SHIP LONGITUDINALLY. *With some additional Observations on the Remarks of Mr. Henwood, Naval Architect, which appeared in the Nautical Magazine for June. By Commander John Pearse, Royal Navy.*

FIGURE 1 in the accompanying drawing, represents a longitudinal vertical section of a body, the surfaces of which are supposed to be planes and the sides to be vertical, the immersed part of the fore body, as is necessary in ships, differing in form from that of the after body; and, as the various surfaces, in consequence of the breadth being equal throughout, bear the same proportion to each other as the cubic contents of the parts which those surfaces represent would do, the contents of those surfaces may therefore be taken for the quantities required in making the necessary calculations, in illustration of the points about to be considered.

The line *w r* represents the surface of the water when the body is in an upright position; the point *d* is then the place of the centre of gravity of displacement, through which passes the vertical line *n m*, which represents the mean direction of the vertical force of the water, and in which the centre of gravity of the body must also be situated, that it might be at rest in that position. The whole displacement is equal to 6300; the displacement of the fore body is equal to 3220, and its centre of gravity is at *b*; and that of

the after body is 3080, and its centre of gravity at *a*. Now, the displacement of the fore body is greater than that of the after body, and consequently the vertical effort of the water on the former is greater than that on the latter; on the after body, however, the mean direction of the force of the water which passes through *a* is at a proportionally greater distance from the vertical line *n m*, than the mean direction of the force of the water on the fore body, which passes through *b*; and this necessarily renders the relative forces of the two efforts equal, that is, 3080, multiplied by the horizontal distance of *a* from the vertical line *m n*, is equal to 3220, multiplied by the horizontal distance of *b* from the same vertical. As the centre of gravity of the body, when it is upright, must be in the same vertical as the mean direction of the force of the water, we may consider it to be at *d*; and 6300, being the amount of displacement, will also be the weight of the body which is equal to it: and, as the relative force of the weight in the fore body must necessarily be equal to that of the weight in the after body, we may, for simplicity, consider the centres of gravity of those weights to be at *b*, and at *a*; consequently the weight in the fore body will be equal to the displacement of that part, and the weight in the after body equal to its displacement; and, therefore, 3220, multiplied by the horizontal distance of *b* from the vertical line *m n* is equal to 3080, multiplied by the horizontal distance of *a* from the same vertical. And the relative forces of those weights would always be equal, in any position whatever, if the axis of rotation passed through the centre of gravity *d*.

Suppose *c*, figure 2, to be the centre of gravity of a body weighing 700 tons; that the centre of gravity of 400 tons is at *a*, thirty feet from *c*; and that the centre of gravity of 300 tons is at *b*, forty feet from *c*: then $400 \times 30 = 12000$, and $300 \times 40 = 12000$. Thus, the relative forces of those weights are equal, and would be so in any position whatever, if the axis of rotation passed through the centre of gravity *c*; for, in the position represented by the line *h r*, 300, multiplied by the distance *r o*, is equal to 400, multiplied by the distance *h i*; and, in any other position, the distance of *r* from the vertical line *m n*, would bear the same proportion to the distance of *h* from the same vertical, as the distance *b c* does to that of *c a*.

And, again, suppose a wheel, whose centre of gravity is in its centre, be made to turn on an axis passing through that point, it would, when put in motion, continue to revolve for a time, and when it ceased to move would rest in the position its motion placed it; for, when the axis of rotation passes through the centre of gravity of the body, it does not of itself possess the power of *re-producing* motion; and, if unequal weights were secured to a wheel, at unequal distances from its centre, but so that their relative forces were equal, and as represented by the weights at *a* and

b, figure 2, the centre of gravity would still be at *c*, and the wheel would revolve, but not possess the power of reproducing motion. But, if a single weight was secured to a wheel, at some distance from its centre, that point would still be the axis of rotation, but not the centre of gravity of the wheel; and the weight added, would prevent it from making entire revolutions round its centre, and only permit it to oscillate when in motion; and when left free, it would assume, and rest in a position, in which the weight added and the centre of gravity of the wheel, would be below, and in the same vertical as the axis of rotation: and, notwithstanding the centre of gravity of the wheel would be constantly moving out of the vertical of the axis of rotation, still the centre of effort of the pressure on the points of support would always remain in that vertical; and, if the centre of gravity of the wheel is kept out of the vertical of the axis of rotation by any power, the pressure on the points of support will be greater or less than the actual weight of the wheel, accordingly as the power applied may be a lever of the first or second kind; the former increasing, and the latter diminishing the pressure, equal to the amount of the downward vertical effort produced by the power applied in the former case, and to the upward vertical effort in the latter.

Figure 1, in the Nautical Magazine, No. 24, represents a simple mechanical apparatus, which explains practically, and in the most correct manner, the effects produced by different dispositions of the weights in a ship; for, in experiments made with it, the dispositions of the weights may be varied in every possible way; and the figure shews plainly that the apparatus could have no stability, and that it would remain at rest in any position it might be placed, if the centres of gravity of the weights were at *r* and at *q*, in the same plane as the axis of rotation *c*; and this proceeds from the equality of the horizontal distances *r t*, and *q s*, of the weights from the vertical line *m n*, which passes through the axis of rotation *c*; and, in consequence of the equality of the distances of those weights from that vertical, in any position, rendering the relative forces of the weights equal. And, if the centres of gravity of the weights were at *u* and *v*, above the plane of the axis *c*, the smallest force would cause it to upset; for, then, the horizontal distance *u x*, being greater than that of *z v*, the relative force of the weight at *u* would be greater than that of the weight at *v*. If, on the contrary, the centres of gravity of the weights are at *e* and *i*, then the apparatus possesses stability, and the property of vibrating; and the relative forces of the weights at *e* and *i*, which are equal when the beam *q r* is horizontal, are not so in the inclined position represented; for then, and as the apparatus was at rest in that position, it is evident that the relative force of the weight at *i* must have been equal to the relative force of that at *e*, *plus* the relative force of the weight applied at *a* to produce the inclination.

In fact, the relative force of the weight at *a* which produced the inclination, is equal to the difference between the relative forces of the weights at *i* and *e*; and this difference is equal to the moment of stability, that is, to the whole weight of the apparatus, multiplied by the distance *g d* of its centre of gravity *g*; from the vertical line *m n*, which passes through the axis of rotation; and, consequently, the moment of stability is equal to the inclining weight *w*, multiplied by the distance *a b*. And, if the centres of gravity of the weights were at *p* and *k*, in place of at *i* and *e*, the stability would still be the same, in consequence of the weights remaining at the same distance below the axis of rotation; and, therefore, the inclining weight *w*, multiplied by the distance *a b*, would still be equal to the whole weight of the apparatus, multiplied by the distance *g d*; and either of those relative forces would be equal to the difference between the relative forces of the weights at *p* and *k*. But, although the stability is the same, and that an equal *permanent* inclining power is required to produce the same inclination, when the weights are concentrated, and when they are more extended; and, notwithstanding the difference between the relative forces of the weights at *i* and *e* is equal to the difference between the relative forces of the weights at *p* and *k*, still the relative power of the weight at *p* is greater in proportion to that of the weight at *k*, than the relative power of the weight at *i* is to that of the weight at *e*; consequently, this comparatively greater relative power of the weight at *p* sooner overcomes an inclining force that is only *momentary*, and which no sooner acts than its effort begins to diminish, and which causes the vibrations to be less both in extent and duration, than when the weights are more extended. And the resistance produced in this way may very properly be considered a mechanical property, as it proceeds from, and may be augmented or diminished by, altering the disposition of the weights.

The apparatus inclined by the weight applied at *a*, is a lever of the first kind; and the pressure on the points of support which are in the vertical of the axis of rotation, is equal to the weight of the apparatus, *plus* the inclining weight: the former constantly exerting its power at the centre of gravity *g*, and the latter exerting its power at *a*, the equality of their relative forces establishing the equilibrium, and preserving the apparatus in a state of rest in the position represented. But, if the inclination had been produced by a lifting power applied at *r*, it would then have been a lever of the second kind, and the pressure on the points of support would only have been equal to the weight of the apparatus, *minus* the amount of the upward vertical effort proceeding from the inclining power, still the whole weight of the former would have constantly exerted its power at the centre of gravity *g*.

In the Nautical Magazine for June, page 346, Mr. Henwood makes the following observation, namely: "A mathematical

demonstration that the axis of rotation of any body whatever, acted on by any forces whatever, must always pass through its centre of gravity, it is not my object to attempt to introduce in this paper." Now, it has been clearly demonstrated, by the most simple principles of mechanics, that the axis of rotation of *any body* whatever *does not* pass through its centre of gravity, and that it is *impossible* a body can possess either *stability* or the property of *vibrating*, if the axis of rotation passes through that point. And it has been clearly demonstrated, also, that, as regards the disposition of the weights, a floating body is governed by precisely the same laws as a simple mechanical apparatus, and that the results derived from experiments with the latter, are similar to those obtained by the same means with the former: for, the experiment with the floating body represented by figure 2, is precisely the same as that with the mechanical apparatus; and, in each, the weight of the body, multiplied by the horizontal distance of its centre of gravity g from the vertical line $m\,n$, is equal to the inclining weight w, multiplied by the distance $a\,b$. And, with respect to the floating body, in place of considering its whole weight to be acting at the centre of gravity g, we will suppose it to be divided into two equal parts, whose centres of gravity shall be at h and i, and the difference between the relative forces of those weights, as in the experiment with the apparatus, is equal, either to the weight of the body, multiplied by the distance $g\,c$, or to the inclining weight w, multiplied by the distance $a\,b$; and the nearer the centres of gravity of the weights, now supposed to be at h and i, are to the centre of gravity g of the whole, the less both in extent and duration would be the motion of rolling. But, if the centres of gravity of the weights were at o and p, the distance $o\,s$ being greater than that of $p\,q$, the relative power of the weight at o would consequently be greater than that of the weight at p, and therefore it would cause the body to upset.

It is evident, that either in the case of the floating, or in that of the apparatus, g is only the centre of gravity of *one part* of the *system*, and that the inclining weight w, whose relative power is equal to that of the weight of the body, is *another part*; it is evident, also, that m is the *centre of gravity* of the *whole system* in the floating body, and c its *centre of gravity* in the apparatus; and that in each the *centre of effort* of the *weight* or *pressure* is in the *same* vertical $m\,n$ as the *point of support*, and which, to the floating body, the *vertical force of the water supplies*. And, if the floating is suspended out of the water by an axis passing longitudinally through the point m, which the experiment in the water determines to be the place of the metacentre, the same inclining weight of forty-eight ounces produces precisely the same inclination as it caused in the water.

Now, *laterally*, the stability of a ship is the same, and its

motion of rolling as great, one way as the other; and this proceeds from the perfect similarity in the form of its sides, and from the relative forces of the weights on each side being equal, when the ship is at rest in an upright position. And the only possible means of rendering the stability of a ship *longitudinally* the same one way as the other, and the motions of pitching equal to those of sending, would be, by constructing it so that the form of the fore body should be precisely similar to that of the after body, but which would be *highly injurious*, if what has been long and generally admitted be true, namely, that it is absolutely necessary for the production of various requisite qualities, that the centre of gravity of displacement, and that of the ship, should be some distance before the middle of its length, and, that the fore body, or the part before the vertical of the centre of gravity, should be fuller than the after body, or the part abaft the same vertical.

Mr. Henwood has introduced this subject in his paper in the Nautical Magazine for June. We will, however, quote his opinion from the paper which he refers to in the United Service Journal for November last, page 365, viz.: "The sum of the moments of inertia of all the weights of a ship will be a minimum, (provided the weights are concentrated as much as possible,) when the sum of the moments of inertia of all the weights on one side of the vertical plane, through the transverse axis of the ship, is equal to the sum of the moments of inertia of all the weights on the other side of the same plane. ....

"The angles of pitching and sending, so far as they depend on the effect of the action of the water on the bottom, will be a minimum, when the moment of inertia of that part of the displaced volume which is abaft the vertical plane, through the transverse axis of the ship, is equal to the moment of inertia of that part which is afore the same plane: and this will be the case only when the distance of the centre of gravity of the displaced volume on one side of this plane from the plane, is equal to that on the other side, from the same plane. And it is deserving of notice, that this can have place in those vessels only which have a full fore body, and a sufficiently fine after body; and such vessels are usually fast sailers.

"The pitching and sending motions of a ship are, therefore, the least possible, when the sum of the moments of inertia of the weights on each side of the vertical plane through the transverse axis of the ship are equal, at the same time that the moments of inertia of the fore and the after bodies of the ship are also equal to each other; or, the pitching and sending of a ship will be a minimum when the angles of pitching are equal to the angles of sending."

Now, when a ship is upright, the moments or relative forces of the weights on each side of the vertical plane through the centre of

gravity of the ship, and the moments of the vertical efforts of the water on the fore and the after bodies, *must be*, and *always are*, equal; otherwise, the ship would not remain at rest in that position. And, as long as a dissimilarity exists in the forms of the fore and the after bodies of a ship, the centre of gravity of the whole displacement will be before the middle of its length; and the centres of gravity of displacement of the fore and the after bodies will be at unequal distances from the vertical plane through the centre of gravity of the ship. And, when a ship is inclined, it is *absolutely* necessary that the moments of the weights of the fore and the after bodies should be unequal; otherwise the ship would not possess stability; for, it is the difference between the relative forces of those weights, which produces that necessary resistance to inclination which is called stability, and which, after the inclining power is exhausted, or removed, restores the ship to an upright position, performing, alternately, the part of a resisting force, and that of a moving power. And the principal cause of the difference in the angles of the pitching and sending motions, proceeds from the stability being much greater one way than the other.

The disposition of the weights would produce no difference in the angles of pitching and sending, if a ship had not greater stability one way than the other; for, if weights were distributed, so that the centre of gravity of the whole should be at *c*, figure 3 in the accompanying drawing; and that equilibrium should be established in a horizontal position, by the centre of gravity of 400 tons being at *a*, thirty feet from *c*, and the centre of gravity of 300 tons at *b*, forty feet from *c*; and, although the relative forces of weights at *h* and *r*, and at *t* and *s*, would differ from the relative forces of equal weights at equal distances from the centre of gravity *c*; still, in each case, at equal inclinations, the stability, and consequently the difference between the two relative forces would be the same; and, with the disposition represented, the extent of the vibrations would be the same one way as the other.

If the body represented by figure 1 was inclined by the stern, so that the line *s t* should represent the surface of the water, the whole displacement would remain the same as before, its centre of gravity would be at *h*, the line *o k*, which is perpendicular to the water-line *s t*, would represent the mean direction of the force of the water, and where it intersects the point *o* of the line *n o*, which passes through the centre of gravity *d* of the body, would be the place of the metacentre, or point of stability; and the moment of stability would be the weight of the body, multiplied by the horizontal distance of *d* from the vertical line *k o*. If, on the contrary, the body was equally inclined by the head, and so that the line *u v* should represent the surface of the water, the whole displacement

would still remain the same as before, its centre of gravity would be at *i*; the line *m l*, which is perpendicular to the water-line *u v*, would represent the mean direction of the force of the water; and where it intersects the point *m* of the line *n m*, which passes through the centre of gravity *d* of the body, would be the place of the metacentre; and the moment of stability would be the weight of the body, multiplied by the horizontal distance of *d* from the vertical line *l m*. We thus find, that, at equal inclinations, the stability is much greater when the body is inclined by the stern, than it is when inclination is produced by the head: consequently, and as the *difference* between the relative forces of the weights of the fore and the after bodies, is always equal to the moment of stability, this difference, at equal inclinations, is greater when the body is inclined by the stern, than when inclined by the head; and it is the greater resistance proceeding from this, or from the greater stability, that prevents the bow from rising so much as the stern.

In this case, in which the whole displacement is considered to be the same before and while the body is inclined, Attwood's theory for estimating the stability of a ship is perfectly correct, and is simply this, namely: when the inclination is by the stern; as 6300, the whole displacement, is to 935, the displacement of the part *s j w* which becomes immersed by the inclination, and which is equal to the part *r j t* which emerges, so is the horizontal distance *c f* between the centres of gravity of those two parts, to the horizontal distance from *d*, the centre of gravity of displacement when the body is upright, to the vertical line *k o*, which passes through the centre of gravity of displacement, when the body is inclined. And, when the inclination is by the head: as 6300 is to 740, so is the horizontal distance *g y* to the horizontal distance from *d*, to the vertical line *l m*. And the cause of this distance being greater in the former case than in the latter, is clearly apparent; for, the positive quantities, that is, the part which becomes immersed by the inclination, or that which emerges; and the horizontal distance between the centres of gravity of those parts are much greater when the body is inclined by the stern, than they are when the body is inclined by the head; while the negative quantity, namely, the whole displacement, remains the same in both cases.

According to the opinion of Mr. Henwood, it is necessary, in order to reduce the angles of pitching and sending to a minimum, that the *centres of gravity* of displacement of the *fore* and the *after* bodies should be at *equal distances* from the vertical plane through the *centre of gravity of the ship*; and he says, that "this can have place in those vessels only which have a full fore body, and a sufficiently fine after body; and such vessels are usually fast sailers." Now, it is this very form, namely, a *full*

fore body, and a *fine after body*, which prevents the *possibility* of Mr. Henwood's opinion being correct, viz., that in *such vessels only* can those *distances be equal*; for, it is evident that an *equality cannot exist*, if the *forms* of the *two parts* are not *precisely similar*; and, that the same laws which cause the centre of gravity of the whole displacement to be before the middle of the length of a ship, which has a full fore body and a fine after body, determine also the centres of gravity of displacement of the fore and the after bodies to be at *unequal* distances from the vertical plane through the centre of gravity of the ship.

The opinion, that "such vessels are usually fast sailers," and that they are easy, also, practical experience confirms. And the cause of this is obvious, for, in such vessels, the greater stability abaft prevents the bow from raising so much as it otherwise would, and consequently it has less distance to descend, and falls with less force, in consequence of the relative force of the weight in the fore body not acquiring so much power over the relative force of the weight in the after body, at a small angle of rising, as it would at a greater one. With a head-sea, also, the water is much smoother at the stern than at the bow, and particularly when a ship has considerable length; and the bow is frequently left much more unsupported than the stern, and this must necessarily contribute in producing a difference in the angles of pitching and sending, and in causing the bow to fall with more force than the stern; and this, combined with the tendency which the effort of the water on the bow has to produce inclination, may prevent any form from rendering the angles of pitching and sending at all times equal.

In the Nautical Magazine for June, Mr. Henwood observes, "that the force with which one side of a ship descends in rolling, is of necessity equal to the force with which the other side descends; and, that the contemplated modification of the mode of constructing ships consists simply in obtaining a similar equality between the forces with which the extreme ends shall descend." Now, this equality which exists in rolling, proceeds from the perfect similarity of form of the sides of a ship; from the displacement of the part on one side of the vertical plane through the centre of gravity of the ship, being equal to the displacement of the part on the other side of that plane; and from the centres of gravity of displacement of those parts being at *equal* distances from the same plane, and which necessarily renders the moments of the efforts of the water equal. But, with respect to the fore and after bodies of a ship, we are told that an *equality* in the distances of the centres of gravity of displacement of those parts from the vertical plane through the centre of gravity of the ship, "can have place in those vessels only which have a full fore body, and a sufficiently fine after body." This, however, is so inconsistent with the conditions

which render the distances equal in a transverse direction, that it is impossible to imagine such a discrepancy can exist, without at the same time supposing the *laws of fluids* to be *changeable*, and that water possesses *different principles of action*; for, as long as the fore and the after bodies of a ship differ in form, the centres of gravity of displacement of those parts, and consequently the mean directions of the vertical forces of the water on them, will *necessarily* be at *unequal distances* from the vertical plane through the centre of gravity of the ship.

The effort on the bow that proceeds from the resistance of the water which a ship meets in its progress, possesses a similar tendency to produce inclination longitudinally, as the resistance to lee-way does to cause inclination laterally. In figure 1, the dotted line $a^2\ b^2$ is supposed to represent the mean direction of this effort on the bow, and which, by acting below the metacentre m, would cause the body to incline by the head; and its relative force would be equal to the amount of its absolute force, multiplied by the distance $b^2\ m$; and this relative force, provided no other operated, in producing inclination, would be equal to the moment of stability at the inclination it produced. Now, m being the place of the metacentre, or point of stability, when the body is inclined by the head, the force of the wind would not produce inclination, if its mean direction intersected that point. But, if the mean direction of the force of the wind intersected above the point m, as at c^2, for example, then the force of the wind would unite with that of the water on the bow in producing inclination; and, consequently, in this case, the absolute force of the wind, multiplied by the distance $c^2\ m$, *plus* the force of the water on the bow, multiplied by the distance $b^2\ m$, would be equal to the moment of stability, that is, to the weight of the body, multiplied by the horizontal distance which the inclination would produce, of the centre of gravity d, from the vertical line which would represent the mean direction of the supporting power of the water. If, on the contrary, the mean direction of the force of the wind intersected below the point m, as at d^2, it would then operate in diminishing the greatness of the inclination which the force of the water on the bow would otherwise produce; and, therefore, the force of the water on the bow, multiplied by the distance $b^2\ m$, *minus* the force of the wind, multiplied by the distance $d^2\ m$, would be equal to the moment of stability: and, provided the planes of the sails are perpendicular to the horizon, the force of the wind may act on sails, either forward or aft, without producing inclination longitudinally, if its mean direction intersects a point in the plane of the sails which is in the same horizontal plane as the metacentre m; but, if the mean direction of the force of the wind intersects above that point, then it will operate in producing inclination by the head; and, if, on the contrary, the force of the wind acts below that point, it will then

have a tendency to produce inclination by the stern; but which may be counteracted by the force of the water on the bow.

It is as well to observe, that, in a body of the form represented by figure 1, whose breadth is equal throughout, the points of stability, laterally and longitudinally, and the mean direction of the effort of the water on the bow, are all very low, and that they are situated much higher in bodies which are lean below.

As the stability of a ship longitudinally is governed by the same laws as it is laterally; and as the force of the wind, and the effort of the water on the bow, produce effects longitudinally, similar to those produced laterally by the force of the wind, and the resistance of the water to lee-way; we may therefore use figure 1 to explain the conditions of equilibrium of a ship, when inclined laterally, which Bouguer gives at page 524 of his Traité du Navire; and, for which purpose, we will suppose the body to be inclined, so that the line $u\ v$ shall represent the surface of the water, when the line $m\ l$, which is perpendicular to $u\ v$, will represent the mean direction of the supporting power of the water.

Now, that which Bouguer considers to be the place of the metacentre, is, when the line $l\ m$, which passes through the centre of gravity of displacement, and represents the mean direction of the force of the water, intersects the line $n\ m$ which passes through the centre of gravity d of the body: and he says, the moment of stability is the weight of the ship, multiplied by the horizontal distance of the centre of gravity d from the vertical line $l\ m$; and that the point m is the fulcrum of the lever to which the weight of the ship is applied; and of course the horizontal distance of d from the line $l\ m$ is a true measure of its power. And the fulcrum of the lever to which the power of the wind is applied he considers to be at z^2, when the line $a^2\ b^2$ (which is now supposed to represent the mean direction of the lateral effort of the water, or resistance to lee-way) intersects the line $l\ m$, which represents the mean direction of the supporting power of the water; and tells us the relative force of the wind is (supposing its mean direction to act at o) the amount of its absolute force, multiplied by the perpendicular distance $x^2\ z^2$ of its mean direction from the point z^2; and that this relative force is equal to the moment of stability.

It is evident, there is no discrepancy here between Bouguer's and my meaning of the term metacentre, and, that Mr. Henwood, in imagining such to exist, must himself have misunderstood the meaning of that author. But, there is a most palpable discrepancy between the conditions of equilibrium given by Bouguer, and the equation which Mr. Henwood has introduced in the Nautical Magazine for June; for, by that equation the relative forces of the operating powers are estimated by the perpendicular distances of their respective mean directions from the *centre of gravity of the ship*, which is inconsistent with the laws of mechanics, as the

centre of gravity of the ship is not the *fulcrum*, or *point of support*. Whereas Bouguer estimates the relative forces of the operating powers by the perpendicular distances of their mean directions from points situated in the vertical of the metacentre, the vertical in which the *supporting power of the water is concentrated*. And at page 528 he says, when the mean direction of the lateral effort of the water intersects the point m, which will happen when the transverse vertical sections are circular, the points m and z^2 become one and the same; when of course m would be the fulcrum of the lever to which the power of the wind would be applied. And the reason of his taking the point z^2 as the fulcrum of the lever is, because he considers the efforts of the wind and the water as combined, and which may in some ships amount to near the same thing as if the two efforts were considered separately. According to Bouguer's method, the relative force of the inclining power of the combined effort is the absolute force of the wind, multiplied by the distance $x^2\ z^2$; and when the two efforts are considered separately, the relative force of the inclining powers is the absolute force of the wind, multiplied by the distance $o\ m$, plus the effort of the water, multiplied by the distance $b^2\ m$. Thus, the amount of the relative forces of the efforts considered separately is less than that according to Bouguer's method; but the difference between the two would have been smaller, if a transverse vertical section had been used in explanation, in place of a longitudinal one. And, with respect to the stability laterally, Bouguer says, at page 534, the error would be of little consequence, which might proceed from considering the metacentre as the fulcrum, in place of the point where the mean direction of the lateral effort of the water intersects the mean direction of the vertical force of the water, because the distance between the two points is very inconsiderable, in comparison to the great length of the lever to which the power of the wind is applied.

It has been already shewn, that, with the body in an upright position, the weight at b, multiplied by the horizontal distance of b from the vertical line $m\ n$, is, as it necessarily must be, equal to the weight at a, multiplied by the horizontal distance of a from the same vertical. But, if the body was inclined by the stern, so that the line $s\ t$ would be the surface of the water, then the relative force of the weight in the fore body would be equal to the weight at b, multiplied by the horizontal distance of b from the line $k\ o$, which represents the mean direction of the supporting power of the water in the inclined position; and the relative force of the weight in the after body would be equal to the weight at a, multiplied by the horizontal distance of a from the same line; and the difference between those relative forces would be equal to the moment of stability, that is, to the whole weight at d, multiplied by the horizontal distance of d from the line $k\ o$. And, if equally inclined by the head, so that the line $u\ v$ would be the surface of the water,

the relative force of the weight at *a* would be equal to that weight, multiplied by the horizontal distance of *a* from the line *l m*; and the relative force of the weight at *b* would be equel to that weight, multiplied by the horizontal distance of *b* from the same line; and the difference between those forces would be equal to the whole weight at *d*, multiplied by the horizontal distance of *d* from the line *l m*. We thus find, that, at equal inclinations, the power of the wind at *b* over that at *a*, when the inclination is by the stern, is much greater than the power of the weight at *a*, over that at *b*, when the inclination is by the head; consequently, in the latter position, the power which the weight at *a* acquires, to re-produce motion, is not sufficient to cause so great an inclination by the stern, and, therefore, the angle of rising of the bow, and the power which the weight in the fore body acquires by it, to re-produce motion, is not so great as it otherwise would be; and this, as before explained, proceeds from the stability being greater when the body is inclined by the stern, than it is when inclination is produced by the head.

Although the rolling motion of a ship is much deeper than that of pitching, still it does not produce the same kind of sensation as the latter, and which is similar to that produced by the backward motion of a swing; and the cause of this feeling may be perceived, by observing attentively the water as a ship passes through it, when not sailing very fast; for, as the ship pitches, or the forepart descends, its velocity appears to diminish; on the contrary, when the bow rises, the velocity of the ship appears to increase.

If a large circular body floats so that its centre is considerably above the surface of the water, and is made to turn, the *parts* at its ends which are near the surface of the water, and the *water*, will appear to move in opposite directions; and which confirms the truth of the preceding remarks; and, although a ship differs in form from that of a circular body, still, its motions are governed by precisely the same laws; it possesses a disposition to turn in the same way, and the only difference is, that the form of a ship prevents it from turning with so much facility as a circular body does.

V.—Glass Balance Spring in Chronometers.

Our readers are requested, by Messrs. Arnold and Dent, to substitute the following for the corresponding sentence of their letter in p. 422 of our 29th number:—

"That our prize number is on the 31st May, 3,92, so that we had just then exceeded the limit of the second prize; and taking the fifteen chronometers withdrawn, and thirteen remaining on trial, whose errors have exceeded the chronometer with a glass spring, it stands, as regards its performance, surpassed by thirteen out of the twenty-eight first deposited.

Table VIII.

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

1 Lisbon foot = 1·1109127 English foot.
1 English foot = 0·9001607 Lisbon foot.

Portug. or English Ft.	English Feet and Dec. parts.	Portuguese Feet and Dec. parts.	Portug. or English Ft.	English Feet and Dec. parts.	Portuguese Feet and Dec. parts.	Portug. or English Ft.	English Feet and Dec. parts.	Portuguese Feet and Dec. parts.
1	1·111	0·900	38	42·215	34·206	74	82·208	66·612
2	2·222	1·800	39	43·326	35·106	75	83·318	67·512
3	3·333	2·700	40	44·437	36·006	76	84·429	68·412
4	4·444	3·601	41	45·547	36·907	77	85·540	69·312
5	5·555	4·501	42	46·658	37·807	78	86·651	70·213
6	6·665	5·401	43	47·769	38·707	79	87·762	71·113
7	7·776	6·301	44	48·880	39·607	80	88·873	72·013
8	8·887	7·201	45	49·991	40·507	81	89·984	72·913
9	9·998	8·101	46	51·102	41·407	82	91·095	73·813
10	11·109	9·002	47	52·213	42·308	83	92·206	74·713
11	12·220	9·902	48	53·324	43·208	84	93·317	75·613
12	13·331	10·802	49	54·435	44·108	85	94·428	76·514
13	14·442	11·702	50	55·546	45·008	86	95·538	77·414
14	15·553	12·602	51	56·657	45·908	87	96·649	78·314
15	16·664	13·502	52	57·767	46·808	88	97·760	79·214
16	17·775	14·403	53	58·878	47·709	89	98·871	80·114
17	18·886	15·303	54	59·989	48·609	90	99·982	81·014
18	19·996	16·203	55	61·100	49·509	91	101·093	81·915
19	21·107	17·103	56	62·211	50·409	92	102·204	82·815
20	22·218	18·003	57	63·322	51·309	93	103·315	83·715
21	23·329	18·903	58	64·433	52·209	94	104·426	84·615
22	24·440	19·804	59	65·544	53·109	95	105·537	85·515
23	25·551	20·704	60	66·655	54·010	96	106·648	86·415
24	26·662	21·604	61	67·766	54·910	97	107·758	87·316
25	27·773	22·504	62	68·877	55·810	98	108·869	88·216
26	28·884	23·404	63	69·987	56·710	99	109·980	89·116
27	29·995	24·304	64	71·098	57·610	100	111·091	90·016
28	31·106	25·204	65	72·209	58·510	200	222·183	180·032
29	32·216	26·105	66	73·320	59·411	300	333·274	270·048
30	33·327	27·005	67	74·431	60·311	400	444·365	360·064
31	34·438	27·905	68	75·542	61·211	500	555·456	450·080
32	35·549	28·805	69	76·653	62·111	600	666·548	540·096
33	36·660	29·705	70	77·764	63·011	700	777·639	630·112
34	37·771	30·605	71	78·875	63·911	800	888·730	720·129
35	38·882	31·506	72	79·986	64·812	900	999·822	810·145
36	39·993	32·406	73	81·097	65·712	1000	1110·913	900·161
37	41·104	33·306						

VI.—Suggestions for Avoiding or Lessening the Disasters incident to a Sea Life.

(Continued from page 466, No. 30.)

No. 4.—*The means for getting on Shore from a Wreck.*

The Amicus, lost off Holderness.—It may be scarcely necessary to remark, that a life-boat is the safest and best means for effecting the above object. Every one acknowledges this:—the parliament, as a deliberative assembly; the Admiralty, as a board; sailors and soldiers, as being parties most interested; yet, strange to say, with respect to our merchant-vessels, and indeed our men-of-war too, the acknowledgment alone seems to hold good, crews being left (with few exceptions) to buffet with the waves in the best way they can!

Parliament rewarded the inventor of the life-boat, and left the rest to the public.* The humanity of individuals has, in different parts of our stormy coasts, provided these boats for the purpose designed; and many valuable lives have been consequently saved.

Captain Manby's apparatus, too, has done good service occasionally; and a particular rocket has recently been employed with success; but these life-preservers are not to be found upon every part of the sea-coasts, and many lives are still annually lost!

This being the case, and experience proving, that those most interested are negligent of what essentially concerns themselves, should not the legislature, as *guardian*, enact a law to compel every owner of a vessel to provide her with a life-boat of some description, for the preservation of the crew, to whom he is mainly indebted for his prosperity?

Preceding such a law, however, every man-of-war should be supplied with a life-boat, and all the others should at the same time be converted into safety-boats, which could be done in a manner as simple as efficacious. And every seaman on board ought to be provided with a buoyant belt; fatal accidents from the upsetting and swamping of boats, &c., would thenceforth be considerably lessened, if not entirely prevented; in the same degree, confidence would increase, and the calamitous scenes now so often witnessed during shipwrecks would be greatly reduced, and human suffering proportionately lessened.

To bring about these desirable effects, would be an act of *true* philanthropy, as well as one of *sound* policy; the consummation awaits only the fiat of the Government; and we accompany this

* It is not unlikely that the Government has contributed pecuniary aid towards the providing these boats at the stations upon the coasts of Britain and Ireland; but I am not aware of such being the case.

declaration with an ardent prayer, that the enlightened heads composing the executive, to whose hearts a case of humanity never pleads in vain, may speedily respond to it, and fulfil the desire.

It may be well to state here, however, that large cloth or cartridge-paper kites, well glazed, would be found of great service to mariners, situated as those of the Amicus were, who depended for their preservation on a rope reaching the shore.*

It generally happens, that a vessel, when wrecked, strikes upon a lee-shore; consequently, if a small line be bent to the belly-band of a kite, seven or eight feet in height, and the kite set off from any of the tops, it will be borne by the wind to the shore. To facilitate its descent, when it has passed over the space of sea between the vessel and the shore, a coil of the string by which it is held might be suddenly let out, which it is probable would cause the desired effect. This plan can only be adopted with a chance of success when the vessel happens to be close to the shore; when distant, it will be necessary, after the kite has been poised in the air, to fasten the flying-line to a small cask, (well bunged,) and to the cask a line, which must be eased out as the pressure of the wind advances the kite towards the land; when the cask has reached the shore, the people there will seize the line, and by it draw on shore a hawser.

The greatest difficulty, I apprehend, would be at the onset, that is to say, ensuring the kite's steadiness when thrown from the top, as the order of flying it will obviously be reversed. Some little practice, therefore, will be necessary before-hand, during leisure moments, when no danger threatens, to obtain success; and we need scarcely say, that the appendages to the kite should be in perfect proportion, as in ordinary cases, to ensure its being nicely poised.

A canvass cot, with large holes at the bottom, to admit the water to pass through freely, and having cross-bars of thick rope, should also be kept in readiness for such an occasion. I need not describe the manner of using it; I may, however, merely observe, that raw-hide will be the best covering for the travelling grommets.

As the cases of shipwreck are various, with respect to the position of the vessel, and the locality, it is obvious that one plan alone will not be suitable at all places; others must be contrived.

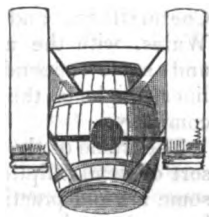
Should a vessel be near the shore, and unprovided with a kite, a hawser may be conveyed there from her, by means of empty barrels fastened to it. During daylight, and perhaps at night, if rocks

* An ingenious and simple plan of this sort appeared a few years ago in the Portsmouth Telegraph, from the pen of a scientific and clever officer of the Navy, Lieut. Thomas Evans, worthy the attention of seamen.

The application of this "play-thing" to the above purpose, struck me upon witnessing Mr. Pocock's vehicle drawn at a rapid rate over a level heath, by means of a large kite.

On the long, straight, and level roads in France, such a mode of travelling might, we think, be used with advantage.

do not intervene between the vessel's position and the shore, a man may reach it by the aid of a large cask, which, to prevent its turning over, might be fitted in the following manner: two transverse bars let in between the outer and inner hoops, inclining upwards, and firmly secured to the upper extremes, a plank to be fixed longitudinally, to act as out-riggers. A round hole to be cut in the upper bilge, large enough to admit the body of a man, and a tarpaulin waist-cloth fitted round it, which, the man who enters is to keep round him, to prevent the water from filling the cask. If the out-riggers be considered as not efficient for the purpose of preventing the cask's being turned over by the action of the waves, the bars may be planked outside, which it is probable would effectually prevent it.



Cask with Out-riggers.

It is probable that an empty barrel, well bunged, lashed on each side of a small boat, would prevent its upsetting or being swamped, and be the means of conveying the people to the shore. This is an easy matter when taken in time, but if left to the last moments, in the hurry and confusion attending shipwreck in a dark and tempestuous night, much difficulty would be encountered in effecting it, especially when the sea makes a breach over the vessel; yet, when the ship's hull begins to give way, some desperate alternative must be resorted to by those who do not give themselves up to despair; perseverance and resolution accomplish wonders! and as we know that a spar has often carried a man safe on shore, why not a boat, thus buoyed up? If a boat remains, with a little self-possession, and the use of one's fingers, the small casks might be lashed on.

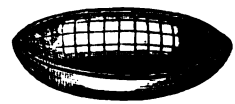
I may appear to argue very coolly in my "*arm-chair*," on a subject not quite so easily accomplished when the waves are lashing a vessel to pieces. In answer, without touching on what I have myself experienced, it may be sufficient to name the word "precaution," and to say, "be always prepared."

Under some circumstances, I am perfectly aware that nothing of this sort can be effected; the plan, simple as it is, can of course only be tried when not absolutely impracticable; but, a measure has sometimes proved successful under circumstances where its application had been considered almost impossible.

Cork-jackets, inflated waist-belts, buoyant matresses, &c., have been devised for the aid of seamen; but, however useful, these are, I believe, nowhere employed, as much probably from careless indifference, and want of forethought, as from the mere trifling expense which *somebody* must be at in providing them for a ship's crew! The circumstance is almost inexplicable; there is no "fathoming" human nature, no arriving at the motives which influ-

ence men's actions on certain occasions. With a good-sized inflated belt under his arms, a sailor might almost *walk in the water*, and yet, for "the value of half-a-crown or three shillings," he suffers the hazard of being drowned!

The coracle used by the ancient Britons, and at this day by their descendants at Caermarthen, and some other places in Wales, with the addition of a little cork, and some appendages, and attached to lines, might be the means of saving a ship's company.

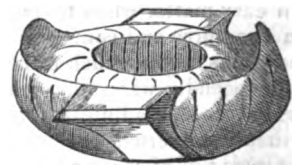


The Coracle.

The frame of the coracle is made of wicker-work; in fact, it is a sort of semi-elliptical basket, covered with raw-hide; it requires some art and practice for a man to steady himself in it; but I think it may be so improved as to become safe and useful for the purpose I have mentioned.

A man, for a wager, actually performed the passage across the estuary of the Severn, from Chepstow to Bristol, in one of these frail basket-floats, without accident.

If formed somewhat deeper, with two supporters, or out-riggers, and properly fitted with cork, it might be used as a *surf*-boat, and perhaps be nearly as efficient as the *balsa* of Arica, as well as answering the end proposed.



Rafts.—I shall not pretend to lay down rules for constructing a raft; the main point, however, upon which its capability depends, must be the *security* with which its several parts hold together; this is so obvious, that it might seem superfluous to name it here, were we not assured of the fact, that such has not always been attended to carefully.

In a manuscript journal of a naval officer, I have seen a very good addition to the raft, noted, as used by the Spaniards. It was that of fixing a boat on the raft, so that the people, by turns, might keep their feet and legs from being constantly immersed in the water; as likewise to afford them a resting-place, which is a relief not to be expected without such aid. It would also prove of service on approaching the shore, &c.

In preference to erecting a single pole for a mast, I recommend the method used in the rafts of the river Guayaquil, in South America that of *sheers*, which, being stepped on either side, plumbs the centre, the support being firmer.

It should be remembered, that hooks and lines, and a pair of grains or two, for catching and striking fish, would be invaluable on a raft, as well as in the boats. A shark (however, in times of plenty, we may be inclined to loathe) would afford a plentiful meal

to men destitute of other food; and it is scarcely necessary to state to sailors, that fishes are generally found following floating wood.

The memorable fate of the crew and troops of the French frigate Méduse, should be present in the minds of seamen: nothing parallel to it, I believe, ever occurred before; certainly not among Britons.

The evils of insubordination cannot be exemplified in a stronger degree, than in that sad event; and a better contrast certainly could not be found, than in the exemplary conduct of the company of the British frigate Alceste, under the late most admirable Sir Murray Maxwell, when shipwrecked in the Strait of Gaspar.

If I recollect right, his Majesty's ship Sterling Castle* was wrecked on the Silver-Cay Bank, and some part of her crew escaped on rafts.

The Persian, sloop-of-war, was lost on that bank on the 21st of June, 1813, and 123 of the crew escaped on a raft, and in the boats. Twelve hours after quitting the vessel, the raft broke adrift! but all reached safely Old Cape Françoise, in St. Domingo, after being exposed to two days' perilous navigation. This vessel appears to have sunk in shoal water; resting upon her starboard bilge, her masts appearing above the surface.

No. 5.—*Lowering Boats, Life-buoys, &c.*

Caroline, 1807.—When there is any sea on, as all sailors are aware, it becomes difficult to get the tackles of the stern-boat unhooked, in consequence of her position being transversely to the ship's length,† from which many accidents have happened.

We have seen a *lizard-tail* substituted for the hook of the fall-block which prevented any accident from occurring when the boat was lowered in blowing weather.

To guard against the danger arising from the ring in the stem and stern breaking, we have also seen a rope-grommet seized round it, passing through two holes made for the purpose in the wood.

A quarter boat should always be kept in a state for lowering; the delay in getting a boat down often occasions the loss of life; the facility with which this operation can be performed, whether the ship is at a stand, or has head or stern way, renders any delay in effecting it, when a man falls overboard, almost criminal.

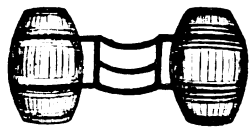
In merchant-vessels, without guns in their quarters, in lieu of wooden davits, with topping-lifts, those of iron, with curved heads, are substituted, and the boat remains in the position in which she is hoisted up, and of course may be lowered in a few minutes. This is a great improvement, and I am glad to find that quarter-boats

* Another of the name, years before, was lost on the Goodwin Sands.

† I have just heard of a patent having been taken out for a new method of lowering boats.

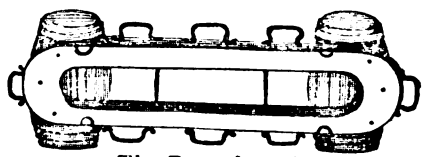
have become very general in merchant-ships, and also in some of the brigs.

LIFE-BUOYS.—The life-buoy that was in general use during the late war was a very simple contrivance, being two flattened breakers, or small casks, connected together by means of *longitudinal* pieces of wood; some having cross-pieces, and others a third bar. This is susceptible of improvement. Let the cross-bars be made of iron, with a sweep or semicircle in the centre, and a transverse bar on each side; here a man could sit, and retain his position with more ease than by holding on, or striding the wooden bars. The iron may be made to encircle the breakers, instead of passing through them.



The Breaker-buoy.

The annexed form for a buoy would be useful when two or more men fall overboard: an oblong square frame of wood, rounded at the angles, with a seat at each extreme, to be fixed on two flattened breakers, three iron handles on each side, and one at each extreme. Ten men might thus be sustained in this manner, until picked up by a boat.



*The Dray-buoy.**

Another good shape for a life-buoy is that of the mameluke saddle, but with a belly, instead of being hollowed out; this may be made of a solid piece of light wood, (or indeed entirely of cork,) with lead introduced into the lower or keel part, to poise it when in the water. The bight of a rope through, or round the neck, with a clove hitch, for the person who strides it to hold on by; and it would steady him, if he were to pass the bight over his back, holding on by the rope on each side. Two or three beckets, or perhaps mats would be better, may be nailed on each side of the saddle, to rest the feet upon.

To convert it into a night life-buoy,† all that would be necessary would be to hang a lantern, with a good light in it, to the beak, by means of a swivel-hook; but the lantern should be provided with a

* A dray is a sort of sledge.

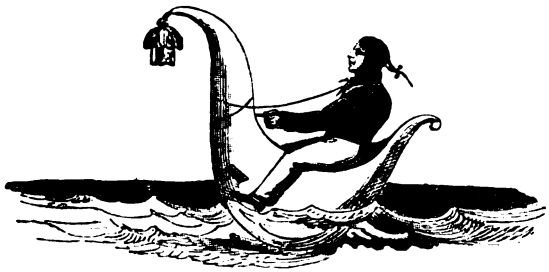
† The life-boat of 1790 (Mr. Greathead's) is too large and heavy for ship-board. Others have been invented since: such are, Lieut. Cowley's, Lieut. Thrackstone's, (of cork,) Mr. Plenty's, (of cork,) Admiral Hunter's, Captain H. Gordon's, Captain G. Bray, &c.

Lieuts. T. Cook and W. Rodger have invented life-rafts, and the night life-buoy of the former is said to be the best which has been constructed.

The "Cliff Waggon," invented by Mr. James Davison, master mariner, for communicating with shipwrecked persons who may have reached the rocks beneath a cliff, is simple, and effective for the purpose designed.

hood, so as to throw off the water and spray, and prevent the light from being extinguished.

The form would insure its not upsetting!



*The Saddle-buoy.**

In the absence of any of the life-preservers, gratings, hen-coops, spars, and other floating bodies, are thrown overboard, for the aid of the man in the water, until the boat can be lowered, to go to his relief; but it sometimes happens that an unfortunate sailor falls into the sea during a storm, when the common ship's boat is unequal to contend with the raging "billows;" at which time, if the vessel is unprovided with a life-boat, the most efficient life-buoy would only tend to prolong the life of the unhappy sufferer for a few hours.

(To be continued.)

VII.—Land and Sea Rates of Chronometers.

To the Editor of the Nautical Magazine.

Sir—I have always been a great admirer of the neatness and correctness of the tabulated matter in your valuable journal, and, as errors will at all times more or less exist, it is but fair that you should bear the blame only of those which may unfortunately fall to your lot. My present reason for addressing you, is to call your attention to an article in Silliman's Journal, vol. xxvi. page 121, for April, 1834, entitled "Sea and Land Rates of Chronometers, by Parkinson and Frodsham," and said to be an extract from the Nautical Magazine.

On examining the first table, I found certain algebraic signs, which rendered it wholly unintelligible to my comprehension. But, on comparing it with the article in your work, to my surprise,

* A cork buoy of this sort I think preferable for crossing rivers, than the South American mode, or inflated hide-bladders, or perhaps to the bark canoe of the North American. It may be propelled with a paddle.

I found that it is not a correct copy; and, on a further examination, I observe that the letter addressed to Professor Silliman, by Messrs. P. and F., requesting the publication of that article in his journal, and which letter he has printed with it, is dated Dec. 20, 1833, while the paper in question did not appear in your Magazine until January, 1834. As it is not a copy of the paper in your work, the errors must be attributed either to Messrs. P. and F. or to Professor Silliman.

Having drawn your attention to this part of the paper, I must beg your further assistance in the subject. Having long been a great admirer of those valuable machines, chronometers, and having had them from the most celebrated makers, and being tolerably well acquainted with the state of perfection to which they have arrived in this country, I have endeavoured in vain to reconcile my mind to the table given by Messrs. Parkinson and Frodsham, to prove that their chronometers do not vary their rates when taken on ship-board. You are aware, Mr. Editor, that tables are frequently given to the public, without the means of determining their correctness, and consequently their value. Now, as the results only are given by Messrs. P. and F., and the annexed is a correct copy of two of the chronometers mentioned, and said to possess no variation of rate, I was led to compare them with Mr. Bond's table, and I forward you a copy of both for your further notice:—

Messrs. P. and F.'s Statement.

No. of Chronometer.	Difference of Rate.	No. of Days at Sea
	s.	
1179	0 · 0	55
1100	0 · 0	55

Mr. Bond's table of the two chronometers, the above being the result only, stands thus:—

Maker's Name, and Number.	Year.	Previous Shore Rate. + or −	Rate on Ship-board. + or −	Subsequent Shore Rate. + or −	Excess of Gain or Loss on Ship-board.	Number of Days on Ship-board.	General Remarks.
		s.	s.	s.	s.		
Parkinson & Frodsham 1179	1828	−2·0	+0·9	+3·7	0·0	55	Assorted Cargo.
.. 1100	..	+3·0	+4·3	+5·5	0·0	55	

Now, it appears on first view of the tables, that Messrs. P. and F. have only given the columns containing the results, and suppressed the remaining columns; and as the result is "0ˢ,0," and as 0ˢ,0 means no variation, I shall be obliged by your looking at Mr. Bond's table, and informing your readers if there would have

been any error in longitude given by the chronometers, as the rate given on shore was $2^s,0$, and the rate shewn in fifty-five days to be $+0^s,9$ at sea; also, what the subsequent rate of $+3^s,7$ can in any way have to do with the question? Really, Mr. Editor, if you can explain these "$0^s\,0$," arising from such formulas, you will clear up a point at present perplexing many of your well-wishers, and particularly your humble servant,

A CONSTANT READER.

Our correspondent's letter calls for some explanation from us on this subject, and, in justice to ourselves, as well as to Professor Silliman, much as we may regret having to say some "ungracious things," we are bound to give it to him.

First, then, with regard to the article on "the Sea and Land Rates of Chronometers" in Professor Silliman's Journal, said to be "republished from the Nautical Magazine." Perhaps, before now, the worthy Professor has found that he has been so far imposed on, as, that the article in question is not a "republication" from our work. We have compared the two articles together, that in Silliman's Journal, and that in the Nautical Magazine, of which the former professes to be a copy, and pronounce it to be *not* a "republication" of the latter. Moreover, as it has gone forth to the world in a foreign channel, replete with blunders, sufficient to impeach our *academical* knowledge, and as those blunders will of course be set down to our share, we must, in duty to ourselves, endeavour to account for them to our readers. This may not be difficult to do, when we inform them, that shortly after the paper in question went to our printer, *an unread proof of it was obtained without the knowledge (much less the consent) of the Editor of this journal.* This proof appears to have been forwarded to Professor Silliman, with the following letter, which the Professor has thought fit to print with it, (and for which Messrs. Parkinson and Frodsham are no doubt very much obliged to him, as it evinces a desire to meet their wishes to the utmost,) and he has prefixed to it the notice, "Republished in this journal by request."

"4, *'Change Alley, London, Dec.* 20, 1833.

"TO PROFESSOR SILLIMAN.

"*Dear Sir*—We respectfully take leave to enclose you a paper, entitled 'Land and Sea Rates of Chronometers,' which we have thought it necessary to publish, in answer to a paper which appeared in a periodical entitled Nautical Magazine, and contained, to our ideas, very erroneous opinions.

"As it is a subject which we believe concerns every maritime nation, and none more than your own, we have to request that you will do us the favour of inserting it in your valuable scientific journal. Our object in wishing to give this paper the most extended circulation is, that we believe it might destroy the confidence of the nautical man in one of the most important inventions for the

benefit of navigation; and we are sure that many hundreds of your most intelligent navigators, from their experience, can bear witness that *our chronometers* are not subject to the change of sea and land rates, (which would render them useless for navigation,) as stated to exist in the chronometers of Messrs. Arnold and Dent.

"We remain, Sir, your very obedient servant,
"For Parkinson & Frodsham,
"JOHN FRODSHAM." *

Here, then, while we recognize the paper in question, we cannot but be amused at the *avowed* object of the author of the foregoing letter, in his anxiety to give the paper the most extended circulation, in order that "it might destroy the confidence of the nautical man in one of the most important inventions for the benefit of navigation"! This, perhaps, was not his object; but whatever it might have been, and that may be easily guessed, the paper was printed by Professor Silliman, and there it is, discreditable to the journal in which it stands, discreditable to the journal from which it professes to be copied, and wearing a title which is not borne out by facts. The worthy Professor, we are quite sure, will be more cautious another time; a sense of justice to all parties, we have no doubt, will induce him to explain to his readers the unintelligible expressions they will have found in it, (which, by-the-bye, were in the original MS.,) and that they are not what appeared in the Nautical Magazine; and, when next he quotes from this work, a measure which cannot be otherwise than gratifying to its Editor, he will at least take care to have it before him.

The circumstance of the date alluded to by our correspondent is now explained; but, to reply to his other queries, would lead us too far, as we should have to go into the question of the merits of the system laid down by Messrs. Parkinson and Frodsham, of determining the character of a chronometer. That must be left for further inquiry, and we shall only add here, that we take some degree of blame to ourselves for allowing such marks as ‴ to have appeared in our work without being explained. But, as they generally occupied the place of the tenths of seconds, we trusted to the good nature of our readers to take them as such, if they succeeded in discovering any thing in the whole paper worthy of their attention, or tending to improve them in their acquaintance with chronometers; a discovery which we tried in vain to make, but which we were induced to give them the opportunity of doing, in order that we might avoid the charge of partiality.

* The American Journal of Science and Arts, conducted by Benjamin Silliman, M.D. LL.D., vol. xxvi. No. 1, p. 121, April. For January, February, and March, 1834.

VIII.—Signal-Guns at Lighthouse Stations.

To the Editor of the Nautical Magazine.

Union, August 18, 1834.

Sir—Long ago I have remarked on the advantages which would result to navigation from having guns stationed at the principal lighthouses, to afford a means of determining distance by the measured interval on firing them, between the flash and report, and thus to enable the navigator to find his exact position on the chart.

Having on several occasions experienced the value of watching the night-gun of a ship or battery, when anxiously groping my way into port, and having lately had occasion to think more seriously on the subject, I am induced to offer the following suggestions, which may perhaps be deemed worthy of enlargement or consideration by some of the influential subscribers to your magazine.

If the leading lights in the mouth of the channel, or as far up as Portland and the Caskets, were furnished with guns or howitzers, and these fired at *fixed hours, to denote the name of the light* to which they belonged, the mind of the seaman on many an anxious occasion would be relieved. Such an advantage in thick weather, as that of knowing his position by the report of guns, must be evident to every commander; the *time* would clear up the doubt of their being those of a vessel, and the report would serve in some measure as a guide to their direction and distance. The following then may be taken as the advantages to be derived *directly* :—

First. The Captain of a vessel would be *certain* from the *time* the guns were fired, what light they belonged to, if barely, or for a moment visible.

Secondly. If the light should be just on the horizon, and in fact invisible to him, anxiously looking for it, the *flash* which would illuminate the arch of the horizon immediately above it, would remove his doubt, and denote the *direction* of the light *not yet visible.*

Thirdly. Captains of vessels anxious about the light, and doubtful of their reckoning, would take care that a strict look-out should be kept at the hours at which the guns of any of the lights (the soundings led them to suspect they were near) were about to be fired. (The times should be regulated to admit of two guns during the night.)

Fourthly. Having the light in sight, and knowing the gun will be fired at a certain moment, care would be taken to have a watch ready at the ear, to note the interval between their flash and report; by which means the distance would be known certainly within a quarter of a mile. If the watch be known to give five beats in two seconds, it is *preferable* to take the beats, (as the ear will divide

the beat into tenths;) otherwise seconds may be counted. Sound travels about 1142 feet per second, therefore, this distance multiplied by the seconds elapsed between flash and report, gives the distance in feet, which, divided by 6080, equals geographic miles.

If the beat be used, multiply 456,8 by the beats, and divide by 6080.

But it is simpler to divide the seconds by 5,32, and the result is the distance in miles.

The number of beats divided by 13,3 give miles also.

I trust it must be evident, that a trifling expense would relieve much anxiety to the master of a vessel ignorant of his situation; and when I consider, that in our American possessions guns are fired during *day and night* in foggy weather, as a warning to ships, I cannot imagine that expense will for a moment be thought of, when the mercantile interests of this country are to be benefited, independent of our ships-of-war.

If an officer happened to be stationed in the vicinity of the Lizard lighthouses, the *mean time* at nine might be given nightly to ships passing outward or homeward bound, and would probably be of more importance after the ship had buffeted the wave than on passing Greenwich.

Hoping you may find a more competent hand to pursue this subject,

Yours, &c.

EDWARD BELCHER, Commander, R.N.

MISCELLANEOUS INTELLIGENCE.

NARRATIVE OF A PASSAGE FROM BOMBAY TO ENGLAND, *describing the Author's Shipwreck in the Red Sea, Journeys across the Nubian Desert, &c. &c. By Capt. W. Bourchier, R.N.* Whittaker. London.

Our readers will be disappointed, if, under the foregoing title, they expect to find more than a "simple narrative." Indeed, the author freely tells us, that nothing was further from his intention than to make a book. We think, however, that, having set about it, he might have thrown reminiscences of the Desert among the notes of his journey across it, particularly about Suakin, and, by so doing, have made his little volume still more interesting to his readers than he has done already. The course from this island across the Desert to Berber, where the shipwrecked crew of the Nautilus landed, was new to European travellers, and their misfortune has added so much to our knowledge of its geography—a recommendation which this work will always possess. Narratives of shipwreck, where intrepidity and suffering are depicted in the bold colours of reality, are always interesting; the more so, as the style in which they are told is simple and unassuming; and it is impossible to read that before us without sympathizing with the author in the unfortunate and forlorn condition in which he was placed.

LIVES OF EMINENT ZOOLOGISTS, from Aristotle to Linnæus; with Introductory Remarks on the study of Nautical History, &c. by W. Mac Gillivray, A.M., F.R.S.E., &c. Oliver & Boyd.

This volume forms the 16th of the Edinburgh Cabinet Library, a work which has peculiar recommendations from the very able manner in which it has been conducted from its commencement. We recommend it to those of our readers who pursue the study to which it relates, as giving them in a condensed form the views and opinions of those men who have become eminent for their high attainments in it; besides which, it abounds in amusing anecdotes, illustrative of their times.

LIFE AND POEMS OF THE REV. GEORGE CRABBE. Vol. VIII. Murray.

The eighth and last volume of these poems has just appeared, containing the posthumous pieces of this "best painter of nature." We will not say that they are the *crown* of his former productions, but they assuredly exhibit many of the most striking and valuable characteristics of his genius, and will be found to reflect no dishonour upon the judgment of the editor in giving them to the world, influenced, as that judgment may be supposed to be, by filial affection and the implied wishes of his father.

This volume is truly enriched with a highly-finished and most expressive likeness of the author, engraved by Finden, after a painting by Phillips; and we must not close our eulogy of the poet, without congratulating his admirers, that such artists have been employed to perpetuate his features. There can be no question, that all the lovers of the Tales of Crabbe will feel an increased regard for him, after they have contemplated this very beautiful delineation of his countenance; so redolent of the benevolence, sterling sense, and good-natured wit, by which they are distinguished; and so worthy to be transmitted with them to the remotest posterity.

BRITISH CALENDAR OR ALMANAC for the Year 1835. Gilbert. London.

This appears to be the cheapest almanac we have yet seen, consisting of forty pages, and a plate of Halley's comet on steel.

TRIAL OF THE R. Y. S. BRIG WATERWITCH on the 5th Sept. 1832, off the Scilly Islands, with H.M. ships Vernon, Donegal, Castor, and Snake.

TRIAL OF THE R. Y. S. BRIG WATERWITCH on the 6th Sept. 1832, off the Scilly Islands, with H.M. ships Vernon, Castor, and Snake.

Two spirited little pictures in aquatint, by W. J. Huggins. The former represents the contending vessels under all their canvass, with the wind "right aft," as as ailor would call it; thelatter shews them close hauled, under double-reefed topsails, courses, and topgallant-sails. The favourite Waterwitch, as might be expected, is the prominent feature in the two pictures. They are both well done, and prove that the artist deserves the patronage of nautical men.

PEARCE'S PATENT REVOLVING SIGNAL LANTERN.—We have inspected this machine, and pronounce it to be worthy the attention of nautical men.

Iron Steam-Boats.—Verily if our forefathers could now rise from their graves, they would find a spirit of enterprize among some of our merchants unheard of in their dull times. Even the last ten years present a glorious retrospect for Great Britain. The master-mind of Canning had scarcely called the new states of South America into existence, when the capital of our merchants crowded their seas with the British flag, and almost peopled their seaports with British subjects. The splendid discovery of Richard Lander was scarcely known, when the paddles of British steam-boats startled the slumbering echoes of the Niger, that before had responded only the wail of the captive, or the imprecations of his tyrant master; and, though the bold attempt by the late expedition of the Quorra and Alburkha to establish a *legitimate* commerce with the interior of Africa, has for the present failed to bring a profitable return; short-sighted, indeed, must the man be, who does not see that the highway is at length opened for the regeneration of that mighty continent, and opened too by British merchants, unaided in the remotest degree by the Government of their country. Again, when we look to the East, what a prospect there presents itself to the merchant, the philanthropist, and the philosopher!—the proposed steam-communication by the Euphrates to Bombay, laying open the most interesting parts of the old world, and at the same time facilitating the intercourse with our Indian possessions in a manner which a few years ago would have been thought chimerical. The valuable discoveries which Captain Chesney has made, of the facilities to commerce afforded by nature on the banks of the Euphrates and Tigris, may yet raise a second Haroun al Raschid in Bagdad; while the equally splendid discoveries of Lieut. Burnes have declared to us the natural and impregnable frontier of our Indian empire. What hostile army could pass the Indus, opposed by a flotilla of iron steam-boats? It is impossible to contemplate the noble rivers of our immense Indian possessions, dividing them in every direction, like arteries in the human frame, carrying life and prosperity into their remotest parts, without seeing that the application of steam-power to their navigation must strengthen in an inconceivable degree that immediate control so necessary to our government of that extensive country. Well might the present enlightened Governor-General say, "For every steam-boat I get from England, I can afford to disband a regiment."

We have been led into the foregoing remarks, by noticing in the papers an account of the launch of an iron steam-boat in Liverpool, of 280 tons burden. Our readers well know the warm interest we take in this novel and peculiar description of vessels, and how anxiously we looked for the accounts of the Alburkha, on her extraordinary voyage to the Niger, as well as the gratification with which we announced her proved superiority over her wooden companion, the Quorra. The vessel we now allude to, and which we noticed also at page 180 of our twenty-fifth number, is the largest yet built entirely of iron, and combines in an eminent degree the qualities of a sea and river steamer. Her dimensions are as follows:—

Length on Deck	125 feet.
Beam	21·6 ..
Depth	10 ..

with a pair of engines of fifty-horse power each. She is intended to run between Limerick and Kilrush, and is confidently expected to be the fastest steamer afloat. This station is universally allowed to be a most severe one, the whole swell of the Atlantic breaking on the mouth of the Shannon. The vessel is named the Garry Owen, and we consider it the strongest proof of the acknowledged superiority of iron vessels, that such a station has been selected for her.

In consequence of the severe trials to which she will be exposed, the Garry Owen is built much stronger than any former vessels, having floorings of iron nine inches deep. Her deck and paddle-beams form the very masterpiece of workmanship, and have excited the highest admiration from many naval men. Her capacity is considerably more than that of other vessels of similar tonnage, and her draught of water less than two-thirds of that of a vessel built of wood, on the same model. Her accommodations are spacious and complete; and she is generally admitted to be the handsomest steam-boat yet launched at Liverpool. The builders, Messrs. Laird, are the same gentlemen who built and sent out the Alburkha, the first of these vessels that ever made a voyage to sea. By that voyage, made at their own expense, one of the most interesting experiments in naval science was tried, and we are happy to find completely succeeded.

Messrs. Laird have now a noble steam-boat, the Lady Lansdowne, of 240 tons, at work on Lough Derg; and another,* of 250 tons, carrying cotton on the rivers of Georgia; and in a few months they will have two carrying the blessings of peace, prosperity, and civilization to the remotest regions of Asia. They are also at present in treaty for one of 500 tons, intended to run from Liverpool to Dublin in eight hours. These progressive steps, in the gradual introduction of iron steam-boats, seem to verify the opinion we expressed long ago, that in a few years the whole Channel trade of the kingdom will be carried on in iron steam-boats.

EXPEDITION TO CENTRAL AFRICA.—Our readers are aware that an expedition has been lately planned at the Cape of Good Hope, for the purpose of extending our geographical knowledge into the vast and unknown regions to the northward of that settlement. The following extract of a letter just received from the Cape, announces its departure:—

"A general meeting was held last February, over which Sir Benjamin D'Urban, the Governor, presided. Most of the influential persons of the Cape district were present.

"The importance of the subject was strongly advocated by Mr. Justice Menzies; Mr. Oliphant, the Attorney-General; Colonel Wade; the late Acting-Governor; Dr. Burrow, and others. Fresh subscriptions were entered, by which the fund was increased to nearly £1,000. Still, this fell short of the estimated expense; but hopes were entertained of assistance from the Geographical Society of London, and other scientific bodies in England and India, to which application had been made.

"Several weeks elapsed without satisfactory intelligence, and the association was about to redouble its exertions, when a letter was received from Mr. J. M'Queen, of Scotland, containing, with less important matter, a donation of £300, under certain restrictions, the most prominent of which was, that his donation should not be available, unless £950 had been already subscribed.

"This handsome donation enabled the association to prepare for action without further delay.

"I undertook the charge of instructing Mr. Burrow, the son of the Rev. Dr. Burrow, in the use of the necessary astronomical instruments, chronometers, &c. Sir John Herschel lent his able advice on every occasion to the committee. Mr. Ford, an artist at the Cape, was engaged, and other arrangements were made for obtaining the best results from the expedition. The elephant-guns, beads, toys, &c., purchased in England, reached Table Bay in

* For an account of her dimensions, and those of the Alburkha, with a view of the latter, and a clear account of the advantages of these vessels, see vol. ii. p. 544, 604, 678, and also vol. iii. No. 25, p. 180, of the Nautical Magazine.

May. Boarding-pikes and divers articles were supplied from the garrison at Cape Town, as well as from private individuals; and the expedition obtained an accession of talent by the Governor granting leave of absence to Mr. Charles Bell, nephew of Colonel Bell, in order that he might join the party. This young man's extraordinary talents, added to his energetic courage, would secure, I am told, success to any undertaking he might embark in.

"The arrangements having been so far completed, the heavy stores were shipped for Algoa Bay, on board the brig Test, and sailed on the 26th of June; from Algoa Bay, to be conveyed by waggons to meet the expedition at Graaf Reynet, where they expect to be on the 15th instant. The expedition-waggons, with Mr. Ford, above mentioned, and a corporal of the 72d, started from Cape Town on the 7th of June, leaving Dr. Smith, Captain Edye, Mr. Burrows, and Mr. Charles Bell, to proceed afterwards.

"The following statement of the number of the expedition may not be uninteresting:—

"Dr. Andrew Smith, conductor of the expedition; Captain Edye, 98th regt. second conductor; B. Keft conducts the leading department; John Burrow, surveyor and astronomer; George Ford, draughtsman; Charles Bell, draughtsman, and fit for any thing; C. Hartwell, assistant in general capacity; J. Minteen, servant to Dr. Smith; two missionaries, sent out by the Missionary Society established at Berlin; three European soldiers, (one of the 72d, and two of the 98th regiment;) five Hottentots, of the Cape Mounted Rifle Corps; about twenty-two Hottentots, to be engaged at Graaf Reynet. Four waggons have been purchased, with ninety-six oxen; one with twenty-four oxen, belonging to Dr. Smith; and it is contemplated to buy one more, with twenty-four oxen.

"Fourteen of the Hottentots will be required as leaders and drivers of the oxen.

"Thus, the party will consist of about forty persons. The expense, exclusive of very considerable Government aid in fitting out, and exclusive of wages yet to be paid to Hottentot servants, may be estimated at £1,300.

"On the morning of the 3d of July, this expedition for exploring Central Africa, under the command of Dr. Smith, proceeded on its perilous undertaking.

"Dr. Smith took up his quarters at the Royal Observatory on the preceding night, and was joined the next morning at breakfast by Sir John and Lady Herschel, Baron Ludwig, Messrs. Edye, Bell, Burrow, and the gentlemen who accompany the party as far as Lattakoo.

"After packing up the astronomical instruments, they started in excellent spirits, making allowance for those feelings the occasion excited, where solicitude for the safe return of these enterprising men was mixed up with sincere friendship and esteem. Indeed, the history of all former expeditions to the interior of Africa prove how much hazard must be incurred, even where the greatest prudence and address are exercised. The present has been planned with much care, and, considering the talents of Dr. Smith, there is a strong hope that it will be crowned with success."

NAVAL ARCHITECTURE—*From the Naval and Military Gazette.*

SIR—May I, through your columns, call the attention of all those gentlemen who seek to represent that Captain Symonds's mode of ship-building is *far more expensive* than that of the *old school*, to the following facts, which I challenge them to *gainsay*; and I shall anxiously look for their explanation of the causes of this wonderful disparity. To those unacquainted with these matters,

it cannot but appear that there must have been *foul play* somewhere, when we find a sloop of war, of *fifty tons less* burthen than another, has cost the country *five thousand six hundred and thirty pounds more!* But I will let the facts speak for themselves:—

CAPTAIN SYMONDS'S SHIPS.			SHIPS OF THE OLD SCHOOL.		
Names.	*Tonnage.*	*Cost.*	*Names.*	*Tonnage.*	*Cost.*
Vernon.....	2,082	£47,370	Southampton..	1,476	£52,514
Vestal	913	19,174	Sapphire	606	19,644
Snake	434	5,237	Childers	385	8,510
Serpent.....	435	5,237	Cruizer	384	10,867
	3,864	£77,018		2,851	£91,535

Thus, we find that four vessels of the old school, of four thousand and thirteen tons *less tonnage*, cost *fourteen thousand five hundred and seventeen pounds more* than four ships of Captain Symonds's construction.

Truths like these must put down all misrepresentation, and eventually subdue the best-concerted opposition; and 'tis on such truths Captain Symonds may safely rely for establishing the correctness of his system, and the fallacy of the arguments of his enemies.

I would wish to ask the gentlemen of the *old school*, also, whether it is not correct that the *alterations* alone which were made in the Caledonia, cost nearly as much as the building of the Vernon and Vestal combined? and, further, that those pretended improvements have spoiled that once beautiful ship altogether, and rendered her infinitely more weak. Will these gentlemen be so good as to state under whose plan it was that this vast, and it has proved most unwise expense, was incurred?

September 1st, 1834. ÆQUUS.

POST OFFICE PACKETS.—Return of the names and descriptions of all the Packet Vessels that have been lost since the transfer of the Packet Establishment to the Admiralty, with the number of persons on board at the time of their leaving the last port, and the circumstances attending such loss, whether by foundering or otherwise, as far as the same may be known:—

CYNTHIA, a purchased packet, thirty-two persons on board, wrecked on the island of Barbadoes, on the 6th of June, 1827, by accident, in moderate weather. All on board saved.

HEARTY, packet brig, thirty-five persons on board, left Falmouth on the 12th of September, 1827, for Jamaica. Was heard of in the N.E. Trades, within a few days' sail of Barbadoes, but did not reach that island. Supposed to have been accidentally burned, the master being in the habit of reading in his bed.

REDPOLE, ditto, number of persons on board not known, left Rio Janeiro homeward bound, on the 10th of August, 1828, and was attacked and sunk off Cape Frio, by the Congress, a piratical vessel of 18 guns, belonging to Buenos Ayres, after an engagement of an hour and a quarter, as stated in a deposition made by one of the crew of the Congress.

ARIEL, ditto, thirty-four persons on board, left Falmouth on the 10th of Nov. 1828, for Halifax; was seen standing direct for Sable Island in December, by a trading schooner of Halifax, which had tacked in 10 fathoms water. Mr. Dulen, the master of the said schooner, endeavoured to warn her off,

without success, and she is supposed to have run on shore within two hours after.

MYRTLE, ditto, twenty-nine persons on board, wrecked on the coast of Nova Scotia, on the 3d of April, 1829, by accident, in moderate weather. All on board saved.

CALYPSO, ditto, number of persons on board not known, left Halifax on the 29th of January, 1833; was seen surrounded by icebergs, on the day after she sailed, by a fishing vessel, which could not approach her on account of the ice. She was evidently in distress, and firing guns for assistance.

THAIS, ditto, thirty-five persons on board, left Falmouth on the 12th of December, 1833, for Halifax, during the constant westerly gales which then prevailed; and, by a letter to Captain King, dated on the 24th, was then in lat. 50 deg., lon. 16 deg. 8 minutes, standing to the northward; wind to the westward and W.N.W. Her launch, part of the deck, and some other portions of the wreck, have been found on the north-west coast of Ireland.

COURTS MARTIAL.

THE CAMELEON.—A court-martial was commenced on the 6th of September, on board His Majesty's ship San Josef, on Captain Lord John Hay, and the officers and crew of His Majesty's ship Castor, for having run down His Majesty's cutter Cameleon, on the 27th of August, off Dover, the former vessel being on her passage from the Downs to Plymouth. The following was the report from Lord John Hay to the Secretary of the Admiralty, respecting this unfortunate event:—

"His Majesty's ship Castor, off Dover,
27th August, 1834.

"Sir,—It is my painful duty to report, for the information of the Lords Commissioners of the Admiralty, the total loss of the Cameleon revenue cutter, with the greater part of her crew, which vessel was most unfortunately run down by his Majesty's ship Castor, under my command, at 6-10 A.M. Dover Castle N.N.E.—off shore three miles.

"I shall abstain from entering into the circumstances which led to this unfortunate and melancholy event at present, conceiving that their Lordships will direct an investigation to take place thereon.

"I have the honour to enclose a list of the officers and crew of the Cameleon at the time the melancholy accident occurred.

"I shall proceed in His Majesty's ship Castor, under my command, without delay, to Plymouth, in execution of their Lordship's orders.

"I have the honour to be, Sir,
"Your most obedient humble servant,
(Signed) "JOHN HAY, Captain."

Names of the officers and crew of His Majesty's revenue cutter Cameleon —distinguishing those that were most unfortunately drowned from those that were saved:—

Names of Persons Saved. — William Gibson, Gunner; Thomas Newman, Ab.; Charles Yates, Boy; George Drew, Boy.

Names of Persons Drowned.—John Pratten, Lieutenant; Mr. Carthew, Mate; William Godfrey, Boatswain; James Arnold, Ab.; John Holbrook, Ab.; Charles Kingsford, Ab; Henry Coleman, Ab.; Edward Boddin, Ab.; William Dicks, Ord.; Daniel Ovenden, Boy; George Tarrill, Boy; Daniel Ford, Boy; George Ward, Boy.

(Signed) JOHN HAY, Captain.

To the Hon. Capt. G. Elliot, C.B.
Secretary, Admiralty.

The Court was composed of the following officers: Captain Superintendant Charles Ross, R.N. C.B. as President; Capts. Sir W. A. Montague, G. T. Falcon, N. Lockyer, C.B. and Captain F. W. Pennell, and delivered the following sentence:—

"The Court having heard the evidence of the surviving crew of the Cameleon, and other evidence touching her loss, as well as what had been offered by the pri-

soners in their defence, having very maturely and deliberately weighed and considered the same, is of opinion, that the loss of the Cameleon, on the 27th day of August, 1834, whereby her commander and twelve of her crew were drowned, was occasioned by her being run down by his Majesty's ship Castor, and that this melancholy event would not have happened, if a proper look-out had been kept at the time on board the Castor. The Court is further of opinion, that it was the especial duty of Lieutenant James Johnstone Mc Claverty, as officer of the watch, to have kept such look-out, which duty he neglected; and the Court is further of opinion, that blame is not imputable to Captain the Honourable Lord John Hay, or to any other of his officers or ship's company, (except the said James Johnstone Mc Claverty,) for their conduct upon the occasion of the loss of the said cutter. The Court do therefore adjudge the said Lieutenant James Johnstone Mc Claverty to be dismissed his Majesty's service, and the said Captain the Right Hon. Lord John Hay, his officers, and ship's company, (except the said Lieut. James Johnstone Mc Claverty,) to be severally and respectively acquitted."

We regret much that our limits will not allow us room to give the particulars of this court-martial, more especially the defence of Lieut. Mc Claverty; but we must find room for the following judicious observations on it from a Plymouth paper, where the court-martial took place :—

"First, then, it appears to us, that blame is attached equally to the officers and crew of both vessels; inasmuch as each saw the other in sufficient time to avoid collision. Had the knowledge of their relative positions been followed up, a far different result might have been expected. But each seeing the other under way, the cutter having her sails spread to a good breeze, was apparently crossing the path of the frigate; but by her foresail being to windward, (unobserved by the frigate,) she became stationary. Hence the officer of the watch concluded, from her distance ahead, and the course she was apparently steering, that the cutter would be out of his way in sufficient time, and so thought no more of her. On the part of the cutter, it was expected that the frigate would get out of *her* way, from the knowledge of the good look-out generally kept on board of men-of-war, and from the ship's sailing free, hence so very capable of avoiding them; they, therefore took no further notice, until it was too late. Again, this accident did not arise out of any supineness with regard to their relative positions, but an undue reliance by each upon the conduct of the other; and, by directing the attention of their respective crews to the fulfilment of the internal duties of their vessels, external objects were for the moment lost sight of, and the lamentable result was the consequence.

"So then we cannot possibly exonerate the crew of the Cameleon from blame; for it does appear to us, that laying a small vessel to, so as to lose all command of her, *in the track of ships passing up and down Channel*, was exceedingly imprudent; and we find by the evidence, that if an attempt had been made to get the cutter under command when first the frigate was seen standing *directly towards them* instead of when it was too late, the melancholy and unfortunate accident would not have happened!

"Such an accident, under like circumstances, perhaps never occurred before, and may never happen again. And when we consider that our ships of war, when at sea, are not called upon to be so anxious as in time of war for the sight of a strange sail, therefore we may conclude that the letter of the law, for a man to be *continually* at the mast head, was somewhat relaxed, but more especially when so near the land, and the only vessels near them were small craft, such as sloops, cutters, and fishing boats, whose undoubted duty it was to get out of the way, and not keep directly in that of another vessel, confessedly very much larger. Into this then we conceive the cause of the accident resolves itself,

rather;—and we feel bold in stating it—than the fine fellow on whom the sentence of the court-martial has fallen so heavily, and who is spoken of by all who know him in the highest possible manner, both as a smart, active officer, and as a gentleman; nay, bets were even offered freely by many naval gentlemen, that the watch in which the accident occurred was not Lieut. Mc'Cleverty's. And we, in common with them, regret that justice could not be satisfied with a less sacrifice."

A court-martial has been lately held on board the Victory, (of which Rear Admiral Sir F. L. Maitland, K.C.B., was President) to try Mr. Alexander Lawrence, Surgeon, of H. M. brig Buzzard, for having been guilty of acts of drunkenness, between the time of his joining the brig and the 11th inst. The Court having heard the witnesses for the prosecution, and what the prisoner stated in his defence, was of opinion—"That the charge against the prisoner had been proved; but it appearing that whilst in practice on shore, he had received a severe hurt on the head, which was followed by fits of epilepsy, and injury to his intellect, they were induced only to sentence him to be dismissed from the brig, and to have his name placed at the bottom of the list of surgeons of the navy, upon which list he is never to rise."

The following Midshipmen have recently passed their examination at the college (*c*); and in seamanship (*s*):—

T. J. R. Barrow, *s. c.*; E. K. Barnard, *c.*; L. P. Burrell, *s.*; J. S. Bradley, *c.*; A. M. Bingham, *c.*; A. B. Christie, *s.*; L. Christie, *c.*; H. B. Davis, *s. c.*; A.W. Denmark, *c.*; W. M.W. Douglas, *c.*; D. P. Dumaresq,*c.*; A.DeBurgh,*c.*; Effendi Fiezullo, *c.*; B. Fox, *c.*; J. C. S. Field, *c.*; W. A. Fellows, *c.*; J. A. Hodgkin, *c.*; F. W. C. Heikey, *c.*; F. Holland, *c.*; E. H. Kennet, *c.*; E. Little, *c.*; E.M. Leycester, *s. c.*; C.C. Otway, *s. c.*; H. Probyn, *c. s.*; B. Priest, *c.*; E. F. Roberts, *c.*; R. D. Stupart, *c.*; M. R. Scott, *c.*; G. St.Vincent, *s.*; E. S. Southeby, *c.*; G. W. Smith, *c.*; W. S. Sanders, *c.*; A. S. Woodley, *s. c.*; A. Watson, *c.*; A. Young, *s. c.*; B. Young, *c.*

Orphan Children of Lieutenant Butcher.—We have received the sum of One Pound from Mr. H. W. Roe, of H.M. customs at Hull, in addition to the former subscriptions advertised.

Sponge Fishery.—In the bottom of the sea which washes the shores of the Cyclades, the common sponge is found in abundance, and proves the principal source of wealth whence the inhabitants derive their maintenance, trafficking it with the Turks, among whom it is in great request for cleansing their baths. Sponge-diving is consequently the principal employment of the population of the Cyclades; and it is said no young man can marry till he can descend with facility to a depth of twenty fathoms. The sea is at all times extremely clear, and the experienced divers are capable of distinguishing from the surface the points to which the animal has attached itself below, when an unpractised eye could but dimly discern the bottom. Each boat is furnished with a large stone, attached to a rope, which the diver seizes in his hands, on plunging head foremost from the stern, in order to increase the velocity of his descent through the water; thereby saving an expenditure of breath, as well as to expedite his ascent, being hauled up quickly by his companions when exhausted at the bottom. I have seen but one man who could remain below more than about two minutes, and the process of detaching the sponge was of course very tedious; three, and sometimes four divers descending successively, to secure a peculiarly fine specimen.—*Emerson's Letters from the Ægean.*

NAVAL REGISTER.

COMMISSIONERS *for executing the Office of* LORD HIGH ADMIRAL *of the United Kingdom of Great Britain and Ireland.*

The Right Honourable George *Baron* Auckland.
George Heneage Lawrence Dundas, C.B., *Rear-Admiral of the Blue.*
Sir William Parker, Knt., C.B, *R. Admiral of the Blue.*
Sir Samuel John Brooke Pechell, Bart., K.C.H., C.B., *Captain, R.N.*
Henry Labouchere, Esq.
Maurice Frederick Fitzhardinge Berkeley, Esq., *Captain, R.N.*

THE ROYAL NAVY IN COMMISSION—SEPTEMBER 21ST, 1834.

Flag-Ships.		*Stations.*
CALEDONIA,	120	Mediterranean.
HASTINGS -	74	Tagus.
ISIS - -	50	Cape, and Africa.
MELVILLE -	74	East Indies.
OCEAN - -	80	Nore.
PRESIDENT-	50	N.America&W.Indies.
SAN JOSEF -	110	Plymouth.
SPARTIATE-	74	South America.
THALIA - -	46	Cape, and Africa.
VICTORY- -	104	Portsmouth.
WINCHESTER	52	East Indies.

ALFRED, 50—Capt. ——, Sheerness.

ALGERINE, 10 — Lieut. Com. G. Stovin, 30th Aug. arrived at Plymouth; 6th Sept. sailed for the Cape. We understand her rigging is experimental, being made altogether of New Zealand hemp.

ALLIGATOR, 28—Captain G. R. Lambert, 9th March arrived at the Bay of Islands; 22d sailed for Wangaroa.

ANDROMACHE, 28—Capt. H. D. Chads, C.B. 6th May arrived at the Cape from Rio, on her way to Canton, with Lord Napier and suite.

ARACHNE, 18—Com. J. Burney, 29th June left Port Royal, Jamaica, for Carthagena.

ASTREA, 8—Capt. A. King, Falmouth, superintendent of Foreign Packets.

ATHOL, *Troop Ship*—Mr. A. Karley, Aug. arrived at Woolwich.

BELVIDERA, 42 — Capt. C. B. Strong, 23d July arrived at St. Kitt's. Sailed 24th.

BLONDE 46 — Capt. F. Mason, C.B., 9th June arrived at Rio; 25th sailed for Pacific.

BRISK, 3—Lt.Com. J.Thompson, Gold Coast.

BRITANNIA, 120—Captain P. Rainier, 25th June and 9th Aug. at Vourla; 20th July off Myteline; 7th Aug. at Malta.

BRITOMART, 10 — Lieut. W. H. Quin, 6th June at the Gambia, about to sail for Sierra Leone.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, Master, 10th Nov. left Sydney for New Zealand, having touched at King George Sound in Sept. previously.

BUZZARD, 10—Lieut. Com. W. C. Burbidge, 4th Sept. sailed for Coast of Africa.

CALEDONIA, 120—Flag of Vice-Adm. Sir Josias Rowley, Bart., G.C.B., appointed 18th Dec. 1833—Captain T. Brown, 23d Aug. at Vourla.

CANOPUS, 84 — Hon. J. Percy, 9th Aug. at Vourla.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 30th Aug. arrived at Plymouth; 15th Sept. sailed for north coast of Spain.

CEYLON, 2—Lieut. J. G. M'Kenzie, Malta.

CHALLENGER, 28—Capt. M. Seymour, 10th May arrived at Valparaiso, from Islay; 13th sailed for Callao.

CHAMPION, 18—Com. Hon. A. Duncombe, 25th Aug. arrived at Plymouth, from Mediterranean. Moved into harbour.

CHARYBDIS, 3 — Lieut. Com. S. Mercer, 15th April at Sierra Leone. The brig Charybdis, Lieut. S. Mercer (of Deal) commander, on the 14th of June last, in lat. 5° 21′ N. and long. 3° 20′ E., in the Bight of Benin, fell in with, and captured, after a chase from daylight until 4 o'clock, P.M., and after firing fourteen rounds of grape and canister, a large brig, called the Tamega, under Portuguese colours, with 444 slaves on board, with which she proceeded to Sierra Leone for condemnation.

CHILDERS, 16—Com. Hon. H. Keppel, 12th Aug. passed Gibraltar for Malta; 28th arr. at Malta.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

COCKBURN, 1 — Lieut. Com. C. Holbrook, Lake Ontario.

COLUMBINE, 18 — Com. T. Henderson, 6th Sept. arrived at Plymouth from Sheerness; 11th sailed for Lisbon.

COMUS, 18—Com. W. P. Hamilton, 15th July left Conception Bay, Newfoundland, for the northward, to touch at Baccalieu, for the purpose of ascertaining some particulars respecting the wreck of an unknown brig.

CONWAY, 28—Capt. H. Eden, 12th May arr. at Valparaiso, from Rio; 18th remained.

CRUIZER, 18—Com. James M'Causland, 18th July arrived at Jamaica, from Bermuda.

CURAÇOA, 26—Capt. D. Dunn, ordered home. 12th April at Madras.

DISPATCH, 18—Com. G. Daniell, 30th June at Bermuda. Left Barbadoes 12th.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. Rt. Hon. Lord J. Townshend, ordered home. 10th May at Valparaiso; 8th Sept. arrived at Spithead, from Rio Janeiro; 11th sailed for Plymouth; 13th arrived at Plymouth. Moved into Hamoaze, to pay off.

EDINBURGH, 74—Capt. James R. Dacres, 9th Aug. at Vourla.

ENDYMION, 50—Capt. Sir Samuel Roberts, C.B., 9th Aug. at Vourla.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, Bight of Benin. The Fair Rosamond has captured, off the Old Calabar river, the slave-schooner La Pontica, with 317 slaves on board. Forty of this cargo of our fellow-creatures died on the passage up to Sierra Leone.

FAVORITE, 18—Com. G. R. Mundy, 6th July at Smyrna; 7th sailed.

FIREFLY, 2 — Lieutenant J. M'Donnel, 19th March arrived at Jamaica, from Honduras. The Firefly captured, on the 25th of May, after two days' chase, the Portuguese schooner Despiche, with 215 slaves on board, which arrived at the Havannah on the 31st of May, in charge of Mr. Henry M. Lockyer, mate of the Firefly, and was to proceed on the 3d of June to Nassau, to land the cargo of human beings, and then to proceed with the vessel to the Coast of Africa, for condemnation.

FLY, 10—Com. P. M'Quhae, 13th July arr. at Jamaica from Carthagena.

FORESTER—Lieut. G. G. Miall, 15th May left the Cape for Ascension.

FORTE, 44 — Captain W. O. Pell, 1st July at Port Royal, Jamaica.

GANNET, 18 — Commander J. B. Maxwell, 22d July at Bermuda.

GRIFFON, 3 — Lieut. J. E. Parlby, in the Bight of Benin.

HARRIER, 18—Com. S. L. H. Vassal, 27th March left Singapore for Malacca.

HASTINGS, 74—Flag of Rear-Admiral W. H. Gage, appointed 9th April, 1834—Capt. H. Shiffner, 25th Aug. in the Tagus.

HORNET, 6—Lieut. Com. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, 2d April arrived at Madras from Trincomalee; 6th sailed on a cruize.

IMOGENE, 18—Capt. Hart, (*act.*) 29th March arrived at Bombay from Zanzibar.

ISIS, 50—Flag of Rear-Admiral F. Warren, appointed 5th Aug. 1831—Capt. J. Polkinghorne, 29th May at the Cape, from Ascension: arrived there 4th May.

JASEUR, 18—Com. J. Hackett, 10th July at Gibraltar.

JUPITER, *Troop Ship* — Mr. R. Easto, 7th Sept. sailed for Dublin.

LARNE, 18—Com. W. S. Smith, 7th July arr. at Jamaica from Havana.

LEVERET—Lieut. Com. G. Traill, 15th April St. Ubes.

LYNX, 10—Lieut. Com. H. V. Huntley, Gold Coast.

MADAGASCAR, 46 — Capt. E. Lyons, C.B, 26th Aug. at Nauplia. Ordered home.

MAGICIENNE, 24—Capt. J. H. Plumridge, ordered home. 5th April sailed from Bombay for African coast.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

MALABAR, 74—Capt. Sir W. A. Montagu, K.C.H. Hamoaze, fitting. 18th Sept. nearly ready for sea; she is taking on board the remainder of the mast spars, the former part having been taken by the Portland frigate, which we duly noticed at the time. We understand, that, on the Malabar's arriving in the Tagus, she will trans-ship these spars to the Revenge, 74, Captain W. Elliott, C.B., which ship will take them on to Malta.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., appointed 16th Dec. 1831—Capt. H. Hart, 12th April at Madras.

PORTSMOUTH, *Yacht*—Lieut. Com. J. Maitland, Portsmouth.

NIMBLE, 5 — Lieut. C. Bolton, 18th Jan. arr. at Jamaica, from Nassau.

NIMROD, 20 — Com. J. Mc. Dougal, 25th Aug. in the Tagus.

NORTH STAR, 28 — Capt. O. V. Harcourt, 27th July sailed for Rio Janeiro, with H. Hamilton, Esq., Minister Plen. at Buenos Ayres, and P. Scarlett, Esq., for Rio Janeiro. Left Madeira 14th Aug.

OCEAN, 80—Flag of Vice-Admiral the Hon. C. E. Fleeming, Capt. A. Ellice; Sheerness.

ORESTES, 18—Com. H. J. Codrington, 7th Sept. sailed from Portsmouth, and 12th Sept. left Plymouth for the Mediterranean.

PEARL, 20—Com. R. Gordon, 7th July arr. at Jamaica from Havana.

PELORUS, 18—Com. R. Meredith, 2d April at Prince's Island.

PICKLE, 5—Lieut. Com. A. G. Bulman, 19th March arrived at Jamaica.

PINCHER, 5—Tender to flag-ship, 22d May at Bermuda; 13th June sailed from Barbadoes.

PIQUE, 36—Capt. the Hon. H. J. Rous, Hamoaze, fitting.

PORTLAND, 52—Captain D. Price, Plymouth, fitting. 11th Aug. moved into the Sound; 20th sailed for Mediterranean.

PRESIDENT, 52—Flag of Vice-Admiral Sir G. Cockburn, G.C.B., appointed 6th Dec. 1832—Capt. M. Sweney, 14th July at Halifax. Arrived 10th from Bermuda.

PRINCE REGENT *Yacht*—Capt. G. Tobin, C.B. Deptford.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. 20th June at Bermuda.

RACER, 16—Com. J. Hope, 29th June left Jamaica on a cruize.

RAINBOW, 28—Capt. Thomas Bennet, 22d July arrived at Barbadoes.

RALEIGH, 16—Com. M. Quin, Sheerness, fitting.

RAPID, 10 — Lieut. Com. F. Patten, July at the Falkland Islands.

REVENGE, 78 — Capt. W. Elliott, C.B., 2d 25th Aug. in the Tagus.

RINGDOVE, 16 — Com. W. F. Lapidge, 14th Aug. left Lisbon for the north coast of Spain.

ROLLA, 10—Lieut. Com. F. H. H. Glasse, 19th Aug. sailed for coast of Scotland, to protect the fisheries.

ROMNEY, *Troop Ship*—Mr. James Wood, 14th Sept. returned to Portsmouth from Leith, with the 68th regiment; sailed with detachments of other regiments on 19th, for Gibraltar, touching at Lisbon and Cadiz.

ROSE, 18 — Com. W. Barrow, 30th Aug. touched at Madeira, on her way to the East Indies.

ROVER, 18 — Com. Sir G. Young, Bart., 21st Aug. left Malta for England; 17th Sept. arrived at Plymouth.

ROYAL GEORGE *Yacht*—Capt. Right Hon.

Lord A. Fitzclarence, G.C.H., Wednesday 27th Aug. returned to Portsmouth from Woolwich.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

SAMARANG, 28 — Captain C. H. Paget, April at Guayaquil; 24th May left Callao for Valparaiso. To leave the Pacific in Oct.

SAN JOSEF, 110—Flag of Admiral Sir W. Hargood, G.C.B., G.C.H., appointed 27th April, 1833—Capt. G. T. Falcon, Hamoaze.

SARACEN, 10—Lieut. Com. T. P. Le Hardy, 5th June arrived at Lisbon from Cadiz.

SATELLITE, 18 — Com. R. Smart, ordered home: 25th July at Rio Janeiro. The Portuguese schooner Duqueza di Braganza, was captured near St. Sebastian's on the 16th of June, by the Satellite, Capt. Smart, with 577 slaves on board.

SAVAGE, 10 — Lieut. R. Loney, 23d July sailed for the North American station, to touch at Salem.

SCORPION, 10—Lieut. Com. N. Robilliard, see Packets.

SCOUT, 18 — Com. W. Holt, 26th Aug. left Malta for England.

SEAFLOWER, *Cutter*, 4—Lt. Com. J. Morgan, 6th Sept. sailed for Jersey, to protect the oyster fishery.

SEAGULL, 6—Lieut. Com. W. Parsons, Sheerness, fitting.

SERPENT, 16—Com. J. C. Symonds, 3d July sailed from Barbadoes for Trinidad.

SKIPJACK, 5—Lieut. Com. W. H. Willes, (*act.*) Bahamas.

SNAKE, 16—Com. W. Robertson, 8th July sailed from Rio for Bahia.

SPARROWHAWK, 18—Com. C. Pearson, 8th July left Rio for the Falkland Islands.

SPARTIATE, 76—Captain R. Tait, 25th July at Rio Janeiro.

SPEEDWELL, 5 — Lieut. Crooke, 20th Oct. at Rio.

SPEEDY, *Cutter*—Lieut. C. H. Norrington, Portsmouth station.

STAG, 46—Capt. N. Lockyer, C.B., 19th Sept. returned to Plymouth Sound.

SWAN, 10—Lieut. J. E. Lane, at Sheerness May.

TALAVERA, 74—Capt. E. Chetham, C.B., 22d July at Vourla.

TALBOT, 28—Capt. F. W. Pennell, Hamoaze, fitting. Rear-Admiral Sir G. E. Hammond, K.C.B., the newly-appointed Commander-in-Chief in South America, it is understood will take his passage out in the Talbot, 28, Capt. Pennell, fitting at Plymouth, and on his arrival at Rio, hoist his flag on board the Spartiate, 78.

THALIA, 46 — Capt. R. Wauchope, flag of Rear-Admiral P. Campbell, C.B., 4th Sept. arrived at Portsmouth; 10th Sept. sailed for the coast of Africa.

THUNDERER, 84—Capt. W. F. Wise, C.B., 25th June and 25th July at Vourla. The squadron have tried their rate of sailing with a United States' frigate, on a wind, in which they were all beaten hollow. The Thunderer proved next best, and then Endymion, Talavera, Edinburgh, and Canopus.

TRIBUNE, 24—Capt. J. Tomkinson, 13th Sept. arrived at Portsmouth, from Chatham; 14th sailed for the Mediterranean.

TRINCULO, 18—Com. Warren, (*act.*) 4th May arrived at the Cape, from Ascension; 29th lying there.

TWEED, 20 — Com. A. Bertram, ordered home; 2d June at Jamaica.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, C.B., Aug. at Alexandria.

TYRIAN, 10—Lieut. Com. E. Jennings, Plymouth, fitting.

VERNON, 50 — Capt. M'Kerlie, Sheerness, fitting.

VESTAL, 26 — Capt. W. Jones, 11th July sailed from Halifax; 21st arrived at Quebec.

VICTOR, 18—Com. R. Russell, June sailed from Pictou, in the Gulf of St. Lawrence, on a cruize.

VICTORY, 104—Flag of Admiral Sir T. Williams, G.C.B., appointed 23d Jan. 1833—Captain R. Williams, Portsmouth.

VIPER, 6—Lieut. L. A. Robinson, 12th July in the Tagus.

VOLAGE, 28 — Capt. G. B. Martin, C. B., 3d July and 1st Aug. at Corfu.

WASP, 18—Com. J. S. Foreman, 20th May arrived at Barbadoes, from Bermuda; 27th July at Barbadoes.

WILLIAM AND MARY, *Yacht*—Captain S. Warren, C.B., Woolwich.

WINCHESTER, 52—Capt. E. Sparshott, K.H. Chatham, flag of Rear-Adm. Hon. Sir T. B. Capel, K.C.B.

WOLF, 18 — Com. E. Stanley, Plymouth, fitting: 25th June undocked.

ZEBRA, 16—Com. R. C. M'Crea, 16th Sept. arrived at Sheerness from Chatham, on her way to Portsmouth.

STEAM VESSELS.

ALBAN — Lieut. A. Kennedy, 23d arrived at Woolwich from Demerara. The Albion left Demerara on the 3d ult., making the passage in fifty-one days, seven of which only she had her steam up. During the eighteen months she was on the station she lost only one man, (the chief engineer,) who died after two days' illness.

BLAZER—Chatham.

COLUMBIA—Woolwich.

CARRON—Lieut. Com. J. S. Duffil, 29th Aug. arrived at Malta from Vourla, having conveyed Sir Robert Inglis, M.P., to the squadron there. His visit is understood to be connected with the arrangements in progress for the steam communication with India.

COMET—Woolwich.

CONFIANCE, 2—Lieut. Com. J. M. Waugh. See Packets.

DEE, 4—Com. W. Ramsay, 6th Sept. sailed for West India station, to relieve the Rhadamanthus.

FIREBRAND — Mr. J. Allen, returned to Woolwich, having attended the Rt. Hon. the Lords Commissioners of the Admiralty on their visit to the various dockyards, Portsmouth, Plymouth, Milford, &c.

FLAMER, 6—Lieut. Com. C. W. G. Griffin, 27th Aug. arrived at Woolwich, from Falmouth.

LIGHTNING—Mr. T. Allen, 24th Aug. passed the Nore, with H.R.H. the Duke of Cumberland, for Hamburgh.

MEDEA, 6—Com. H. T. Austen, Portsmouth.

MESSENGER, 1—Com. Mr. J. King, Channel Station: running between Thames, Portsmouth and Plymouth, and Milford.
METEOR—Woolwich.
PHŒNIX—Com. R. Oliver, 29th Aug. left Woolwich.
PLUTO—Lieut. T. R. Sulivan, ordered home: 2d April at Prince's Island, Coast of Africa; 24th on her way to Ascension.
RHADAMANTHUS — Commander G. Evans, 1st July at Port Royal, Jamaica.
SALAMANDER — Commander W. L. Castle. Woolwich.
SPITFIRE, 6—Lieut. Com. A. Kennedy. See Packet List.
TARTARUS—Lieut. Com. H. James, Woolwich, fitting.

SURVEYING VESSELS ABROAD.

ÆTNA, 6 — Captain ———, Portsmouth, fitting.
BEACON — Com. R. Copeland, surveying in the Archipelago; 1st July at Vourla.
BEAGLE, 10—Com. R. Fitz-Roy, surveying the coasts of Patagonia and Chili; 2d April at Berkeley Sound, Falkland Islands.
FAIRY, 10—Commander W. Hewett, surveying the North Seas.
GULNARE, *Hired Schooner*—Captain H. W. Bayfield, surveying the Gulf of St. Lawrence.
INVESTIGATOR, 16, — Mr. G. Thomas, surveying the Shetland Islands.
JACKDAW — Lieutenant Com. E. Barnett, 11th May at Port Royal, from Nassau, refitting. Surveying the Mosquito coast.
MASTIFF, 6 — Lieutenant Com. T. Graves, surveying in the Archipelago; 21st Aug. at Smyrna.
RAVEN, *Cutter* — Lieut. Com. W. Arlett, Portsmouth, fitting.
THUNDER — Com. R. Owen, 11th May at Port Royal, refitting, from Nassau, previous to sailing for the Musquito coast.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; *Assistants, Lieuts.* J. Harding, G. A. Frazer.—Coast of Ireland.
Lieutenants, M. A. Slater; W. L. Sheringham, H. C. Otter.—East Coast of Great Britain.
Lieutenants, H. M. Denham; C. G. Robinson.—West Coast of Great Britain.

PAID OFF.

ATHOLL—20th Aug. at Woolwich.
ÆTNA—25th Aug. at Portsmouth.
VERNON, 50—26th Aug. Sheerness.
ROYAL GEORGE, *Yacht*—4th Sept. Portsmouth.
ACTÆON, 26—24th Aug. arrived at Spithead; 4th Sept. paid off.
ROYALIST—9th Sept. at Plymouth.

COMMISSIONED.

ATHOLL—At Woolwich, 20th Aug.
TARTARUS, St.V.—Woolwich, 28th Aug.
ÆTNA—30th Aug. Portsmouth.
VERNON, 50—27th Aug. Sheerness.
RAVEN—30th Aug. Portsmouth.
ROYAL GEORGE—4th Sept. Portsmouth.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains—J. J. Onslow, A. Forbes, R. Oliver.
Commanders—S. C. Dacres, S. Pritchard, G. St. Vincent King, R. L. Warren, W. Archbold, *retired*; D. Horrie, *retired*.
Lieutenants—Hon. E. Plunkett, P. P. Inskipp.
Surgeon—J. Syme.

APPOINTMENTS.

COMMANDERS-IN-CHIEF.—NORE. Vice-Admiral Hon. C. E. Fleeming: *Flag-Lieut.* G. G. Loch; *Secretary*, B. Chimmo.
SOUTH AMERICA. Rear-Admiral Sir G. E. Hammond, Bart., K.C.B. *Flag-Lieut.* Hon. J. B. Drummond, to Rear-Admiral Sir T. B. Capel; *Flag-Lieut.* J. Maitland, to R. Adm. Sir P. Campbell.
Capt. T. L. Peake, Commander Sherwin, and Major Longmore, are appointed Stipendiary Magistrates at the Cape of Good Hope; and Lieut. W. B. Strugnell at Trinidad.
ACTÆON, 26—*Lieut.* G. C. Napier; *Mast.* W. H. Thompson; *Surg.* C. A. Browning, M.D.; *Assist. Surg.* H. G. R. Page; *Clerk*, C. D. Colls.
ÆTNA, *Surv. Ves.*—*Lieuts.* H. Kellett, G. C. Mends; *Surg.* J. Coulter; *Purser*, E. Brown; *Mates*, W. P. Moneypenny, J. Wood, W. H. Church; *Assist. Surg.* W. Lambert; *Mids.* H. Hooper, C. B. Yule, R. M. Richardson, H. Medley.
ALGERINE, 10—*Master, act.* L. Baillie.
ASTREA, 6—*Purser*, S. Street.
BLONDE, 46—*Lieut.* T. V. Anson.
BUZZARD, 10—*Surg.* J. W. Reid; *Assist. Surg.* J. Morrison.
CASTOR, 36—*Lieut.* Hon. D. Plunkett.
CHALLENGER, 28—*Lieut. act.* W. Stephens.
CHAMPION, 18—*Surg.* T. Thompson; *Assist. Surg.* C. Priaux.
COAST GUARD—*Lieutenants*, J. Hill, (*b.*) Newhaven; H. D. Forster, Dugwith; T. R. Fowler, Watesford.
COLUMBINE, 18—*Assist. Surg.* J. Solomon; *Clerk*, D. Jones.
COMUS, 18—*Mast.* F. W. Bateman.
EXCELLENT, 76—*Mate*, T. Christian.
FAVORITE, 18—*Lieut.* M. Allen.
HENRY POUKER, *Conv. Ship*—*Surg.* T. Galloway.
ISIS, 50—*Clerk*, G. Bell.
MALABAR, 74—*Lieuts.* A. C. Dickson, J. Hallowes, G. Dashwood, J. W. Montagu; *Master*, E. Lawkins; *Chaplain*, J. Cooper.
MEDEA, *St. Ves.*—*Lieuts.* J. Richardson, J. Williams; *Assist. Surg.* H. H. Hammond.
MELVILLE, 74—*Clerk*, W. Lower.

OCEAN, 80—*Master, Assist.* J. M. O'Brien; *Mate,* J. E. Keaton; *Clerk,* J. R. Tate.
ORDINARY—*Sheerness, Lieut.* D. Shewen.
ORESTES, 18—*Mate,* T. Baillie.
PHŒNIX, *St. Ves.*—*Com.* H. Nurse.
PICKLE, 5—*Lieut.* A. G. Bulman.
PINCHER, 5—*Lieut.* C. J. Bosanquet.
PIQUE, 36—*Lieut.* P. Hast.
PLYMOUTH, *Hospital*—*Assist. Surg.* J. C. Bowman.
PRINCE REGENT, *Yacht*—*Capt.* Right Hon. Lord Adolphus Fitzclarence; *Assist. Surg.* D. M'Nab.
RALEIGH, 16—*Lieuts.* J. Murray, H. Johnston: *Master,* Mr. Lord.
RAVEN, 4—*Lieut. Com.* W. Arlett; *Mate,* A. Jones; *Assist. Surg.* J. Robertson; *Sec. Master,* W. Pike; *Clerk,* C. Fielon.
RENARD, *Packet*—*Mate,* R. Wharton.
ROYAL GEORGE, *Yacht*—*Lieut.* W. Cory; *Master,* J. Oake; *Surg.* J. Greenish; *Purser,* T. Goddard.
SAN JOSEF, 110—*Assist. Surg.* H. Tracey.
ST. VINCENT, 120—*Mast.* W. H. Hall.
SPARROWHAWK, 16—*Surg. act.* J. M'Dermott.
SPEEDY, 8—*Clerk,* J. C. Phillips.
SPEY, *Packet*—*Assist. Surg.* G. Doak.
STAG, 46—*Lieut.* C. D. Acland; *Purser,* R. Wilkins; *Chaplain,* H. Jones.
TALBOT, 28—*Mast. Assist.* W. Whiting.
TARTARUS, *St. Ves.*—*Lieut.* H. James.
THALIA, 46—*Lieuts.* S. P. Gallway, R. Tryon, J. Maitland, J. Richardson; *Chaplain,* J. N. Campbell; *Mid.* H. B. Davies; *Clerk,* C. Wakeman.
THUNDERER, 84—*Lieut.* W. Lewis (*b*).
TRINCULO, 16—*Purser, act.* J. Marsh; *Mid.* W. Douglas.
VERNON, 50—*Capt.* J. M'Kerlie; *Lieuts.* R. Hay, C. T. Hill, G. Wodehouse, T. C. Festing; *Master,* M. Bradshaw; *Chaplain,* J. Marshall; *Purser,* W. E. Bushell; *Assist. Surgs.* A. Sanderson, R. L. Birtwhistle.
VICTORY, 104—*Assist. Surgs.* J. Chalmers, J. Kirk, W. Ducie; *Mast. Assist.* T. Walker.
WINCHESTER, 52—*Chaplain,* D. S. Harrison; *Clerks,* J. Nott, J. Bisth.
ZEBRA, 16—*Lieut. act.* L. Bailey; *Master, act.* J. R. Aylen.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1834.

Continued from page 574.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
268 Conqueror	———	Cork	Newport	Breaksea P.	6 Aug.	3 drowned.
269 Isabella	Simpson	Kirkaldy	Quebec	C. Chat	July	
270 John Wallace				Prince Edw. I	5 Aug.	
271 Lucy	———	Havana	Clyde	Clyde	12 Aug.	By lightning.
272 Nandi	Bishop	Liverpool	Rio Jan.	Arklow B.	Aug.	Crew saved.

ADMIRALTY ORDER.

Admiralty, Aug. 27.—Grant for the Battle of Navarin.—Notice is hereby given to the officers, seamen, marines, and others, who were serving on board his Majesty's ships, under the command of Vice-Admiral Sir Edward Codrington, on the 20th of October, 1827, and to the legal representatives of those who were then slain, or have since died, that the sum voted by Parliament will be distributed so soon as the necessary lists and documents shall be prepared, of which due notice will be given, and the mode then pointed out by which claimants resident at a distance, as well as those in and near London, will be able to receive their respective shares without any delay, trouble, or expense. As no further useful information can at present be afforded, it is desired that no applications be made until the appearance of future advertisements, which will afford every requisite instruction to the claimants.

By command of the Commissioners for executing the office of Lord High Admiral of the United Kingdom.

JOHN BARROW.

We understand that Lieut. Raymond, R.N., commanding his Majesty's revenue cutter Lapwing, has received the sincere thanks of a number of gentlemen who were passengers in the Yorkshireman steam-packet, for assistance rendered to that vessel off the Humber, on her passage from London to Hull, on the 21st of August last. It appears that the prompt and timely assistance afforded by Lieut. Raymond, his officers and crew, were the means of extricating the Yorkshireman from a condition of much difficulty and peril in which she had been for many hours, owing to the disabled state of her boilers.

FALMOUTH, 20TH SEPTEMBER.

LISBON—Sails every Tuesday.

Packet.	Commander.	Sailed.	Last Spoken.	Where.	Due.
AFRICAN, ...	Lt. Com. J. West	19 Sept.	———	———	17 Oct.
CONFIANCE st. v.	Lt. Com. J. M. Waugh..	7 Sept.	———	———	5 Oct.
SCORPION	Lt. Com. N. Robilliard.	14 Sept.	———	———	12 Oct.
PIKE	Lt. Com. A. Brooking..	29 Aug.	———	———	26 Sept.
NAUTILUS	Lt. Com. W. Crooke....	22 Aug.	31 Aug.	Lisbon	19 Sept.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

FIREFLY, st. v...	Lt. Com. T. Baldock...	4 Sept.	———	———	25 Oct.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

PELHAM.....	Lt. Com. H. Carey	9 Aug.	———	———	11 Oct.
SPEY	Lt. Com. R. B. James..	8 Sept.	———	———	10 Nov.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

NIGHTINGALE..	Lt. Com. G. B. Fortescue	21 July	———	———	13 Oct.
OPOSSUM	Lt. Com. R. Peters	23 Aug.	———	———	16 Nov.
REYNARD	Lt. Com. G. Dunsford..	20 Sept.	———	———	13 Dec.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

LYRA	Lt. Com. J. St. John ..	5 July	1 Aug.	Barbadoes	11 Oct.
BRISEIS	Lt. Com. J. Downey, ..	14 Aug.	———	———	20 Nov.
SMELDRAKE	Lt.Cm.A.R. Passingham	8 Sept.	———	———	15 Dec.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet.]

PANDORA	Lt. Com. M. P. Croke..	21 June	24 July	Jacmel	25 Oct.
SWALLOW	Lt. Com. S. Griffith	21 July	———	———	24 Nov.
LAPWING	Lt. Com. G. B. Forster..	23 Aug.	———	———	27 Dec.
REINDEER	Lt. Com. H. P. Dicken.	20 Sept.	———	———	24 Jan.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Tencrife, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

MUTINE.....	Lt. Com. R. Paule	6 June	———	———	24 Oct.
CAMDEN	Com. Mr. J. Tilley	4 July	———	———	21 Nov.
PLOVER.....	Lt. Com. W. Downey..	8 Aug.	———	———	26 Dec.
PIGEON	Lt. Com. J. Binney....	10 Sept.	———	———	28 Jan.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

DUKE OF YORK—Lt. Com. W. James, 1st Sept. arrived from Halifax.

ESPOIR—Lieut. Com. W. C. Riley, 17th Sept. arrived from Lisbon.

ECLIPSE—Lt. Com. W. Forester, 13th Sept. arrived from Jamaica.

FLAMER, St.V.—Lt. Com. C. W. Griffin, 18th Aug. arrived from Mediterranean.

GOLDFINCH—Lt. Com. E. Collier, 23d Aug. arrived from Jamaica.

MELVILLE—Lt. Com. C. Webbe, 6th Sept. arrived from the Brazils.

SKYLARK—Lt. Com. C. P. Ladd, 31st Aug. arrived from Jamaica.

SPITFIRE, St.V.—Lt. Com. A. Kennedy, 15th Sept. arrived from the Mediterranean.

STANMER—Lt. Com. R. S. Sutton, 17th Sept. arrived from Leeward Islands.

TYRIAN—Lt. Com. E. Jennings, 31st Aug. arrived at Falmouth.

VIPER—Lt. Com. L. A. Robinson, 9th Sept. arrived from Lisbon.

The Mails for the Bahama Islands are made up at Falmouth on the *first,* instead of the third Wednesday every month.

Births.

On the 5th of Sept., in Crawford-street, the lady of Lieut. A. B. Becher, R. N., of a daughter.

On the 7th Sept., at Alnmouth, Northumberland, the lady of Lieut. W. Y. Gill, R.N., of a daughter.

On the 8th inst., at Jessamine Cottage, Cowes, the lady of W. C. Middlemist, Esq. R.N., of a son.

At Darnhall, on the 31st of Aug., the lady of Captain Loch, R.N., of a son.

Aug. 24, the lady of Lieut. Pitman, R.N., of a son.

On the 10th Sept., at Chelsea, the lady of James Sparshott, Esq. R.N., of a daughter.

At Gosport, Mrs. Colborne, wife of Mr. T. C. Colborne, Master of H.M.S. Rover, of a son.

Marriages.

In Dublin, the Hon. Capt. Hely Hutchinson, R.N., brother of the Earl of Donoughmore, to Sophia, daughter of Sir S. S. Hutchinson, Bart.

At Coventry, J. W. Douglas Brisbane, Esq. Lieut. R.N., son of the late Sir C. Brisbane, to Elizabeth, daughter of the late John Ryley, Esq., of Hertford House, near Coventry.

On the 9th Sept., at Oakley, Suffolk, by the Right Hon. and Rev. Lord Bayning, Captain Baldwin-Wake Walker, R. N., to Mary-Catherine-Sinclair, only child of Capt. John Worth, R.N., of Oakley House, and granddaughter of the late Captain Patrick Sinclair, R.N., of Duren, Caithness.

Deaths.

Rear-Admiral Sir Michael Seymour, Bart., K.C.B., died on the 9th of July, after a short illness, in the 66th year of his age, at Rio Janeiro, he being in command of the South American station. His remains were interred in the British cemetery, at Rio de Janeiro, on the 11th July, with all the honours and mournful respectful ceremony due to his rank, distinguished professional services, and excellent private character. The British Minister, Mr. Fox; the French Admiral, Baron LeFeyte; the British Consul; Commodore Taylor, of the Brazilian service; Commander Smart, K.H., of the Satellite; and the American Commodore, bore the pall. Captain Robert Tait, of the Spartiate, (flag-ship,) and Lieut. Edward Seymour, R.N., attended as mourners. The event is extensively regretted in this county, Sir Michael and his family having long resided at Horndean.

At Beddington Park, Surrey, Admiral Sir Benjamin Hallowell Carew, G.C.B., in his 74th year: one of the best seamen, and most experienced, distinguished, and universally esteemed officers, in his Majesty's service. Sir Benjamin was promoted to the rank of Rear-Admiral Aug. 1, 1811, and subsequently held commands in the Mediterranean, the Irish station, and in the Medway.

On the 8th Sept., at Esher, in Surrey, George Palmer, Esq., Admiral of the White Squadron, aged 79. This officer obtained the rank of Post-Captain Jan. 18th, 1783. At the period of the Russian Armament he commanded the Perseus, of 20 guns, on the home station, and the Leeward Islands, until the year 1795, when he removed into the Lion, of 64 guns, and subsequently the Adventure, 44. Promoted to the rank of Rear-Admiral, 1804, Vice-Admiral in 1810, and Admiral 1819, but never hoisted his flag.

At St. Germain-en-Laye, John Fish, Esq., aged 76 years, late of Castlefish, County Kildare, Admiral of the Red. His active service was very limited.

At Burlington Crescent, Bath, after a few hours' illness, deeply regretted by an extensive circle of friends, Capt. Jones, R.N.

At his lodgings in Great Portland-street, Marylebone, London, Capt. Wm. Cook, R.N. (1806.) He had been in a deranged state of mind during the last six years, and in the most delicate state of health; during which he became impressed with the belief that he was deserted by his friends, (he was unmarried, and had no family relations but father and mother,) who were constantly concocting plots and conspiracies against him. Under this strong delusion, he wrote a note on Wednesday evening to a friend, (Mr. Back,) stating his resolve to take the only step that could emancipate him from them. In the course of the night, he literally blew his head to atoms with the contents of a pistol, the stock of which was broken to pieces by the discharge: another loaded pistol was found lying at the foot of the chair. Coroner's Verdict—"Temporary Insanity."

On the 25th of July, in the Gulf of Florida, Lieut. George Blissett, R.N. (1812), of Bristol, leaving a widow and six children to mourn their bereavement.

On the 9th inst., in Norfolk-street, in the Strand, in the 47th year of his age, James Weddell, Esq., F.R.S.E. As an officer and a seaman, the merits of Capt. Weddell are well known. The many valuable additions made to our stock of nautical knowledge by him, and his voyage to a higher southern latitude than was ever before attained, will serve to perpetuate the merits of this intrepid and unostentatious seaman, and enrol his name in the list of the most distinguished of our British navigators.

Lately, at Crediton, Commander John Manley, R.N. (1802.)

At Saxthorpe, Commander (retired) Henry Davey, R.N.

In Haslar Hospital, Mr. Julias Dowers, R.N. First Mate of his Majesty's revenue cutter Stork, after a week's painful illness, aged 27 years, son of Captain P. Dowers, R.N.

At Ratchcoffey, Ireland, (the seat of his venerable father, Archibald Hamilton Rowan, Esq.,) Capt. G. W. Hamilton, C.B., R.N. (1811,) a brave, meritorious, and distinguished officer.

On the 20th Aug., Thomas Scott, Esq. M.D. Assistant-Surgeon, R.N. late of H.M.S. Malabar. He was seized with malignant cholera on his passage from London to Leith, and landed at Lowestoffe, on the coast of Suffolk, where he expired, after lingering five days.

Commander John Yule, R.N., (1805.) He was a Lieutenant in the Victory at the battle of Trafalgar.

Of cholera, Surgeon P. Handyside, R.N.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

AUGUST, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength.			
		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.
				°	°	°	°						
1	F.	29·86	29·86	70	74	61	76	S.	S.	1	2	Bc.	Bc.
2	S.	29·90	29·89	69	73	63	75	N.	N.E.	2	4	B c.	B.
3	Su.	29·88	29·86	64	70	54	72	N.	N.	3	1	B.'	B.
4	M.	29·94	29·95	64	71	58	72	W.	S.W.	2	2	Of.	Bcm.
5	Tu.	29·88	29·88	67	71	57	73	S.	S.W.	5	7	Bcm.	Bcd (4
6	W.	29·87	29·87	66	69	58	71	S.W.	S.W.	5	7	O.	'Op (3)
7	Th.	29·99	29·97	62	67	56	68	S.W.	S.	5	5	Od 2)	Or (4)
8	F.	29·81	29·82	67	69	63	70	S.W.	S.W.	6	8	Or (1) p (2)	Or 3)
9	S.	30·13	30·15	63	68	52	69	S.	S.	3	3	Bcm.	'Bcm.
10	Su.	30·16	30·12	65	73	54	74	S.W.	S.W.	1	2	Bw.	Bcm'w.
11	M.	30·05	30·07	67	74	55	75	S.W.	S.W.	3	3	Bcm.	B cm.
12	Tu.	30·12	30·11	70	76	56	78	S.	S.E.	2	5	Bcm.	B'm.
13	W.	30 00	30·05	72	76	61	80	S.	W.	2	7	B.	Bc m.
14	Th.	30·10	30·08	62	68	58	70	N.	N.	3	5	B c m.	Bm.'
15	F.	30·12	30·12	63	73	56	74	N.	N.	6	3	B'c.	B c.
16	S.	30·20	30·16	68	75	61	77	N.E.	N.E.	4	4	O.'	Bc.'
17	Su.	30·14	30·10	66	74	56	76	N.	N.	3	3	B.	B c.
18	M.	29·96	29·93	67	72	59	74	N.E.	N.	1	2	O.	'B c.
19	Tu.	29·97	29·95	66	71	58	73	N.	N.W.	2	1	O.	Bc.
20	W.	29·80	29·74	63	72	59	72	S.W.	W.	2	3	O.	Bcd (4
21	Th.	29·70	29·72	63	67	56	70	S.W.	S.W.	3	6	Bc.	Bcq.
22	F.	29·82	29·79	59	66	52	68	S.W.	S.W.	4	6	B.	Bcqp 3)
23	S.	29·94	29·93	60	64	50	65	S.W.	S.W.	3	7	Bc.	B'cqp (3
24	Su.	29·80	29·70	61	63	45	65	S.E.	S.E.	4	4	Bcp (2)	Bc p'3) pl(4
25	M.	29·66	29·73	54	58	44	62	S.W.	S.W.	5	8	B.	Q't' phr·(3
26	Tu.	29·80	29·77	58	64	47	64	N.E.	E.	2	4	Bc.	T' lhr 3)
27	W.	29·77	29·77	54	61	46	62	N.	N.	2	5	Bcm.	Cm.'
28	Th.	29·93	29·89	55	61	44	62	S.W.	S.	4	6	O.	'Or (4)
29	F.	29·74	29·66	62	64	55	66	S.	S.	6	3	O.	Opd(3) qr(4
30	S.	29·68	29·71	63	66	56	67	S.	S.	3	7	Op (2)	Bcq.
31	Su.	29·71	29·81	59	65	55	66	S.	S.W.	4	4	P (1) 2)	P (3) (4

AUGUST—Mean height of the Barometer=29·913 inches; Mean Temperature=62·8 degrees; Depth of Rain fallen=3·00 inches.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds—detached passing clds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
· Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, *i.e.* from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of the six hours, and both together denote the whole interval. They are intended to express the time nearly when rain fell. Thus, 2) signifies that rain fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained the whole six hours from 6 A.M. to noon; (3) ditto from noon to 6 P.M.

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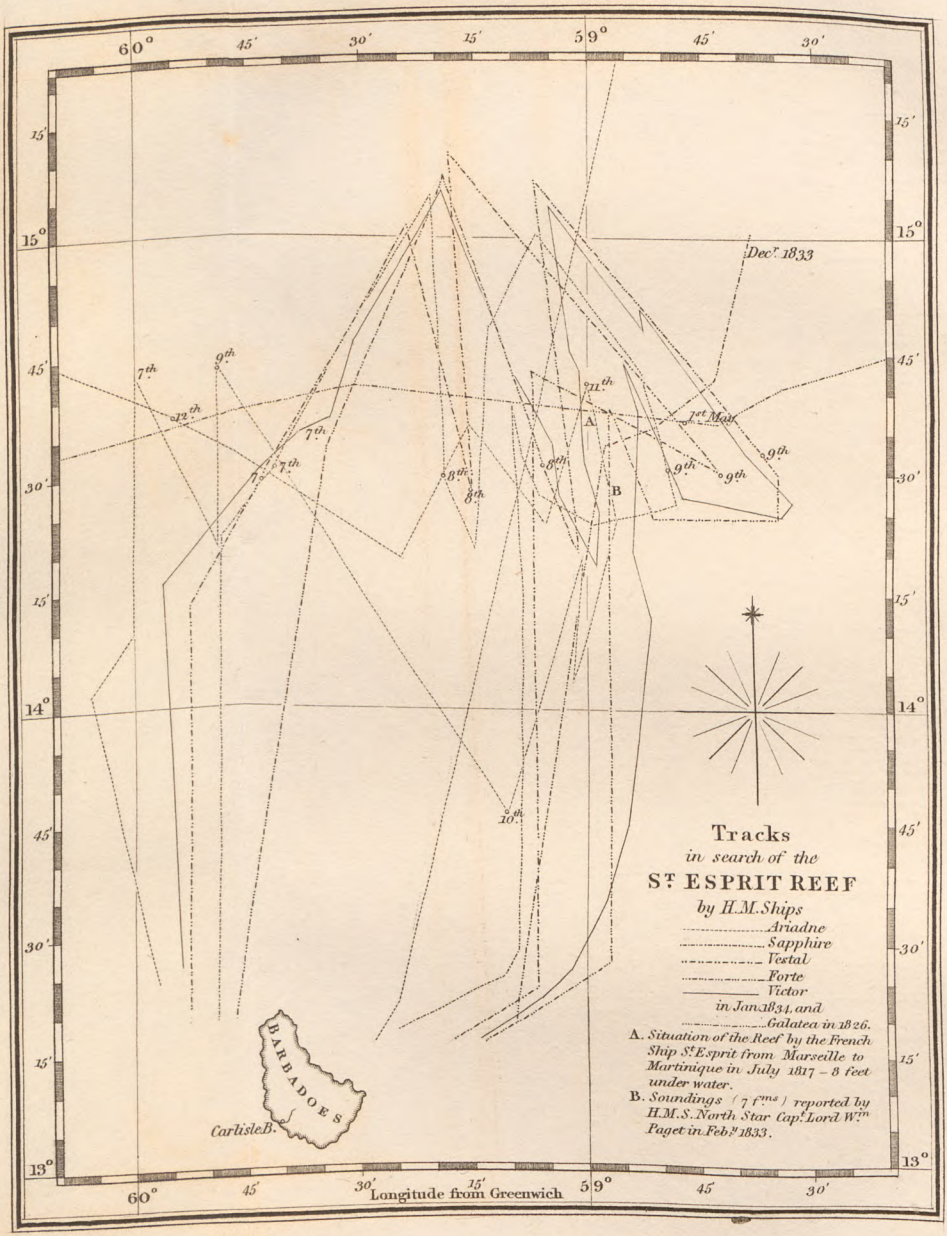


THE

NAUTICAL MAGAZINE.

NOVEMBER, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

52. The St. Esprit Reef, *West Indies.*

It was observed in the commencement of this work, that, to determine the position, and even the existence of sunken rocks, is one of the greatest difficulties with which hydrographers have to contend. The remark was occasioned by the position of the Virgin Rocks off Newfoundland having been at last satisfactorily ascertained by the exertions of Vice-Admiral Sir Charles Ogle, then Commander-in-Chief on that station, the very existence of which danger had been doubted. It is not much more than a year ago that we decided on the existence of a similar *reported* danger, namely, the St. Esprit Reef, on the authority of soundings said to have been found on it. We might have said, sworn to have been found on it, as we have the affidavit of the man who sounded; and on more frail authority have such dangers found their way into the charts. It seems fortunate, however, that the circumstance occurred, for as soon as it became known to the present Commander-in-Chief on that station, Vice-Admiral Sir George Cockburn, he immediately directed the ships of his squadron to search for so formidable a danger; and we now lay their tracks before our readers.

The report stated that seven fathoms was found on the reef, but no signs of broken water, which would thus be occasioned, were observed; and it is, moreover, the opinion of the officers employed on this occasion, that the St. Esprit does not exist.

We are happy in having it in our power to congratulate seamen on the attention paid to these subjects by our naval commanders. The measures taken by Captain Lord William Paget for endeavouring to find the reef, and the prompt manner in which they were followed up by Sir George Cockburn, are gratifying proofs that correct charts are seen to be among the first wants of the navigator.

53. Sailing Directions for the Coast of South America, *from Cape Manzanilla to San Juan de Nicaragua, by Commander William Sidney Smith, of H.M.S. Larne*, 1833.

Seasons.—On this part of the northern coast of the Isthmus of Darien, the year is divided into two seasons,—that of the breezes, or trade winds, and fine weather; and that of Vendavalés, or rains, light breezes, variable winds, and calms.

The months of the breezes are January, February, March, April, May, and June.

The months of the Vendavalés are July, August, September, October, November, and December, when the trade-wind seldom blows home to the land. It happens in either season that the weather of one becomes intermingled with that of the other.

Gales.—Notwithstanding hurricanes, and strong gales of continuance, have been said never to blow here, his Majesty's sloop Comus experienced a gale nearly amounting to a hurricane on 17th October, 1833. The barometer, in this instance, gave a timely and sufficient indication, by falling very low indeed; which induced the said ship to leave her anchorage at Chagres. It blew for twelve hours exceedingly hard from N.W. to S.W. All the vessels at Panama were wrecked, and houses blown down at Chagres and San Juan de Nicaragua.

Northers.—Fresh northers, of a week's duration, sometimes almost amounting to a gale, are felt, particularly during winter and spring, at Chagres, but are much more prevalent at San Juan de Nicaragua.

Except on these occasions, in both seasons, close inshore, and at a varying distance of about six miles, the land-winds blow off generally during the night.

Season of Breezes.—The prevalent trades blowing home to the land by day are more or less to the north of east: when well set in, the weather is beautifully dry.

Rainy Season.—The weather prevalent at the rainy season extends off Chagres sometimes as far north as 13°, but generally only to 11°, or not so far. The winds changing about remain not six hours at any one quarter. Heavy rolling clouds of threatening appearance are frequently discharging torrents of rain, accompanied with a sharp squall, thunder, and dangerous lightning. A gloomy calm then succeeds. Still the barometer is little affected by any of these phenomena. From experience, I can say there are equally dirty squalls from eastern and western quarters, with calms between, west winds being only more prevailing.

At an offing of twenty or thirty miles from Cape Manzanilla, this weather is more particularly frequent in the Vendavalés than even at Chagres, where the east winds are not so wet as in the offing, being generally finer than the west winds; but they are faint.

Currents General.—It seems to be an established fact, that the great equatorial current from east to west, in the Atlantic, entering the Caribbean Sea through the several passages between the mouths of the Orinoco and the Island of Martinique, flows still to the westward, on the continental side, to Cape de la Vela, from whence it inclines a point or two northerly, to pass between Cape Gracias a Dios and Jamaica.

In the space between Cape Gracias a Dios and Cape de la Vela, off-shoots and eddies from this great current are found. This assertion is not merely

grounded on those of former navigators, or on the examination of the coast outline, but on actual experience.

A writer worthy of great respect, Captain Mackellar, R.N., has stated—"The current between the island of Jamaica, and the Spanish main, or coast of Colombia, is not always to be depended upon as setting to the westward, as is generally supposed; for, in crossing from Jamaica to the main, ships have been known to be driven to the eastward by the current." This circumstance must be of rare occurrence at the northern part of the passage, and is here mentioned to make known its possibility. I myself have made the runs across between Jamaica and the opposite main at many times and seasons, and am therefore governed by practice, as well as theory, in the following remarks. They necessarily extend over a broader field than was requisite for treating on the weather, as the consideration of currents must embrace remoter influences:—

Currents between Jamaica and the opposite Main, between Capes de la Vela and Gracias a Dios.

1st. The local current between the south side of Jamaica, Morant Keys, and Pedro Shoals. This is very uncertain, both in rate and direction. Its rate may be from 0 to 1½ knot per hour; and its direction either north, east, or west, according to circumstances, whose discussion appertains to the sailing-directions of that island only.

At the Morant Keys the current is known to be variable. Over the Pedro Shoals it is supposed almost ever to run in a westerly direction. Between these two dangers, therefore, it behoves a ship at night to be full of precaution, and not to rely on the continuance of any current she may have ascertained, when either to northward or southward of her then situation!

2d. Southward of Morant Keys and Pedro Shoal, or between 17° and 15° north latitude, the current, perhaps always, is W. to N.W. by W. (true,) 20 to 55 miles per day!

Among the Mosquito Shoals, equally strong, and more uncertain. Between 15° N. and a line drawn from Capes de la Vela and Gracias a Dios, including also some Mosquito Keys, the current is W.S.W. to N.W. 20 to 40 miles per day!

3d. Southward of the above line, and to a distance of 30 miles from the coast, the sets are so very changeable as to baffle all system. Sometimes no current whatever is felt !at other periods it may run north, south, east, or west 35 miles a day. Let it be borne in mind, however, that their direction is very seldom towards the *east*, but generally towards the *west*. St. Andrew's, and the frontier rocks of the Mosquito Bank, are equally beset by changeable currents, of velocities occasionally amounting to 50 miles a day!

4. Land Current.—Between Cape Manzanilla, near Portobello, and San Juan de Nicaragua, there is an inshore current from westward to eastward. It is an eddy, striking out from the great Carribbean current at Cape Gracias a Dios, and eventually returning into it, with a broken and divided force, to the north of Carthagena. The breadth of this current extends from the land to a distance of about 30 miles in the offing. Its rate is from one to two knots, and its direction is parallel to the curvature of the coast and capes.

The streams out of numerous rivers entering this current, seem to increase its rapidity; for, close inshore, between the rivers, the rate is seldom less than two knots; 6 miles off the land, it runs about one knot; and at a greater distance the same. This I lay down as its proper state.

But no established current is without its uncertainties; and the present is subject to the observation. Winds, either remote or actual, affect its direction

and velocity, to the extent of changing, neutralizing, or even reversing them entirely. In-shore it will sometimes set two knots right upon the land! In the offing, also, it has been experienced to vary off and on the land, and from one to two and a half. It has been known to cease every where, or even run west for a short while.

Most people suppose it strongest in the rainy season, and to be thrown most upon the land when northerly breezes prevail in the vicinity. It is, however, quite as true, that fiery trade-winds from the north-east, during the fine season, falling on the Mosquito Coast, strengthen the eddy or current along the land to its full force; whilst they diminish the rate, or affect the course, at the outer part of the stream.

Sailing Directions from Port Royal to Chagres.

PORTLAND ROCK.—Though the Portland Rock lies only ten leagues from the most frequented port of Jamaica, several situations are still assigned to it. This causes perplexity to those shaping their course to the main, after having caught the sea breeze, attended with hazy weather, soon after getting clear of Port Royal Keys. It causes still more anxiety to those striving to fetch Port Royal from Chagres with a scant wind.

COURSES.—The safest position to allow Portland Rock is 17° 13′ N., 77° 10′ W. A course S. by E. will pass 20 miles to windward of it. But, in case the wind should be unsteady, or the current running to westward, I would recommend a course S.S.E.

When, with a S.S.E. course you are arrived at lat. 17°, then alter course to S. by W., which will carry clear of El Comboy. This last course is recommended, as ships generally pass the position of this doubtful reef before next morning, and are ignorant to what extent they have been set to the westward by the current.

Arrived at 15° 30′ N., shape course for the coast, allowing each day the current, according either to astronomical observations, or to the information that may be obtained in a previous chapter of this essay.

During the Season of the Breezes.

DURING THE BREEZES.—The best land to make is Cape Manzanilla, both on account of its situation at a convenient short day's run to windward of Chagres, and its appearance, of which a stranger is more readily assured, than of any other land on this coast.

Make Cape Manzanilla bearing south. Should it be night before land is sighted, run no nearer than eighteen miles; then endeavour to keep thereabout till daylight, acting according to the wind, and allowing a current to E.N.E. 1′ per hour, unless, from the strength of the breeze, or other circumstances, you believe it variable.

When the Cape and Farallons are distinguished at daylight, run along shore with all convenient speed to Chagres road, being mindful of the coast directions.

BY NIGHT OFF PORTO BELLO.—Should you be under sail at night off Porto Bello, be constantly on your guard against the squalls and calms prevalent in its vicinity. The former frequently shift from the land, round the compass, with torrents of rain and gusts of wind, so as to oblige you to clue all up. Precautions must be adopted to prevent being drifted to the Farallon Sucio, and other dangers there, over which the current is supposed directly to set north-easterly two or three knots an hour!

The land, from the rocks near Porto Bello to Chagres, should not be ventured on closer generally at night, than eighteen fathoms. For there are several low points with reefs, as likewise the swell right on, and a strong current.

A ship, baffled in her exertions to reach Chagres, may anchor for the night in 18 or 20 fathoms, between Point Toro and Chagres, and indeed off most parts of the coast, either towards Porto Bello, or to the westward. But you should be sure not to be too close to a reef. Indeed, unless the weather is entirely settled, it is more prudent to stand off and on under sail, ready for the first of the sea-breeze next day.

CHAGRES.—Chagres is a very difficult place to ascertain by night, even when close in; the height on which is the castle, being backed, at no great distance, by still higher ground. If the castle be discerned at sunset, and current be properly allowed, you may expect also, until 10 o'clock, to perceive, and be assisted by, the lights of the village-huts in a row at the margin of the harbour. When the village is open of the land on either side of it, bring the lights E. by S. ½ S., and anchor in 10 to 12 fathoms when you will be 2′ nearly from the nearest land, in good bottom.

At that season, ships from Jamaica, under favourable circumstances, anchor at Chagres between the third and fourth days.

During the Season of the Veudevalés.

DURING THE RAINS.—If in the season when the trade wind may be daily expected to blow home, it is proper to make the land to the N. E. of Chagres. It is necessary to pursue a contrary method during the rainy season; for now the sea-breezes may not arrive for several days, and then be faint, and insufficient to outstem the seldom obliterated current from west to east!

I recommend the following directions from Captain Mc'Kellar, R. N.:—"Ships should never go to the southward of lat. 11°, until 50 miles to westward of their intended port." Then endeavour to make the land about Escudo Island. The westerly winds, the southerly winds often felt in the mornings, together with the current, will set them to the eastward, thereby to gain the anchorage.

The land within Escudo is high; that island cannot be discerned unless you are close in-shore. (For the soundings, remarkable objects, and other particulars, see Remarks on the Coast.) As soon as certain of being to eastward of Escudo Island, close the coast till within 3′, and run along at that distance from it, in from 40 to 28 fathoms, to Chagres.

BY NIGHT.—Whilst trying to sight the land about Escudo, should it be night before that object is accomplished, and your position verified by it, approach no nearer than 18′, on account of that island and its banks. Then keep thereabout till daylight, acting according to the wind, and allowing a current along the land one knot. At daylight proceed south again.

When sure of your situation, in your run along the coast between Escudo and Chagres; and night has again set in, you may either continue, or anchor in from 18 to 20 fathoms. In case the squally weather should induce you to keep under sail, every precaution must be carefully adopted to preserve the ship 10′ to the westward of Chagres, and near to the land; in order to prevent the possibility of being set away past it by the current. This is an important point.

DIRECTIONS.—Captain Mc'Kellar says, "Should a ship find that the current has set her to the eastward of the intended port, and light winds prevail, she should immediately stand to the northward as far as 10° 30′ or 11°, in order to meet the north-east trade winds, and with it to make good the necessary westing again."

In September, 1833, H. M. sloop Larne was four days off Chagres, striving to reach it. She never got to the eastward of her port; but neither could she

recover by day the few miles she was obliged, as she conceived, to stand off during the night, which were without a moon.

The winds variable, with perpetual shiftings from all quarters. attended with calms, squalls, and deluges of rain. The current N. E. by E. (true,) 1½ to 2½ knots. Within 5 miles of Chagres not so much northing.

The best sails to keep regularly under are: —double-reefed top-sails, fore-sail, fore-topmast stay-sail, and reefed driver, with top-gallant sails, main-sail, and jib, immediately a squall has ceased; and light sail when the wind is going to be in the least steady. The men are incessantly employed trimming sail and soundings; and their clothes and bedding are universally soaked with rain water during many days. They derive no illness therefrom at sea. The swell, always rolling from N. E., at times suddenly makes alarmingly, as if it was going to break on a beach. The ship at length anchored at night in utter darkness. She had placed herself in the proper anchorage; but the writer of these remarks, before and since, has frequently anchored by night, and found the ship several miles on either side of Chagres. If not intending or unable to anchor at night, and Chagres should bear S. 5 miles, steer W. N. W., heaving deep-sea lead ½ hourly and hand-lead constantly. Thus you will partly stem the current, and by receiving it on larboard bow, be sure of only being set to the N. W. a convenient distance.

(To be completed in our next.)

54. TARBERT ROCK LIGHTHOUSE.

The Corporation for Preserving and Improving the Port of Dublin, &c. give notice, that a lighthouse has been erected on the Tarbert Rock, river Shannon, from which a Fixed Bright Light will be exhibited on the evening of the 31st of March next, and thereafter will be lit from sunset to sunrise.

Tarbert Rock lighthouse bears by compass—

From Kilkadman Point	E.S.E. ¼ S. distant	11¼	nautic miles.
.. North Point of Beal Bar	E.S.E. ¼ S. ..	9½	.....
.. Scattery High Tower....	S.E. ¼ E. ..	5	.....
.. Rinnana Shoal S. Point	S.E. by E. ¼ E...	5	.....
.. Coleman's Point	N.W. by W. ..	2	.....
.. Bowlin Rock	N.W. ¼ W. ..	1½	.....

The light is not shewn landward from S. ¼ W. to E. ¼ N.

The lantern is fifty-eight feet above the level of high-water.

By Order, JOHN COSSART, Secretary.

Ballast-Office, Dublin, 30th Jan. 1834.

55. FLOATING LIGHT ON ARKLOW BANK.

The Corporation for Preserving and Improving the Port of Dublin, &c. hereby give notice that the above-mentioned vessel has been placed in the situation laid down in the chart published by the Corporation, viz., one mile south-west of the end of the bank.

The light vessel bears by compass—

From Arklow Bank	S.E. ¼ S.	7	sea miles.
.. Tara Hill	E. by S. ½ S.	9	ditto.
. Tusker Rock	N.E. ¼ N.	32	ditto.

By Order, WILLIAM BIGGER, Ballast Master.

-Office, Dublin, 22d May, 1834.

56. Sailing Directions and Remarks on the Port of Colombo, *by James Steuart, Esq., Master Attendant.*

Colombo, the seat of the British Government of the Island of Ceylon, is situated in lat. 6° 57′ N. and long. 79° 52′ E.; it is one of the most healthy places in India, abounding with good water, and other refreshments; its exports to Europe are cardamoms, cinnamon, coffee, cocoa-nut oil, coir cordage, ebony, pepper, plumbago, and satinwood: several of these articles are increasing yearly.

The land about Colombo is low near the sea, with some hills to the eastward, at a distance in the country. The high mountain, having on it a sharp cone, called Adam's Peak, bears from Colombo E. 7° S., distance twelve leagues and a half. Its height above the level of the sea is estimated at about 7,000 feet, according to a rough trigonometrical measurement by Colonel Willerman. When the atmosphere is clear, it may be seen thirty leagues. During the prevalence of the north-east monsoon, Adam's Peak is generally visible in the morning, and frequently the whole of the day; but it is rarely seen in the south-west monsoon, dense vapours generally prevailing over the island at this season.

Ships approaching Colombo in the night have a brilliant light to direct them, which is exhibited every night from a lighthouse in the fort. The height of the light above the level of the sea is ninety-seven feet, and may be seen in clear weather as far as the light appears above the horizon.

A steep bank of coral, about half a mile broad, with fifteen fathoms water on it, lies seven miles west from Colombo, extending northward towards Negombo (where its surface is sand) and a few miles to the southward of Colombo; outside the bank, the water deepens at once to twenty-three fathoms; and in two miles to twenty-eight fathoms, greenish sand, which is not far from the edge of soundings. Within the bank there are twenty-five fathoms, gradually shoaling towards the shore.

A bed of sunken rocks, called the Drunken Sailor,* lies S.W. by W. ½ W. from Colombo lighthouse, distance one thousand yards: the length of the ledge may be estimated at one hundred yards, and the breadth twenty yards. On its north end a small spot, about the size of the hull of a twenty ton boat, is said to have only three feet water on it at low-water; but, during several recent visits, when some of the coral from its surface was brought up, there did not appear to be less than seven feet six inches water on the shallowest part. On the other part of the ledge there is four, five, and six fathoms. The sea breaks on the shallow part of these rocks almost constantly during the south-west monsoon; but this is very seldom the case during the north-east monsoon.

There appears to be no doubt that the Drunken Sailor is granite or stone of the same description as the rocks on the shore, with its surface incrustated with coral. If there ever was so little water as three feet on it, it may be supposed to be sinking.

The Drunken Sailor should not be approached under nine fathoms during the night, as there are eight fathoms very near to it, and in its stream to the southward.

In the north-east monsoon of 1826, the Hon. Company's brig of war Thetis, Captain Terrel, touched on the Drunken Sailor, having stood too close to the land in beating up to the anchorage from the southward; but, with common

* See further remarks on the Drunken Sailor in p. 326, No. 28, which perfectly agree with these, although made many years ago.

attention to the depth of water approaching the rock, it may be easily avoided.

The passage within the Drunken Sailor is clear, and some ships have sailed through; but no advantage can be gained by approaching the shore so very near at this point.

The Drunken Sailor lies so near the land, and so far to the southward of the anchorage in Colombo road, as scarcely to form any impediment to ships bound to or from Colombo.

The currents off Colombo are subject to considerable variation; but they are never so strong as to cause inconvenience to ships which may have to communicate with the shore in either monsoon, without coming to anchor.

Colombo road affords good anchorage, free from foul ground, and is frequented at all seasons of the year.

The best anchorage during the prevalence of south-west winds from April to October, is in from seven to eight fathoms, with the lighthouse bearing S. by E. ½ E.; Dutch Church E. by S. In the north-east monsoon, from November to April, it is more convenient to anchor in six fathoms and a half, with the lighthouse bearing S. or S. ½ E., and the Dutch Church E.S.E.

Ships requiring pilots to conduct them to the anchorage should make the usual signal; the charge for pilotage is fifteen shillings.

The bar is a bank of sand, with seven feet water on its shallowest part, the northern extremity being about four hundred yards north-west of the Custom-House Point; small vessels that draw less than ten feet water ride within the bar, protected from the south-west wind and sea.

When the sea is high, it breaks with great force on the bar, and renders the passage from the shipping in the outer road dangerous for small boats; the native boats generally pass out and in to the southward of the bar, close to the breakers on the rocky point of the custom-house; but, as the passage is narrow, it should not be attempted by strangers when the sea breaks upon the bar; it is better to proceed round to the northward of the bar, which may be easily distinguished by the breakers.

What is strictly understood by a gale of wind is a rare occurrence at Colombo; this may be owing to the vicinity of the equator, the strong gales which blow on the Malabar coast are felt in small squalls, and a high sea; but there is scarcely wind to endanger vessels properly found in ground tackling; it is true, ships have sometimes required the aid of a second anchor, but in most cases the cause has been attributable to some defect in the first anchor or cable, a light anchor, an anchor breaking, a short chain, or the chain coming unshackled. An instance occurred in Colombo road, of two ships receiving cargo during the south-west monsoon, whose chain-cables came unshackled twice: twice did it occur to each ship.

On the 2d of June, 1831, the Hector drove in a squall: having about eighty fathoms of chain ahead, they let go the second anchor, but finding the ship did not immediately bring up, they made sail, and slipped their cables. This ship stood out of the roads under double-reefed fore and mizen topsails, and from its size, a single-reefed main-topsail, foresail, fore and main trysails, and driver, and returned to anchorage on the 4th. Instances of ships putting to sea are rare; and when it is considered, that, although the sea is high, the wind is not violent; and, as at these times, the wind having fallen in the interior, strong freshes escape to the south-west, from the Kalany Ganga, it is by no means surprising that Colombo road proves a safe anchorage.

ORIGINAL PAPERS.

I.—The Capture of a Spanish Slave Schooner off St. Domingo Key, *on the 5th and 6th June*, 1829, *by H.M. Schooner Pickle, under the command of Lieut. J. M'Hardy, R.N.**

Sir,—The following extract of a letter, received some time ago from the West Indies, containing an account of one of the most gallant actions with a slaver ever fought, may be acceptable to the readers of your useful publication.

Edinburgh, 10th August, 1834. Z.

We were stationed in his Majesty's schooner Pickle, to cruise off the north-east part of Cuba, for the purpose of intercepting slavers from the coast of Africa, and to do our best to suppress piracy. It was about six in the morning of the 5th of June, when we were about three leagues to the north-west of Port Naranjos that we discovered a strange sail to the eastward of us, which we soon made out to be a large schooner, with two topsails, and, in nautical phraseology, a very suspicious-looking craft. About an hour after we had began to calculate on a prize, she hauled in for the land, a manœuvre which would enable her to land her crew and slaves, if we gave chace to her. So we very prudently hauled off, to decoy her as she hauled in. The *ruse* succeeded, for we had the satisfaction of seeing her resume her former course. This being settled, we quietly tacked, and endeavoured to get between her and the land; but of course we took no notice of her, and pretended to be after other game, to prevent her suspecting what we were about. It was fortunate we did so, for we afterwards found that he had taken a pilot on board the day before, who knew very well all about the Pickle. It was not very long before we succeeded in getting between the stranger and the land, and having her in the wind's eye of us just where we wished, we threw off all disguise at once, and tacked, shifted the jib, got up the main-topmast, and, with our flying jibboom out, made all the sail we could in chase of her. This astonished our new friend, who, we afterwards found, had mistaken us for a Droger, and the effect on him was to make him haul his wind on the starboard tack. (Wind at N.E.)

We were now fairly in chase, and all was excitement on board the Pickle. Away we went, dashing along at a fine rate by the wind, (our best point of sailing,) both weathering and forereaching on the stranger. We were busy all day in tacking, wetting our sails, altering our trim, by shifting heavy weights, so that it should not be our faults if the Pickle did not come up with her chase, and willing enough was she to second our design. As we had approached the chase near enough by four in the afternoon, we shewed her our colours, and very politely called her attention to the flag of old England with a shot, and, in order to remove all doubts respecting

* The present Commander M'Hardy, who was promoted for this affair.

us, as she might not be able to distinguish it after dark, we took care to follow up the complement by sunset with several more. Of these the stranger took no notice, although (as we since learned) her crew formally requested their captain to bear down, and engage us; but his reply was, "not while there is a chance of avoiding it."

As the evening closed in serene and beautiful, we continued working up under the lee of our friend, so as to get as near him as we could before dark, that we might better keep sight of him after the moon had set. It was well we did so, for it was not without manœuvring that we managed to keep him to windward of us. At one time it became so dark that we had nearly lost sight of him, and should have certainly done so, had it not been for one of our men, James Stewart, a fellow who has the eye of a hawk. At about a quarter after eleven matters began to be serious. It was evident that we were closing fast with the stranger, and preparations were accordingly made for action. The topsail sheets were stoppered, gaff and yards slung, and every thing being in fighting trim, we sent a warning shot over him, keeping the squaresail ready for running up again if required. We were then going seven knots, when the slaver (for such he proved to be) shortened sail, and bore down on us in regular "man-of-war style." It was evidently his intention to pass under our stern, for the purpose of engaging us. This was readily seen, and prevented by our heaving in stays, and, while we lay down snug at our quarters, our commander hailed him twice, without receiving a reply. The third time he was hailed, and, finding by our manœuvres that he had no chance of escape, he returned us his broadside, and a fire of musketry, for an answer. With the exception of mortally wounding a seaman named Laden, this did us no material injury. But, if we had been trifling with him before, we now set to work in earnest. "Mr. Fowell," said our commander to the senior mate, who had charge of the long gun, "take care to depress your fire, and don't throw away your shot." "I'll take care, sir, not to spoil her maintopsail," was the quaint reply of the officer, "for I know you want it to rig our craft into a two topsail schooner."

We now reserved our fire till we were close on his larboard quarter, when we saluted him with the contents of our long gun and carronade, both prepared for the occasion, with an additional charge of a canister of musket-balls. The action now became warm, our guns being directed principally at the slaver's spars, so as to prevent his escape; we believing him to be a pirate, from the circumstance of his having hitherto shewn no colours. The scene was now splendid beyond description. The moon had set, and a light breeze was blowing. We could just distinguish the figure of the long, low, black vessel we were engaging, as she moved round us; except when, by the occasional blazes from her sides on the

discharge of her guns, she was distinctly visible. From the crowded state of her decks, and the confusion we observed on board of her, it was evident our shot were not thrown away; nor indeed was the fire from her musketry, for the Pickle having no bulwark, the effects were severely felt among our men. The slaughter among our crew would have been greater, had they not been trained to work the guns in a crouching position, and the head braces worked on the lower deck.

The action continued within pistol-shot for an hour and twenty minutes, at the end of which we had the satisfaction of seeing the slaver's mainmast fall. It had been shot away about six feet above the deck. The noise of its fall was followed by a voice hailing us from the slaver's deck, that he had not a sail standing, that he had several shots through his foremast, and most of his forerigging cut away; that the captain was wounded and in bed, the crew killed or wounded, that he was wounded and had surrendered. On this, Lieut. M'Hardy ordered him to send a boat on board the Pickle; but he replied it was impossible, from his crippled condition, and not having one that would swim. We then ordered him to keep near us till daylight, when we should take possession of him. This being the case, we cautioned him against firing another musket, and threatened him with no quarter if he did so.

In the mean time it had fallen calm, and our sweeps were got out, to keep a commanding position over our prize, and to take possession of her at daylight. We lost no time in repairing damages, which, after a contest with so superior and determined an enemy, were not little. Our sails, rigging, and spars were much injured, and two of our three guns were disabled. The care of the wounded was our next concern, for our indefatigable Assistant-Surgeon had been unable effectually to attend to them during the action, as the concussion of our long gun prevented a light being kept burning below. Those of the crew who were most severely wounded were as soon as possible conveyed to the commander's cabin, which was given up entirely to them. And it is a singular circumstance that the four men who lost their lives in the action formed his gig's crew. One of these poor fellows named Horner, the only one who was killed instantly, had behaved most gallantly. His corpse was after the action committed to the deep, the funeral service being read over it by Lieut. M'Hardy.

By daylight we had shifted our mainsail, and with the exception of our guns, had repaired all material damages, and it was well we were ready, for notwithstanding the caution we had given the prize, he was for escaping, if possible. For the first time we now observed him shew Spanish colors in his fore-rigging, he had managed to sheet home his fore-topsail and thought to creep away from us. This was no sooner perceived, than our square sail was set, and we soon ranged down on his larboard quarter with every man at

his station that could go to it. Mr. Fowell was now dispatched to take possession of the prize, and send back her commander and principal officers. On boarding the slaver, the Spanish ensign was immediately hauled down, and the boat soon returned with a party, among whom was her captain, a morose dark coloured man, with an ill-favoured countenance, bespeaking a soul fit for "murders, stratagem, and crimes." In fact, he had been outlawed from his own country, rendered incapable of commanding any vessel under the Spanish flag, in consequence of having been the captain of a pirate. Therefore, although the captain of this vessel, he could not appear on her papers as such. As he stepped on the quarter deck of the Pickle, his look well expressed his surprise and disappointment at being captured by a vessel so inferior in force to his own; but this was no time for indulging in such feelings, he had been severely wounded by the fall of the mast, and his first care was to request our surgeon to examine his head. He was subsequently sent by us to the prison hospital at Havana, where he died: thus terminated the career of a man who had already violated all laws, and was carrying on the inhuman traffic of dealing in slaves. Our opponent proved to be the Boladora, generally known as the notorious Mulatto, which memorandum was made on her papers. She was a two topsail schooner from the coast of Africa, pierced for sixteen guns, mounting two long eighteen pounders and two long twelves, with a crew of sixty-two picked men, (fourteen of whom were wounded and ten killed,) besides a cargo of three hundred and thirty-five slaves. She measured ninety-four feet in length on deck, and two hundred and thirty-five tons English.

The Boladora was now our own, but she was an unmanageable wreck; so, as soon as possible, we took her in tow. Our next care was to secure her only remaining mast, (the foremast,) it being so much wounded, as to leave no chance of its standing even in a moderate breeze. We also transferred about one hundred of the slaves to the Pickle and some of her crew, confining the remainder where the slaves, now removed to the Pickle, had been imprisoned. We were under the necessity of doing this, for they had taken care to throw the irons overboard which had been used to confine the slaves, in order that they might not be appropriated to themselves. Here we were with prisoners, (exclusive of slaves,) a lawless set of rascals, amounting in number to more than double that of our own effective crew, and some of them infuriated by spirits. These pretty fellows we had to secure without irons, a rather nervous matter, but we had to finish yet the work we had begun, and this was only a small part of it. Lieutenant Mc. Hardy, however, was a match for them. One of his precautions was to throw overboard all the amunition which was on board the prize, so that in the event of the prisoners rising

against the mate (Mr. Fowell,) and his small party in possession of her, they might be rendered incapable of defending themselves against the Pickle. You are aware that the Pickle measures one hundred and twenty tons, that at the commencement of the action, we mounted one long eighteen pounder pivot-gun, with two eighteen pounder carronades, and had a crew of thirty-nine, including officers, six small boys and two disabled men. We lost during the action, one man killed and ten wounded, three of whom have died since.

The slaver was severely cut up by the shot from our pivot-gun, every one of which told, at least so said her sides, spars, rigging, and sails, when exposed by day-light, the latter being shot through in all directions, much to the disappointment of Mr. Fowell, who was not a little anxious from the commencement, to appropriate one to the use of the Pickle. According to Mr. Fowell's report, the state of the Boladora, when he first boarded her, resembled more that of a pirate than a slaver. Many of the crew and the negroes were drunk, some just able and others unable to reel about her deck, which being also strewed with rigging, wounded spars, dismantled guns, and wounded men, presented a sad picture of disorder and wretchedness.

As it was necessary to make for the first port, both for the purpose of securing the prisoners better, and to obtain water previous to going to Havana, Lieutenant Mr. Hardy determined on steering for Xibarra in Cuba, where, with our prize in tow, we anchored in the evening of the seventh. Here we set to work in rigging jury masts in the Boladora, and making stocks to secure the prisoners in. In this we had much difficulty, from the circumstance of the Spanish authorities of the port refusing us the slightest assistance, and the feeling evinced by the inhabitants (Spanish) in favour of their countrymen, so that the greatest caution was necessary on our part. Having arranged matters in spite of them, we started from Xibarra with our prize, and succeeded in arriving here (Havana) without any particular difficulty. Our crew being much reduced, after manning the prize, our commander took some of the male slaves on board the Pickle and clothed them, to assist in navigating her. These fellows from their very great expertness in musquetry, corroborated the information we had received of a number of them having been trained and used, during the action, as small-arm men against the Pickle.

Having gone through the necessary form of condemning our prize, before the mixed commissioners for that purpose appointed, and delivered her, and the prisoners and slaves, to the Spanish governor, we sailed in the morning. Among the malpractices of the slave trade, I am told, is the following, which is not generally known. On the arrival of new slaves, they are indented to

such of the inhabitants as the governor may please. It is the practice among the masters, to name the newly indented slaves after some of their old ones already on their estate. The result is, that on the death of any one of the old slaves, the event is reported, and it is thus made to appear that the newly indented slave has died, so that at the expiration of their term of indenture, a very few only are represented as being alive, and their deaths are readily enough attributed to the climate of Cuba not agreeing with them. Thus the estates are always well supplied. Lieut. Mc. Hardy in transmitting his account of the action to the commander-in-chief, with the list of killed and wounded, which I have sent you, expressed his approbation of the conduct of the officers and men on the occasion, and the most exemplary support he received from Mr. W. N. Fowell our senior mate.

Return of killed and wounded on board H. M. Schooner Pickle, in an action with a Spanish Slave Schooner, on the 6th of June 1829, *off Saint Domingo Key, on the N. E. coast of Cuba.*

John Horner	A.B.	..... Killed.
Mr. James Cook	Assistant Surgeon	..... Wounded slightly.
Mr. W. N. Fowell.....	Mate	..... Do. Do.
James Brown ..... *	A.B.	..... Do. dangerously
John Laden ..... *	A.B.	..... Do. Do.
Tho. Westaway..... *	A.B.	..... Do. severely
John Barker	A.B.	..... Do. slightly
James Steward.....	A.B.	..... Do. Do.
George Harrison	A.B.	..... Do. Do.
Eben. Watson	A.B.	..... Do. Do.
Thos. Wilmore	Private Marine	..... Do. dangerously

Total one killed, ten wounded.

Signed, JAMES COOK.
Assistant Surgeon.

II.—EXAMINATION OF THE "REPLY" OF COMMANDER JOHN PEARSE, R.N., *to the "Remarks" on his "Original Papers on Naval Architecture," in the Nautical Magazine for June. By* MR. WM. HENWOOD, *Naval Architect.*

THE extraordinary proposition advanced by Captain Pearse in the 25th number of the Nautical Magazine, namely, that, "the mean direction of the centre of effort of the water, does not always pass through the centre of gravity of the part immersed," has been candidly admitted, in the 30th number, to be an error. The other equally unphilosophical notion, that "the axis of rotation of a ship, passes through the metacentre," is still perseveringly maintained by this writer in the 30th and 32d numbers of this useful publication.

* These three men stated to have died in consequence of their wounds.

The meaning of the term metacentre, as used by Bouguer, and other writers on Naval Architecture, was concisely and correctly explained on page 366. This explanation, however, does not appear to have been clearly apprehended by Captain Pearse; and it is therefore necessary to advert to the opposing statements in the reply on pages 467, 474, and 609. It is stated on page 467, that "the arguments and the explanatory diagrams of authors, clearly demonstrate, that when a ship is inclined, the place of the metacentre is that point where the mean direction of the vertical force of the water intersects an imaginary line, passing through the centre of gravity of the ship, and dividing it into two equal and similar parts." This declaration is tantamount to saying that, the arguments of the authors, to whom Captain Pearse alludes, clearly demonstrate nothing: and by explanatory diagrams, most assuredly, nothing can be demonstrated.

The place of the metacentre has most certainly been clearly *defined* by various authors; and their definition of the term, has been made the foundation upon which their arguments have been built. Bouguer's own definition of the term, on page 258, of his "Traité du Navire," is, that "the metacentre is the point below which the centre of gravity of a ship must be placed." And, in the course of his illustration of this definition, Bouguer, on page 270, mentions, as a general theorem, that the mean vertical pressure of the water, takes place always in a line perpendicular to the curve, in which the centre of gravity of displacement moves, as the ship inclines from an upright position: and, he says, it is clear that the vertical lines, representing the successive mean directions of the vertical pressure of the water, form, upward, by their concourse, another curve, which may be called the "metacentric curve." If Captain Pearse will consult Liv. 2, Sect. 2, Chap. 5, of the "Traité du Navire," he will find, both by the text, and by the diagrams, that, as I have stated on page 346, the metacentre of Bouguer "is not coincident with the vertical and longitudinal plane which divides the ship into two equal and similar parts, unless the angle of heeling is infinitely small;" and that, as the ship inclines, the metacentre describes, in the course of its change of position, a curve with two branches. Now, as Captain Pearse's metacentres are always situated in the middle longitudinal plane of the ship, represented by the line *g m*, in fig. 4 of the Nautical Magazine, No. 22,—it is evident that this writer is completely mistaken, when on page 609, he states, that there is no discrepancy between Bouguer's and his meaning of the term metacentre.

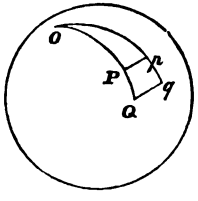
Again, the obvious difference between Captain Pearse's and Bouguer's mode of determining the metacentre, is manifest from the statement on page 467;—that the change of the situation of the metacentre, as the ship revolves "is only a change in the point of support which the force of the water constantly sup-

plies:" by which it is plainly intended to be denied that the metacentre ever leaves the line $g\ m$; whereas, Bouguer's metacentre is never in the line $g\ m$, except when the vessel's angle of heeling is indefinitely small. The quotation made from Bouguer's Traité de Méchanique, on page 474, with the avowed design of removing the discrepancy just mentioned, has nothing whatever to do with the question.

In proceeding to the consideration of the place of the axis of rotation, let it be supposed, for example, that a ship is inclined 10° from the upright position. The metacentre of Captain Pearse, is that point where the vertical line passing through the centre of gravity of displacement, intersects the middle longitudinal plane, or the vertical axis of the ship. When the same ship is inclined 20° from the upright, the metacentre then, is the intersection of the perpendicular to the horizon, through the centre of gravity of displacement corresponding to the inclination of 20°, with the same vertical axis. And this latter metacentre, would, in ships in general, be a point above the metacentre of 10° inclination. Now, the question to be decided is, does the axis of rotation pass through either of these two of Captain Pearse's metacentres, or through some other metacentre above, below, or between these two. Or, on the other hand, is the old fashioned doctrine, that the axis of rotation must and does always pass through the centre of gravity of a vessel, still to be regarded as perfectly orthodox.

Reference was made on page 346, to Whewell's Treatise on Dynamics, for the proof, that the axis of rotation of any body whatever, acted on by any forces, must always pass through its centre of gravity. It is shewn on page 222, of this Treatise on Dynamics, that "the motion of any body whatever, may at any instant during the motion, be resolved into a motion of translation of the centre of gravity, and a motion of rotation round an axis passing through that point." The proof of this proposition was originally given by the celebrated Euler, in his "Theor. Corp. Sol. Cap. 2"; and is as follows:

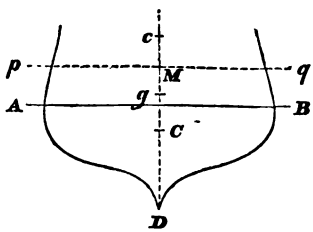
"Suppose the centre of gravity of a revolving body to be in motion, and let an equal velocity be communicated to the body in the opposite direction, so that that centre may be at rest; then let the centre of gravity of the body be made the centre of a sphere, and let the points of the body be referred to the sphere's surface, by lines drawn through them from the centre. Let P be one of these referred points, and in an indefinitely small time, let P move to p. Draw a great circle $P\,Q$, perpendicular to $P\,p$; and in this small time, suppose an arc $P\ Q$, to come into the position $p\,q$; therefore, $Q\,P$ is equal to $p\,q$, and $Q\,q$ must be perpendicular to $P\ Q$. Let the arcs $P\ Q$, $p\,q$, produced, meet in O; then O will have



been at rest during this small time. And if we draw a line from the centre of gravity to *O*, all the points of the body in this line will have been at rest, and therefore the body, during this instant, has been revolving round this line as an axis." It is a necessary consequence of this proposition, that "when forces act upon any body, the centre of gravity is the centre about which the rotation, when separated from the motion of translation, does take place."

The same truth may perhaps be somewhat more familiarly demonstrated in the following manner.

Let *A B D* represent a ship; *g* its centre of gravity; *M* the point which, according to Captain Pearse, is the metacentre; and let *p M q*, be a horizontal plane passing through *M:* and suppose, for the sake of argument, that the axis of rotation passes through *M*, in the plane *p M q*. Also, suppose all the weights above the plane *p M q*, to be collected at their common centre of gravity *c*, and all the weights below the same plane to be collected at their common centre of gravity *C*. In order that the ship *A B D* may revolve freely, that is, with perfect facility either way, round an axis passing through *M*, in the plane *p M q*, it is absolutely necessary that the weight in *c*, multiplied by *c M*, be equal to the weight in *C*, multiplied by *C M*. For if those moments are not equal, some force, proportionate to their difference, will be required to act at a distance from the axis, to make the body revolve; and as long as this is necessary, or so long as the rotation of the body cannot be produced by an indefinitely small force, *M* cannot be the axis of free rotation. And it is plain those moments cannot be equal, unless *M* coincides with *g;* which latter point therefore is the axis of rotation.



Again, on the supposition that *M* is the axis of rotation, let a force of any magnitude act on the body through the point *M*, in a line parallel to *p M q*. The only effect this force can have on the body, if *M* is its axis of rotation, is to give the body a motion in the direction of the force; it cannot produce rotatory motion. But, as a force acting horizontally at *M* will communicate the same quantity of motion to unequal quantities of matter above and below the line of its action, the velocity which the force impressed will generate in the part of the body above the plane *p M q*, will be greater than that communicated to the parts of the body below the same plane; and consequently the body will revolve round some point below *M*, which is absurd. And, as a similar contradiction of reasoning would result from a supposition of any other point

than *g* being the axis of rotation, it follows that *g* is the point through which the axis of rotation must pass.

Having thus disposed of the questions at issue respecting the meaning of the term metacentre, and the position of the axis of rotation, it will be proper briefly to notice some of those observations which Captain Pearse has made, in reply to my remarks inserted in No. 28 of the Nautical Magazine, and relative to the results of some of his experiments.

The first observation I shall advert to is, that on page 469, that "the laws of mechanics, as well as experiment, prove the equation of equilibrium (of a ship, in an inclined position, given on page 347 of this vol.) to be erroneous; for, by that equation, the relative forces of the wind, and the resistance to leeway, are estimated by the perpendicular distances of their mean directions from the centre of gravity of the ship."

In the equation referred to, the *relative* forces of the wind, and the resistance to leeway, were never mentioned nor estimated. The absolute or actual forces of those powers were, with perfect propriety, made parts of the equation of equilibrium; but it would have been absolute absurdity to have spoken of the relative forces of the wind and water, when there were no other forces in question to which they had relation. The use of the phrase "relative force," in the same, and the following paragraph on page 469, as well as on page 609, and many other places, is equally improper.

Captain Pearse proceeds, on page 470, to say, that, "according to the equation in question, the weight of the model represented by figure 4, in the Nautical Magazine, No. 22, should be equal to the inclining weight *w*, multiplied by the *whole* of the horizontal distance between the vertical efforts of the opposite weights *a g*." This, however, is by no means the case; for, in the experiment represented by the figure referred to, if a line be drawn from the centre of gravity *g* of the model, to the centre of gravity of the weight *w*, the intersection of this line with the vertical *m n*, will be the common centre of gravity of the weight and model. And the whole vertical effort of the water which acts in the line *m n*, is equal to the weight of the model added to the inclining weight. In the equation of equilibrium given on page 347, the position of the centre of gravity of the model, or ship, is not changed by the application of the inclining force of the wind from the middle vertical axis to the line *m n*, as it is in Captain Pearse's experiment. Nor is the whole displacement, or the vertical effort of the water, increased in the equation referred to, as it is by the inclining weight in figure 4. Captain Pearse's experiment is simply an instance of two weights balancing each other; the model at the distance *g c* from the common centre of gravity or axis, balances the inclining weight *w*, at the distance *a b* from the same point. In my equation, on page 347, in like manner, the inclining power of the wind

and the resistance to leeway, are balanced round the centre of gravity, or axis of the ship, by the vertical effort of the water. And thus the common centre of gravity is the axis in both cases—in my equation, and in Captain Pearse's experiment. To use Captain Pearse's own words, "it does not require a moment's consideration to be satisfied that" Capt. Pearse's reasoning "is erroneous, and inconsistent with existing laws."

The next observation on which I shall briefly animadvert is apparently a very important one. Captain Pearse, on page 470, referring to the prevailing notion, that the axis of rotation passes through the centre of gravity of a ship, says, that, "in fact the error proceeds from improperly considering the centre of gravity of the ship, which is only a *single part*, to be the point of support, the axis of rotation, and the centre of equilibrium, in place of the metacentre, which is the centre of gravity of the *whole system*, or of all the operating forces."

This statement is at once vague and ambiguous. Can it be meant, that writers on naval architecture have hitherto considered the centre of gravity of a ship to be the point through which the mean direction of the vertical effort of the water passes when the ship is inclined? If this is intended, the statement is the very reverse of fact. And so singularly to distinguish the point which Captain Pearse calls the metacentre, as being "the point of support," is surely little else than the most egregious folly. For, why should not the centre of gravity of displacement also be called the point of support? No support whatever can with propriety be said to be afforded at either of those points. And, again, it may be inquired, what can be meant by the affirmation that the centre of gravity is only "a *single part*?" Of what is it a single part? It is no part of the ship, neither is it a part of any force acting on the ship. And, finally, when it is stated that the metacentre is the centre of gravity of the whole system, or of all the operating forces, if we are to understand that this metacentre of Captain Pearse's is the point or axis round which all the forces which keep a ship in an inclined position balance each other, the assertion is the very point to be proved: a mere *petitio principii*; a thing frequently occurring in Captain Pearse's papers.

It is stated by Captain Pearse, on page 467, that "the place of the metacentre is that point where the mean direction of the vertical force of the water intersects an imaginary line (plane) passing through the centre of gravity of the ship, and dividing it into two equal and similar parts." On page 471, Capt. Pearse has exhibited another of his experiments—a model described by fig. 3, in No. 30, with a weight suspended at one end. The weight of the model, multiplied by $g\ b$, is stated to be equal to the inclining weight, multiplied by $a\ b$; and consequently the common centre of gravity of the weight and model, which float in combination as one body

at the water-line *w r*, must be in the line *m n*; which line is also the mean direction of the vertical effort of the water. Now, as the vertical line passing through the centre of gravity of this model or ship is the line *m n*, and as the same line *m n* is also the mean direction of the vertical pressure of the water, the metacentre, according to Captain Pearse's own definition, quoted above, must be at an *indefinite height*, and not in the point *m*, as he has stated. Captain Pearse has, in this instance, very evidently failed in determining his own metacentre; and it is not therefore very surprising that he should have mistaken the way of finding that of M. Bouguer. But the gratuitous conclusion, on page 472, derived from this inadvertency of Captain Pearse's, deserves a passing notice. "It is therefore evident (from the above mistake) that the metacentre is the centre of gravity of the whole system, or of all the operating forces;" and "that it is the centre of effort of all the weight or pressure."

I pass on to the paragraph at the bottom of page 475, leaving the preceding paragraph for a subsequent consideration. We are there referred to fig. 1, in No. 22 of the Nautical Magazine, in which *a b n* is a model floating in an upright position, *c* being its centre of gravity, and *l o* the water-line. *d h i* is the same model with a weight at the mast, which caused it to incline 90°, so that *p r* became the water-line. Captain Pearse says, that before the inclination the centre of gravity of the model was at *c*, in the line *c m*; but, that when the model was inclined by the weight *w*, its centre of gravity was at *g*, in the line *g m*. The common centre of gravity of the combined model and weight will, obviously, be in a line joining *g*, and the centre of gravity of the weight *w*; and it appears from page 707, vol. 2, where this experiment is described, that the common centre of gravity of the model and weight is in the line *m c*; and it is therefore in the point of intersection of those two lines, and below the line *g m k*. Captain Pearse has accordingly inaccurately stated that the centre of gravity ascended the *whole* distance *c m*, minus the distance between the lines *l o*, and *p r*. But the chief thing to be noticed in this place is, that Capt. Pearse says, respecting this experiment, "that it is the most simple and satisfactory way of determining which is the most stationary point, and which proves to be the metacentre." It does not appear that in this experiment there can be any point of intersection of the mean direction of the vertical force of the water, with an imaginary line passing through the centre of gravity, and dividing the model into two equal and similar parts, when the model is upright; and when it is inclined, if the centre of gravity of the weight *w* be supposed to be at *k*, in the line *k g*, the intersection of these lines is the point *m*; which is at once Captain Pearse's metacentre, and the centre of gravity of the whole system. And, as the metacentre must have been above *m*, before the inclination

became 90°, the centre of gravity must be "the most stationary point."

The next observation to be examined is from the paragraph on page 476—that "as the vertical force of the water is always equal to the weight opposed to it, and as the mean direction of this force is always in the vertical line which passes through the metacentre, it is impossible that any point in that vertical can descend, when a ship inclines, unless it be caused by additional weight." ..... "And when a ship is inclined, the vertical force of the water cannot lift or raise it, to restore it to an upright position; .... on the contrary, THE CENTRE OF GRAVITY OF THE SHIP, as is clearly seen by figure 1, REQUIRES TO DESCEND."

When it is said to be impossible for any point in that vertical line which passes through the metacentre to descend, when a ship inclines, it is proper and necessary, for the sake of clearly understanding the matter, to ask, which, of all the unlimited number of vertical lines passing through the illimitable number of metacentres which exist as a ship inclines from the upright to an angle (for example) of 20°, is that one particular line to which Captain Pearse refers, as impossible to descend? It is difficult to imagine how, with the least appearance of attentive reflection on the subject, it can be said that any point, in any one of all the vertical lines in question, which successively passing through Captain Pearse's metacentres, consecutively become perpendicular to the horizon, that it is impossible for it to descend. Every one of such lines, and therefore every point of each of them, is in continual motion as a ship inclines; and the directions of their motions are oblique to the horizon.

It has most clearly been shewn by the Rev. Dr. Inman, on page 244 of his translation of Chapman's "Treatise on Ship-Building," how it is possible to prevent a motion of the centre of gravity, or axis of a ship, in a vertical direction, as the vessel rolls, or is inclined. It is simply necessary to give such a form to the sides of a ship between wind and water, that the cubic content of the solid immersed by the heeling on the lee-side, shall be equal to the cubic content of the solid emerged on the weather side; and when this is done, it is certain that the centre of gravity of the ship will remain immoveably at the same distance from the surface of the water, whatever may be the magnitude of the angle of inclination. And, I may remark, that no ship ought to be regarded as a well-constructed body, unless this adjustment be effected. Captain Pearse does not appear to have been aware of this circumstance, when he declared in a manner the most positive and emphatical, that the CENTRE OF GRAVITY OF THE SHIP (ships in general are doubtless intended) REQUIRES TO DESCEND. It is impossible that the centre of gravity of a well-constructed ship should either ascend or descend as she rolls or inclines from the upright position;

and it is alike impossible that the centres of gravity of displacement and the imaginary vertical lines which, passing through them, mark out the metacentres, should not alternately ascend and descend whilst the ship revolves on her longitudinal axis.

A complaint is made on page 476, that I have put a construction on some parts of Captain Pearse's arguments, "that is at variance with what the experiments prove." What some of the experiments to which I have in this paper adverted prove, I think it difficult to be perceived; and, as Captain Pearse has not specified those particular experiments which are at variance with the construction he has characterised as strange, I have not an opportunity of ascertaining whether or not "such constructions" could with propriety be formed "from the explanations of such simple experiments."

It was my intention to write a less lengthened animadversion on the statements of my fellow-inquirer after truth in naval architectural science, but it has appeared impossible to do justice to the several arguments which have been discussed, if great brevity alone were consulted. I therefore shall conclude this part of my examination of the "reply," with an observation respecting a very erroneous impression which Captain Pearse appears to have received relative to the present state of the theory of naval architecture.

Captain Pearse has stated, on page 466, that it "is notorious that some great error does exist in the theory." Captain Pearse has not, however, directly pointed out the great error which he affirms it is notorious does exist. If the great error consists in the general belief that the axis of rotation of a ship passes through its centre of gravity, the preceding disquisition will perhaps be regarded as a satisfactory proof that "a great error" does not "exist in the theory." That a glaring imperfection has hitherto existed in the theory of naval construction, was explained in the June number of this publication, and there will be occasion to revert to the same subject in the sequel of this examination; but this imperfection does by no means amount to "a great error."

(To be continued.)

III.—Maps of Tuscany and Morocco.

Florence, July 1, 1834.

Mr. Editor,—I wrote to you last month from Rome, and again date from an inland town, as information respecting maps and geography may probably be acceptable to the readers of the Nautical Magazine.

On making inquiry the other day about a great map of Tuscany, I was surprised to find three valuable works laid before me: 1st. A geometrical map of Tuscany, by the Padre Inghirami,

(geographer and astronomer of the public schools here,) on the scale of $\frac{1}{200,000}$, in four large sheets; a work of nine years' labour, having himself superintended the survey, which is based upon a net of 2,500 triangles, dependent upon 770 trigonometrical points. A well-engraved and beautiful map.

2ndly. This map reduced to one-fourth its size, that is, on the scale of $\frac{1}{100,000}$, with the geological features, mines, quarries, mineral springs, &c., all marked: admirably engraved by Sagato, who is famous for the relief he gives to his mountains.

3rdly. An atlas of the Grand Duchy, in twenty maps, each surrounded with valuable statistical information, by Dr. Zuccagni Orlandini; executed with great care, and completed last year. Besides these, the Padre Inghirami is employed upon a map of Tuscany, in 165 sheets; and a geographical, physical, and statistical dictionary is publishing in numbers, by *Repetti*, a good geologist, and who is considered quite equal to the task. Thus, Tuscany may boast of as many, if not of as good, maps of its territory, as any country in Europe.

A history of the "Empire of Morocco," in 8vo., by the Chevalier Gräberg de Hamsö, many years Swedish consul at Tangier and Tripoli, is just publishing here; with an excellent map, the best yet engraved of that country, as the author has taken the outline of that published by the Geographical Society of London in 1831, and has joined to it all the information he was able to collect during some years' residence at Tangier. Aided by a perfect knowledge of Arabic, the Chevalier Gräberg is well known in the literary world as author of many works, and especially as the translator of the celebrated Arabic MS. of the historian *Ibnou Khaldour*, published in the third volume of the Transactions of the Asiatic Society of London.

Rossellini, companion of the lamented Champollion, in his travels in Egypt, has just published at Pisa the third volume of his grand work on the "Monuments of Nubia." His valuable Egyptian collection is in the Museum here. De Amici, the astronomer at Florence, (successor of Pows,) is busily employed on his microscopes, and is raising his observatory in height. The country of Galileo, and with his telescope preserved in its museum, should produce something in astronomy.

In the birth-place of Amerigo Vespucci, I had hoped to find some work relating to nautical affairs, but, on searching through the rich library here, I find the best work on charts, pilotage, and maritime education, is one called "Arcano del Mare," published here in 1641, by our countryman, Robert Dudley, duke of Northumberland.

Tuscany is flourishing, in spite of Holy Alliance principles. Few in England are aware that savings' banks have been established here for some years; also public schools of nautical instruction;

and at length four infant schools are opened, to which the children flock eagerly. In Lombardy, the proportion of children receiving elementary education to the population, is 1 in 13; in England, in 1830, it was only 1 in 16.

The free port of Leghorn tends much to diffuse liberality and wealth: upwards of 800 vessels, exclusive of coasters, arrived in the port last year, of which 200 were English. During the same time, its imports were more than two millions and a half, and its exports two millions sterling.

I am, Mr. Editor, yours,

JOHN WASHINGTON, Commander, R.N.

IV.—MARINE INSURANCE.

To the Editor of the Nautical Magazine.

Kirkcaldy, 13th August, 1834.

SIR,—I am happy to observe by your last number, that the unsafe state of British merchant shipping is at last beginning to attract the attention of the public. While the remarks of "An Old Sailor," under the head of "Proposals for a Board of Control over Merchant Shipping," are irrefutable, and must meet with public approbation, (excepting of course the parties he excepts,) it is clear there can be no Board of Control which will exercise a vigilance equal to that which will be exercised by individuals looking after their own interest. What then is the cause of three-fourths of shipwrecks which take place? Plainly, SEA INSURANCE, equal to, and too often exceeding in amount, the *value of the vessels and goods lost, being paid by the* PUBLIC, to protect the property of ship-owners and merchants from loss.

Now, it is manifestly clear, to my view at least, that, if this indemnification could be withdrawn, and the loss of ships and goods made to fall on the *ship-owners* and *merchants*, who, it will be observed, so long as their property is afloat, are only the nominal, and not the real owners of it, since, if it be lost, it is paid for by the public, and is not lost to them, they (ship-owners and merchants) would take steps to prevent their property being lost, and it would soon be found that there is no difficulty in doing this. We know, by twenty-four years' experience of the Royal Navy, that there is no difficulty in making stronger and safer ships, and, to a great extent, in preventing shipwrecks altogether. The same means, if applied, would preserve merchant ships also, with the merchandise which they carry. Nor would the additional cost of a vessel be any objection, were it not for mis-classification, which, under the pretence of classification, gives no credit to a strong and safe vessel, over a weak and unsafe one, and of course

takes away every motive or inducement from a ship-owner to get a strong and safe vessel.

But strong and safe merchant vessels will never be got, so long as this practice continues, and merchants and ship-owners *have their property protected from loss*, so that they need not care a straw (and too often do not) whether it goes to the bottom of the sea or not. The attention of the public should therefore, in my humble opinion, be directed to withdraw this indemnification from loss, which it at present gives to merchants and ship-owners, and then, you may take my word for it, if this can be effected, that shipwrecks, and losses of vessels and merchandise at sea, *will disappear*, almost as if by magic. Of course, no person who knows any thing of the practice, ever supposed the loss of human life in the eight hundred merchant vessels lost last year, or in the eighteen emigrant vessels lost this year, on their passage to Quebec, to have cost the parties who filled their pockets by the practice a single thought. It was not a condition in the policy.

Petitions on the subject should, I conceive, be forwarded to both houses of parliament; and, if underwriters opposed a better and safer construction of merchant vessels, notwithstanding that individual rights, if such they be, should not be allowed to stand in the way of public good, the amount of property which would be saved from the sea, under a safer construction, would more than pension the whole of them for life at the amount of their present gains, besides the lives which would be saved. I take leave to forward you, for the Nautical Magazine, as an organ for disseminating information on nautical matters, the following petition to the House of Commons, from the inhabitants of Edinburgh, and its vicinity, on the subject of merchant shipping. Your publishing this will much oblige,

Sir, your most obedient servant,
JAMES BALLINGALL.

"That your petitioners regard with alarm and regret the present condition of the national commercial marine. That it appears from Lloyd's Lists, that, during the year 1833, not less than eight hundred mercantile vessels have been lost or shipwrecked, while, during the same period, not one ship of the Royal Navy has met with a similar fate.

"That the proximate cause of so many wrecks, involving an incalculable loss of property and life, appears to be the imperfect system of shipbuilding. Only half of the ribs or alternate main timbers of the hull, are united together, while the other, or intermediate timbers, are not only unconnected with each other, but rest solely on the outer planking of the vessel: hence the safety of the vessel, and all it contains, are wholly dependent on the outer planking, which, in nine cases out of ten, is shivered to atoms by

the slightest contact with a reef or sandbank. In the royal dock-yards, the system of architecture in the military marine is totally different. Instead of an outside bottom plank of two or three inches thick, as the sole protection, the hulls of ships-of-war are built of a solid mass of woodwork, of fifteen to twenty-one inches, in three separate parts united in one; having the grain of the different pieces of wood placed transversely to each other, and consequently in the strongest possible manner. Vessels thus constructed bid defiance to ordinary contingencies, and, though not proof against rocks and shoals, even there they often ride secure, when weaker vessels would be riven to pieces.

"That the remote, but influential, cause of the frail and perishable construction of the mercantile navy, appears to be the pernicious influence exercised over the commercial interests by the sea insurance companies.

"Ever since the art of shipbuilding arrived at its present pitch of perfection, as exhibited in the Royal Navy, insurances have been a great evil, inasmuch as the policy of insurance brokers has been to retard, if not altogether to prevent the application of similar scientific improvements in the construction of the mercantile marine. Were trading ships made as safe and durable as ships of war, there would be an end to sea insurances, and with them the gains of underwriters. If a ship be knocked to pieces, the shipbuilder has no cause to mourn. Another is ordered in its place, as weak and fragile as its predecessor. Nor does the owner suffer, the vessel being generally insured for much above her actual value. The merchant, too, is relieved from all anxiety, his cargo being guaranteed in a similar manner. Thus, let the destruction of shipping be what it may, the premiums being always so enormous, the insurance brokers, in the end, constantly derive an advantage; and, as the loss of every vessel diminishes the supply of goods in the market, the price of commodities necessarily rises, and the final loss, as usual, falls on the consumers. Hence, these great stakeholders, the underwriter, shipbuilder, ship-owner, and merchant, not only manifest indifference to shipwrecks, but, under pretence of classification of merchant shipping, have, apparently, taken the most effectual measures to prevent safe vessels being built.

"It is against this system of *public wrong* that your petitioners claim protection, which, while it annually causes the death of thousands of British subjects, and those chiefly of a class whose value in a commercial country can hardly be overrated, consigns to destruction an incalculable amount of capital.

"May it therefore please your Honourable House to take the subject complained of into serious consideration, with a view to adopt whatever remedy may appear calculated to put an end to the evil, either by appointing surveyors under the control of the Board of Trade, or other public board, to superintend and report on mer-

chant ships, while building, and before proceeding to sea; or, otherwise to do in the matter, as to your honourable house may seem meet. And your petitioners will ever pray."

[We have readily complied with the request of our correspondent, Mr. Ballingall, on this very important subject. And as we consider the evil so clearly pointed out to be of that baneful nature which aims at the very root of our national prosperity, and, in conjunction with the old tonnage laws, as having reduced the character of our mercantile shipping to its present degraded condition, we shall never lose sight of it. We shall take every opportunity of shewing our readers the bad effects of marine insurance, in its tendency to secure (in most cases unworthily) the owner's property, by raising the market prices, and lavishing the lives of seamen and passengers. We have met with the eighth edition of a very valuable little work, called "Taylor's Instruction to Mariners," from which we extract the following. It was written more than twenty years ago, and, although the old mariner did not contemplate bad ships in his fears for the mercantile navy, yet they form one of the ill effects of the system of insurance, and the tonnage laws another.]

Address to Seamen, but especially to the Rising Youth.

Those who have used the sea, and have attained the age of sixty or seventy years, must have observed a very great declension in all orders of seamen, both with respect to morals and discipline.

Fifty-four years ago, when the writer of this address first went to sea, masters had a great interest in the ships they commanded, (being mostly owners, or part owners,) and generally had such a high sense of honour, that no hardships or dangers appeared to them so formidable, as an imputation on their conduct as seamen. Had they lost a ship, and it was supposed to be owing either to ignorance or carelessness, it was long before they were intrusted with the charge of another, or could prevail on any to venture friendly parts with them; so that the loss of a ship in those days frequently involved the loss of *character*, as well as *property*.

Few ship-owners made insurance on policy, and such as did seldom insured half the amount of their interest. Masters at that time observed a respectable and dignified conduct, for, though they slept less, and walked the deck more than any of the crew, when the ship was at sea, they seldom entered into any unnecessary conversation with the sailors; their mates were their confidants, and to them they committed the entire management of the ship while in port, or in a road-stead, at anchor.

If they saw any occasion to reprove their mates, they did not do it in the presence of their men and boys; for they knew, had they done so, it would have lessened their authority. It was then the custom for mates to remain in the same ship, until they obtained the command of them, or of others; foremast men seldom continued less than one year, and there were many instances of their continuing seven to ten years.

As to boys, they were then more obedient to the men than they are now to their masters; they never durst go on shore, without leave of the mate, and that could seldom be obtained more than once a week, half of them in the forenoon, and the other half in the afternoon. It is needless to say, that they were obliged to be on board at the time appointed.

The oldest apprentice had a sort of delegated authority over his fellow-servants, and each one had some part of the ship's stores under his particular care, which he was bound to have in readiness whenever called for; instead of blows, or abusive language, mates contrived to substitute shame and degradation, by assigning mean offices to such as were last in turning out, or were otherwise backward or unhandy in doing their duty; such as sweeping the decks, cleaning the boat, &c.; to avoid which, the writer has fresh in his recollection, the many hard races he has run (upon the mate knocking all hands out) to be among the first at the windlass palls.

To haul out the *weather earing*, when the topsails were to reef, to *ship* the first handspike, and to *cat* the anchor, were objects contended for by men and boys, as points of honour.

To such discipline and subordination must be attributed the smallness of the number of ships then lost, compared with what now happens, making every allowance for the increase of shipping.

It is lamentable to think how ships are now thrown away; with sea winds and hazy weather, we see them keeping near the land, and grappling for harbours, by which many, with their crews, are lost; when, at such times, by keeping at sea a few days longer, they might have prevented such disasters. But what is more astonishing, a master, who loses his ship through ignorance or carelessness, finds little difficulty in obtaining the command of another, without any stigma from the public, or any apparent contrition on his part.

To bring seamen back to that state of vigilance and care, so conspicuous in their forefathers, is the design of this address; and the writer enjoys no small degree of satisfaction in the consideration, that his plans (some years since executed) for lights in Hasbro' Gatt, and at the Goodwin and Sunk Sands, have been the means, under Providence, of preventing the loss of many of their lives.

As the future prosperity or calamity of this country will very much depend on the virtues or vices of the rising generation, the writer hopes he need not apologize for earnestly exhorting them to stem the strong current of luxury and dissipation of the present day.

A growing contempt of religion and good morals seems to pervade the far greater part of mankind; and, unless a considerable

reformation takes place, inevitable ruin will be the consequence.

Without religion there can be no solid virtue, no good morals, no true honour: all the *apparent* good actions of bad men spring from mean and selfish motives. That ferocity called courage (too often kept up by artificial means) is in such men, like that of animals, devoid of reason; hence their commands are boisterous, fickle, and confused; in that state of mind there is great danger of their issuing orders the reverse of what they should do.

Good men encounter difficulties and dangers with rational courage; and such as are commanders give their orders in a calm, cheerful, and dispassionate manner, and their example animates and encourages all that sail with them.

The religion recommended to all (and of which all in every situation are capable) consists in sentiments of piety, and in reflections on the power, and providence, and goodness of God, and in actions correspondent therewith.

Such sentiments, and such conduct, would give young men (who have nothing to depend upon but their own merit) the fairest chance of preferment; and if it has been their loss to have had parents who either could not, or would not give them a suitable education, they will have many opportunities of improvement while at sea and in port.

The famous circumnavigator, Captain Cook, served his apprenticeship in the coal and coasting trade, and acquired almost all his knowledge of books after he went to sea: he was a striking instance of the power of emulation, united with sobriety and an ardent application; his example is worthy the imitation of every seaman.

To the foregoing we annex the following extract from a little work on the subject of marine insurance:—

It is a singular feature in civil polity, that those measures which, in the infancy of human institutions, are necessary to the success of various undertakings, are found, after a certain stage, not only to be unnecessary, but in some cases to be absolutely pernicious. It becomes a question, whether, in curing one evil, they have not created a greater. In this class we have no hesitation in ranking Marine Insurance.

In order to a right understanding of this subject, it will be necessary to explain what Marine Insurance is. We cannot do this better than in the words of the preamble to the statute 43, Eliz. c. 12, which recites, that—"By means of policies of insurance, it cometh to pass, upon the loss or perishing of any ship, there followeth not the undoing of any man; *but the loss lighteth rather easily upon many, than heavily upon few; and rather upon them that adventure not, than those that do adventure;* whereby all merchants, especially of the younger sort, are allured to venture more willingly and more freely."

It is clear from the above description, that, whoever may suffer by the loss or perishing of a vessel with the merchandise on board, the ship-owner and

merchant are not of that number. The ship-owner may, and indeed generally does keep his ship insured to the full value, and the merchant generally insures to the full value of his goods.

Now, although in the infancy of naval architecture, when the art was but very imperfectly understood, and when it might be alleged, that the risk of foreign voyages was too great for any individual to take upon himself, it might then have been proper for the community to protect such individuals from loss, it is evident that the case is now completely altered. In the progress of time, the art of ship-building has become better understood; and there is no doubt that sea-risk would be greatly diminished in consequence, were it not for marine insurance, which, it is clear, has been the main instrument in prohibiting all improvements in naval architecture.

To carry marine insurance into effect, a class of persons is necessary, who, for certain sums paid to them as presents, called premiums of insurance, agree to bear the risk, and to pay for all losses of vessels and merchandise. These persons are technically called Underwriters, from the circumstance of their subscribing, or under-writing, a paper bearing faith in law, called a Policy of Insurance, which sets forth the amount of premium, or present paid to them, and the risk which they consent to bear. These parties quickly perceive, that it is absolutely necessary for the success of their trade, that there should be frequent shipwrecks, and damages to vessels and goods. They reason thus:—If there be no losses or damages of, and to, vessels and merchandise at sea, there will be no sea insurances; hence, it is necessary to the very existence of our trade, that losses and damages to vessels and goods should take place. Again—If we countenance the building of strong and safe vessels, ship-owners will provide them accordingly; and, as premiums of insurance will, as a matter of course, rise or fall with the risk; if it be greatly diminished, merchants and ship-owners will then take the risk of their own merchandise and vessels on themselves, and will thereby draw the business of insurance from us altogether. On the other hand, the more the sea-risk is increased, the higher the premiums of insurance will of necessity rise; and as it is a clear principle, that we must receive in premiums or presents more than we pay away in losses, otherwise we should become bankrupt, we will take steps to increase instead of to diminish sea-risk.

Accordingly, a system of classification of merchant-vessels having been adopted for the convenience of underwriters, and prepared by themselves, it was soon seen, that the most effectual way to increase sea-risk, and prevent strong and safe ships being built, would be to take away all inducement from a ship-owner to get a strong and safe one, by classing it, however safe it may be, after a certain age, with the most unsafe and worthless fabric which could be made to float; that is, to class the most valuable vessel on a par with the most worthless.

Lest it be thought we have taken a partial or uncandid view, we beg leave to quote from official documents. About the year 1798, an alteration of the system on which vessels had before then been classed was made, and the ship-owners having good reason to be dissatisfied, remonstrated with the authors of this new system. It will be observed, that the proceedings took place about the year 1798, now thirty-six years ago, at which time it would appear the red register-book of shipping was undertaken. This book was known at Lloyd's by the name of Ship-owner's Book. The underwriters' book was known by the name of the Green Register Book. Both are now discontinued, and a new one is in the press. The following are extracts from the explanation at the beginning of the red register book of 1829, and bearing date April, 1799:—

"In the preceding year the committee of the society, without consulting the

subscribers at large, made an entire change in this system so long established, and so universally approved, and substituted in its place a plan founded on principles diametrically opposite, and perfectly erroneous."

"Instead of classing the ships, which they gave an account of according to their actual state and condition, ascertained by a careful surveyor, a new system was adopted, of stamping the character of a ship wholly by her age, and the place in which she was built, without any regard to the *manner* in which she was originally constructed, the wear or damage she might have sustained, or the repairs she might from time to time have received, *or even being rebuilt*; thereby at once obviating the necessity of surveying the hulls of vessels, lessening the inducement to build ships upon principles of strength and durability, and taking away the encouragement to keep them in the best state of repair. On the first appearance of this new system, meetings were held by a numerous body of the ship-owners of this city, (London,) who came to resolutions, expressing in the strongest manner their disapprobation of the conduct of the committee of the society, and, amongst other resolutions, declared their opinion that it was 'founded in error, and calculated to mislead the judgment of merchants and underwriters; and, if continued, would not only prove of the most injurious consequences to individual ship-owners, merchants, and underwriters, but to every branch of trade connected with repairing and refitting vessels, and in a great measure tend to destroy the shipping of the country.'"

"Meetings were held, and similar resolutions formed in the principal outports of the kingdom.

"The ship-owners of London appointed a committee to represent to the authors of this new plan the injurious tendency of their system, but the committee thought proper even to refuse them an interview."—*Dated, April*, 1799.

We have been thus particular in giving our authority, because the same principle and spirit which caused a departure from the original system of classification, is in operation at this hour, notwithstanding the new system of classification lately adopted. The reader will please to observe, how truly the prediction of the ruin of the merchant-shipping of the country, made thirty-six years ago, has been verified.

This new system having accordingly been adopted, the effect proved to be what was anticipated and intended. Strong and safe ships not being in request, were not built. Every ship-owner knows full well, before he proceeds to build a merchant-vessel, that if he builds a strong and safe one, it is unsaleable—simply, because there must of necessity be more material and labour in it than in a weak one, and consequently the price must be higher; and, because he himself could build a weak and unsafe vessel, which would be perfectly saleable, safety being in fact proscribed by the system, at a half or a third of the price; he knows he cannot build too bad, or, in other words, too cheap for a ready sale.

A ship-owner, too, or a person about to become one, knows full well that there is no inducement for him to purchase or contract for the building of a strong and safe ship, because she must of necessity cost him more than a weak and unsafe one; and, as he will get no abatement of the premium of insurance in consequence of the additional strength and safety of the vessel, he has no interest in getting a safe one, but the reverse. He finds that he can earn as much freight with the merest sieve which can be made to float, as with the strongest and safest ship; and, as he has less capital embarked in the one case than in the other, even although in consequence of the diminished risk to the strong ship, he did not insure it to the full value; his profits with a cheap ship are of course greater. He therefore provides a cheap and unsafe ship accord-

ingly, instead of a strong and safe one, his only object being cheapness; insurance enabling him entirely to disregard safety.

But, it may be said, cannot he provide a strong and safe vessel; and, as the sea-risk will be thereby greatly lessened, dispense with insurance altogether? Here, however, he finds that underwriters have taken most effectual measures against him. They reduce his ship, however strong and safe it may be, to the second class, or, in other words, put a mark of proscription on it, implying want of safety, in a limited number of years, generally about nine, on an average, of the whole shipping of the kingdom, as soon as the most worthless. A book of classification is annually published by underwriters, said to be for their own use only, containing these marks of proscription; and, as he has not within himself a command over the freight, as he has over the ship, or the means of employing her, upon applying for freight or charter for his vessel, he is immediately asked if his be a first or a second-class vessel? If she has passed the fatal climacteric, although she should possess the strength of a rock or a castle, it is quite in vain for him to allege her strength, safety, and superior equipments. A merchant cares nothing about these things, and has the ready objection—"I can get my goods carried at the same rate of freight, and at a lower premium of insurance, in a first-class vessel;" first-class signifying merely a newer vessel; nor in general does it give the merchant any concern after his insurance is effected, although ship and cargo go to the bottom immediately on leaving port. Nor will an underwriter make any abatement in his demand of premium on either ship or cargo, on account of additional strength and safety, merely because he does not wish strong and safe ships to be built, or to exist; and the ship-owner finds that he cannot obtain employment for his safe ship. The books of classification, or rather of proscription, are sent also to all parts of the world, so that, let him go where he may, wherever British commerce has been carried, and winds blow, and oceans roll, he will find that these books have preceded him. Although, therefore, he might be inclined, in consequence of the additional safety, to take the risk on himself, and dispense with insurance on the ship altogether, he cannot convince a freighter against the evidence of his pocket, and this book, that it would be to his advantage to send his goods by his ship, and of her additional safety. He therefore finds that a strong ship, instead of being an advantage, is a curse to him. He has not the means of employing her within himself, and he cannot sell her; because, for the same reasons that she is unremunerative to him, she would be unremunerative to a purchaser, and he cannot keep her without great expense, loss, and deterioration. What then is he to do? His only alternative is to follow the example of others; that is, to withhold repairs and supplies from her; to keep her insured to the full value; and let her be lost, and get paid for her by the public, through the agency of underwriters. As he himself has the fixing of the sum at which she is to be insured, it must be his own fault if she is not sufficiently paid for.

But, again it may be said, since the underwriters have to pay for all losses in the first instance, would it not be for their advantage that vessels should be built stronger and safer, and they would have fewer losses to pay for? It has already been said, that the premiums paid to underwriters must exceed the losses, otherwise they would become bankrupt; and, as all these premiums come eventually out of the pockets of the consumers, or, in other words, of the public, whosever hands they may pass through, it is a received maxim in marine insurance, that "high risks and high premiums, are preferable to low risks and low premiums;" and every effort is used to keep up premiums. The loss of human life attendant on the speculation never enters for a moment into consideration.

Such, we conceive, has been the practical effects of a system, which, originally intended in the infancy of commerce, for the protection of those who embarked, their capital for what was then considered the public good, has come in the course of time to be an evil of immense, and, let us hope, of intolerable magnitude. From it has proceeded the unsafe and dangerous condition of the whole Mercantile Marine of Britain. Hence, every attempt to improve the structure or condition of the mercantile Navy, has been directly and systematically opposed. It is stated in a article on the subject, in the Edinburgh Encyclopedia, that no attempts have been made to improve the construction of the Mercantile Marine of this country. This is not true. Various, strenuous, and persevering efforts have been made to improve it; but, owing to the above-mentioned causes, hitherto without effect. It is to be hoped, however, that the day is not far distant, when a better order of things will arise. A British merchant vessel of the present day, is put together with less art, or attention to scientific principles, and regard to safety, than the rudest machine of ancient or modern times. Hence, when it is roughly handled by the winds and waves, or gets stranded, we find its component parts dislocated, separated, and spread along the beach. In a vessel of a thousand tons, the utmost defence that is placed between the crew, the passengers, the cargo, and destruction, even in its first voyage, and in its best and soundest state, is three inches of oak timber! so that a touch from a pointed bit of coral, a scratch of its own anchor, is sufficient at any time to drown, with all its contents, the proudest British merchantman that floats! Destroy by any means that fragile defence, and the William the Fourth is as much at the mercy of the waves as was the coracle of Caractacus, when the cow-hide that covered its wicker work was destroyed. This might be excusable, if it proceeded from ignorance, but what are we to say to it, when it proceeds, as it does, from design? Will the public allow such a system to be persevered in? From it proceeds interminable drownings, ships foundering at sea, wrecks and abandonments, without number and without end. We are informed, but we do not vouch for it as a fact, that a vessel called the Lady Nelson, which was built by the late Admiral Schank, as a model, and a model of which is in the Naval Museum at Somerset-House, was bought up by a party, and sent out of this country, lest the advantages of additional safety, shewn in its construction, should become too apparent to be resisted, and should be generally adopted. We know for certain, that, when a few years ago models illustrative of a better and safer construction of merchant vessels were offered to be exhibited to the Committee of Lloyds, free of any expense whatever, the Committee declined even to look at them.

It is manifestly clear, that if Sea Insurances could be effectually prohibited, all parties interested, Merchants, Ship-owners, Ship-builders, and the Public, would unite their interests most cordially and zealously to get strong and safe vessels, and they would be got accordingly. This is in some degree in practice, in the case of smacks belonging to Scotland, the owners of which do not insure them. These vessels, too, would be made much stronger and safer, were it not for Marine Insurance throwing its baneful influence, like the Upas tree, over the whole extent of Naval construction, and rendering Ship-builders averse to adopt improved methods of ship-building.

There is proof, too, in the case of the Royal Navy, the vessels of which are not insured, after an experience of twenty-four years, that there is no difficulty in making stronger and safer ships, and in a great degree preventing shipwrecks. The same means, if applied, would produce the same effect in the Mercantile Navy.

But, as the prohibiting of Marine Insurance would be violently opposed by

the parties interested, and is scarcely to be hoped for, it ought to be enacted, that no person should be allowed to insure either his vessel or goods to beyond a half, or a third, of their marketable value. The less amount that proprietors were allowed to insure for, the greater would be their anxiety to get strong and safe ships; and they would accordingly be got. Publicity in this, as in all other cases, would do much good; or surveyors might be appointed under the directions of the Board of Trade, to superintend and report on vessels while building, and before proceeding to sea, whose certificates of sea-worthiness should be exhibited at the Customhouse before vessels are permitted to sail, which would afford a security to the public that they do not at present have, both as regards the safety of those embarked, and the merchandise committed to their charge. This plan was recommended by the Committee of the House of Commons, appointed to inquire into the cause of the loss of the Rothsay Castle steamer. Meantime, until some such steps are taken, there appears to be no relief; nor until the public become aware of the cause producing the effect of interminable wrecks, and losses at sea, and that all of them are paid for by themselves, and not by Underwriters, and they take a determined part in demanding a reform in naval construction, can any amendment be hoped for. A simple exposition of the case, and which is intelligible to every person, is, that while a merchant ship, as already stated, has a defence of three inches of oak timber only, against all adversaries of winds, waves, rocks, shoals, and fire, a ship of war has a defence of from fifteen to twenty-one inches according to the size of the vessel, of solid timber in her bottom and sides, against the same dangers.

It is not neccessary to enter into a comparative statement of the additional safety in the one case over the other, because we have proof of the practical effects, and it is with the effects we have to do. In 1833, about 800 British merchant vessels were lost, with a most appalling loss of human life, as appears by Lloyd's list; while in the same period, not one ship of war was lost; the ships of war, too, were many of them in the same perilous situations with the merchant ships which were lost! We have thus proof of the disease and of the preventive both in one view. We have no hesitation in asserting, and the assertion cannot be disproved, that had the Amphitrite, female convict ship, which was wrecked on the coast of France, and in which above one hundred human beings were drowned, been built on the improved principle, that is, had had a solid bottom and sides, that these lives would have been saved. Had such been the case, the ship would have held together for at least one tide, in the very worst view of it; and as the flood tide would have carried her up on the beach, where she would have been left dry, or nearly so, at low water, every person on board might have been landed in safety. Although this may be denied, it cannot be disproved; and, reasoning from practice and experience, in similar cases, it cannot be refuted. In the case of the Earl of Wemyss smack, too, we have a letter, under the Manager's hand, to prove, and the fact has since been confirmed beyond dispute, that the water first got in at the bottom of the vessel, and filled the hold and the cabin above the deck, before the water, which got in at the skylights and drowned the female passengers, broke into the vessel. Had the water been kept out at the bottom, and a solid bottom would unquestionably have had that effect, the melancholy catastrophe could not have happened. Had the vessel, in such a case, been drifted over a sand-bank into deeper water as was the case, she would have floated as buoyantly as she did when she left the Thames: and as the water which broke in at the skylights was not in sufficient quantity to have filled the cabin, had there been no water previously there, the passengers would not have been drowned. Yet the appalling loss of human

life, besides property, in this case, as well as in the case of the Amphitrite, convict ship, the Erin, and Lord Blayney, steamers, and the other 796 cases, seems to have made no impression, with reference to preventive measures being taken to prevent such calamities and loss of life in future. Any impression which was made at the time, seems already to have passed away, like a tale that has been told.

The cost of the additional timber and labour required to make the bottom and sides of a merchant vessel solid, would be no objection, save for Marine Insurance, or rather misclassification, proceeding on the principle of not giving credit for strength and safety, where it is due.

The losses borne by the public in consequence of the system, we estimate at far above a million a year, while we have reason to think, it also causes the death of above two thousand British subjects annually. The ships, lately foundered and wrecked with emigrants to Quebec and of which the *Montreal Gazette* gives a list of 18 in the spring of this year, are clear proofs of the effect, and part and parcel of the nefarious system. About 700 human beings have been drowned in these vessels lately. It is the more annoying, too, to think that the property lost does not benefit any human being, except the parties by whom the system has been devised, but is swallowed up in the sea. It is high time the public mind was opened on this most important subject. The public are actually paying for the destruction of their fellow-creatures.

It thus appears, that in freeing proprietors, both Ship-owners and Merchants, from all individual risk on their property, and throwing the risk on the community at large, we have created a greater evil than the one which it was intended to cure. In endeavouring to avoid Scylla, we have run directly into the jaws of Charybdis. A clear proof of the system is the fact, that, while every other art and science has been rapidly tending to perfection in Britain, during the last half century, the art of merchant ship-building, for the remark does not apply to the Royal Navy, where, as already said, the vessels are not insured, has been as rapidly retrograding. There must be a cause producing this effect, and we challenge proof of any other cause than Marine Insurance, taking away all motive or inducement to build, to have, or to hold strong and safe ships. Safe ships, indeed, and Marine Insurance cannot co-exist and thrive together; the practice of the one is incompatible with the success of the other.

There cannot be a doubt, that the amount of premiums, paid above what is necessary to cover the risk with strong and safe merchant ships, is just so much taken out of the pockets of the public, unnecessarily and unjustly. There can be no doubt, either, that the whole amount of property, which, under the present system, is sacrificed in the sea, and which, under a better construction of merchant ships would be saved, is just so much lost to the public. With respect to the question, whether or not ship-owners could be found, who would continue to be Ship-owners, and take the whole risk of their vessels on themselves, were there no Sea Insurances, we have again to repeat, that it is in practice in the smacks belonging to Scotland, even under their present imperfect construction—that the owners of these vessels make the principal part of their profits by not insuring them; and, although it may be alleged, that these vessels belong to companies, no person will allege, that what is profitable to a company, would not, also, be profitable to an individual. The practice of not insuring is, also, pretty general amongst Foreigners, who build better ships than the British. It should, also, be remembered, that safe ships would carry safe merchandise, and thus take off the anxiety of the merchant for the safety of his goods. Why, then, is not a better system of conducting merchant shipping at once adopted? Simply and alone, owing to the proscription put upon

shipping by classification. Besides the reckless sacrifice of human life which it occasions, it is a most oppressive tax on our food, raiment, and shelter, and on the whole commerce of the country. It endeavours, too, to shun the public gaze and public condemnation. Stated categorically, the question stands thus. Is there any difficulty in making merchants ships stronger and safer, and in preventing thereby many shipwrecks, and much loss of property, and the drowning of many human beings? None whatever. Why, then, is not the better practice adopted? Simply because it would be against the interest of Underwriters. Can such interest, productive of such effects, be allowed to prevail against the interest of the public? Such, we conceive, are *the pernicious effects of sea insurance!*

The following is an extract from a report, by Merchants, Ship-owners, and Underwriters, at a meeting of these parties, held at the City of London Tavern, in June 1826:—

"And, can it, then, be contended in the very face of conclusive evidence, proving that property *and life* are continually sacrificed to the negligence and cupidity of those who, from ignorance or hope of fraudulent gain, construct insufficient ships, or neglect to maintain them in a state of secure efficiency—that the public is entitled to no protection, lest control should interfere with the rights of property? or, that *that can be private right which directly produces public wrong?* Your Committee are persuaded it is unnecessary to enlarge on this topic, and, that whatever may be the opinion entertained, with respect to the specific propositions submitted by them, the necessity for *some* provision against the dangers arising from ignorance, negligence, and fraud will be generally admitted."

We cannot close these remarks, without adverting to the daring impiety which endeavours to attribute the numerous shipwrecks to the act of God; thus endeavouring to charge the benevolent Creator and Sovereign Dispenser of all good, with a consequence which is clearly the work of man's hand. In the vast majority of shipwrecks, it is merely a natural cause producing a natural effect. The vessels were originally built to be lost, and lost they accordingly were. With as much truth and reason might we make stage coaches originally unsafe, and withhold repairs from them when they require them, and when they broke down in consequence, call it the act of God. Were stage coaches insured on the same principle as ships, such too would be the effect. As well might we call the breaking in of the water into the Thames Tunnel, the breaking down of the gallery of Kirkcaldy church, the falling in of the roof of the Brunswick theatre, or any other effect produced by insufficient workmanship, the act of God!

V.—Postscript to Mr. Enys's Letter on Steam-Engines.*

I have lately understood, from good authority, that at present the shipowners find the same difficulty in procuring return cargoes of coal, as they formerly did in obtaining return cargoes of copper ore; this confirms Mr. Davies Gilbert's account of the duty, and the more particular facts stated by Mr. John Taylor.

The increase of population, and the greater proportional consumption of coal, and the fact that a considerable quantity of ore is now drawn to the surface by coal instead of horses, are well

* See No. 26, p. 210.

known, and the change can only have been caused by the great decrease in the consumption of the large pumping engines, since their number has unquestionably increased in a greater ratio than the copper ore exported.

The engines employed by the different water-work companies, lift water to the reservoirs in such a manner as to become subjects of exact comparison with the Cornish engines, and I am inclined to think, their respective disadvantages are equally balanced. They work with 2 or 3 lbs. steam, expanded a little towards the end of the stroke, in the mode adopted by Boulton and Watt, and their duty does not exceed 35,000,000; or, as compared with the mines, 3 to 8 nearly. Welsh coal is used in both. It will, however, be sufficient for my argument to assume, that one bushel of coal in Cornwall is made to do double the quantity of work that is obtained from its use in the London pumping engines. Is not this statement worth inquiry? I can answer, that the Cornish engineers are ready to meet it. The superiority is only assumed as two to one, to allow for the disadvantages of the smaller size of the London engines. I have not been able to obtain an exact data, but should feel obliged to any person to insert corresponding statements to those in my former letters. 70,000,000 is a low average of the best Cornish engines. 35,000,000 is the highest, I understand, ever done in London. May I not contend, that a similar improvement would follow the introduction of steam of two atmospheric power expanded, in rotative engines? The jar is the only objection I have ever heard, worth consideration. For delicate machinery, it may be true, and can only be obviated by a second fly-wheel, or great increase of its weight; but steamer's engines are, or ought to be, strong enough to bear it, the difference being as 18 to 30.

If two-thirds expansion is used, the horse power in similar-sized cylinders is nearly the same; but, with one-half expansion, an increase of about 15 per cent is obtained. A reference to Dalton's tables will readily explain the mechanical advantages obtained by expanding steam, since equal power is exerted in one-third or one-half the cylinder, and the remainder of the stroke is clear gain. It will be found, my statement of the advantages practically gained by expanding, is nearly as great as theoretically proposed by James Watt, in his Expansion Engine; the words of his patent of 1782 are an accurate description of the present engines in the mines. If he had paid sufficient attention to strong boilers, or ever dared to use steam of two atmospheres, that is, 15 lbs. per square inch on the safety valve, expansion would have succeeded in his hands. His practice is at present far too highly venerated; but, in Cornwall, the duty report has long since broken the spell of his name.

Trevithiek expanded his steam, because he found it answer in practice. He was in the habit of contracting *to fork the water* for a given sum, an excellent plan to bring forward expedients for saving coal by a talented engineer, but by no means conduce to good workmanship in engines. Waoff's steam was expanded, in consequence of his false theory of the rapid increase of the tension of steam by small increments of heat, so that it may be fairly said to have been introduced into Cornwall by one engineer without reference to science, and by another from a false view. Sharp as is the competition between all the Cornish engineers, the duty report has invariably kept it in a proper direction, allowing no depreciation of each other's merits, so common elsewhere, but exciting only the endeavour to excel in its columns: it brings forward, though it curbs and controls, restless talents. It would soon point out whether the sliding double-seated, or common spindle valves are the best, and particularly in steamers' sliding valves; whether, in the first day's work, when well packed, and the crack of steam going into cylinder, is heard or in the second day's work, when the constant hiss only is heard, it performs best: these questions of detail are required to be known, in order that the best plan, or that which gives the highest duty, shall be followed. On these, and numberless points of detail with which I am unacquainted, a report of *work performed by steam engines*, is the only safe guide for the engineer, or engine man, to depend on.

Objections may be made to the use of high steam. The Manchester and Liverpool railway limited the engine contending for the £500 prize to 50 lbs. above atmosphere, or more than four atmospheres; the Cornish engines condense, but often use three atmospheres. For steamers, I advocate the use of two only. May not this be properly called middle steam? "Have any returns ever been made of the expense of square boilers and their repairs? One of the finest vessels in the packet service received extensive repairs in her boilers after the second voyage to Malta, was again repaired after the third, and was sent to Woolwich after the next voyage to have a complete new set of fire-places. The first repairs were effected at Falmouth, by the Perran Foundry Company. These expenses were incurred in a period of less than a year.

There is only four inches of water between the two fire-places commonly used in square boilers; the water is so rapidly converted into steam in this part, that a sufficiency is not allowed to remain in contact with the iron at the side of the fires; so that the iron is quickly burnt out, and the boiler injured. Lately, in one instance, the lower part of the fire-place has been made circular, and the top coved, (probably to avoid this defect,) a very near approach to part of the plans proposed by Captain King.

The most correct account of the management of the fires in the Cornish engines has been published by Mr. W. J. Henwood, in the Philosophical Journal; it is rather too long for insertion here, but I cannot refrain from adding, from the same undoubted authority, that the following prices of—

	s.	d.	
Coals . .	41	0	per 72 measured bushels.
Grease . .	45	6	per 112 lbs.
Oil . . .	4	2	per gallon.

The work performed, on twenty-four hours' trial by the engines at

Wheal Towan, East Cumus, Binner Downs } has been about { 1085, 870, 1006 } tons,

lifting one foot high at an expense of one farthing.

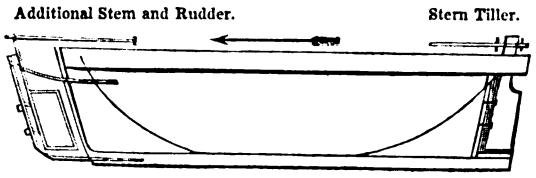
Enys, March 4, 1834. JOHN S. ENYS.

VI.—THE BOW RUDDER.

To the Editor of the Nautical Magazine.

Homerton, near Hackney, July 26, 1833.

SIR,—Observing in your number for this month, a description of the American mode of steering steam-vessels, and viewing it as a point of the utmost importance, that *such vessels*, especially which usually proceed with *such rapidity*, should be under the most complete control with respect to the power of steering, I beg to submit to the consideration of your nautical readers a very simple plan, which I consider will give nearly quadruple the power of the helm, and relieve the deck of the vessel from the great incumbrance of the steering apparatus described in your plates. The plain drawing herewith represents a steam-vessel with a bow rudder fixed to an *additional stem*, and to be hung precisely in the same way, and upon the same principle, as the rudder at the stern. These rudders are to be in no way connected together, but to be steered by two persons, *and to work in unison as occasion may require*. I here beg it may be understood, that I recommend the bow-rudder, *most particularly for steam-vessels* used on lakes and rivers, and carrying passengers and light cargoes, short voyages, and that proceed *with great velocity*. But I think also it may be attached to swift-sailing vessels of limited tonnage, as it would require nothing more than an additional stem made of iron, bolted round the bow of the rudder of sufficient strength, and the lower end bent for the purpose of being bolted to the keel.



It will be, I think, readily admitted, that the powers of the rudder at the bow will act more promptly than the rudder at the helm, because the rudder at the stern has to move the whole body of the vessel before it can be placed in the intended line of direction. But when both these powers, applied at each end of the vessel, are made to work together in unison, the vessel will turn comparatively as upon a centre, a pivot, and, on other occasions acting in unison, would cause it to keep to windward. Another material advantage, steam-vessels especially, would derive from the use of a bow rudder, is, that when in a high sea the rudder at the stern is so far out of the water as to be nearly or quite useless, the rudder at the bow would be in full power. And in sailing vessels it is highly probable that vessels of moderate tonnage would find a bow rudder of the utmost benefit in preventing the disastrous consequence of missing stays.

I feel it necessary to repeat, as my firm conviction, that it is utterly impossible to fix a bow rudder to any good purpose, but by means of an *additional stem*. A bow rudder fixed on the original stem of the vessel would be ungovernable, and would, when moved one point from the centre, turn quite round to the bow.—I remain, sir, your obedient servant,

W. ALDERSEY.

[We recommend our correspondent not to think of ships and the sea, when he proposes a bow-rudder. It is well known that the bow of a ship is generally the strongest part of her, and is purposely made so, to enable her to withstand the violence of the sea, to which it is more exposed than any other part. This violence we believe would soon relieve her of the new appendage; to say nothing of the effect of the cables when at anchor in a tideway. Even old Neptune himself would rise in judgment against it for disfiguring the bow, and give it to his tritons the very first voyage. But we have no objection to Mr. Aldersey applying it to certain small craft on canals or sluggish rivers. ED.]

TABLE IX.

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

1 Stockholm foot = 0·9738958 English foot.
1 English foot = 1·0268039 Stockholm foot.

Swedish or English Ft.	English Feet and Dec. parts.	Swedish Feet and Dec. parts.	Swedish or English Ft.	English Feet and Dec. parts.	Swedish Feet and Dec. parts.	Swedish or English Ft.	English Feet and Dec. parts.	Swedish Feet and Dec. parts.
1	0·974	1·027	38	37·008	39·019	75	73·042	77·010
2	1·948	2·054	39	37·982	40·045	76	74·016	78·037
3	2·922	3·080	40	38·956	41·072	77	74·990	79·064
4	3·896	4·107	41	39·930	42·099	78	75·964	80·091
5	4·869	5·134	42	40·904	43·126	79	76·938	81·118
6	5·843	6·161	43	41·878	44·153	80	77·912	82·144
7	6·817	7·188	44	42·851	45·179	81	78·886	83·171
8	7·791	8·214	45	43·825	46·206	82	79·859	84·198
9	8·765	9·241	46	44·799	47·233	83	80·833	85·225
10	9·739	10·268	47	45·773	48·260	84	81·807	86·252
11	10·713	11·295	48	46·747	49·287	85	82·781	87·278
12	11·687	12·322	49	47·721	50·313	86	83·755	88·305
13	12·661	13·348	50	48·695	51·340	87	84·729	89·332
14	13·635	14·375	51	49·669	52·367	88	85·703	90·359
15	14·608	15·402	52	50·643	53·394	89	86·677	91·386
16	15·582	16·429	53	51·616	54·421	90	87·651	92·412
17	16·556	17·456	54	52·590	55·447	91	88·625	93·439
18	17·530	18·482	55	53·564	56·474	92	89·598	94·466
19	18·504	19·509	56	54·538	57·501	93	90·572	95·493
20	19·478	20·536	57	55·512	58·528	94	91·546	96·520
21	20·452	21·563	58	56·486	59·555	95	92·520	97·546
22	21·426	22·590	59	57·460	60·581	96	93·494	98·573
23	22·400	23·616	60	58·434	61·608	97	94·468	99·600
24	23·374	24·643	61	59·408	62·635	98	95·442	100·627
25	24·347	25·670	62	60·382	63·662	99	96·416	101·654
26	25·321	26·698	63	61·355	64·689	100	97·390	102·680
27	26·295	27·724	64	62·329	65·715	200	194·779	205·361
28	27·269	28·751	65	63·303	66·742	300	292·169	308·041
29	28·243	29·777	66	64·277	67·769	400	389·558	410·722
30	29·217	30·804	67	65·251	68·796	500	486·948	513·402
31	30·191	31·831	68	66·225	69·823	600	584·337	616·082
32	31·165	32·858	69	67·199	70·849	700	681·727	718·763
33	32·139	33·885	70	68·173	71·876	800	779·117	821·443
34	33·112	34·911	71	69·147	72·903	900	876·506	924·124
35	34·086	35·938	72	70·120	73·930	1000	973·896	1026·804
36	35·060	36·965	73	71·094	74·957	2000	1947·792	2053·608
37	36·034	37·992	74	72·068	75·983	3000	2921·687	3080·412

VIII.—Recollections of a Voyage to Corsica.

(*Continued from* p. 557, *No.* 31.)

On the 29th of May we left Ajaccio, our pilgrimage in the street St. Charles being still fresh in our minds. If the house of Napoleon had possessed for us all the interest of a national curiosity, we had not forgotten that he, who thought he repaid our forfeited liberty by conquests and monuments, more despotic in his will than Louis XIV. had said to Europe—"The universe is mine!"

As we had traversed the shore of the island to gain the level of Cape Corse, a succession of gulfs, mountains, villages, and impenetrable forests of verdant green, lay before us, resembling the virgin lands of America. Were it not for the towers stationed at intervals on the sea-coast, or some solitary huts appearing as little white specks on the brow of the hills, it could not be believed that man existed on this wild, uncultivated soil. On passing the Sanguinaires, the gulf of Sagona opened to our view. Of the thirty-seven cities which Pliny describes in Corsica at the time of its splendour, Sagona ought to be one of the most flourishing. But Sagona is gone, and we may say of it what Racine did when speaking of the holy city—

"Et de Jerusalem l'herbe couvre les murs."

Here no more remains of "Sagona," not a vestige, only the dust of a city and the bed of the river Liamone, which once supplied water for its inhabitants. It is not far from the shore here, that the beautiful road cut through the rock commences, and leads to the first forest of Corsica. It also conducts the traveller to Vico, a village immersed in the forest, where I once experienced a sample of ancient hospitality at the house of the venerable Monstedo, a colleague of Salicetti at Marseilles, and not long ago a living victim of the French revolution. Theodore, who I have before alluded to, was then scouring the country; and I heard a story related by this old man, which reflects honour on the name of the bandit. A female peasant had been violatēd, and Theodore avenged the crime by dragging her seducer to the altar, and taking his life with the poinard. I think I hear still the tremulous voice of the old man relating to us the recollection of his young years. "Yes," said he, "a brigand even can have sublime and happy moments."

A gentle breeze filled the sails of the frigate as we sailed slowly past the rocky and indented coast of the island. These indentations are worthy the attention of the geologist, as the opposite side of the island presents in its whole length nearly a straight line without a single harbour for shipping. It is also on this side that the Romans founded Aleria and Mariana, important colonies of their time, but now forgotten, deserted, and without a name. Why this

predilection for this side of the Corsican coast?—Delenda est Carthago! no other reason.

On the morning of the 30th, Bastia lay before us, but the wind was unpropitious, and prevented our reaching it. The view from the frigate, as we approached it, was sublime and magnificent. In one part of the horizon the eye reposed on distant lands, the names of which every traveller loves to repeat. The mountains before us, enveloped in fogs, were those of Italy. At a little distance from us lay Capria, an islet of rocky mass, with volcanic summits like cornices; next Gorgona; and farther on, the isle of Elba, one of the fatalities of Napoleon; and lastly Bastia, with its smiling landscape. "This part of Corsica," says La Bologne, "is fertile and well cultivated; it resembles very much the beautiful scenery which Tuscany presents."

On the 31st of May we were yet some miles from Bastia, and could not reach the anchorage, but about ten o'clock in the morning a steam-boat was observed approaching us from the port, and the Prince de Joinville landed from her. The appearance of Bastia from the sea is picturesque and imposing, and is well worthy of the artist's pencil.

The history of the number of the "*vendette*" consummated in the course of the fortnight, are, of old, the ordinary means used by strangers to introduce a conversation with a Corsican. There was no other topic at the time of our visit but that of a peasant, who had been condemned for having assassinated a father and his daughter. He had endeavoured to obtain the latter in marriage, but her father had refused him; and such was the result of the disappointment. This wretch was still alive in the dungeons of Bastia; and having heard of the arrival of the Prince, had dared to hope for his life. In the eyes of a countryman of Fiumorbo, a "vendetta" sealed with blood is not an unpardonable crime; but the double guilt of this peasant was no longer spoken of, when a short time after our arrival at Bastia an attempt of a more serious nature occupied the public attention. Two individuals, who had been tried and acquitted by the jury, were attacked near the governor's palace, and the stiletto thrown at them from a distance, but chance or want of skill prevented the design succeeding. This had been done by the accusing party, who, wishing at all hazards to satisfy their revenge, thus set at nought the opinion of the jury who had acquitted them, a tolerable proof that the establishment of a jury in Corsica is yet premature.*

* "The inhabitants of Orrezzo, and particularly the muleteers, pique themselves upon their wit and readiness at repartee. When excited by wine, they crack their jokes upon whoever they happen to meet on the road, and very often wantonly throw out hints against the character of females. In April, 1833, several of these muleteers were conducting their animals (who were laden with potash) near to the commune of Ivagua, and were amusing themselves by giving way to their inclination for railery. The wife of a man named Orsini was the subject of their jests, but it so happened that the husband was working in a vineyard close by, and overheard them. A violent quarrel ensued, but the mayor and some

On the morning of the 1st of June we left Cape Corsica, Gorgona, and Capraia, and in the evening made the land at a good league from the port of Leghorn.

Some miles out at sea, and on a rock level with the water, the foundation of a beacon has been laid. It shows the position of a dangerous reef, and directs vessels to their anchorage. The French consul and the harbour-master came off to us in elegant boats, to receive the Prince of Joinville. The captain of our frigate, and the surgeon, were called to swear to our sanitary condition. I notice this circumstance, because it is well to know, that, with a properly attested certificate, they seemed to doubt the required oath; and that thrice they made us raise our hands in pronouncing the formula, "I swear it." We attributed the philosophical doubts of these gentlemen to a want of good taste on their parts.

The next day, in spite of the wind from the offing, in spite of a high rolling sea, the Tuscan "barcaroles" of the governor, the consul, the chief of the port, reached the frigate about eleven in the morning. The elegant barge of the governor carried on its prow an enormous Pegasus, but certainly never did allegory mean less. The personages on board, together with the Tuscan authorities, embarked in the gondolas of the country, and, with the wind and tide in their favour, reached the quay of Leghorn.

Although the "Livorno" of the Italians may have been a rich

of the inhabitants of Iavagna having interfered, nothing more serious occurred than very high words on both sides. However, in the course of the evening there were manifestations of irritation among the muleteers, one of whom, named Antonio Mateo Cipriani, was observed to be loading his gun. On being questioned as to what use he meant to make of it, he answered, 'I am going to shoot blackbirds;' at the same time treading slightly upon the foot of one of his companions. This movement was significative of what was to take place the next day.

"Their road lay by the side of the vineyard where Orsini was working, with several others. Scarcely had the muleteers approached than they broke into a chorus of insinuations against the woman, followed by insulting expressions towards the *rignerons*—such as 'Now is the time to show your courage, if you have any.' 'Who among you has heart enough to attack the mountaineers?' 'If you were not cowards, you would already have come forward; but above all, you are the man we are waiting for,' they said, addressing the husband. Upon this, the latter threw down his spade, ran to his hat, took up his gun, and advanced towards the point of the road where the muleteers were stationed. His companions endeavoured to stop him, but it was too late—he fell dead from a shot before he had time to make use of his own gun. Cipriani (the muleteer who was seen getting his gun ready the evening before) was arrested, and put upon his trial for the murder. One of the witnesses was the brother of the deceased. The prisoner, addressing himself to the jury, said, 'His deposition is false: he has lost his brother, and wishes to avenge his death.' At these words the witness turned towards the prisoner with a look of contempt, and replied, 'If I had wished to avenge my brother's death personally, I should not have been here. Had I not a flint and cartridge? I look to the jury for prompt justice. If my expectation should not be realized, no doubt it would become my duty to take personal vengeance.'

"Another witness having omitted to testify to a remarkable fact which he had stated previously, the President inquired the cause?—'I have been threatened with death, M. le President.' 'But you should not believe such a threat.'—'I beg your pardon, M. le President; if these people promise you 1,000 crowns, don't reckon upon them; but if you are threatened to have your brains blown out, I recommend you to be on your guard—the promise will be kept.'

"The jury, after an hour's deliberation, brought in a verdict of 'Guilty of murder without provocation, but with extenuating circumstances.' The prisoner was sentenced to ten years' imprisonment."—*Gazette des Tribunaux.*

and commercial place, the aspect of the walls which girt the docks, does any thing but correspond with its so much boasted magnificence. Some cannon repose there on miserable brick walls, pointing out the military station committed to the coast guard. The health office, of a modern and simple style of architecture, relieves the naked and desolate appearance of what is termed the debarcaderè. We found in the harbour some merchant ships, and a schooner belonging to the Grand Duke, lying peaceably at her moorings. This, the only maritime force of Tuscany, is proportioned to her wants; for since the extinction of Algerine piracy, the ships of the state have been dismantled.

Not far from the sea side is a statue of Ferdinand I., representing him in the moment of triumph, and beneath him are placed those of four slaves in chains, representing four great nations conquered, and attached to the pedestal of Victory. The work is said to be esteemed by connoisseurs; but the artist, and not the design, has merited their approbation. This piece of sculpture dates from an epoch when the mania for grouping figures prevalled among the Italian artists: this mania respected nothing, and here it first belied the page of history.

Under the archway of a gate called *la Marina*, we saluted the officer of the guard, who had been the first to anticipate us; others, better taught than ourselves, humbly took off their hats before a plastered Madonna, dressed in a rose-coloured garment, half concealed among nosegays, in a dirty niche hollowed out precisely in the middle of the rock, on which the sentinel had rested his musket.

One step more, and we were in Leghorn, considering which way we should follow. On our left lay a quarter, dirty, infected, and populous, rivalling the poisonous lanes of Smyrna; and before us was the spacious and long street, St. Ferdinand, well paved and with large pompous-looking houses on either side. The noon-day sun reflected, from the white pavement, forced us to seek the shade of the houses, the windows of which were all closed, as if it were the hour of midnight. But so it is, pleasure and industry alike give way to the Siestá; and Leghorn, active and busy as it may be in the morning and evening, is a deserted city at noon. These people sleep too much. A certain physician has sustained a thesis on the effects of the Siesta in a physical point of view. Why has he not endeavoured to treat it in a more philosophical way; perhaps he might have proved that the decay of Italy has proceeded from the effects of the Siesta.

The first concern of a voyager on landing, is to get housed; and being at a loss where to go, chance led us to a large hotel kept by an Englishman. Those people are every where. I have coasted a tolerable large portion of the globe, and in all parts of it I have met

with those cosmopolite figures. They have the organ of migration. In entering the hotel, a well-dressed mendicant stretched forth his hand; what a contrast! on his hat was written "*sordo*," deaf,—this to us was a novel mode of exciting compassion, whatever it might be in Leghorn. After having taken possession of a room, we repaired to the café Minerva at the time the natives re-appeared from the Siesta. Sherbet and ices have peculiar charms for voyagers; the nature of their food, too often heating, makes that essential to them, which to others is a mere superfluity. On demanding our bill, we found the delegate of Minerva had overcharged us. How many travellers would this incident have led to calumniate a whole city! Such are the trifles which charge with gall the pen of some writers! Our little party scoured the city in all directions, to obtain a general idea of it, before seeing its details. We accordingly visited the most beautiful, as well as the least attractive streets, the best of all ways to make comparisons. It is surprising, that, during the dog-days, the poisonous effluvia proceeding from the animal and vegetable substances in fermentation, do not oftener produce disease and death in this city: to us it was perfectly intolerable. The quarter of the city pompously named *New Venice*, is a perfect drain for filth. The canals, intended to conduct the laden vessels to the doors of the different warehouses, contain a yellowish stagnant water, which, evaporating under the heat of a burning sun, sends forth a poisonous miasma. Besides, these canals were encumbered with a crowd of vessels dismantled; so many proofs of the stagnation of commerce. But it is not astonishing that the city should be unhealthy, when, in the first place, the drinkable water which descends from the mountains of "la Colognole" is scarcely sufficient to meet the demand of the people: in the second place, the inhabitants take not the least trouble about cleanliness; and, careless of the aid of the galley-slave, whom the armed soldiery leads to his door, it would matter little to him if the exhalations of the Stymphalian lake assailed him in his abode. The churches in Italy form one of the wonders of the country. I had designed a very pompous and didactic account of the cathedral, but having seen those of Pisa and Florence, the latter of which was so superior, I shall not bestow any praise on an edifice which has nothing in common with the last, except the purpose for which it is intended. But the synagogue of the Jews of Leghorn, next to that of Constantinople is indeed the most remarkable in the whole world. The Jews of Leghorn, to the number of ten thousand, are, next to those of the capital of the Sultan, the men who turn most to their own profit the commerce of Italy. Their temple is immense, but without ornament, for thus wills "the King of kings," "the Lord of hosts." On the days of the Hebrew solemnities, three thousand

wax tapers are lighted in this synagogue. Such is the habit of measuring the pomp of a ceremony by the number of the illuminations, alike in the theatre, the church, and the synagogue! a sacristan will tell you that the naves of his parish church can be garnished with so many hundreds of small lamps, with the same exultation that the corsair will boast of the tonnage of his favourite barque. For the Jews who are established there, Tuscany is the best of all possible worlds, in which to await the promised land: freely may they exercise their industry, and fear no exactions on the part of governors. There, the car of Hebraic opulence may roll on without the risk of being upset. I have been dazzled at a ball, by the appearance of a Jewess literally covered with gold and precious stones; her dress cost a hundred thousand francs. Chance has also introduced to me a score of the children of Judah, and afforded me ample opportunity for studying their physiognomy. Whatever may be said about them, their distinctive feature consists not in the arched form of the nose; a regularity of features, a soft expression from the eye as it rests on any object, are the leading characteristics of the Jewish physiognomy—a trifle degenerated from the Oriental type. The pointed chin, attributed to the whole race, is an acquired deformity. A Jew making a bargain, never ventures his gold without having well calculated its probable benefit; see him calculating his gain, he pinches his chin in, drawing it downwards and upwards; a habit which leaves that feature which they in vain would wish to render national.

At four o'clock in the afternoon, the harmonious sound of the bells resounded in the city, calling to the cathedral priests, monks, and penitents, and an infinite number of persons, to form a procession. In Italy the influence of the sound of bells is almost magical; it even seems that there the heat of the climate gives to the vibrations of the metal a harmony unknown in cold countries. Their sound shortly ceased—a signal for the resurrection of the people of Leghorn: in a twinkling the scene changed—the infected atmosphere of the streets was overcome by the perfumes of aromatic plants, among which, as a botanist, I detected that of one in particular, called cat's grass, the *teucriuni marum*. The fragance of this plant is peculiarly gratifying. It excites a feeling of delight which has a marvellous effect in preparing the mind for the contemplation of the divine insignia of the christian world. This grass grows in profusion on the pavement of the privileged streets of Leghorn, and is found in abundance in the churches, even on the steps of the altar. The pavement, which a short time ago was deserted, is now thronged by people with flowers and mats; rich Persian carpets and damask silks are seen every where; the sides of the houses, from the first to the fifth story, are at once metamorphosed into a rich brocard, in all the luxury of Asiatic magnifi-

cence, vying with the ancient splendour of Egypt at the time of the feasts of Semiramis. But all this magnificence is but a reflection of pontifical Rome; at the solemnization of the feast of our Saviour, of whom the Pope is the first minister here below, the grand square of Leghorn exhibits the most superb decorations: for my part, I can enjoy the finery, and the enthusiasm which produces it. The king who would delight in such amusements would be the idol of his subjects.

The square, which is now filled by crowds of spectators, is of the form of a parallelogram. The front of the cathedral, raised on numerous steps, forms one of the extremes, but has nothing remarkable in its appearance. The palace of the dukes of Tuscany occupies one of the sides of this square; it is a structure of a gothic appearance enough, belonging to the time of the latter Medici. It was the residence of the Prince de Joinville during his stay at Leghorn. The vestibule is spacious; the rooms very lofty, and some of them painted in fresco. The bed and the double oratory of one of the Medici are carefully preserved in it. The house of the governor of the city, and of a rich tradesmanlike appearance, is opposite to this palace.

About an hour after our arrival in the square, the procession commenced. An immense concourse of people, decked out in a thousand colours, followed it without much regard to order or classification. In the procession might be seen young men and women, whose manner was any thing but that belonging to a religious ceremony; heedless of the scandal which such irreverence would draw on them and their religion. The eighth day of the feast is wholly devoted to processions; that which terminates it, being the most brilliant, attracts to the city of Leghorn a vast concourse of people—many alone to satisfy their curiosity. The sight of two or three thousand wax tapers burning, whether they light up the interior of the cathedral, or are seen on the magnificent flight of steps at the entrance, or in the great square itself, at the time when the ceremonies terminate, about twilight, has a marvellous effect. A phenomenon of a different description, rare as that may be, of the end of a procession, attracted our notice. The four sides of the square were flanked by Tuscan grenadiers; to pass them at the moment when the holy procession is advancing, is about the same thing as braving the iron pikes themselves. Never are orders better fulfilled than on these occasions. A soldier of the Pope, a Tuscan soldier, has an invincible scruple on this subject. I was outside of the square, and, not being able to see any thing on the esplanade, was carelessly looking up at the window, when a strange costume at one of the balconies attracted my attention. Immediately I discerned an old man with a pearly beard, whose habit bespoke him to be a Turk of quality. On inquiry, I learnt that he was the Dey of Algiers himself, occupying the first place

at the balcony of the governor, and most saintly perched among a group of pretty women! Who would have believed such an event would have taken place, when, a year ago, precisely at this period, our expedition landed on the Algerine coast? Strange result of the mixture of men, whatever may be the difference of their belief! Oh, Mahomet! oh, Allah! your thunders are silent, and Hussein-Dey, the first Osmanli of Africa, drinks wine, and contemplates with pleasure the pomp and the majesty of our ceremonies! Upon a neighbouring balcony his principal janisaries might be seen, and the crowd of his stupid Bedouins, with their eyes fixed upon those of their master, arranging their deportment in the most edifying manner.

In Italy, a procession is the equivalent of a play, and nothing is left for the memory. No sooner is one ended than another awaits you; and this being over, it was time for the opera. The last words of the bishop, uttered from the threshold of the church, had scarcely invoked the blessings of Heaven upon this earthly crowd, when the torrent changed its course towards the theatre.

(To be continued.)

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

THE SEAMAN'S GUIDE FOR PREPARING SHIPS FOR SEA. By Charles Martelli. Bentley, London. 1834.

Mr. Martelli having amended his title in a postcript to the preface, we have considered it right to adopt it; at the same time apprising our readers that they will probably hear of it under that of the "Naval Officer's Guide." We fully concur with Mr. Martelli in the propriety of this change.

When first we heard of this work, our attention was naturally excited, being well aware how much it was wanted, and, if well executed, the good service it was likely to render the young naval aspirant. And we do not hesitate to say that Mr. Martelli has quite realized our expectations. The work contains in a small compass a vast mass of information of the most valuable kind to the class of persons for which it is intended. The idea of such a work was certainly a most happy one; to compress into so small a space the valuable experience of a twenty years' servitude on that difficult and important branch of knowledge, seamanship, was indeed an undertaking well worthy of Mr. Martelli's best endeavours. We do not mean to disparage such works as "The Olden Time," "The Sheet-Anchor," "Falconer's Marine Dictionary," *et hoc genus omne*, when we give our opinion that the Seaman's Guide will be prized as much as they have been.

Mr. Martelli has done an essential service to the rising generation of seamen by presenting them the results of his experience; and in so doing he has conferred a benefit on his country. We feel assured that his labours, as they well deserve, will be extensively patronized. The Seaman's Guide should

abound in every ship that swims, whether she be for trade or war; and we cordially recommend it to every parent who intends his son for the sea, as placing in his hands that knowledge which too many are prone to neglect in their youth, and are justly ashamed to ask when they arrive at maturer years.

We think that in another edition Mr. Martelli might take the opinions of some of his nautical friends on the subject of staying his lower masts. We entirely dissent from his system of keeping his wedges in during this operation.

THE ARCHITECTURAL DIRECTOR, being an Approved Guide to Builders, Draughtsmen, Students, and Workmen, in the Study, Design, and Execution of Architecture. Nos. 5, 6. 7. Bennett, London. 1834.

The Architectural Director is a work of which it is impossible to entertain any other than a most favourable opinion. It embraces in its design a complete system of the theory and practice of architecture, combining tables of comparative dimensions and a great variety of beautifully executed plates, illustrating the several orders of this art.

NEW CHARTS.

NORTH AMERICA. East coast: Sheet 4. From documents in the Hydrogaphic Office. Admiralty. Size, Half-Double Elephant.

We dont know a series of charts that will be more generally useful and desirable than these, of which this is the first that has appeared. The limits of this chart are lat. 42° 50′ N. to 47° 20′ N. and lon. 58° 40′ to 67° 0′ W. and include the whole coast of Nova Scotia and its adjacent islands, with the whole bay of Fundy, and that formidable danger to navigators, Sable Island.

NORTH AMERICA. East Coast. Sheet 5. From Documents in the Hydrographic Office, Admiralty. 1834. Size as former.

The limits of this chart comprehend the latitudes 45° 30′ N. and the longitudes 66° and 74° 0′ W. aud include the coast of America from the entrance to the Bay of Fundy to the harbour of New York. It is, equally as the former, a most desirable little chart.

THE HARBOUR AND BAYS OF TRINCOMALEE. Surveyed by order of Rear-Admiral Sir Edward Owen, by Lieutenant James Cannon, and Hector Loring. 1832. Admiralty. Size, Double-Elephant.

Includes the whole of Back Bay on the north and Great Bay on the south, with Foul Point. It gives a complete view of the whole of the indented coast by which the harbour of Trincomalee is surrounded.

THE HABOUR OF TRINCOMALEE. Surveyed under the order of Rear-Admiral Sir Edward Owen, by Lieutenants James Cannon, and Hector Loring. 1832. Admiralty. Size, Double-Elephant.

This is a plan of the harbour only, on a larger scale than the foregoing.

NAUTICAL SURVEYING.—We understand that a treatise on this subject will shortly appear, from the pen of Commander E. Belcher, of the Royal Navy. The experience of this officer will no doubt enable him to produce a work for the young surveyor, containing more of the practical application of this valuable science than is to be found in any one yet published.

DESTRUCTION OF THE TWO HOUSES OF PARLIAMENT BY FIRE.

On the evening of the 16th of October, one of the most terrific conflagrations ever witnessed broke out in the House of Lords: with the utmost rapidity it extended to the House of Commons, and in a short space of time these venerable buildings were a mass of ruins. To describe the awful grandeur of the scene requires more space than we can dispose of; we therefore must content ourselves with referring our readers to the accounts of it in the daily prints, and, as a national calamity, shall preserve a record of the official report of this event.

OFFICIAL REPORT.

The following is the Official Report upon the damage done to the buildings, furniture, &c. of the two Houses of Parliament, the Speaker's official residence, the official residence of the Clerk of the House of Commons, and to the Courts of Law at Wesminster Hall, occasioned by the fire on the 16th day of October, 1834, as far as can at present be ascertained:—

House of Peers.—The Robing rooms, Committee rooms in the west front, and the rooms of the resident Officers, as far as the Octagon Tower at the south end of the building — totally destroyed. The Painted Chamber—totally destroyed. The north end of the Royal Gallery abutting on the Painted Chamber destroyed from the door leading into the Painted Chamber, as far as the first compartment of columns. The Library and the adjoining rooms, which are now undergoing alterations, as well as the Parliament Offices and the Offices of the Lord Great Chamberlain, together with the Committee Rooms, Housekeepers' Apartments, &c. in this part of the building, are saved.

House of Commons.—The House, Libraries, Committee rooms, Housekeeper's Apartments, &c. are totally destroyed, excepting the Committee rooms Nos, 11, 12, 13, and 14, which are capable of being repaired. The official residence of Mr Ley, Clerk of the House, is totally destroyed. The State Drawing-room under the House of Commons, in the official residence of the Speaker, is much damaged, but capable of restoration. All the Rooms from the oriel window to the south side of the House of Commons, are destroyed. The Levee rooms, and other parts of the building, together with the public galleries, and part of the cloisters, very much damaged.

The Courts of Law.—These buildings will require some restoration.

Wesminster Hall.—No damage has been done to this building.

Furniture.—The furniture, fixtures, and fittings to both the Houses of Lords and Commons, with the Committee rooms belonging thereto, is, with few exceptions, destroyed. The public furniture at the Speaker's house is in great part destroyed.

The Courts of Law.—The furniture generally of these buildings has sustained considerable damage.

The strictest inquiry is in progress as to the cause of this calamity, but there is not the slightest reason to suppose that it has arisen from any other than accidental causes.

Office of Woods, &c. 17th October, 1834.

Upon receiving intelligence of the destruction of the Houses of Parliament,

his Majesty, with that devotion to the public interests which has never failed at all times to mark his conduct, immediately placed the newly-erected Palace in St. James's Park at the disposal of the nation, in order to meet the emergency.

Accidents, and narrow Escape of the Earl of Munster.

—About three o'clock this morning, his Lordship was about to enter one of the Libraries at the eastern wing of the Commons, urging the men to rescue the valuable works therein deposited, when a part of the rafters of the ceiling fell in, and a labourer, named Daniel M'Callam, of 79, Tottenham Court-road, seized his Lordship by the collar, and dragged him from the apartment, the ceiling of which immediately afterwards fell in, and M'Callam's shoulder was dislocated by the rafter; he was conveyed to the Westminster-hospital, where he now lies.

The following are the names of the sufferers, with their places of abode and nature of their injuries, who are now in the same hospital:—

George Simmonds, a mechanic, 10, Crown-street, Westminster, run over by a fire engine, broken thigh, and otherwise bruised. Michael Penning, 7, Great Peter-street, Westminster, a fractured arm by falling of timber. John Hamilton, 43, Union-street, Borough, fireman, compound fractured leg, (but expected to survive.) Charles Boylan, labourer, 22, Cobourg-street, Gray's-inn-road, fractured skull. Rosannah M'Cale, 4, Providence-row, Palmer's Village, Westminster, broken leg from being run over. Ralph Raphael, 1, Stonecutter-street, Upper St. Martin's-lane, a fractured head. Thomas Rowath, 30, James-street, New-cut, fireman, fractured skull. John Slater, of No. 9. Oxford-buildings, Oxford-street, a dislocated shoulder, and severely burnt by hot lead. John Hay, Horseferry-road, dislocated shoulder.

A great number of persons received minor injuries, whose wounds were dressed, and left the hospital.

It is impossible to contemplate these splendid ruins without feeling that another link which connected the past with the present is broken. Here, within these walls, the most memorable of freedom's battles were fought—here the Great Charter of English Liberty was first unfolded for the protection of the people—and here an humble member of the House of Commons, Hampden, dared to brave the power of a royal despot. Within the now bare, blackened, and roofless walls of Saint Stephen's Chapel did William Rufus, with the Nobles of his court, prostrate himself in prayer, and Edward III. give to heaven those hours which were not devoted to the happiness of his subject. The House of Lords, too—the first Legislative Chamber in the world—was not without a host of recollections which rendered it an object of venerable respect in the eyes of the country.—Here stood Elizabeth, in all the pride of regal triumph, announcing the destruction of the Spanish Armada—whose foundering fleet formed the never-to-be-forgotten needlework decoration of the lofty walls;—here William III. gave the Bill of Rights to Englishmen; and here the final words were spoken which gave toleration to the Dissenter, emancipation to the Catholic, and freedom to the Slave. The national loss from the destruction of these edifices, sacred to liberty and the past, cannot be estimated. The books alone destroyed were worth several thousand pounds, independent of hundreds of most valuable records, of which it may take half a century to discover the full extent. The loss, considered as an ordinary business affair, is estimated at a half a million sterling.

Among those who were present, during the conflagration, and who were very active in giving directions, or otherwise superintending the people, we noticed Viscounts Melbourne, Althorp, Palmerston, Lord Auckland, Sir John Hobhouse, Earl Munster, Lord A. Fitzclarence, Mr. Hume, M. P., the Commanding

Officers of the Guards, the Commissioners of Police, &c. Indeed, a spirit of rivalry seemed to pervade all parties, to render every possible assistance.

The House of Commons was originally a chapel, built by King Stephen, and dedicated to St. Stephen; hence the name of St. Stephen's Chapel, so frequently applied to this building. It was rebuilt in 1347, by Edward III., and created by that Monarch into a Collegiate Church, under the government of a Dean and twelve secular priests. Being surrendered to Edward VI., he gave it to the Commons for their sittings, and it has been applied to that use ever since.

The old House of Commons was formed within the chapel, chiefly by a floor raised above the pavement, and an inner roof, considerably below the ancient one. On the Union with Ireland, the House was enlarged by taking down the entire side walls, except the buttresses which supported the original roofs, and erecting others beyond, so as to give one seat in each of the recesses thus formed by throwing back part of the walls. A gallery ran along the west end, and the north and south side were supported by slender iron pillars, crowned with gilt Corinthian capitals. The whole house was lined with oak.

Fraser's Distilling Apparatus.

To the Editor of the Nautical Magazine.

Sir—A friend of mine has done me the favour of sending me the last number of the Nautical Magazine, in which appeared an article entitled "Sea-water made Fresh." It was accompanied by some remarks on Messrs. Wills and Westrup's patent machine, and that formerly put up by me on board the Royal George yacht, which I recently refitted for the use of her most gracious Majesty, and which has returned in its pristine condition, to the satisfaction of officers, crew, and all the attendants in the yacht.

The original draught of Mr. Wills' machine having been left in my possession, when he applied to me to *inspect and advise*, I called on him, and cleared his machine of much redundant material; and, had I not known what it *was*, I should have supposed from his *present* description that he had been on board the Royal George, to enable him to claim that invention as his own.

I am now constructing a new distilling hearth, concentrating all my experience *to lessen fuel and bulk*, and to unite the greatest simplicity of arrangement. I am also adapting a propelling-machine for ships of war, to pump on the largest scale, at the same time, *by manual labour*, equal to seventy or eighty horses at least.

The remark that I had experienced much opposition from intrigue is unfortunately too true. The report of the Liffey experiment being a failure was a direct fabrication, the effects of which I shall never recover, as it destroyed my capital, and a business of considerable extent.

The generous and unlimited encouragement which I met with from his late Majesty, also, from the Marquis of Anglesey, and the Hon. Sir Charles Paget, will ever be remembered with feelings which no language could ever describe. I love the living, and deeply do I deplore the illustrious dead.

I have the honour to remain, Sir,

Most respectfully, your obedient servant,

James Fraser, Engineer.

NAVAL REGISTER.

COMMISSIONERS *for executing the Office of* LORD HIGH ADMIRAL *of the United Kingdom of Great Britain and Ireland.*

The Right Honourable George *Baron* Auckland.
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Sir William Parker, Knt., C.B, *Rear-Admiral of the Blue.*
Sir Samuel John Brooke Pechell, Bart., K.C.H., C.B., *Captain, R.N.*
Henry Labouchere, Esq.
Maurice Frederick Fitzhardinge Berkeley, Esq., *Captain, R.N.*

THE ROYAL NAVY IN COMMISSION—OCTOBER 21ST, 1834.

At Home.

PORTSMOUTH.

Admiral, Sir Thomas Williams, G.C.B. *Appointed* 23d Jan. 1833. *Flag-Lieut.* T. R. Eden; *Secretary*, Thomas Williams.—*Flag-Ship*, VICTORY, 104.

PLYMOUTH.

Admiral Sir William Hargood, G.C.B., G.C.H. *Appointed* 27th April, 1833. *Flag-Lieut.* C. H. M. Buckle; *Secretary*, J. Loudon.—*Flag-Ship*, SAN JOSEF, 110.

NORE.

Vice-Admiral, Hon. C. E. Fleeming. *Appointed* 16th Aug. 1834. *Flag-Lieut.* Granville G. Loch; *Secretary*, G. B. Harrison.—*Flag-Ship*, OCEAN, 80.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

PORTSMOUTH, *Yacht*—Lieut. Com. J. Maitland, Portsmouth.

OCEAN, 80—Flag of Vice-Admiral the Hon. C. E. Fleeming, Capt. A. Ellice; Sheerness.

PIQUE, 36—Capt. the Hon. H. J. Rous, Hamoaze, fitting.

PRINCE REGENT *Yacht*—Capt. G. Tobin, C.B. Deptford.

ROLLA, 10—Lieut. Com. F. H. H. Glasse, 19th Aug. sailed for coast of Scotland, to protect the fisheries.

ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Wednesday 27th Aug. returned to Portsmouth from Woolwich.

ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.

SAN JOSEF, 110—Flag of Admiral Sir W. Hargood, G.C.B., G.C.H., appointed 27th April, 1833—Capt. G. T. Falcon, Hamoaze.

SEAFLOWER, *Cutter*, 4—Lt. Com. J. Morgan, 6th Sept. sailed for Jersey, to protect the oyster fishery.

SEAGULL, 6—Lieut. Com. J. Parsons, Sheerness, fitting.

SPEEDY, *Cutter*—Lieut. C. H. Norrington, Portsmouth station.

TYRIAN, 10—Lieut. Com. E. Jennings, Plymouth, fitting.

VERNON, 50 — Capt. M'Kerlie, Sheerness, fitting. The Vernon is ordered to be prepared for sea with all practicable dispatch, supposed to convey to the East Indies the newly-appointed Governor-General, the Earl of Minto, (brother to the Hon. Capt. Elliot, Secretary to the Admiralty.) She is expected to leave Sheerness about the 1st of next month. The rumour of a contemplated trial cruise between this ship and the Barham, 50, is utterly void of truth.

VICTORY, 104—Flag of Admiral Sir T. Williams, G.C.B., appointed 23d Jan. 1833—Captain R. Williams, Portsmouth.

WILLIAM AND MARY, *Yacht*—Captain S. Warren, C.B., Woolwich.

Abroad.

LISBON STATION.

Rear-Admiral W. H. Gage. *Appointed* 9th April, 1834. *Flag-Lieut.* James L. Parkin; *Secretary*, John Irving.—*Flag-Ship*, HASTINGS, 74.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 30th Aug. arrived at Plymouth; 15th Sept. sailed for north coast of Spain.

COLUMBINE, 18—Com. T. Henderson, 20th Sept. arrived at Lisbon; 24th sailed for Mediterranean.

HASTINGS, 74—Flag of Rear-Admiral W. H. Gage, appointed 9th April, 1834—Capt. H. Shiffner, 28th Sept. in the Tagus.

LEVERET—Lt. Com. G. Traill, 28th Sept. in the Tagus: arrived 20th.

NIMROD, 20 — Com. J. Mc. Dougal, 25th Aug. in the Tagus.

REVENGE, 78 — Capt. W. Elliott, C.B., 28th Sept. in the Tagus.

RINGDOVE, 16 — Com. W. F. Lapidge, 14th Aug. left Lisbon for the north coast of Spain.

SARACEN, 10—Lieut. Com. T. P. Le Hardy, 5th June arrived at Lisbon from Cadiz.

STAG, 46 — Capt. N. Lockyer, C.B., 2d Oct. left Plymouth for Lisbon.

VIPER, 6—Lieut. L. A. Robinson, 12th July in the Tagus.

MEDITERRANEAN STATION.

Vice-Admiral Sir Josias Rowley, Bart., G C.B. *Appointed* 18th Dec. 1833. *Flag-Lieut.* H. B. Young; *Secretary*, T. Triphook.—*Flag-Ship*, CALEDONIA, 120.

BRITANNIA, 120—Captain P. Rainier, 25th June and 9th Aug. at Vourla; 20th July off Myteline; 7th Aug. at Malta.

CALEDONIA, 120—Flag of Vice-Adm. Sir Josias Rowley, Bart., G. C. B., appointed 18th Dec. 1833—Captain T. Brown, 23d Aug. at Vourla.

CANOPUS, 84 — Hon. J. Percy, 9th Aug. at Vourla.

CARRON, St. V.—Lieut. Com. J. S. Duffil, 29th Aug. arrived at Malta from the squadron at Vourla.

CEYLON, 2—Lieut. J. G. M'Kenzie, Malta.

CHILDERS, 16—Com. Hon. H. Keppel, 12th Aug. passed Gibraltar for Malta; 28th arr. at Malta.

EDINBURGH, 74—Capt. James R. Dacres, 9th Aug. at Vourla.

ENDYMION, 50 — Capt. Sir Samuel Roberts, C.B., 9th Aug. at Vourla.

FAVORITE, 18—Com. G. R. Mundy, 6th July at Smyrna; 7th sailed.

JASEUR, 18—Com. J. Hackett, 10th July at Gibraltar.

MADAGASCAR, 46 — Capt. E. Lyons, C.B, 26th Aug. at Nauplia. Ordered home.

MALABAR, 74—Capt. Sir W. A. Montagu, K.C.H., Oct. sailed for Mediterranean, from Plymouth.

ORESTES, 18—Com. H. J. Codrington, 7th Sept. sailed from Portsmouth, and 12th Sept. left Plymouth for the Mediterranean.

PORTLAND, 52—Captain D. Price, Plymouth, fitting. 11th Aug. moved into the Sound; 20th sailed for Mediterranean.

SCOUT, 18 — Com. W. Holt, 26th Aug. left Malta for England.

TALAVERA, 74—Capt. E. Chetham, C.B., 22d July at Vourla.

THUNDERER, 84—Capt. W. F. Wise, C.B., 25th June and 25th July at Vourla. By extract of a letter from Malta, we learn that the Thunderer, after having undergone some considerable alterations in stowage, &c. has now realized the anticipations of Mr. O. Lang, builder, of Woolwich Yard, her projector—that she is the admiration of every body, as the finest man-of-war yet seen. She is also the best sailer in the fleet, beating the other ships on all points.

TRIBUNE, 24—Capt. J. Tomkinson, 13th Sept. arrived at Portsmouth, from Chatham; 14th sailed for the Mediterranean.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, C.B., 1st Aug. at Alexandria.

VOLAGE, 28 — Capt. G. B. Martin, C. B., 3d July and 1st Aug. at Corfu.

CAPE AND AFRICAN STATION.

Rear-Admiral P. Campbell, C.B. *Appointed* 30th May, 1834. *Flag-Lieut.* James Maitland; *Secretary*, J. B. Hutchings.—*Flag-Ship*, THALIA, 46.

BRISK, 3—Lieut. Com. J. Thompson, July at Sierra Leone.

BRITOMART, 10 — Lieut. W. H. Quin, 6th June at the Gambia, about to sail for Sierra Leone.

BUZZARD, 10—Lieut. Com. W. C. Burbidge, 4th Sept. sailed for Coast of Africa.

CHARYBDIS, 3—Lieut. Com. S. Mercer, 15th April at Sierra Leone.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, Bight of Benin. The Fair Rosamond has captured, off the Old Calabar river, the slave-schooner La Pontica, with 317 slaves on board. Forty of this cargo of our fellow-creatures died on the passage up to Sierra Leone.

FORESTER—Lieut. G. G. Miall, 15th July at Sierra Leone. To sail on a cruize on the 16th.

GRIFFON, 3 — Lieut. J. E. Parlby, in the Bight of Benin.

ISIS, 50—Flag of Rear-Admiral F. Warren, appointed 5th Aug. 1831—Capt. J. Polkinghorne, at St. Helena on the 10th Aug. on the way to the river Gambia, to resign the command to Rear-Admiral P. Campbell, C.B.

LYNX, 10—Lieut. Com. H. V. Huntley, Gold Coast.

PELORUS, 18—Com. R. Meredith, the Spanish schooner Pepute, from Havannah, armed with two guns and thirty men, and having on board 200 slaves, was captured in the river Cameroons, on the night of the 30th of June, by the boats of his Majesty's ship Pelorus, Lieut. Barrow.

PLUTO, St. V.—Lieut. J. R. Sulivan, Gold Coast. Ordered home. 13th July arrived at Sierra Leone, having taken two prizes.

THALIA, 46 — Capt. R. Wauchope, flag of Rear-Admiral P. Campbell, C.B., 4th Sept. arrived at Portsmouth; 10th Sept. sailed for the coast of Africa.

TRINCULO, 18—Com. J. R. Booth, 4th May arrived at the Cape, from Ascension; 29th lying there.

EAST INDIA STATION.

Rear-Admiral Hon. Sir T. B. Capel. *Appointed* 30th May, 1834. *Flag-Lieut.* Hon. J. R. Drummond; *Secretary*, .—*Flag-Ship*, WINCHESTER, 52.

ALGERINE, 10 — Lieut. Com. G. Stovin, 30th Aug. arrived at Plymouth; 6th Sept. sailed for the Cape. Spoken with 17th Sept. Lat. 38° N., long. 13° W.

ALLIGATOR, 28—Captain G. R. Lambert, 9th March arrived at the Bay of Islands; 22d sailed for Wangaroa.

ANDROMACHE, 28—Capt. H. D. Chads, C. B. 6th May arrived at the Cape from Rio, on her way to Canton, with Lord Napier and suite.

CURAÇOA, 26—Capt. D. Dunn, ordered home, 12th April at Madras.

HARRIER, 18—Com. S. L. H. Vassal, 27th March left Singapore for Malacca.

HYACINTH, 18 — Com. F. P. Blackwood, 2d April arrived at Madras from Trincomalee; 6th sailed on a cruize. To proceed to New South Wales, to relieve Alligator.

IMOGENE, 18 — Captain P. Blackwood, 29th March arrived at Bombay from Zanzibar. The Imogene has recently been sent to the Persian Gulph, on a mission to the Imaum of Muscat, relative to a treaty which his Highness has recently concluded with the American Government, by which they would be entitled to make a settlement at Zanzebar, or on any other part of his coast. The result of the mission has granted to England the same indulgence, should it become requisite. The Imaum testified his perfect satisfaction in the sought arrangement. See No. 29 Naut. Mag. The Imogene has since been dispatched to China. Ordered home.

MAGICIENNE, 24—Capt. J. H. Plumridge, ordered home. 5th April sailed from Bombay for Zanzibar, Africa. Ordered home. The sailing qualities of this vessel are much admired. Accounts dated in May last state that she outsails every vessel she meets, and is in every respect a good sea boat, besides birthing her men well, and carrying her guns eighteen inches higher than before she was razed.

MELVILLE, 74 — Vice-Admiral Sir John Gore, K.C.B., appointed 16th Dec. 1831—Capt. H. Hart, 8th June arrived at Mauritius.

RALEIGH, 16 — Com. M. Quin, 12th Oct. left Plymouth for the East Indies.

ROSE, 18 — Com. W. Barrow, 30th Aug. touched at Madeira, on her way to the East Indies.

WINCHESTER, 52—Capt. E. Sparshott, K.H. 8th Oct. arrived at Spithead from Chatham. Flag of Rear-Adm. Hon. Sir T. B. Capel, K.C.B., hoisted 14th Oct. at Spithead.

WOLF, 18—Com. E. Stanley, 1st Oct. left Plymouth, for the East Indies.

ZEBRA, 16—Com. R. C. M'Crea, 24th Sept. left Portsmouth for the Cape, Mauritius, and Bombay.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral The Right Hon. Sir G. Gockburn, G.C.B. *Appointed* 6th Dec. 1832. *Flag-Lieut.* Hon. G. Hamilton; *Secretary*, T. Woodman.—*Flag-Ship*, PRESIDENT, 52.

ARACHNE, 18—Com. J. Burney, 29th June left Port Royal, Jamaica, for Carthagena. Ordered home.

BELVIDERA, 42 — Capt. C. B. Strong, 5th Sept. at Barbadoes. Sailed for Trinidad.

CHAMPION, 18—Com. Hon. A. Duncombe, sailed from Plymouth 10th Oct. Passenger, Capt. H. Prescott, R.N., appointed Governor of Newfoundland.

COMUS, 18—Com. W. P. Hamilton, 15th July left Conception Bay, Newfoundland. The wreck she was in search of was found wedged in a deep cavern of rock, and four dead bodies near it, far decomposed. It has been ascertained that more than £1,500 in Spanish dollars had been picked up in two kegs by ten persons belonging to that place, and divided among them. Great apprehensions had been entertained that she was the Thais packet, but it became evident from a variety of circumstances that it was a Spanish vessel, and is believed to have been a vessel that sailed from Havannah for St. John's in November last.—*New York Paper.* [4th Sept. the Comus returned to St. John's, and is going to Jamaica.

CRUIZER, 18—Com. James M'Causland, 18th July arrived at Jamaica, from Bermuda.

DEE, 4—Com. W. Ramsay, 6th Sept. sailed for West India station, to relieve the Rhadamanthus.

DISPATCH, 18 — Com. G. Daniell, Sept. at St. Kitt's.

DROMEDARY—R. Skinner, Bermuda.

FIREFLY, 2 — Lieutenant J. M'Donnel.

FLY, 10—Com. P. M'Quhae, 13th July arr. at Jamaica from Carthagena.

FORTE, 44 — Captain W. O. Pell, 1st July at Port Royal, Jamaica.

GANNET, 18 — Commander J. B. Maxwell, 22d July at Bermuda.

LARNE, 18—Com. W. S. Smith, 29th July arrived at Jamaica from Leeward Islands.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

NIMBLE, 5 — Lieut. C. Bolton. Nassau. Aug. 27.—Arrived the British Government schooner Nimble, having in charge the Portuguese schooner Felicidade, with 164 slaves on board; she was captured off the east end of Cuba. The captain, two mates, and boatswain of the slaver, the only whites on board, the remainder of the crew being all blacks, took to a boat before the Nimble could get up to her, and made their escape.—29th Sept. at Halifax.

PEARL, 20—Com. R. Gordon, 7th July arr. at Jamaica from Havana. Ordered home. 29th Aug. at Vera Cruz; to sail for England about 10th Sept.

PICKLE, 5—Lieut. Com. A. G. Bulman, Sept. sent to Halifax.

PINCHER, 5—Tender to flag-ship, 22d May at Bermuda; 13th June sailed from Barbadoes.

PRESIDENT, 52—Flag of Vice-Admiral Sir G. Cockburn, G.C.B., appointed 6th Dec. 1832—Capt. James Scott, 3d Sept. and 29th Sept. at Halifax.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. 20th June at Bermuda.

RACER, 16—Com. J. Hope, 29th June left Jamaica on a cruize.

RAINBOW, 28—Capt. Thomas Bennet, Sept. at Grenada.

RHADAMANTHUS, St. V.—Com. G. Evans, 1st July at Port Royal, Jamaica.

SAVAGE, 10 — Lieut. R. Loney, 23d July sailed for the North American station, to touch at Salem.

The English armed brig Savage, with sixteen pirates on board, has arrived at Salem, where they are to be landed for trial. It is honourable to modern nations, that, instead of being asylums of foreign criminals, that community exists which aids each other in bringing felons to the proper tribunals of justice. These prisoners are charged with piracy, and robbing the brig Mexican, of Salem, and will probably be tried at the October term of the Circuit Court of the United States in

this city. The Mexican is now in our harbour ready for sea. The same captain and mate who were in her at the time of the robbery were going in her, but, in consequence of the unexpected arrival of the pirates, their places were supplied by other officers, and they will remain at home, to give evidence at the trial. The robbery committed upon the Mexican was one of the most audacious and cruel acts of piracy on record. She was bound to Rio Janeiro from this port, and was plundered by a piratical schooner under Brazilian colours, on Sept. 20, 1832, lat 33°, long. 34° 30′, and robbed of 20,000 dollars in specie, the officers and crew stripped of every thing valuable, fastened below, and the vessel set on fire, with the horrid intention of destroying her, with all on board. Captain Butman and his men succeeded in getting on deck through the scuttle, which the pirates had left unsecured, extinguished the flames, and returned home. Our Government ordered a vessel to cruise in pursuit, but she gave up the chase as hopeless. The piratical vessel was afterwards taken on the African coast by his Britannic Majesty's brig Curlew, and destroyed. The British Government, in transporting at their own expense, to the United States, the pirates who robbed the Mexican, give proof that they view all civilized nations as constituting one family. It is an example worthy of imitation. The twenty years of peace with which the world has been blessed has done more towards assuaging national antipathies, as well as towards improving the condition of the people, than had been effected in the previous century. The insurance offices will send on board the Savage this morning an abundant supply of fresh provisions, &c., as a token of respect to her officers and crew.—*Salem Gazette.*

SERPENT, 16—Com. J. C. Symonds, 3d July sailed from Barbadoes for Trinidad.

SKIPJACK, 5—Lieut. Com. W. H. Willes, (*act.*) Bahamas.

TWEED, 20—Com. A. Bertram, ordered home; 2d June at Jamaica.

VESTAL, 26—Capt. W. Jones, 3d Sept. sailed for Newfoundland from Halifax.

WASP, 18—Com. J. S. Foreman, Sept. at Demerara

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hammond, K.C.B. *Flag-Lieut.* A. S. Hammond; *Secretary*, E. E. Vidal.—*Flag-Ship*, SPARTIATE, 74.

BLONDE 46—Capt. F. Mason, C. B., 9th June arrived at Rio; 25th sailed for Pacific.

CHALLENGER, 28—Capt. M. Seymour, 22d May arrived at Callao from Valparaiso.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

CONWAY, 28—Capt. H. Eden, 12th May arr. at Valparaiso, from Rio; 18th remained.

HORNET, 6—Lieut. Com. F. R. Coghlan, running between Monte Video and Rio Janeiro.

NORTH STAR, 28—Capt. O. V. Harcourt, 27th July sailed for Rio Janeiro, with H. Hamilton, Esq., Minister Plen. at Buenos Ayres, and P. Scarlett, Esq., for Rio Janeiro. Left Madeira 14th Aug.

RAPID, 10—Lieut. Com. F. Patten, July at the Falkland Islands.

SAMARANG, 28—Captain C. H. Paget, April at Guayaquil; 24th May left Callao for Valparaiso. To leave the Pacific in Oct. Ordered home.

SATELLITE, 18—Com. R. Smart, ordered home: 25th July at Rio Janeiro. The Portuguese schooner Duqueza di Braganza, was captured near St. Sebastian's on the 16th of June, by the Satellite, Capt. Smart, with 577 slaves on board.

SNAKE, 16—Com. W. Robertson, 8th July sailed from Rio for Bahia.

SPARROWHAWK, 18—Com. C. Pearson, 8th July left Rio for the Falkland Islands.

SPARTIATE, 76—Captain R. Tait, 25th July at Rio Janeiro.

TALBOT, 28—Capt. F. W. Pennell, 20th Oct. sailed for Rio Janeiro, with the newly-appointed Admiral, who hoisted his flag on the 15th.

TROOP SHIPS.

ATHOL, *Troop Ship*—Master Com. A. Karley, Aug. arrived at Woolwich.

BUFFALO, *Store Ship*—Master Com. F. W. R. Sadler, 10th Nov. left Sydney for New Zealand, having touched at King George Sound in Sept. previously.

COLUMBIA—Master Com. James Henderson, Woolwich, fitting.

JUPITER, *Troop Ship*—Master Com. R. Easto, 7th Sept. sailed for Dublin.

ROMNEY—Master Com. James Wood, 14th Sept. returned to Portsmouth from Leith, with the 68th regiment; sailed with detachments of other regiments on 19th, for Gibraltar, touching at Lisbon and Cadiz 25th Sept. arrived at Plymouth.

STEAM VESSELS.

AFRICAN—Lieut. J. West.

ALBAN—Woolwich.

BLAZER—Chatham.

COLUMBIA—See Troop Ships.

CARRON—Liut. Com. J. S. Duffil. See Mediterranean Station.

COMET—Woolwich.

CONFIANCE, 2—Lieut. Com. J. M. Waugh. See Packets.

DEE, 4—See North American Station.

FIREBRAND—Mr. J. Allen, returned to Woolwich, having attended the Rt. Hon. the Lords Commissioners of the Admiralty on their visit to the various dockyards, Portsmouth, Plymouth, Milford, &c.

FIREFLY—See Packets.

FLAMER, 6—Lieut. Com. C. W. G. Griffin, 27th Aug. arrived at Woolwich, from Falmouth.

LIGHTNING—Mr. T. Allen, 24th Aug. passed

the Nore, with H.R.H. the Duke of Cumberland, for Hamburgh.

MEDEA, 6—Com. H. T. Austen, 27th Sept. left Portsmouth for Woolwich; 5th Oct. arrived at Plymouth; 7th sailed for Mediterranean.

MESSENGER, 1—Com. Mr. J. King, Channel Station: running between Thames, Portsmouth and Plymouth, and Milford.

METEOR—Woolwich.

PHŒNIX—Com. J. H. Nurse, Woolwich.

PLUTO—Lieut, T. R. Sulivan. See Cape station.

RHADAMANTHUS—See West Indian station.

SALAMANDER — Commander W. L. Castle, 4th Oct. at Portsmouth.

SPITFIRE, 6—Lieut. Com. A. Kennedy. See Packet List.

TARTARUS—Lieut. Com. H. James, 16th Oct. at Plymouth, having arrived there with Rear-Admiral Sir Graham Hammond. See Packets.

SURVEYING VESSELS ABROAD.

ÆTNA, 6—Lieut. Com. W. Arlett, Portsmouth, fitting.

BEACON — Com. R. Copeland, surveying in the Archipelago; 1st July at Vourla.

BEAGLE, 10—Com. R. Fitz-Roy, surveying the coasts of Patagonia and Chili; 2d April at Berkeley Sound, Falkland Islands.

FAIRY, 10—Commander W. Hewett, surveying the North Seas.

GULNARE, *Hired Schooner*—Captain H. W. Bayfield, surveying the Gulf of St. Lawrence.

INVESTIGATOR, 16, — Mr. G. Thomas, surveying the Shetland Islands.

JACKDAW — Lieutenant Com. E. Barnett, 11th May at Port Royal, from Nassau, refitting. Surveying the Mosquito coast.

MASTIFF, 6 — Lieutenant Com. T. Graves, surveying in the Archipelago; 21st Aug. at Smyrna.

RAVEN, *Cutter* — Lieut. H. Kellett, Portsmouth, fitting.

THUNDER — Com. R. Owen, 11th May at Port Royal, refitting, from Nassau, previous to sailing for the Musquito coast.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; *Assistants, Lieuts.* J. Harding, G. A. Frazer.—Coast of Ireland.

Lieutenants, M. A. Slater; W. L. Sheringham, H. C. Otter.—East Coast of Great Britain.

Lieutenants, H. M. Denham; C. G. Robinson.—West Coast of Great Britain.

PAID OFF.

ALBAN, St.V.—At Woolwich.

DUBLIN, 50—1st Oct. at Plymouth.

ROVER, 18—3d Oct. at Plymouth.

SWAN, *Cutter*—At Sheerness.

VICTOR, 18—11th Oct. at Portsmouth 23d Sept. returned to Plymouth from North American station.

COMMISSIONED

ÆTNA—Surveying vessel.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain—James Ross.

Commanders—Lord C. Paget, E. Seymour

Lieutenant—W. S. Cooper.

Purser—F. Hellyer.

APPOINTMENTS.

ÆTNA, *St. Ves.—Lieut.* J. H. Lloyd; *Mate*, R. Ellis.

ALGERINE, 10—*Surg.* D. Kennedy.

ARACHNE, 16—*Lieut.* C. W. Pears.

BLONDE, 46—*Lieut.* T. V. Anson.

BRISK, 5—*Surg.* J. M'Donald.

BRITANNIA, 120—*Lieutenants*, T. M. C. Symonds, C. Pearson. (*b.*)

CHAMPION—*Master*, D. Craigie; *Surgeon*, D. F. Thompson.

COAST GUARD—*Lieuts.* J. Finemore, E. Medley, J. O'Reilly,(*a*) W. Seaward, J. Simpson, J. Gabriel, C. Smith, A. Wall, J. Cornish,(*a*) R. Connor.

COLUMBIA, 2—*Master Com.* J. Henderson; *Sec. Mast.* R. Campbell; *Clerk*, P. Cole.

COLUMBINE, 12—*Assist. Surg.* J. Salmon.

CRUIZER, 16—*Mate*, E. Holmes.

ENDYMION, 50—*Lieut.* J. Fulford.

EXCELLENT — *Mates*, J. C. Collin, T. Christian.

FAIRY, *Surv. Ves.—Lieut.* E. Battersby.

FAVORITE, 18—*Mate*, W. Bridge.

HASLAR HOSPITAL—*Assist. Surg.* G. D. Austin.

JACKDAW, *Surv. Ves.—Mate*, H. Medley.

MEDEA, *St. Ves.—Lieut.* J. Williams.

NAUTILUS, 10—*Ass. Surg.* H. G. R. Page.

OCEAN, 80—*Capt. Mar.* R. Webb; *Mast. Assist.* J. M. O'Brien; *Clerk*, J. R. Tate.

PEARL, 20—*Surg.* J. Kidd.

PLOVER, *Packet—Assist. Surg.* G. Mottley.

PLYMOUTH HOSPITAL—*Assist. Surg.* J. C. Bowman.

PRESIDENT, 52—*Lieut.* J. Russell.

RALEIGH, 16—*Lieuts.* J. Murray, E. E. Gray, Mr. Lord; *Surgeon*, J. Syme; *Purser*, W. Gradidge; *Assist. Surg.* R. Mc.Crea.

RAVEN—*Second Master*, W. Pike; *Mate*, W. F. Newland.

ROYAL GEORGE—*Mate*, J. H. Bridges.

ST. VINCENT—*Master*, W. H. Hall.

SAN JOSEF—*Mast. Assist.* J. H. Cook.

SPARROWHAWK—*Assistant Surgeon*, J. Mc. Dermott.

SPARTIATE, 76—*Com.* G. Blake.

SPEEDY, *Cutter—Mate*, N. D. Blennerhasset.

SPRIGHTLY, *Rev. Cut —Lt.* T. Thompson.

STAG, 46—*Surg.* J. Noott.

STORK, *Cutter—Lieut.* — Grandy; *Mate*, J. Higginson.

TARTARUS, *St. Ves.—Second Mast.* J. W. Burney; *Assist. Surg.* J. Monro.

THALIA, 46—*Lieut.* H. P. Galway.

THUNDER, *Surv. Ves.—Mate*, C. Collett.

THUNDERER—*Sec Mast.* D. Duncan.

TRIBUNE, 24—*Sec. Mast.* J. C. Mugford.

TRINCULO, 16—*Purser*, J. March.
VERNON, 50—*Lieut.* C. G. E. Napier; *Capt. Mar.* C. Gray; *Ass. Surg.* R. Birtwhistle.
VESTAL, 26—*Lieut.* T. Watson.
VICTOR, 16—*Lieut.* C. E. Powys.
VICTORY, 104—*Mate*, E. Codd; *Ass. Surg.* J. Chalmers; *Clerk*, J. Mitchell.
VIPER, 6—*Assist. Surg.* J. Andrews.
WINCHESTER, 52—*Comman.* J. Shepherd; *Lieuts.* H. James, C. Edmonds; *Second Mast.* G. W. Nembhard; *Clerks*, W. Ramage, W. C. Byrth.
ZEBRA, 16—*Master*, L. C. Bailey; *Mate*, T. H. Mason; *Clerk*, G. W. Pickthorne.

ADMIRALTY ORDERS.

Admiralty, 8th Oct. 1834.

The Lords Commissioners of the Admiralty are pleased to direct that the annexed Memorandum, which has been issued from the Colonial Department, be promulgated for the information of Officers of the Royal Navy and Marines proposing to settle in the British Colonies.

All former notices on this subject are to be considered as obsolete.

By Command of their Lordships,

GEORGE ELLIOT.

INFORMATION FOR THE USE OF MILITARY AND NAVAL OFFICERS PROPOSING TO SETTLE IN THE BRITISH COLONIES.

Colonial Office, 15th August, 1834.

1. Annexed is a Statement of the Regulations according to which, with such modifications as local circumstances may render necessary, Lands belonging to the Crown are disposed of in the several British Colonies in North America, as well as a Statement of the Regulations in force in the Australian Colonies.

2. Under these Regulations Military and Naval Officers cannot receive free grants of land; but, in buying land, they are allowed a remission of the purchase-money, according to the undermentioned scale:—

Commanders, and Officers of the Royal Navy above that rank, and, Field Officers of 25 years' service and upwards, in the whole £300.

Commanders, and Officers of the Royal Navy above that rank, and Field Officers of 20 years' service and upwards, in the whole £250.

Commanders, and Officers of the Royal Navy above that rank, and Field Officers of 15 or less years' service, in the whole £200.

Lieutenants, Masters, and Surgeons of the Royal Navy, and Captains of the Royal Marines of 20 years' service and upwards, in the whole £200.

Lieutenants, Masters, and Surgeons of the Royal Navy, and Captains of the Royal Marines of 15 years' service or less, in the whole £150.

Assistant Surgeons of the Royal Navy, and Subalterns of the Royal Marines of 20 years' service and upwards, in the whole £150.

Assistant Surgeons of the Royal Navy, and Subalterns of the Royal Marines of 7 years' service or less, in the whole £100.

3. 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, shewing 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.

4. 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 testimonials, 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.

5. 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 clases may have been admitted formerly, and under a different state of circumstances, they must now be excluded.

6. Gentlemen who have ceased to belong to His Majesty's Service, cannot be allowed advantages 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 His Majesty's Service.

Officers who have sold out within the last twelve months preceding the date of this Memorandum will be allowed the usual privileges, notwithstanding their want of the certificate required by these Regulations, if they present themselves to the Governor of the Colony within a year from the present date. And all Officers who have already been recommended by the General Commanding in Chief will be entitled to their privileges, without regard to any obstruction which might otherwise be offered by the Regulations now established.

7. Officers cannot be allowed advantages in the acquisition of land in any Colony, unless it be their intention to fix their residence

in that Colony. In order to insure the observance of this rule, it has been determined that the Titles to lands obtained by Officers who take advantage of the peculiar Regulations existing in their favour, shall be withholden for a period sufficient to prove that they have not required to the Colony for the mere purpose of gaining possession of a portion of land, and then departing. Two years is the period for which it has been decided that the Titles shall be kept back: this delay will be sufficient for the salutary object in view, and will not constitute any serious inconvenience to the *bona fide* Settler.

8. By the annexed Regulations for the disposal of Crown lands, it will be observed that the general sales will take place periodically. But in order to prevent inconvenience to Officers who may arrive in the intervals between those sales, and be desirous at once to obtain an allotment, the Governors of the Colonies are authorized to allow Officers to acquire, at any time, on payment of the upset price, lands which have previously been offered for sale at some general sale, but which have not been bought.

Officers will thus be relieved from delay at the time of establishing themselves in the Colony. They will also be enabled by this arrangement, which will permit them to obtain their land at a fixed price, to choose such a quantity as shall be exactly equivalent to the amount of the remission to which they are entitled, instead of being liable to be called upon to pay a balance, which must be the case if they bid for lands at a sale by auction.

9. There being little or no Crown land available in Prince Edward's Island, Officers cannot be offered any privileges in the acquisition of land in that Colony. In Cape Breton, an island in which the natural inducements for the settlement of Officers are not very considerable, it is necessary, from local circumstance, that there should not be a remission of purchase money as in other Colonies: to such Officers as may wish to settle in this island, allotments of land will be granted on the same scale and conditions as before the general introduction of the system of selling the Crown Lands, viz:—

	Acres.
To a Lieutenant-Colonel . .	1200
,, Major	1000
,, Captain	800
,, Subaltern	500

The same rule will be observed in Nova Scotia.

Regulations for the disposal of Lands belonging to the Crown in the British North American Provinces.

The lands are no longer to be given away by free grants, but are to be sold.

The Commissioner of the Crown lands will, at least once in every year, submit to the Governor a Report of the land which it may be expedient to offer for sale within the then ensuing year, and the upset price per acre at which he would recommend it to be offered; the land so offered having been previously surveyed and valued in one or more contiguous tracts of those which are most adapted for settlement, according to the local peculiarities of the province, and in proportion to the number of deputy-surveyors who can be employed.

The lands to be laid out in lots of 100 acres each, and plans of such parts as are surveyed to be prepared for public inspection, which plans may be inspected in the office of the Surveyor-General, or in that of his deputies in each district, on payment of the fee of 2*s*. 6*d*.

The Commissioner of Crown lands will proceed to the sale in the following manner:—He will give public notice in the Gazette, and in such other newspapers as may be circulated in the Province, as well as in any other manner that circumstances will admit of, of the time and place appointed for the sale of the lands in each district, and of the upset price at which the lands are proposed to be offered; he will give notice that the lots will be sold to the highest bidder: and if no offer should be made at the upset price, that the lands will be reserved for future sale in a similar manner by auction.

The purchase-money will be required to be paid down at the time of sale, or by four instalments with interest; the first instalment at the time of the sale, and the second, third, and fourth instalment, at intervals of half a year.

If the instalments are not regularly paid, the deposit-money will be forfeited, and the land again referred to sale.

Public notice will be given in each district, in every year, stating the names of the persons in each district who may be in arrears for the instalments of their purchases, and announcing that if the arrears are not paid up before the commencement of the sales in that district for the following years, the lands in respect of which the instalments may be due will be the first lot to be exposed to auction at the ensuing sales; and if any surplus of the produce of the sale of each lot should remain, after satisfying the Crown of the sum due, the same will be paid to the original purchasers of the land who made default in payment.

The patent for the land will not be issued, nor any transfer of the property allowed, until the whole of the instalments are paid. The lands sold under this regulation are not to be chargeable with quit-rents, or any farther payment beyond the purchase-money and the expense of the patent.

Persons desirous of buying land, in situations not included in the tracts already surveyed, must previously pay for the expense of survey, and the price must of course depend upon the quality of the land and its local situation.

The Crown will reserve to itself the right of making and constructing such roads and bridges as may be necessary for public purposes in all lands purchased as above; and also the right to such indigenous timber, stone, and other materials, the produce of the land, as may be required for making and keeping the said roads and bridges in repair, and for any other public works. The Crown further reserves to itself all mines of precious metals.

The regulations for granting licenses to cut timber will be learned by application to the Surveyor-General's office in the respective Colonies.

Colonial Office, 7th March, 1831.

FALMOUTH, 20TH OCTOBER.

LISBON—Sails every Tuesday.

Packet.	*Commander.*	*Sailed.*	*Last Spoken.*	*Where.*	*Due.*
VIPER.....	Lt.Com. L. A. Robinson	27 Sept.	———	———	25 Oct.
ESPOIR	Lt. Com. C. W. Riley	4 Oct.	———	———	1 Novem.
NAUTILUS	Lt. Com. W. Crooke....	10 Oct.	———	———	7 Novem.
CONFIANCE st. v.	Lt. Com. J. M. Waugh..	19 Oct.	———	———	16 Novem.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

SPITFIRE	Lt. Com. W. Symonds..	3 Oct	———	———	23 Nov.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

SPEY	Lt. Com. R. B. James..	8 Sept.	———	———	10 Nov.
GOLDFINCH.....	Lt. Com. E. Collen	4 Oct.	———	———	6 Dec.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

OPOSSUM	Lt. Com. R. Peters	23 Aug.	———	———	16 Nov.
REYNARD	Lt. Com. G. Dunsford..	20 Sept.	———	———	18 Dec.
DUKE OF YORK	Lt. Com. W. James....	20 Oct.	———	———	18 Jan.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

BRISEIS.....	Lt. Com. J. Downey, ..	14 Aug.	5 Sept.	Barbadoes	20 Nov.
SHELDRAKE	Lt.Cm.A.R. Passingham	8 Sept.	———	———	15 Dec.
TYRIAN	Lt. Com. E. Jennings ..	5 Oct.	———	———	11 Jan.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday every Month.—ROUTE—*To St. Domingo, Jumaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet.]

SWALLOW	Lt. Com. S. Griffith	21 July	———	———	24 Nov.
LAPWING	Lt. Com. G. B. Forster..	23 Aug.	———	———	27 Dec.
REINDEER	Lt. Com. H. P. Dicken.	20 Sept.	———	———	24 Jan.
STANMORE.....	Lt. Com. R. S. Sutton	20 Oct.	———	———	24 Feb.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

MUTINE.....	Lt. Com. R. Paule	6 June	19 Aug.	Rio Jan.	24 Oct.
CAMDEN	Com. Mr. J. Tilley	4 July	———	———	21 Nov.
PLOVER.....	Lt. Com. W. Downey ..	8 Aug.	———	———	26 Dec.
PIGEON	Lt. Com. J. Bitney	10 Sept.	———	———	28 Jan.
SKYLARK	Lt. Com. C. P. Ladd ...	11 Oct.	———	———	28 Feb.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

AFRICAN, st.v.—Lt. Com. J. West, 17th Oct. arrived from Lisbon.

ECLIPSE—Lt. Com. W. Forester, 13th Sept. arrived from Jamaica.

FIREFLY, st. v.—Lt. Com. R. Baldock, 21st Oct. arrived from Mediterranean.

FLAMER, St.V.—Lt. Com. C. W. Griffin, 18th Aug. arrived from Mediterranean.

MELVILLE—Lt. Com. C. Webbe, 6th Sept. arrived from the Brazils.

NIGHTINGALE—Lt. Com. G. B. Fortescue, 7th October arrived from the Leeward Islands.

PANDORA—Lt. Com. M. P. Croke, 11th Oct. arrived from Mexico.

PELHAM—Lt. Com. H. Carey, 18th October arrived from Halifax.

PIKE—Lieut. Com. A. Brooking, 26th Sept. arrived from Lisbon.

SCORPION—Lt. Com. A. Robilliard, 17th Oct. arrived from Lisbon.

TARTARUS, St. V.—Lieut. Com. H. James, Falmouth, for Mediterranean mail.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1834.

Continued from page 637.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
273	Britannia	———	Wexford	Quebec	At sea	7 Sept.	Crew saved.
274	Conqueror	Power	Cork	Newport	Breakses P.	6 Aug.	3 drowned.
275	Henrietta	Leslie	Richebucto	Liverpool	South Reef	25 June	
276	Hiram	———	Sidney	St.John. N B	At sea	2 Aug.	Crew saved.
277	Huskisson	———	Liverpool	B. Ayres	R. Plata	5 July	Crew saved.
278	Jean	———	Belfast	Shetland	Wick Bay	4 Sept.	
279	John Wallace	———	———	———	Prince Edw. I	5 Aug.	
280	Linnæus	Smith	Liverpool	Bombay	C. Agulhas		
281	London	Burn	Montrose	Whaler	At sea	June	
282	Lord Wellington	Harrison	Berwick	Whaler	At sea	15 June	
283	Mary, of	Whitehavn.	Newfndld.	Miramichi	St. Paul's Isl	20 June	2 only saved.
284	Mary, Timber laden	———	———	———	At sea	Aug.	Abandoned.
285	Neva	of North	Shields	Abandoned	Seen on	1 Oct.	By Ida.
286	Rapid	———	Fernand.Po.	Liverpool	Bonny R.	2 July	
287	Simpson	———	Southton	Quebec	At sea	———	Abandoned, cw.sd.
288	Sir Edward Codrington	———	Liverpool	Quebec	At sea	6 Sept.	Foundered.
289	T. Harrison	Harrison	London	V. D. Land	Channel	Oct.	Run foul of.
290	TwoBrothers	Of Dublin	Waterlogd.	———	At sea	23 Sept.	Crew saved by Earl Egremont.

SHIPWRECK.—We understand that several persons belonging to this place have visited Baccalieu since a notice was given in this paper of the circumstance of an unknown vessel having been wrecked there; and the various reports circulated about that wreck appear only to involve the subject in more mystery. From the description of some of her materials, we think that she must have been a large vessel, and from the finishing of some of her rigging, that she must have been either a man-of-war or a packet. We understand that a pair of trousers, apparently of foreign manufacture and make, has been taken from some part of the wreck; and it is very generally reported that specie (said to be English coin) to a very large amount has also been taken. From the described situation of the anchors and chains, it appears that the vessel had come to anchor near the north end of the island, and from one of the anchors being broken, that she drifted from her anchors and went ashore at an inaccessible place, near which a large cave extends some distance under the island, so dark that it was necessary to carry a light into it in the daytime; that into this cave, and in crevices about the mouth of it, bodies of the people who were on board the vessel, as well as some of her materials and wreck, were driven by the force of the sea; that the bodies of several persons are now lying there, some of them mingled up with the tangled remains of the sails and rigging; but two particularly described, one as being jammed against the cliff by some of the wreck, and supported by stones and rubbish, having on a blue surtout and gray trousers; and the other, of respectable appearance, a very tall man, who had, apparently by his strength, got further up the cliff, and died there. We regret that no means are made available to send some intelligent person to the spot, for the purpose of investigating the place and circumstances; such inquiry would probably identify the remains of the vessel, and lead to some knowledge of the unfortunate sufferers; as the plunder of the wreck, and the hope of plunder, have naturally induced a degree of secrecy, and kept from the public a variety of circumstances which, if known, would have discovered what unfortunate vessel it was.—*Bay Conception Star, July* 16.

At the Midsummer vacation of the Royal Naval College, there were twenty vacancies. Upon the re-opening of the establishment, so much have the inducements to send young gentlemen through that channel into the Naval Service been reduced, that only eight new scholars have appeared. — *Hants Tel.*

Births.

In Charles-place, the lady of Captain W. Walker, R. N., K. T. S., of a son.

On the 17th Oct. at Looe, the lady of Lieut. Baker, Coast Guard Service, of a son.

At Lumps Cottage, South Sea, the lady of J. Gain, esq. Purser HM. ship Rainbow, of a son,

On the 26th Oct. the lady of Lieut. Wolfe, R.N., of a daughter.

Marriages.

At Winthorpe, Nottinghamshire, Lieut. Whitfield, R N. to Elizabeth, eldest daughter of the late Rev. Wm. Rastall, of Newark-upon-Trent.

On the 7th Oct., at St. George's Church, Hanover-square, London, by the Rev. W. Holland, A. M., Capt. Falcon, R. N., to Louisa Cursham, widow of the late Captain Cursham, and daughter of the late Richard Meyricks, esq., of Runkton, Sussex.

At Woodchester, Captain the Hon. M. F. F. Berkeley, R.N., to the Hon. Charlotte Moreton, third daughter of Lord Ducie.

On the 28th Sept., Mr. G. Dunn, Assistant Surgeon of H. M. cutter Seaflower, to Elizabeth, eldest daughter of the late Lieut. John Ireland, R. N.

On the 11th Oct., at St. Pancras Church, Captain Charles English, N. N., to Jemima Georgiana Carden, only daughter of the late James Carden, esq., of Bedford-square.

On the 15th Sept., at Scarborough, St. Ann's, Lieut. Paget, R. N., commanding H. M. S. Magnificent, to Anna, second daughter of James Hilton, esq.

At Charles' Church, Plymouth, George F. Rowe, esq., R.N., to Mary Ann, only daughter of the late Alexander Rowe, esq., surgeon.

At Farlington, by the Rev. Henry Taylor, Captain Richard Edwards, R. N., to Emily, daughter of Wm. Taylor, esq., of Parkfield-house, Purbrook.

Deaths.

At Upleatham, near Guisbrough, in Cleveland, Yorkshire, the seat of the Hon. Thos. Dundas, M. P. for York, the Hon. George Heneage Lawrence Dundas, C. B. one of the Lords of the Admiralty. As an officer, Admiral Dundas was highly esteemed throughout the naval service, as his character combined the excellent officer and seaman, with the most correct and gentlemanlike deportment. He entered the Naval service early in life; was a Lieutenant of the Queen Charlotte, of 100 guns, in March 1800, when that ship unfortunately caught fire and blew up; in which he continued until the last moment of safety, when, finding all his efforts to extinguish the flames unavailing, he jumped from the jib-boom, and swam to an American boat approaching, by which he was picked up. He was shortly after promoted to the rank of Commander in the Calpe, and on the 3d August, 1801, to a Post Captain, and subsequently commanded the Quebec, Euryalus, Achille, and Edinburgh, in which he constantly gave proof, during thirteen successive years (to the close of the war), of ability, zeal, prudence, and undaunted gallantry, that was equal to any emergency, and tended to exalt his country's honour and permanent welfare. He many years represented the shires of Orkney and Shetland.

On the 17th Oct., at Elliot House, near Ripon, Commander John Elliot, R. N., aged 77 years, one of the few survivors who sailed round the world with Captain Cook.

On the 19th Oct., at Brighton, Captain Edmund Palmer, C. B., R. N., son of the late John Palmer, esq., projector of the present mail-coach system, and Comptroller-General of the Post-Office. This officer, when in command of the Hebrus, had the honour of capturing the last French frigate taken in the last war (l'Etoile), after an arduous and well-fought action, March 27, 1814, for which he received an honorary medal. He subsequently commanded the Hebrus, in the American war, in the Garonne, and at the battle of Algiers. He married Henrietta, daughter of the late Captain W. H. Jervis, R. N., nephew of Earl St. Vincent, who survives him, with a family of eight children, the eldest of whom is not more than twelve years of age. He was brother of Major-General Palmer, the present M. P. for Bath, his father having represented that city, and was an alderman of the corporation.

At sea, off the Berry Islands, West Indies, on the 29th July last, of fever, Commander Allen Bertram, of H.M.S. Tweed, son of the late W. Bertram, esq., of Nisbet.

At Appledore, Sir Charles Chalmers, bart., Commander in the Royal Navy, aged 54 years.

A few days since, Mr. J. R. Spearman, Purser, R. N. (1791.) He was Captain's Clerk of the Royal George, but fortunately left that ill-fated ship a few months before she foundered at Spithead, in August, 1782.

At Westport, of Cholera, Capt. John Jeffries, commanding the Dolphin revenue cruiser.

On the 14th Oct., at Milbrook, near Southampton, aged 50, Capt. G. M. Bligh, R. N., only son of the late Admiral Sir Rd. R. Bligh, G.C.B., of Belle Vue House, Southampton.

At Hull, Lieutenant Wm. Crow, R. N., 1801, aged 62.

At Quebec, Lieutenant Saml. Walters, R.N. 1805, aged 56.

In the Gulf of Florida, in July last, Lieut. George Blissett, R. N.

Lieutenant George Humphreys, 1815, employed on the Coast Guard Service.

At Leicester, Lieut. Edw. Wm. Scott, R. N., 1815, aged 40.

In Home Park Place, Lieut. Samuel Thos. Deseret, R.N. (1799.)

At Trelissick, in St. Ewe, Lieutenant John Parnell, R. N., aged 40.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

SEPTEMBER, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength.			
		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.
				°	°	°	°						
1	M.	29·62	29·64	64	63	55	67	S.	S.W.	5	5	Op (2)	Odr (3)
2	Tu.	30·02	30·04	57	62	55	63	S.W.	W.	5	3	Bcp (1)	Bc.
3	W.	30·15	30·13	60	65	52	66	S.W.	S.W.	6	8	Oq.	Bcq.
4	Th.	30·08	30·00	63	71	59	72	S.	S.	3	4	Bc.	Bc'vl.
5	F.	29·93	29·93	65	69	58	71	S.W.	S.W.	6	8	Bc mq.	Bc mq.
6	S.	30·02	30·08	62	64	54	65	S.W.	S.W.	5	5	B'c.	'Bc.
7	Su.	30 17	30 05	63	65	50	66	S.W.	S.W.	1	1	Bcm.	Bc m.
8	M.	29·69	29·59	58	64	51	67	E.	S.W.	1	6	Or '(2)	Odr '(3)
9	Tu.	29·38	29·48	57	63	50	64	S.W.	S.W.	5	7	P (1) p (2)	Pq (3) (4
10	W.	29·80	29·78	57	61	52	62	S.W.	S.W.	5	5	Op (2)	Op (3 d 4)
11	Th.	29·80	29·79	61	66	56	67	S.W.	S.W.	5	6	Opq (1) (2)	Opq (3)
12	F.	30·09	30·19	57	64	50	65	S.W.	S.W.	2	1	Fm.	Bcm.
13	S.	30·50	30·48	56	60	47	61	N.E.	E.	3	5	Bcvm.	B.
14	Su.	30·51	30·47	53	64	43	64	N.E.	N.	2	1	'Bvw.	Bm.
15	M.	30·36	30·26	54	59	42	60	E.	E.	3	3	Bvw.	Bv.
16	Tu.	30·06	30·02	56	69	46	70	N.E.	E.	3	1	Bcwp 2)	B.
17	W.	30·04	30·08	68	75	55	78	S.	S.	3	4	Bc'wp 2)	Bclw.
18	Th.	30·21	30·21	64	71	59	73	S.E.	N.	1	1	Od (2	O.
19	F.	30·25	30·23	65	75	55	77	E.	S.W.	1	1	Bcmw.	Bcmw.
20	S.	30·38	30·36	66	74	59	76	E.	N.W.	2	1	Fcw.	Bcm.
21	Su.	30·35	30·31	61	68	56	70	N.E.	N.E.	4	4	Bcmw.	O.
22	M.	30·25	30·19	60	63	55	65	N.E.	N.E.	3	3	Bcmw.	Od (3)
23	Tu.	30·22	30·20	53	60	44	62	N.E.	N.E.	3	3	'O.	Bcm.
24	W.	30·19	30·17	53	59	45	61	E.	E.	1	1	Bcm.	Bc'm.
25	Th.	30·21	30·17	54	60	44	61	S.E.	E.	1	1	Bc'm.	'Bc.
26	F.	30·08	30·02	57	60	51	64	S.E.	S.	1	3	Od (2)	O.
27	S.	29·89	29·92	62	64	57	67	S.W.	S.W.	3	3	Bcp (2)	Bc.
28	Su.	30·10	30·11	58	70	54	70	N.W.	N.W.	2	2	Bcmw.	Bcm.
29	M.	30·28	30·24	56	61	48	63	E.	E.	2	3	Bcw.	Bc.
30	Tu.	30·16	30·12	51	59	45	60	E.	E.	3	4	Bw.	B.

SEPTEMBER—Mean height of Barometer=30·094 inches; Mean Temperature=59·1 degrees; Depth of Rain fallen=0·80 inches.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds—detached passing clds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
. Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, *i.e.* from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of the six hours, and both together denote the whole interval. They are intended to express the time nearly when rain fell. Thus, 2) signifies that rain fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained the whole six hours from 6 A.M. to noon; (3) ditto from noon to 6 P.M.

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THE NAUTICAL MAGAZINE.

DECEMBER, 1834.

HYDROGRAPHY.

"That future pilgrims of the wave may be
By doubt unclouded, and from error free."

57. Sailing Directions for the Coast of South America, *from Cape Manzanilla to San Juan de Nicaragua, by Commander William Sidney Smith, of H.M.S. Larne*, 1833.

(Concluded from page 646.)

The succeeding month (October, 1833) another man-of-war was seven days in similar trouble, being eleven days from Jamaica to Chagres. Merchant-vessels often entirely fail to stem the current at this season, and must wait until the sea breeze shall set in for a sufficient period, if they do not ascend to 11° N. to gather their westing.

Sailing from Chagres.

The river Chagres imparts to the sea a yellow colour, to a distance of eight miles from the land. The stream, after issuing from the harbour, and joining the sea current, runs seldom less than one knot and a half per hour along the land to the northward and eastward.

A ship getting under way from Chagres will meet with such assistance from the current, that, notwithstanding the swell setting in, she can cast any way, and beat off; provided the wind be not so violent as to prevent her carrying double-reefed topsails, jib, and courses. Thus, when the current is from W.S.W. and the wind west, she rides with the latter two points on the starboard bow. The swell being from N.N.E., it is desirable to cast to starboard notwithstanding. Let the after-yards and spanker be set for the larboard tack at once, and lay aback, and the larboard head-braces a little hauled in, for casting. In heaving up, port the helm, which will be acted on by the current sufficiently long to cast her, before it will be necessary to shift it for stern-way.

In light airs the current will set you close along shore, from Point Brujes Islet to Point Toro reefs, when you must be prepared to tow and anchor.

It is universally recommended on all occasions, (except beating to the eastward during the settled times of the breezes,) that a ship leaving Chagres should stand out to the northward four or five leagues as soon as possible, because the winds are in general apt to fall light and variable, and the current is very strong, then setting directly on the rocks which lie off Porto Bello, and thence along the line of coast from E.N.E. to E.S.E., and seldom less than at the rate of one and a half to three knots per hour.

Should you be unavoidably drawn in near the land of Porto Bello, be constantly on your guard against calms and squalls.

Sailing from Chagres to St. Juan di Nicaragua.

When you reach long. 82°, you ought to be in lat. 11° 30′. Between that part and Chagres, the current in fine weather is usually running to E.N.E. one knot an hour, but it occasionally is found different.

From the above-mentioned latitude and longitude to San Juan, you may be affected by a set to the southward, which, in fine weather, may possibly increase to one knot and a half after you draw within thirty miles of the land. The navigation may be based on this information; for, although the state of the currents cannot be *positively* predicted, when the winds are not north, [see Remarks on the Currents of this sea,] yet every one is still of opinion that the land should be made twenty miles to the north of San Juan at all times and seasons.

When northerly winds set in, they are very baffling, as the swell and current, both from the same quarter, are infinitely increased. And ships have been occasionally kept many days, constantly striving to proceed, in a westerly direction to their port. In December, 1833, a ship was twelve days from Chagres to San Juan de Nicaragua, nine of which she was off the latter place. Another had set in before she made the land. When she saw it, in thick weather, having had no observations previously, she run along it, to find an object to verify her position by. She at length observed Turtle Bogue, and then hauled off, to beat up. But the ground thus lost, such was the current's force, could not be recovered during the above period; all which time the strength of the northerly winds disposed her never to anchor on the open shore at night. An easterly wind at last arrived, to carry her in. To prevent similar delays, stand in boldly fifteen or twenty miles to northward of San Juan. The coast and the islands Paxara Bovo and Pigeon Kays are low; but on the coast will be seen the hills described in the coast directions. You may approach either coast or islands to twelve fathoms, even by night. When being thus placed in a favourable position to derive benefit from the long shore-current, you cannot fail of arriving in a few hours. Latitude, sounding, and a good look-out, must be particularly attended to in this sea.

[Vessels going into the harbour of San Juan di Nicaragua should give Point Arenas a berth of more than three cables' length. His Majesty's ship Cruizer, Captain J. M'Causland, lately grounded on a dangerous shoal, the position of which we have not yet ascertained. Ed.]

Sailing from San Juan, or Chagres, to Jamaica.

Keep in general within thirty miles of the land, to receive the assistance of the long shore-current from west to east. By day, during the sea breeze, you may beat close in to eight or ten fathoms; by night, in fine weather, you may be in equally close, if you have a knowledge of the coast, to receive the land winds, which then set off from 10 P.M. to 8 A.M., and even to a distance of nine miles from the land. In this respect, the shores between San Juan and Cape Blanco, and between Escudo Island and Chagres, are more safe than the rest. After passing Cape Manzanilla, the current commences to diminish in rapidity. The line of Kays, in a large ship, ought not to be approached within five miles *by night*; although *by day* reference to a chart, sounding, and look-out on the colour of the bottom, may enable you to stand in higher upon a good lay.

When to the eastward of Point San Blas, and opening the Gulf of Darien, the current to the eastward appears to have less effect, and generally draws in to south. It is, in fact, much influenced by the prevailing winds at the different periods of the seasons. After passing the gulf, you may see the islands of San Bernardo, which form a cluster. The centre of them is placed by

Don Fidalgo in 9° 45′ N., which situation they occupy in the Admiralty chart. Captain Mackellar states them to be in 9° 27′ N., and long., by chronometer, 75° 52′ 30″ W.

These islands are low, but very remarkable: when at the distance of ten or twelve miles off, and bearing from E. to E. by S. ½ S., several parts of them will appear like *small rocks* between the islands; but at the south end of the northernmost island there are two remarkable trees which may be mistaken for a vessel at anchor. These islands, like the whole of the coast, are covered with wood, and may be seen about five leagues off.

As you proceed farther to the eastward, you will make the Rosario Islands, which may always be known from those of San Bernardo, as they lie in a triangular form, and are long and low.

Having passed these islands, you may sight the hill over Carthagena, called Popa, which forms not unlike a gunner's quoin, and has a ruined convent on its highest part.

After you get to the eastward of the Rosario Islands, you will often find a current setting to N.W. and N.N.W. at the rate of from one to two miles and a half an hour. The N.E. breeze often blows off this coast, and half way across to Jamaica, with great violence; raising a very turbulent sea. Arrived in the vicinity of the coast of Carthagena, you may stretch away to Jamaica. Some will do it without beating so far to windward; for experience teaches that the trade *almost always* draws nearly east fifty or sixty miles from the land. Others make it a rule, even though they happen previously to obtain a good lay, to work up near the shore, as far as Point Galera de Zamba, that they may be certain to go across free.

The more rapidly the strong current of the Caribbean Sea is crossed, the better; and if a scant wind should lead a ship to leeward of Portland Rock, she will find so strong a westerly set to contend with, that she will regret not having beat up higher on the side of the main.

The passage from Chagres to Port Royal is generally performed in from eight to ten days.

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58. New Light at Antibes, *Mediterranean.*

The following notice has been published at Marseilles, of a new light-house at the entrance of Antibes:—

Chambre de Commerce, Marseille, 18 Octobre, 1834.

Direction Générale des Ponts et Chaussées et des Mines:—

Phares et Flanaux; Avis aux Navigateurs; Fanal du Port d'Antibes (Departement du Var).

Les Navigateurs sont prévenus qu' à partir du 15 Novembre prochain, l'entrée du Port d'Antibes sera signalée, pendant toute la durée des nuits, par un petit feu fixe varié par des éclats, qui sera allumé sur la Tourelle récemment construite à l'extrémité du Mole oriental.

Les Eclats d'une durée de 4 à 5 secondes, se succéderont regulièrement de 2 en 2 minutes, et seront precedés et suivis de courtes éclipses.

Le Feu fixe pourra être aperçu, dans un beau temps, jusqu' à la distance de trois lieues marines et demie.

Transmis à la Chambre par M. Le Directeur des Ponts et Chaussées.

Par Autorisation

Le Secrétaire de la Chambre de Commerce,

(Signé) Michel Roussier.

(Translation.)

Navigators are hereby informed, that from the 15th November next, the entrance of the port of Antibes, during every night, will be distinguished by a small fixed light, varied by flashes from the little tower recently erected on the extremity of the Eastern Mole.

The flashes, lasting from four to five seconds, will appear regularly every two minutes, and will be preceded and followed by short eclipses.

The fixed light may be seen in fine weather at the distance of three leagues and a half. &c. &c.

M. Roussier.

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59. Remarks on the Passage from Port Jackson, through the Barrier Reef and Torres' Strait. *By Mr. R. Towns. With an Extract of a Letter from Captain Blackwood, R.N., on the advantages of the Inner Route. From Captain P. P. King, R.N., F.R.S., &c.*

In some of the early numbers* of this volume of the Nautical Magazine, we gave at length Captain King's description of the north-east coast of Australia, and the reefs lying off it, with his directions for navigating them. We subjoin the following valuable directions of Mr. Towns, for entering the Barrier Reefs, with an extract of a letter from Captain Blackwood, R.N., on the advantage of the *inner* passage, as proposed by Captain King :—

If a ship sail from Port Jackson before the month of April, or with a northerly wind, an offing should be gained without delay, to avoid the southerly current which invariably prevails from September to March, particularly during fine weather, and when the wind is from the northward. Upon reaching the meridian of 157° or 158°, the course may be directed for the east end of Wreck Reef, with a free wind, as the trade is generally well to the eastward in the early part of the season, and is usually attended by squally weather and thick showers; but if the wind be southerly, or after the middle of April, an offing is not necessary, and the Cumberland's track, or a little more to the eastward of it, will be found sufficient; this, however, ought to be pursued with great caution, as a reef has been reported to the southward of Cato's Bank, by Captain Scarvell, in the Philip Dundas, in 1826, (situation not remembered.)

As you approach Wreck Reef, the greatest caution is requisite to guard against the current; no ship should pass it without sighting Bird Island on its eastern end, because the situation of this reef being correctly ascertained, and corresponding with other dangers as laid down in the best charts, you will obtain thereby a good departure, and, if required, be enabled to correct your chronometers. After leaving Bird Island, the Cumberland's track may be pursued as far as latitude 15° south, with safety, passing between Kenn's and Frederick Reef, and to the eastward of Alert Reef and Diana Bank. Kenn Reef was not generally known to exist, until it be proved fatal in the wreck of the Bonavista, on the 18th of March, 1828. In this vessel, great confidence having been placed in three good chronometers, the mean of which, at 6 P.M., gave the situation of the vessel fifteen miles east of Bird Island,

* Nos. 24, 25, 26, 27.

which they passed without sighting it, she was steered N.N.W. for four hours, at five knots per hour, with moderate breezes from the eastward; the weather afterwards became squally, and the wind veered from E.N.E. to E.S.E., with heavy rain, and a cross sea. Having of necessity run to leeward during the squalls, which now (midnight) had become violent, the ship was hauled up to N. by W. to guard against Frederick Reef, naturally expecting the current to be setting to the westward. About thirty minutes after midnight, broken water was seen on the lee-bow; the helm was immediately put down, but, finding the ship could not clear the reef on that tack, and no hopes of the vessel's staying, the trysail being down, and a possibility of the vessel's waring, the helm was put up, but before she could veer, had entered the breakers. Although a man was stationed at the mast-head, the danger was first seen from the deck, and in less than three minutes the unfortunate ship was a total wreck. The current was found to set over the reef to the northward, at the rate of four knots, and must have drifted the vessel to the N.E. at least twenty miles, during six hours and a half. The advice given by Captain Flinders cannot therefore be too strictly attended to, i.e., *easy sail during the night, and a very strict look-out, as it is impossible to have any idea of the rate and direction of the current in those seas,* particularly in stormy weather, which generally occurs with the change or full of the moon.

On pursuing the Cumberland's track until you reach latitude 15° south, and longitude 151° east, you will then have passed Alert Reef, and Diana Bank, the only dangers known in this route. On the former, the brig Venus was wrecked in 1826: on this occasion, the weather being moderate, the Venus was drifted so close to the reef shortly after midnight, that she grounded before they could make sail, and almost directly went to pieces. They found the current setting over the reef at the rate of four or five knots. The other two vessels being a little to windward, escaped by making sail. Having gained the latitude 15° south, as before recommended, a more westerly course should be steered gradually towards Sir Charles Hardy Island, so at to gain the latitude 12° or 12° 10′ S., in the longitude of 145° E., then steer west for the Barrier Reef, where several safe passages will be found between 12° 10′ and 11° 56′. As you approach them, a detached reef will be made, or rather should be made, in latitude 12°, longitude 143° 55′, where an open space will be seen on either side: this reef appears about three or four miles in circumference, with smooth water in the centre, and several small stones or rocks on the north-west side; off its eastern end, breakers will be seen from aloft, bearing N.E. by N., about ten miles distant, trending to the westward. At the same time, the reefs to the southward will bear about S. or S. by W., distant eight or ten miles, trending to the westward and northward. Passing to the northward of this detached reef, at one and a half or two miles distant, steer west for the Grand Barrier, which is about eight miles therefrom, and trends north and south, or rather forms a very deep sinuosity. When within a mile, or a mile and a half from it, edge off to the northward, keeping a good look-out from aloft for detached rocks. If the weather be clear, one or two sandhills will be seen inside the main reef; the southernmost of the two is a guide for the passage. In running to the northward, along the reef, several openings or passages will be seen through, in a S.W. and W.S.W. direction, and they are probably safe; but the one about to be described, which I have passed twice, will be distinguished by the following remarks:—

After having passed two or three small openings, and approached the reef where it begins to trend to the N.E., with high breakers, the two last or most northern passages will be seen. The more northern one of the two opens at N.W. by W., or W.N.W., and appears very clear; but about two miles to the

southward of it is the passage mentioned. Its latitude is 11° 56′, or 11° 57′, and extends through the reef W.S.W.: as you open it, haul up for mid-channel, and, if the weather be clear, the more southern sandhill will be seen bearing about W. by S., about a sail's length on with the S.W. point of the reef which forms the northern side of the channel. When in the fair way, Sir Charles Hardy Island will be seen W. ½ N. Should the weather be hazy, so that you cannot see the sandhills, it will be satisfactory to notice the following marks:—As you enter the channel, you will see a small sand patch on the N.E. point of the reef, which forms the south side, and two large black stones, resembling turtles at a distance, on the west side, and a dry sand-bank on that of the north-west, which forms the north side: these are sufficient to distinguish this passage from any other one; yet I am of opinion that the one to the northward, running W.N.W., is equally clear, and more direct, having observed it from both sides of the reef.

Having entered the channel as above, keep a little to the northward of mid-channel, to avoid discoloured water which will be seen from aloft; although I have passed over it in twelve fathoms, it will be advisable to give it a berth, as there is plenty of room to the northward. When through, you have a fine clear, smooth sea, as far as the eye can reach; steer round the south-west point of the northern reef, and at half a mile off, and thence steer W. by N. northerly, until you make the second sandhill; pass this on the north side, at three quarters of a mile distant; you will then see a third sandhill, smaller and lower than the two former, bearing about W.N.W.; pass this also to the northward, and at the same distance. All these sandhills have reefs projecting to the south-east and north-west. Before we proceed farther, it is necessary to remark on the time of passing the Barrier Reef. If in the morning, or before noon, with a good breeze, you will reach Bird Island before night; but if the entrance be not passed until afternoon, it will be advisable to anchor under the second or third sandbank, in nine or ten fathoms; or else, if there be time, you may anchor under Sir Charles Hardy Island: this last, however, should only be adopted in cases of emergency, because, in getting under weigh, to proceed, you will have to haul out to the N.E. by E. to clear Cockburn Reef, and gain the fair way; and if the wind be far easterly, you will find some difficulty in doing so; although, while at anchor in the Asia, off Sir Charles Hardy Island, we found regular tides, the flood setting to the westward, and ebb to the E.N.E. By anchoring under the second sandhill, you will be in the fair way, and a W. by N., or more northerly course, will clear the east end of Cockburn Reef, which bears from Sir Charles Hardy Island N.E. by N., and from Cockburn Island E. Give this reef a berth from half a mile to a mile, passing to the northward of it, and then steer west, until you approach the extensive reef to the north-west of Cockburn Island, keeping a good look-out from aloft at all times, in case of detached patches; steer along this reef at a prudent distance, edging to the northward, with the lead going, until you make a small sandbank to the W.N.W. When this bank bears W. by S., if the weather be clear, Bird Island will be visible open to the northward of it; then haul up for Bird Island, giving the bank a wide berth; pass between it and another sandbank and reef, which bears from the former about N.W. six miles, over a clear channel of sixteen or nineteen fathoms.

If entering the Barrier before noon, and pushing for the anchorage at Bird Island, great caution is requisite, should the sun be far westward; but, should necessity require, you have anchorage the whole passage through from the Barrier towards Booby Island; if it be very late in entering, and not daylight to reach the sandhills, you may come-to immediately inside the reef; but if at anchor under the sandhills, weigh at daylight, and, with the ordinary breeze,

you will reach good anchorage at Mount Adolphus, Turtle Island, or Cairncros Islands. The passage immediately to the northward of Cockburn Island, discovered in the Asia, Captain T. F. Stead, is decidedly the best yet known, and, with common care, may be termed perfectly safe, and obviates the objection hitherto made against that by Sir Charles Hardy Island, namely, the rocky grounds and extensive reefs which lie to the westward of it, which we sounded, in order to buoy a channel for the Asia, and found unsafe; but, notwithstanding, many spots may be found where vessels may cross it in three, four, or five fathoms, by conning the course from aloft, whence the rocks are easily distinguished; the risk, however, is great, particularly with a large ship. I passed over the reefs in the Bonavista, in 1827, and had three fathoms and a half in the shoalest part; the western side of it is very steep, with from five and fifteen to twenty fathoms. A deep channel runs between this and Cockburn Main Reef. The ship Lalla Rookh passed to the southward of this danger; but this cannot be done with the wind far from the south. Should a vessel be obliged to attempt this passage from necessity, or otherwise, the following remarks may be serviceable:—Steer from Sir Charles Hardy Island W. by S. and W.S.W., along a very extensive bank, with the lead going; you will carry regular soundings from eight to six fathoms. As you approach the rocky ground, which lies about six miles therefrom, the vessel should be under easy sail, to enable you to see the rocks in time to avoid them, especially if the sun be a-head. When a dry sand-bank, which will be seen to the southward, bore south, when in the Bonavista, I found that she had crossed the danger, and was in deep water; she was then steered along at two cables' length from the south side of Cockburn's Reef, carrying twelve fathoms. The reef is dry in many parts: a middle ground lies between it and the islands off Cape Grenville. About two miles to the westward of the dry sand-bank, on which I had a cast of five fathoms, I edged to the northward, and deepened into twelve, and then followed the course of this reef, until nearly abreast of Sunday Island, when Bird Island was seen bearing N.N.W., under the N.W. side of which I anchored in ten fathoms, sand and coral.

After passing these dangers, King's charts will be found very correct. They will direct you through a fine open channel, from six to ten miles wide, between the main land of Australia and the reefs and islands fronting the coast, which form the channel and shelter from the sea.

Extract from a letter from Captain Blackwood, of H. M. Ship Imogene, dated "At sea, 28th September, 1833," addressed to Capt. P. P. King, R.N.:

"In the foregoing sheets I have made some observations respecting the inner route through Torres' Strait, which I hope may prove useful.

"I consider, with you, the inner passage far preferable in all respects, to that of the outer one by the Barrier Reef. In adopting the former you always insure yourself safe anchorage, and, I should say, fine weather; whereas, in choosing the latter, until after entering the Barrier Reef, you have no anchorage, with a very great uncertainty as to weather. The Imogene's striking is no proof that the inner route is not to be preferred, as she struck on two sunken, and apparently isolated rocks, and, by the bearings of the Low Islands, *to the eastward of the eastwardmost of your tracks.* Such an accident might happen in the Irish Channel, or the Bay of Bengal, and it would be difficult to say, if, on such an extended line of coast as that of the north-east coast of New Holland, you, or any one, could answer for every single rock below water being discovered and laid down, however careful and exact the survey may be. With respect to the passage by the Barrier Reef, we saw, and boarded one fine brig, wrecked and deserted; and the Strathfieldsay (which ship sailed from Sydney

the same day as the Imogene, and, in company with the Asia, went the passage by the Barrier Reef) saw a ship, a wreck, a short time after entering the reef, which had but lately been deserted by her crew. This is but a sorry proof of the safety of the passage by the Barrier Reef, and I believe seldom a year passes without accidents of this sort happening to ships pursuing this route. I doubt very much if the outer passage is a saving of time to ships that adopt it, in proof of which I send you some papers picked up on Booby Island. We lost, *at the very least*, one entire day at the wreck, and anchoring early under Bird Island, to examine a bottle that we saw fastened to a flag-staff on the point. * * *

"I have, I think, spoken all I can now think of respecting the inner route to Torres' Strait, which I trust will for the future be the one adopted by all ships coming to these seas, as I am sure it is the most safe, and oftentimes the shortest. It now only remains for me to say, that your charts, for their correctness, were the admiration of all on board, and that nothing could be more correct than the book of Directions you furnished me with at Sydney. * * * * * Nothing could be more perfect than the weather we experienced the whole of the time we were in the strait."

The above letter was accompanied by the Imogene's log, during the time she was on the passage, and by the following documents, which were found at Booby Island, at the west end of the strait:—

(No. 1.)

"*July* 22, 1833.

"The brig Helen, Taylor, and George Hibbert, Captain Lusk, from Sydney, the 23d of June, having had a long passage, in consequence of two heavy gales of wind, which detained us seven days, and four days of south-west wind at Wednesday Island, came by the inner passage: met with no accident. The Helen, bound to Swan River, with live stock, and George Hibbert, for Sincapore, in ballast. All well. (Signed,) "— TAYLOR."

(No. 2.)

"Ship George Hibbert, Captain Lusk, passed Booby Island on July 22d, 1833, all well. Sailed from Sydney 23d June, in company with the Helen brig, Captain Taylor. We have experienced a strong gale, and have had a deal of westerly wind during the passage."

(No. 3.)

"*Saturday, July* 27, 1833.

"The ship Westmoreland, Brigstock, master, passed Booby Island this day, having got through Torres' Strait: saw a brig on shore on Cockburn's Reef, supposed to be the Richard Bell, Wardle, master; but Captain Brigstock was not nearer than five miles. (Signed,) "JOHN BRIGSTOCK."

(No. 4.)

"*Ship Enchantress, in company with the Jupiter, under Booby Island, the 5th August, at noon*, 1833.

"Sailed from Sydney, New South Wales, the 14th July; entered the Barrier August 2d; anchored under the first Sandhill same night; next day anchored under Bird Island; and on the 4th, at 4 P.M., anchored under York Island, a beautiful bay, six fathoms water. We have had a most delightful passage through.

"Whoever may find this, please to report at first place of their arrival, that the Enchantress, from Sydney, bound to the Mauritius, was this day safe

through Torres' Strait, all well; and have the honour to be your most obedient servant, "DAVID ROXBURGH, Commander."

Now, from the above document, it appears that the Helen and George Hibbert were thirty days on their passage, but were detained by westerly gales eleven days, which bad weather must also have been experienced by ships without the reefs. On such an occasion, it is very evident that a ship inside the Barrier Reefs, at a safe anchorage, with the wind off the land, must have been much more secure than one beating about in bad weather, to leeward of the Barrier, and among the coral reefs outside. It does not appear when the Westmoreland left. The Enchantress was twenty-one days from Sydney to Booby Island, by entering the Barrier Reefs at Charles Hardy Islands. The Helen and George Hibbert came by the inner route, and, deducting the days she was detained by westerly winds, made the passage in nineteen days.

In the month of July, westerly gales, with thick weather, and rain, are of frequent occurrence in the neighbourhood of the Barrier Reefs.

PHILIP P. KING, Capt. R.N.

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60. SOUTHERN CURRENT ON THE COAST OF PORTUGAL.

To the Editor of the Nautical Magazine.

H.M. Schooner Pike, Falmouth, Oct. 20, 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. by E. ½ 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 jawbones. 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 Espichel, 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 Falmouth 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 an 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 too 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 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 furled: 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.

ORIGINAL PAPERS.

I.—Recollections of a Voyager:—Leghorn—Pisa.

(*Continued from* p. 689, *No.* 33.)

There are two theatres at Leghorn, which, without being remarkable, deserve to be visited: the opera would do honour to our own cities. A paul and a half, or about sixteen sous (eight pence) passed us into the pit. On the capitol was represented a triumphal car and a consul; from the words "*veni, vidi, vici,*" traced on a banner, the subject appeared to be the entrance of Cæsar into Rome. The whole is well conceived; the features of Cæsar appear full of the future; his look is anxious, and he seems to dream of empire; his eye is fixed on a Roman in a grave attitude, intended for Brutus. There is poetry in this painting; at least it pleased us so much, that we contemplated it for a long time without finding any defect in it; but there are some very serious ones in the theatre, to make up for it; at least so said a connoisseur. The Exiles of Siberia was the title of the opera. The music and the actors, without being absolutely good, were not bad: it is the same over almost all Italy. There is always something to admire, whether in the singing or playing of the actors.

I dedicated the next day to my observations of Leghorn. To see the favourable side of a city, is to see nothing. Some travellers satisfy themselves, and think they have done as much as is expected of them, when they describe the palace of opulence, and those foreign pantheons, where the wonderful productions of the arts await their inspection. But should the retreat of poverty be disdained? Certainly not: so, in pursuance of my design, I wandered early into the narrow, dirty, encumbered streets, from whence the populace coming forth, like ants from their nest, follow their laborious duties to obtain the necessary provision for the day. On all sides I could hear only a coarse idiom spoken, being a happy mixture of different people, attracted to the place to carry on the little commerce of the coast. In the quarter De la Marine, the populace are numerous and filthy, but yet active and busy. The women are well bronzed, of tolerable symmetry, tall, but with long feet. These same *contadines* (country damsels), now so forbidding in their appearance, are the same who only yesterday, decked out in their Sunday clothes, ornamented the large square of the Grand Duke. In Leghorn, the propensity for wearing jewels is extraordinary in all classes; there is not a fisherman, a mariner, or even a porter, whose daughter and wife cannot display in their persons those indispensable ornaments in processions on feast days, when they may be badly enough provided in the arti-

cles of food; large plates of gold, alloyed to an excess, are seen suspended from every ear, from every neck, whether belonging to those of high or low degree. These plates are rudely carved with a miniature representation of the exterior front of a most gothic church. The female Indians of the Botocudos, a savage nation in the interior of the Brazils, manifest an equally extraordinary desire for this kind of ornament. The only difference between them and the women of Leghorn consists in the nature of the jewels—the former use a piece of perfumed wood and polished shells, while the latter adopt gold of Tuscany.

It is especially among the lower orders that the Madonna is held in great veneration. There is not a street, a house, a room, in their quarter, that is not placed under the safeguard of the immaculate Virgin. It is, I venture to affirm, a separate worship; it is the divinity of the people: unceasingly they see her, unceasingly they pray to her. The niche of the Madonna may be seen before the street lamp of the obscurest part of Leghorn; and the flowers that bloomed in the morning would be wanted at the toilet of the first lady in the city, rather than the numerous sanctuaries of the patron goddess should be without them. It is the same in the houses; there the Madonna has her peculiar nook, surrounded by nosegays, and one or two consecrated wax lights. But to these people it affords life; it is their preservation. In the middle of a stormy night, does the thunder echo around—the poor man, in his hut, imagines that he calms the wrath of Heaven, and finds safety by kneeling at the feet of the Virgin. And why should he doubt her power, since his faith has not been shaken by another's creed? In the neighbouring church, the first picture that is seen represents a city overturned by an earthquake; in the midst of the ruins, the house of God alone is sustained by the Virgin, and stands secure. Go to the theatre, see the Exiles of Siberia, as represented there these last two months; it is still the thunder which ravages the earth, a deluge which destroys it; and the cross, planted on the lofty rock, bears away with it in safety the woman who embraces it. In Italy, the true Christian cannot make a step without finding there something to fortify his faith, and wo to him who is wanting in the respect due to the Madonna. I remember once seeing the populace in full chace after a stranger, who had offered an indignity to the wall which supported a Madonna at the height of twenty feet.

On the occasion of the presence of our prince, the French consul, at Leghorn, M. de Forman gave a grand ball at his country house, a short distance from the city. The Tuscan authorities, the chargés d'affaires of the various powers, and the principal merchants, were invited to it. This news roused the *vetturins* of the place, who came in the evening to offer us their services, at the door of the café Minerva. These gentry are very common here—humble,

persuasive, and pressing enough before the bargain is concluded for the use of their vehicles, but brutal and arrogant when the *buona mano*, as it is termed, is withdrawn. The *buona mano*, or, in other words, a bribe, is a regular impost, sealed by use, and tolerated by the laws. However generous a traveller may be for the payment of a short trip, he is sure of being badly served, if he speculates on the *buona mano;* a relay, a new driver, change nothing from the bad grace which you must put up with from them; he who quits you gives his lesson to him who succeeds, and this one treats you ill enough for your generosity.

Behold us, then, seated in a calèche, and rolling out of Leghorn towards the villa of the consul. A blue and star-lit sky, a perfumed atmosphere, glow-worms and other phosphorescent insects flitting about, the noise of numerous carriages running to the same place, flambeaux placed at intervals to light the road—all these concurred to delight the visiters.

The ball was brilliant, animated, and was prolonged to daylight. There was a mixture of figures and costumes, French, Italians, English, and Russians; in a word, it was a ball where the four qnarters of the world had each their representative. Greeks, Turks, and Arabs, were attended by Nubians, a servile race of people. The dresses of the ladies were most splendid; some of them, particularly Jewesses, were literally encased in precious stones; but they seemed fastened to their jewels, and not the jewels to them. A fair dancer wore a false diamond, the disguised rival of the regent, and an English lady of rank displayed an elegant tricoloured head-dress.

The orchestra, with their eyes fixed upon the master of the ball, were about to commence their duties, when the arrival of the Dey of Algiers was announced. With the assurance of a pasha, who visits his harem, he measured, with a satisfied air, the extent of the room. His costume shone with a chaste simplicity; a turban, formed of beautiful cashmere, *beniche* of white stuff, and sported a costly ring on his finger, and a snuff-box *de rigeur*. It was remarked that a single man of his suite carried pistols at his girdle.

After a short display of amiable manners, Hussein-Dey became a silent spectator of the scene, and passed into a neighbouring apartment, where he improvised the etiquette of a divan. I observed a Turk approach him; one whose features betrayed the cruel ferocity of the tiger; his eye was dull, and turned indifferently from one side to the other, without expressing the slightest sign of interest in the party of which he formed one; his name is Ibrahim-Aga-Agassi: the husband of the Dey's daughter. To this title he is indebted for the honours he was clothed with during the prosperity of the regency of Algiers. He saw the French again under auspices very different from those under which he had known them. This Ibrahim, yet a youth, was a year ago the Achilles of a regency.

It was he who commanded the thirteen Beys, and all the forces of the kingdom. The 29th of June,* the memorable epoch of the battle of Stavueli, put an end to his grandeur.

Nothing comes amiss to a traveller, so I trust that I shall be pardoned for noticing here a person in Oriental costume. At first, I thought he was a servant of the Dey, an error from which I was soon undeceived by himself. He came and asked me, in bad French, the name and the rank of the commandant of the frigate. I had scarcely satisfied his curiosity, when he entertained me with a conversation about Hussein Bey, in no courteous terms; at which I could not help expressing my astonishment to him, that he, whom I thought the Imaun, or chief of prayer, should dare to speak with such irreverence of his dethroned sovereign. "Look at me," said he; "do you recognize in my appearance one of the elect of Allah, a child of the prophet? I am a Greek and a Christian, by the grace of God; and Prince and Hospadar of Moldavia, by that of my father. I have assisted the insurrection of the Greeks—I have incurred the disgrace of the Sultan; and it is to fly the fatal bowstring, or the no less cruel athagam, that you see me at Leghorn. This year shall not end before I salute Greece, where I would end my days. Two unfortunates, whose evil stars are alike, mutually interest each other; what is there, then, extraordinary, that an exiled Dey and a Hospadar in disgrace should live on good terms in the land of exile? The meeting is strange, I confess; a year ago the Dey would have cut off my head, but now he calls me his friend. You see," added he, "where power terminates, there equality commences. A dervise and a pope, surviving the destruction of their country, would lay aside all differences for ever.

My new companion, the Greek prince Carregdy, was thus proceeding, when the Dey himself came and sat down beside him. The sofa on which they were seated would contain three persons; the young prince came, and formed the third. A French prince, a hospadar, and a dey, upon the same sopha! Here was a freak of fortune!

Before visiting the capital of Etruria, we projected a visit to Pisa. Accordingly, a carriage on tolerably good springs, and at a moderate charge, was provided, with two lean coursers, for our conveyance. We passed on our left the English cemetery, one of the "sights" of the country. There are some marble figures, like those of Perè la Chaise. But it is an understood thing in Italy, that you must see and touch sculptured marble, wherever there is any. The road from Leghorn to Pisa is wide and in good repair; it is bordered with ash, poplars, and willows; the stem of the creeping vine is interlaced with the massy trunks, and, when its

* See page 74 of the 2d volume of the 2d part of the Maritime Annuals of 1829, for a relation (report) concerning the cruise of M. Latreyte before Algiers.

branches have reached their tops, it darts forth in sprouts filled with sap towards an equally vigorous shoot of the opposite trunk: the contact produces a natural clasping; thus married, the branches, garnished with vine leaves and grapes, embellish the road with festoons and with garlands without end.

The Arno, the Nile of Tuscany, announces the entrance of Pisa; the traveller can scarcely pass the gate before the magnificent quay of Arno presents itself to his view. The river is crossed by three handsome bridges, and backed by houses and palaces, the architecture of which unites that of times past and modern. But, on the water, not a boat, not a merchant vessel was to be seen; nothing of the kind, to animate the scene. Pisa once contained 160,000 inhabitants. Whilst our modest equipage was passing along the quay, the vetturino, in shewing us a little church sunk down upon its foundations, and of a style which some would call antique, cried out—"*Signori, ecco la Santa Maria della Spina;*" but this was all he knew about it. The church of La Spina, so named from its possessing a stem of the crown of our Saviour when he was crucified, dates from the year 1230. The dome of this church, bristling with minarets, its cornices peopled with apostles and evangelists, and its contours garnished with arabesques, and, above all, with dust and age, the inimitable varnish of centuries, render it one of the most curious monuments of the city.

Before entering the street which leads to the hotel, the ancient palace of Leopold was pointed out to us on the opposite side of the quay. Its appearance is very modest: its occupant was he who said of his children—"Before teaching them that they are princes, I wish them to know that they are men." We got down at the Dragon Hotel; the reception of the master, and the French language, which he spoke well enough, prejudiced us in his favour. The urbanity and attention of a landlord is a piece of good fortune not often found in Italy. A well-dressed cicerone attended us on our first visit to the different quarters of the city. I very soon discovered that Pisa was neither a noisy nor a populous city. Silence reigns in its long and lonely streets, where even the grass presumes to grow. The corn granary, an elegant and sumptuous deserted building, appeared like a monument destined to perpetuate the remembrance of some great action.

From the middle bridge across the Arno, the traveller follows the delightful course of the river as it washes the various quays, whose vast masses of stone defy the effects of time. There is something of Paris in this panorama of houses, which border the one and the other side of the river; but with how many creations would it be necessary to people even these sumptuous retreats, to realize one single mile of the banks of the Seine! We sauntered through

several streets, the most lively in the place: every where the desolation and misery of the people suggested melancholy reflections. Under the long arcades, intended formerly to protect the foot passengers from accidents, were priests and monks, pointed out to us as the flower of the population of Pisa. It was not so when the Pisanian republic rivalled in power the Genoese; since the year 1406, the epoch at which Pisa fell under the yoke of Florence, the iron hand which has weighed her down has dried up her port, has decimated her citizens, and for ever stifled, in those who have survived, the feeling of liberty. The 160,000 inhabitants of the golden age of Pisa are now reduced to 15,000. This is indeed decrepitude. It has been said, that under the dominion of Buonaparte, Pisa had resumed somewhat of her ancient splendour. No such thing. The inhabitants of Pisa will never like strangers. This decay has not proceeded entirely from an ignorant and cruel despotism. No; the government of the dukes of Tuscany, although stagnating, is paternal and good. Such effects proceed from more general causes.

The ruins of the temple of Cicero were pointed out to us; these ruins were nothing else than some capitals, six or eight feet above ground, and which sustained the infected stall of a cobbler. My want of taste prevented me from stopping to admire them; in such a case a simple glance is sufficient for me. On this subject I recollect the observation of a naval officer before the site of the temple of Bacchus—"A ruin, indeed," said he; "and so much a ruin, that there is nothing to be seen!"

I have already remarked that our guide was neatly dressed; which means, in other terms, that his education surpassed by far the rank of his occupation. I took pleasure in his conversation. Misfortune has multiplied in Italy the people of his class; they are sometimes gifted with a little erudition, and theirs is really the only service which poverty has provided for travellers. In front of a palace of a modest and gothic appearance, he pointed out to me a statue representing one of the Medici. It is great name for Tuscany, that of Medicis, I observed. "Yes," he replied, "the head of it was good, but to our sorrow the limbs were gangrened." I have reflected since on the enigma of these words. It would not be easy to give a better definition of this family, which, pure and virtuous in its first chiefs, has degenerated, in less than 150 years, so far as to produce cruel and imbecile tyrants.

As we passed through the streets of the city, we naturally sought for those objects, of a classic description, in which one delights. Pisa presented to us the aspect of a declining city, ornamented still with the trappings of its former glory. Seated on a bench in the church of St. Stephen, embellished by the presents of the knights of the order, we were much pleased with the elegant cornice of the royal standards. On inquiry, we found

they were the trophies of the East, being captured from the Turks.

Not far from this building is a tower, rendered famous by a horrid piece of cruelty—a hundred times more cruel than could be committed by the fanatics of the Koran, were those whose party spirit induced them to bury alive in its dungeon a father with his two sons and two grandchildren. Death by starvation carried off his first victims in the youngest; for sleep and food are the first essential wants of infancy. The four sons of Ugolino died like martyrs, and their last sigh was breathed forth in beseeching bread of their unhappy father. How well has the celebrated Dante described the scene, calling forth the reanimated corpse of Ugolino, representing him devoured by the hunger and thirst of the tiger, exhausting his cannibal verocity on the brains of the archbishop of Buggiéri, his infamous executioner! The tower of Ugolino stands but a few steps off from a church, affording a remarkable but melancholy contrast!

We turned in disgust from the polluted building, and demanded of our guide something more congenial with our expectations. A few minutes' walk conducted us to a vast esplanade, deserted, and overgrown by grass; at a short distance was a gate of the city, as little frequented as one of Pompeii; and at different points of this magnificent enclosure were the leaning tower, the cathedral, the baptistry, and the Campo Santo. Every one has heard of the "torre rotta," or the leaning tower of Pisa, if they have not had the good fortune to see it. On the first glance, it appears like a huge monument in the act of falling; and the visitor is left to recover his surprise, how the immense bells on its summit can be sustained in its tottering position. The inclination at first sight appears exaggerated; but on a closer inspection, from a particular point of view, the divergence of thirteen feet from the perpendicular can be discovered. Scarcely had we approached the base of the tower, when we were assailed by some poisonous effluvia proceeding from a sewer—this, too, at the foot of an edifice renowned throughout Europe. On reaching the gate, the *custodé* (keeper) presented himself, and offered to escort us over the tower, for the services of our cicerone were not available in the keeper's domain. The cicerone is the established guide of the country, in which poverty has induced the inhabitants to improve on mendicity, and thus to increase the expenses of travellers. There is a sort of competition in the venality of these dignitaries; and what is more shameful, elsewhere, as well as in Tuscany, the government seems to acknowledge the right to this description of begging. In the kingdom of Naples, ciceronism is most successful, and we may have occasion to allude hereafter to the subject.

We ascended, without stopping, the 293 steps which lead to the top of the tower, and having reached the belfry we climbed up still

higher; one of the bells weighs eleven thousand pounds. It has been said by some travellers, that they have ascended the staircase of this tower on horseback. Certainly, an inordinate love of the marvellous only could have induced any one to make such an assertion. From the summit of the tower the view is most sublime. On one hand is the Thyrrean sea, reflecting from every wave the brilliant rays of the sun; on the other, the verdant Appenines, and the road leading to pontifical Rome: beneath us lay Pisa, and the Arno; following its circling course, hamlets, aqueducts, opulent villas, rich and shady gardens, walls covered with moss and ivy; marking the situation of a triumphal arch or a Roman tomb—all these, crowned with a transparent sky, of a beautifully delicate azure, form the splendid landscapes of Italy. Such was the prospect which enchained us, as it were, to our aerial perch on the torre rotta. In addition to the magnificent view which the torre rotta affords, there is a degree of romance attached to it, sufficient by itself to make it interesting. On several occasions it has been resorted to by some despairing lover, of Leucadia, for the sake of the leap from its summit. It is even stated that about ten years ago, Signor Morazzo, a respectable merchant, relieved himself from the burden of his pecuniary difficulties, by seeking his death from the summit of the tower of Pisa. Never did the Tarpeian rock fulfil more effectually the hopes of those who devoted their victims to fathom the depth of the abyss. From the tower of Pisa, in his progress to the ground, the unhappy wretch must die in the air long before he reaches the stones beneath its awful height. The keeper of the tower carefully preserves the names of those who have chosen this mode of death, as so many instances of this kind of martyrdom.

We descended the belfry with the joy of school-boys quitting the dusty room of a fifth story; and the noise of our voices was echoed so powerfully, that one or two experiments in that line were quite sufficient.

At about ten paces from this incomparable tower stands the cathedral, beautiful and majestic, resting gracefully on the vast foundation destined to support it. The site of the cathedral has always been a choice spot with the religions which have preceded our own. The temple of Jupiter has yielded its altar to the cross. Scarcely had we reached the threshold of the edifice, when we were assailed for charity by a dozen individuals, with the title of Excellenza and Cavaliere. So much grandeur, and yet so much poverty! This contrast destroys, to my mind, all the delightful feelings which the former would convey. The elegant colonnade of the cathedral, the height of the cupola, the richness of the bronze, on which was represented in relief the principal subjects of sacred history, excited our admiration. A traveller has gravely stated somewhere, that these doors had been brought, in 1070, from

Jerusalem by croziered Pisanians. The city of Sion may or may not have had a temple with doors of bronze; but to settle the matter, our cicerone, Peter, said gravely, as he pointed to them, "Behold, signor, the gates of Paradise!" A silent nod of the head expressed our assent; but one of the figures, represented with long horns and an ape's tail, attracting our notice, he was interrupted with the question, "Is not this meant for Satan? How so?—is he then in Paradise?" "Eh, no, Excellenza, he is only at the door," replied our cicerone, readily enough. But the truth is, that this beautiful composition in bronze, on which a fanatic of the arts would write a volume, belongs to an Italian sculptor, whose name is lost, and who was one of those geniuses who leagued to modern times the school of John of Bologna. A verger, attracted from the sanctuary by the benedictions of the unfortunate wretches who, for an act of charity, had metamorphosed us into demigods, came, and offered to conduct us wherever our curiosity or admiration might lead us. The interior of the church does not fulfil the opinion which one conceives of it from its exterior. Sixty-six columns spring from a Mosaic pavement, so light, so graceful, that they seem rather rising to reach the vaulted roof of the building, than to sustain it. But the admirable proportions of a religious edifice are common-place beauties in Italy; there, pagan antiquity has left every where the most perfect models.

A picture, representing the sacrifice of Abraham, deserves special attention, under the twofold reason that it has been considered worthy of being transported to Paris, to ornament the Museum there, and because it is by a justly celebrated artist. The knife, lifted up with a trembling hand, seems detached from the canvas—it falls on the supplicating victim. The artist has very properly given to Abraham the look of an inspired person: a son is not sacrificed without emotion, even at Divine command.

The four evangelists of the choir, the sumptuous tomb of a cardinal, the assassination of an old man by the Turks, the tomb of one of the sisters of the Hospitallers, who comes at the hour of midnight to calm the thirst of one dying of the plague; that of a daughter of the blood-royal taking the veil in presence of her family; all merit from the artist a homage of admiration. These eloquent paintings severally underwent our inspection, and we stopped before a marble group nearly hidden by an altar, and which the cold connoisseur would pass by with disdain. The group represented Eve embracing, with her beautiful arms, the athletic person of Adam.

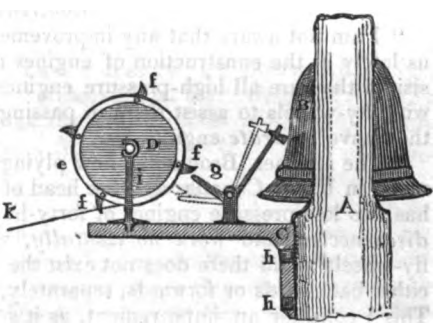
(To be continued.)

II.—Dragging the Anchor.

August 2d, 1834.

Sir—Having seen in your last month's number, that your pages are open for the reception of plans to lessen the loss of property and lives at sea, I have taken the liberty of forwarding to you one out of several plans, invented by me, for that purpose, which, should it not be deemed intruding on your pages, I shall be most happy at all times to forward to you. They have been the results of several years' experience in various cases of emergency; but having left the profession at present, if you think them likely to benefit any of your readers, who, of course, are mostly seafaring men, I beg the favour of your inserting them. The one, the subject of the present paper, is a machine for warning the watch in case of the vessel dragging her anchor. Its utility must at once be evident to those who have experienced thick hazy weather during a storm, when anchored near land; and its simplicity must be a recommendation for it, as any ship's carpenter can make it, the principal parts being carried to sea in every vessel.

A piece of the belfry.
B the bell.
C stand for holding reel and hammer.
D log reel with plate e affixed.
e plate screwed on the rim of log reel.
fff stumps projecting from the rim e.
g the hammer acted upon by the stumps f.
h h two staples for holding the stand C.
i stand for log reel,
k log line.



When the anchor is down, and enough chain paid out as is deemed sufficient, let the deep-sea lead, or the lead from Massey's sounding machine, be brought on deck, bent to the deep-sea line, and thrown overboard; the reel is then placed in the stand i, allowing sufficient slack off the reel for the pitching of the vessel. Should the vessel drag her anchor, the line k will be tightened, and cause the reel D to revolve, which carrying round with it the studs fff, depresses the bar g, which raising the hammer to the position shown by the dotted line, in falling it strikes the ship's bell in succession as the stumps revolve. The only parts that require making by the carpenter will be the stand C and stapels h h, and

the rim e, with the studs f, which may all be made out of wood. The sketch is made according to the original one, and can be modified as the ship's belfrys and bells are at present fitted.

I remain, Sir,
Your obedient servant,
EDWARD W. BAKER.

15, *Old Broad-street, City.*

III.—MR. SANDFORD'S TWIN STEAM-BOAT.*

London, 10th, Nov. 1834.

MR. EDITOR—In your valuable Magazine you have paid so much attention to the improvements in steam navigation, that I hesitate not to send you some farther account of the large steam-boat, built in Canada, of which you gave a sketch in your number for October last, as also some remarks on steam navigation generally, as I have just received them from an intelligent steam-boat captain at Montreal. Yours truly,

N. GOULD.

"*Montreal, 27th Sept.* 1834.

"I am not aware that any improvements have been made with us lately in the construction of engines or paddles. On the Missisippi they are all high-pressure engines, and work horizontally, with fly-wheels to assist them in passing over the centres, when they have *separate* engines.

"The steamer, Brockville, now plying between the town of that name in Upper Canada, and the head of the rapids in Long Sault, has two low-pressure engines of forty-horse power each; they are *disconnected*, and work *horizontally*, without the assistance of fly-wheels; and there does not exist the least difficulty in working either backwards or forwards, separately, as occasion may require. This I consider an improvement, as it supersedes the necessity of those large gallows-frames used for the support of the walking beams of vertical engines. It is nevertheless a question with some persons, whether the horizontal work as powerfully as the vertical engines. Practical men say they do; and this opinion is gaining ground fast. There are two or three vessels on the American side of Lake Ontario, the engines of which are on this plan; but they have not yet been adopted on the lower part of the St. Lawrence.

"You will have long since become acquainted with the disaster to the great boat, Burden: the loss is much to be regretted, on account of her enterprising proprietor. There is little doubt that he was disappointed with respect to her speed.

"There has been a large boat built at Prescott in Upper

* See page 595.

Canada, on a plan something similar. The cylinders, or hulls, are eliptical, being 183 feet long, 9 feet horizontal diameter, and 6 feet vertical, propelled by two low-pressure engines of thirty-horse power each, connected to one wheel, working between the two hulls. This vessel was intended to run between the Cedars and Prescott, a distance of one hundred miles; and from her very light draft of water, thirty-one inches, and very light construction, it was confidently expected that she would have overcome the rapids between these two places without difficulty. I am, however, very sorry to acquaint you, that not only those interested, but the public at large, have been greatly disappointed at the failure of this grand and much-talked-of experiment; her speed, on her trial, not justifying the owners in making the hazardous attempt. I am, notwithstanding, fully persuaded that they will be successfully navigated in the course of two or three years.

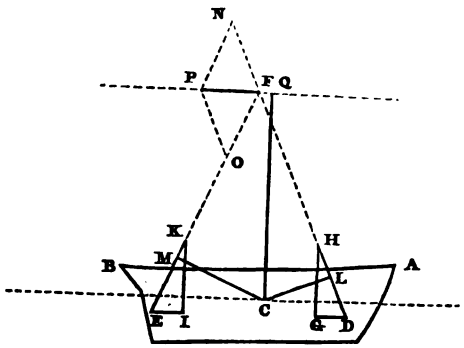
"I take it that there is something radically defective with respect to these double or cylinder boats, so far as speed is concerned, from the very circumstance of being obliged to propel four sides and two bottoms through the water, besides the concussion of the water between the two hulls; all these creating too much friction, &c."

IV.—Examination of the "Reply" of Commander John Pearse, R.N., *to the "Remarks" on his "Original Papers on Naval Architecture," on the Longitudinal Motions of a Ship.* By Mr. Wm. Henwood, *Naval Architect.*

(Concluded from page 662.*)

A reference was made on page 475 to certain arguments of Bouguer and Chapman, quoted by Captain Pearse, in support of his position, that "the axis of rotation passes through the metacentre." Those authors have designed to shew by their arguments alluded to, "that when a ship sails with the wind aft, if the mean direction of the force of the wind intersects a certain point, its power does not produce inclination longitudinally; but if the mean direction of the force of the wind intersects above that point, then the ship will incline towards the head; and if, on the contrary, the mean direction of the force of the wind intersects below that point, the after part will be further immersed." It will be proper, in order clearly to comprehend all the bearings of this question, to allow Chapman, whose explanation comprises, and is more complete than Bouguer's, to speak for himself.

* On page 661, line 12 from the bottom, the reader is requested to add as follows:—"Solid emerged on the weather side," *when the ship rolls round a quiescent longitudinal axis;* "and when this is done. ...."



"Suppose AB to be a ship moved from B towards A, with a certain force in a resisting fluid. Let DG be the direct force of the water against the head of the ship, the direction of which is from D to G; let IE be the direct force of the water on the after-part, the direction of which is from I to E; let GH be the vertical force of the water on the head, the direction of which is from G to H; and KI the same force on the after-part, the direction of which is from K to I. We shall have DH for the resultant of the forces on the fore part, the direction of which is from D to H, and KE for the resultant of those on the after-part, the direction of which will be from K to E."

"Produce the lines DH, EK, to meet in F. Make FN, FO, = DH, EK; complete the parallelogram of the forces FNPO; draw the diagonal PF, and produce it. From the centre of gravity of the ship draw CL, CM, and CQ, perpendicular to DH, EK, and FP. We shall have $FN \times CL + FO \times CM = FP \times CQ$; consequently, if PF is the force and direction of the wind, and the centre of gravity of the sails is in the line PF, the surface of the sails being perpendicular to the same line, the ship would go ahead without the elevation or depression of either of its extremities." Chapman also states, that if the centre of gravity of the sails is above the line PF, the ship will incline towards the head; and if the centre of gravity is below PF, the after-part will be farther immersed.

Respecting this proposition, I observe, that when the ship AB is moving with a small velocity, five feet per second, for example, the resultants of the direct and vertical efforts of the water will intersect at some point F. Now, the question is, when the ship is moving much faster, at the rate of ten, fifteen, or twenty feet a second, will the point of intersection of the resultants of the direct and

vertical efforts of the water still be at F, or will it be at a greater or at a less height. If the whole vertical efforts increase in the same ratio as the direct efforts, the point of intersection of the resultants will remain at F; and it would appear that Chapman must have considered that this would be the case. But, as such a supposition is perfectly gratuitous, and its justness appears exceedingly questionable, it cannot be regarded as a matter of certainty, that the point which Chapman has determined as the height of the point of sail, would be at the same altitude with a slow as with a quick rate of sailing.

But, further, it is plain that when a ship is impelled before the wind, the effort of the wind on the sails acts in conjunction with the direct resistance of the water on the bottom, to make the ship revolve round her transverse axis; and, as when the velocity of the ship has become uniform, the impressed force of the wind on her sails is necessarily equal to the direct resistance of the water on her bottom, the moment of the united effort of the wind, and the direct resistance of the water, to turn the ship round her transverse axis, is equal to the force of the wind on the sails, multiplied by the height of the centre of gravity of the sails above the mean direction of the resistance of the water. This tendency of the united efforts of the wind and water to immerse the bow is opposed by the moment of the longitudinal stability, in the same manner as the effort of the sails to incline a ship, when she is sailing close-hauled, is opposed by the moment of the lateral stability; and, so long as the moment of the wind on the sails is a constant force, the moment of longitudinal stability, which is necessarily equal to it, remains also invariable: but, whenever either an increase or a decrease of the moment of the wind on the sails takes place, through an alteration of the surface of the sails, or a variation of the strength of the wind, there must of necessity be a corresponding increase or decrease of the moment of longitudinal stability; and consequently there must also be a corresponding depression of the ship by the head. It thus appears evident, that Bouguer and Chapman have each taken a very imperfect view of the proposition in question, and by so doing, have both fallen into a similar error, that of supposing, that if the centre of gravity of a ship's sails is placed at a certain height, the ship will go a-head, when the wind is aft, without either an elevation or a depression of either extremity, however great the velocity of the wind, or the total area of the sail.

As, accordingly, a ship will inevitably be inclined by the head, by the force of the wind on her sails, at whatever height the centre of gravity of the latter may be situated; in the same manner, though of course not in the same degree, as she is heeled on her side, when the wind is blowing athwart the ship; so it is likewise impossible that the after-end of a ship can ever be depressed by the

force of the wind on the sails, when the wind is aft; this effect can be produced only by the ship being taken aback.

I have deemed it proper to enter thus briefly into an investigation of this question, not only for the purpose of removing the last prop to which Captain Pearse has had recourse, for the purpose of upholding his fallacious notion, that the axis of rotation passes through the metacentre, by a reference or an appeal to the evidently untenable arguments of Bouguer and Chapman on the "point of sail," but, also, and chiefly, with a design to expose the unsoundness of the generally received opinion respecting the height of the "point of sail," which has been derived from Bouguer's and Chapman's views on the subject. There can, I repeat, be no such limit for the position of the centre of gravity of a ship's sails as that which has been variously termed, the "point of sail," "height of sail," or "point velique."

It will now be proper to examine some of those observations which Captain Pearse has made on the subject I was led to introduce into my paper in the June number of the Nautical Magazine. If Captain Pearse's notions respecting the position of the axis of rotation could not be demonstrated to be utterly fallacious, the principle which I endeavoured to establish in an article in the United Service Journal for November, 1833, relative to the motions of a ship longitudinally would be completely overthrown, and a great part of the theoretical principles of naval architecture be altogether invalidated.

It has long and generally been admitted, as Captain Pearse has stated, on page 604, "that it is absolutely necessary, for the production of various requisite qualities, that the centre of gravity of displacement, and that of the ship, should be some distance before the middle of its length;" and by some it may have been considered absolutely necessary "that the fore body, or the part before the vertical of the centre of gravity, should be fuller than the after body, or the part abaft the same vertical." Without doubt, it is proper, on account of the proximity of the foremast, bowsprit, anchors, and other weights to the forepart of a ship, that the centre of gravity should be at some distance before the middle of the length; but the question, the solution of which is of vital importance to the practice of naval architecture, is, *how far before the middle of the length* should the centre of gravity of a ship be placed?

If the writings of Bouguer, Clairbois, Chapman, or Don Juan D'Ulloa, and others that might be mentioned, be consulted, it will, I believe, be found that no information has been afforded by any of those authors concerning the precise and best situation for that important fundamental point, which each and all of them have always considered to be the centre through which the axes of rotation of a ship do pass.

It is perfectly well understood, that, if the after-body of a ship be too full, or, which is the same thing in effect, if the centre of gravity be situated too far aft, the ship will inevitably pitch with violence; and, in like manner, if the fore-body be too full, or, if the centre of rotation happen to be too far forward, the 'scending* motion will be proportionally violent. These motions, it is well known, produce the greatest straining of the hull of a ship, and of the masts and rigging, and always operate to impede the velocity of sailing more or less, according as they are performed with greater or less force. It is therefore desirable to diminish the impetus of these motions as much as possible; and, in order to accomplish this, it is necessary to ascertain what degree of fulness should be given to the fore-body of a ship, and what to the after-body; in other words, it is necessary to find that vertical line in which the centre of gravity of displacement, and that of a ship, must be placed, in order that the longitudinal motions may be rendered less violent than if those centres were in any other position; and, if this were done, it is plain that the velocity of sailing, so far as it is affected by the motions of pitching and 'scending, would be retarded in the least possible degree.

By some, it may be regarded as a matter of astonishment, that the best position for the centre of gravity of a ship should never have been ascertained, especially as it ought to be determined with strict mathematical exactness, if possible, before the process of constructing the form of a ship's hull is begun. But, extraordinary as it may appear, it is nevertheless the fact, that ships have invariably hitherto been constructed in the most profound ignorance of the method of finding the best position for this important point, upon the situation of which the excellence of their sailing qualities must in a very great degree depend.

My object in the article in the United Service Journal above referred to, was to shew in what manner the best position for the centre of gravity, or centre of rotation of a ship, might with precision be found. The solution of this problem would obviously determine what degree of fulness the fore and the after bodies of a ship should have; and it would also prescribe that which has never hitherto been scientifically explained, and which is of especial interest and importance to naval officers in general, namely, how a ship ought to be stowed.

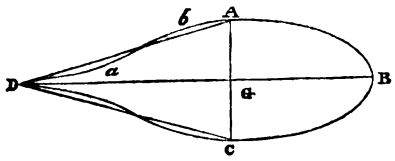
It has been supposed by Captain Pearse, on page 604, that, if it is necessary, the centre of gravity of a ship should be some distance before the middle of its length, it would be "*highly injurious*" to

* The term "'scending" has been used to express the descending motion of the after-part of a ship, in opposition with the term pitching, which denotes the descending motion of the fore-part. It is by some persons written sending; but it is thought 'scending, the abbreviation of descending, is to be preferred.

The term "rising" was substituted for "'scending," in the "Remarks" in the Nautical Magazine, No. 28, and is to be considered as synonimous with it.

make "the form of the fore-body precisely similar to that of the after-body." I observe, that, if the centre of gravity is before the middle, it is absolutely impossible the fore-body can be similar to the after-body. On the same page, also, it is affirmed, that unless the fore-body is precisely similar to the after-body, it is not possible to render the stability of a ship longitudinally the same one way as the other, and the motions of pitching equal to those of 'scending.

To shew with how much want of careful reflection Capt. Pearse has chosen to make this assertion, let it be supposed that the fore-body of the ship ABCD is a solid, generated by half a revolution of the common parabola ABC round its diameter BG. The cubic content of this fore-body will be the area of the circle, whose diameter is AC, multiplied by half GB; and the centre of gravity of the same solid will be one-third GB from the point G. The height of the half cone ADC, which, upon the semicircular base, whose radius is GC, has the same cubic content as the parabolic fore-body ABC, is $\frac{3}{2}$ GB: and the centre of gravity of such a half cone would be farther from G than the centre of gravity of the fore-body, in the proportion of nine to eight. It is therefore obvious, that if the after-body were to be formed by half a revolution of a curve A *b a* D, round the axis GD, which would generate a solid equal in content to the half cone ADB, and whose centre of gravity should be nearer to G than that of the half cone, in the ratio of eight to nine; this after-body A *b a* D C would be equal to the fore-body ABC, and its centre of gravity would be at the same distance from G, the centre of gravity of the ship, as that of the fore-body. An endless number of methods might be devised to accomplish that which Captain Pearse thinks to be impossible; so, to construct a ship, that the cubic content of the part afore the centre of gravity of displacement, shall be equal to that abaft the same point; whilst at the same time the centres of gravity of the ship, and of the displacement, are at any required distance before the middle of the length; and the centre of gravity of the fore-body is at the same distance from the vertical of the centre of gravity of the ship, as the centre of gravity of the after-body. Every reflecting individual will, without the slightest hesitation, admit the justness of this statement.



It may here be mentioned, that the example just adduced, of a ship with a parabolic form of fore-body, and a nearly conical form for the after-body, may be regarded as an instance of a very full fore-body, combined with a very fine after-body, in which those

distances are equal to each other, which Capt. Pearse, on page 607, declares with so much apparent confidence, cannot by "*possibility*" be equal. This example also furnishes a direct contradiction to the equally unhesitating affirmation on page 608, that, "as long as the fore and after bodies of a ship differ in form, the centres of gravity of displacement of those parts will *necessarily* be at *unequal* distances from the vertical plane through the centre of gravity of the ship;" and it shews, happily, there is no necessity for "supposing the *laws of fluids to be changeable*, and that water possesses *different principles of action*." Such phrases are at once unmeaning and irrelevant.

And again. It is asserted on page 605, that "when a ship is inclined, it is *absolutely* necessary that the moments of the weights of the fore and the after bodies should be unequal; otherwise the ship would not possess stability." If this is true, it follows—as indeed Captain Pearse states—that the difference of those moments produces, and is always equal to, the moment of the longitudinal stability. It is immediately afterward declared, on the same page, that "the disposition of the weights would produce no difference in the angles of pitching and 'scending, if a ship had not greater stability one way than the other." But, assuredly, if stability is produced by the weights being so disposed that the moments of the weights on each side of the vertical of the centre of gravity are unequal; how can it be said with the least appearance of consistency, that the disposition of the weights would produce no difference in the angles of pitching and 'scending, if a ship had not greater stability one way than the other? The first of those statements appears in reality to be, that the stability is dependent on the disposition of the weights; and the second, that the stability is not dependent on the disposition of the weights.

In reverting to the assertion already quoted—that "unless the fore-body is precisely similar to the after-body, it is not possible to render the stability of a ship longitudinally the same one way as the other,"—I remark, that the observations at the bottom of page 604, which follow and relate to the quotation Captain Pearse has made from my paper in the United Service Journal for November, 1833, appear plainly to show that Captain Pearse has quite mistaken, or not understood, the subject contained in the paragraphs he has extracted. In the example above supposed, of a ship with a semi-parabolical fore-body, and a nearly semi-conical after-body, the cubic content of the fore-body is equal to that of the after-body; and the distance of the centre of gravity of the former, from the vertical through the centre of gravity of the ship, is equal to the distance of the centre of gravity of the latter from the same vertical axis. And it would be easy to dispose the weights, in a ship of this construction, in such a manner that the weight afore the vertical axis should be equal to the weight abaft

the same line; and the distance of the common centre of gravity of the former weights from the vertical axis, equal to the distance of the common centre of gravity of the latter weights from the same perpendicular. The effect of such an adjustment of the form and weights of a ship would be, not merely that the moments of the weights on each side of the vertical plane through the centre of gravity of the ship, and the moments of the vertical efforts of the water on the fore and after bodies, would be equal,—as Captain Pearse most truly says, they "*must be* and *always* are equal,"—but the effect of such an adjustment would be, also, that the *moments of inertia* of the same weights, and the *moments of inertia* of the same perpendicular pressures of the water, would, at the same time, be equal to each other respectively.

It would seem that Captain Pearse has overlooked the distinction between the term "moment" and the phrase "moment of inertia," which latter is sometimes called the "angular inertia," or "angular momentum." By the "moment" of a body is of course meant, the force with which the body, balancing another in a quiescent state on a fulcrum, acts or tends to preserve its state of quiescent equilibrium; and it is equal to its weight multiplied by the distance of its centre of gravity from the fulcrum. By the "moment of inertia" of a body, revolving round an axis, is always understood, the force with which the body moves, or would strike an obstacle opposed to its motion; and it is equal to the weight of the body, multiplied by the *square* of the distance of its centre of gravity from the centre of rotation.

The example Captain Pearse has given, on page 600, of a body weighing 400 tons, placed at a distance of 30 feet from an axis, balancing another of 300 tons weight, at 40 feet from the axis, will show clearly that when the moments are equal, the moments of inertia will always be unequal unless such a disposition is made as that above explained.

Moments.	Moments of inertia.
$400 \times 30 = 12{,}000$	$400 \times 30^2 = 360{,}000$
$300 \times 40 = 12{,}000$	$300 \times 40^2 = 480{,}000$

Now, with the same certainty as it is known, by the moment of 400 tons at 30 feet, being equal to that of 300 tons at 40 feet, that two such bodies will balance and maintain each other in a state of quiescent equilibrium; so is it likewise shown by the moments of inertia of those weights being to each other as 360,000 to 480,000, that 400 tons revolving round an axis at the distance of 30 feet from it, would move with a force represented by only 360,000; whilst 300 tons revolving at a distance of 40 feet, would have a moving force represented by 48,000.

If, therefore, we have a ship whose weight is 700 tons, and we distribute the weights in such a way that 350 tons shall be in the fore-body, and the remainder, or 350 tons, in the after-body, and

so that the common centre of gravity of the weights in each half of the ship shall be at the distance of 35 feet from the centre of rotation, we shall have the moments of inertia of the weights of the fore and after bodies equal, and each represented by 428,750. In other words, the forces with which such weights in the fore and after bodies will act in making the ship pitch and 'scend, will be 428,750; and as these tendencies are always in opposition to each other, one of them must be considered as positive, and the other as negative, and, accordingly, the sum of them will be equal to 0. But if, in the same ship, 300 tons were placed in the fore body at 40 feet from the axis, and 400 tons in the after body at 30 feet from the same, the force of pitching (arising from the disposition of the weights,) would be represented by 480,000, and the opposing tendency to 'scend by 360,000. And regarding the force of pitching as positive, and that of 'scending as negative, the effect of this disposition of the weights in making the ship pitch, will be expressed by $480{,}000 - 360{,}000 = 120{,}000$. And thus it is evident, that the tendency of the weights of a ship to increase the forces of pitching and 'scending, is a minimum, when there is the same weight in the fore-body as in the after-body, and the common centre of gravity of the weights afore the vertical axis, is at an equal distance from it as that of the weights abaft.

The effect of the action of the water on the bottom may be similarly elucidated. It is certain that the whole displacement of a ship must remain unalterable, whether she is in still water or in an agitated sea. And therefore when a ship pitches, the increase of displacement produced at the fore end, must be precisely equal to the contemporary diminution of displacement at the after end. If a ship were to be constructed as above supposed, so that the moment of inertia of the buoyancy of her fore-body should be equal to that of her after-body,—so that the longitudinal stability would be the same one way as the other—the effect of the additional buoyancy at the fore end when the ship pitches, would be equal to the opposing effect of the diminution of buoyancy at the after end. If we consider the former effect as positive, the latter will be negative; and the sum of these counteracting forces will be equal to 0, or a minimum.

But when a ship is constructed in the customary way, so that the longitudinal stability is not the same one way as the other,—unless by accident it should happen to be so,—the sum of these counteracting effects produces a positive force, (similar to that already found as the effect of the weights of a ship when stowed in the usual manner,) and this force must act effectively in making the angles of pitching exceed in magnitude those of 'scending; or, vice versa, according as the centre of rotation is too far aft or too far forward.

Taking the effect of the weights of the fore and after bodies

in combination with that of the buoyancy of the water on the ship, it is clear from the elucidation which has been given, that if a ship were to be constructed and stowed in the manner above described, the angles and the forces of pitching and 'scending would, in all circumstances, be diminished to the lowest possible degree; and the velocity of sailing would be affected by these motions in the least possible degree; and what is also of essential importance, the ship would always perform her motions of pitching and 'scending with the utmost ease, and the least possible straining of her hull, masts, and rigging.

It may be proper to mention, that in order to dispose the weights of a ship so as to ensure the attainment of this desirable result, it would not be necessary to enter into so long or so minute a calculation as may at first sight appear to be required. It would be requisite to make such computations as should determine the situations of the principal weights; and the positions of various minor and moveable articles might be so far altered, after the performance of the ship had been tried at sea, as would be found sufficient in practice for obtaining the desired equality of the forces of pitching and 'scending.

This equality would depend principally on the accurate construction of a ship. It would also depend considerably on the correctness of the calculations of the proper positions of all the principal weights, and the correct stowage of these weights; and in order to attain an equality of those forces completely and fully, it would be necessary to adjust certain disposable weights at sea, until the longitudinal motions, indicated by the vibrations of a pendulum in the ship, should become perfectly equable.

The observations thus advanced are sufficient to show how imperfect has been every system, whether theoretical or practical, of constructing and equipping vessels of war. Were any one who has hitherto had to make the draught of a ship, to be asked, *why* the centre of gravity of any particular vessel constructed by him had been placed as it was? the only reply the individual could make would be, that he did not know of a sufficient reason why it had been so placed; or, that it chanced to be so situated;—although it would doubtless be most readily admitted, that the best form for the bottom, the best positions for the masts, the easiness of the ship's motions at sea, and, therefore, the superiority of her sailing, must depend greatly on the situation of her centre of rotation. And it is well known, that in stowing the weight of ships, no information respecting any peculiarity in their construction, which would prescribe the particular manner in which the several weights ought to be arranged, has been afforded to the persons entrusted with the performance of this important duty. Naval officers, in stowing their ships, have been left to dispose their ballast, provisions, and stores in any way that con-

venience, or former arbitrary practice, might happen to dictate, without having any scientific principle or rule whatever for their guidance.

The principle I have endeavoured to establish would at once determine the precise manner in which the operation of stowing the weights of a ship should be performed, and constitute the basis of a truly philosophical system of Naval Architecture.

V.—Authorship of Anson's Voyage.

Sir—The Penny Cyclopædia of December, 1833, in alluding to the voyage of Lord Anson round the world, says that the narrative of it "was written by Mr. Benjamin Robins, from materials furnished by Lord Anson, and digested under his own inspection." I have good reason for believing that this statement is not correct, and that instead of Mr. Robins being the author of that valuable work, it was Mr. Richard Walter, the chaplain of the ship, who witnessed all he relates in it.

Mr. Benjamin Robins was an engineer. He was not in the Centurion when the voyage was performed; and during the time of the publication was at Bergen-op-Zoom, attending to the fortifications of that place. The charts of the voyage, I believe, were his, for which he was paid from the profits of the work.

Lord Anson was very particular in examining each sheet before it went to the press; and Mr. Walter waited upon him every morning with the work of the previous day. A few years ago there lived a gentleman in Huntingdonshire, whose father had been a fellow-collegian of Mr. Walter, and who frequently alluded to his assisting his friend in copying the sheets, for the inspection of his lordship. Mr. Walter's time was so entirely occupied by this work, that Mrs. Walter has been heard to say, that she thought it hard, as he was then an accepted admirer, that he had so little time to bestow on her. When the book was completed, two volumes were very handsomely bound, which each cost Mr. Walter twenty-five or twenty-eight shillings. When they were completed, Lord Anson took him in his carriage to present them to King George II.; they were graciously received. Being placed on a chair, Prince George, afterwards King George III. and the little princess, afterwards Duchess of Brunswick, were so attracted by their beauty, that they commenced turning over the pictures, much to the discomfort of Mr. Walter, who feared that they would injure them. Some years ago, these books were shewn to me in the library at the Queen's House (Buckingham House), by Sir Frederick Barnard, who pointed them out to Mr. Walter, and said, "Have they not been well preserved?" Another time, Mr. Walter was at Kew, and happened to be placed in a situation to be seen by the Royal Family.

The King inquired who he was, and, on being told, said he knew Mr. Walter, and that he was the author of Anson's Voyage.

Mr. Walter was allowed the honour of dedicating his book to the Duke of Bedford; and can it be supposed that his grace would have allowed such a privilege for a spurious work? The reason of the work being dedicated to his grace, I believe was the following, but I may be wrong:— Mr. Walter had an elder brother in the law; among his clients was a poor man whose cause he espoused, on the promise that if he gained it he should be paid. Soon afterwards this brother married a lady of fortune, and retired into the country, giving up his practice to a friend, who also undertook the cause of the poor man, and gained it, but not till after he had died. The poor man, however, left all that might be gained to his lawyer: this proved £13,000, a tolerably good beginning for a young man in those days. That gentleman's name was Palmer, who become steward to the Duke of Bedford, and was so highly esteemed that he was often distinguished as the great Palmer. I have no doubt but it was through Mr. Palmer's interest that Mr. Walter became known to the duke, at whose house he was sometimes a guest. Would such a man as Mr. Palmer have carried deception to his patron? I cannot comprehend, supposing Mr. Robins the real author, what advantage he was to obtain by allowing Mr. Walter not only the credit of that work, (which, of course, he had by signing the dedication,) but also of the emolument. I send you a copy of the paper containing the last settlement with the printers, the Messrs. Knapton, which proves that he received £750 as his share awarded him by Lord Anson, and he realized £1000 altogether.

The Impression of Lord Anson's Voyage round the World.

Dr. to the Rev. Mr. Richard Walter.		Per contra Cr.		
To Seven Hundred and Fifty Pounds, appointed by the Lord Anson to be Mr. Walter's proportion of the Profit	£750 0 0	By Subscriptions received by Mr. R. Walter and Mr. W. Darwent	£551	12 6
		Received of T. Anson, Esq.	20	0 0
		Received of the Fishmongers' Co.	52	10 0
		By Draft on Messrs. Knapton, received May 15th, 1749	60	0 0
			£684	2 6
		Nov. 1st, 1754.—Received of Messrs. John & Paul Knapton, the balance of this Account	65	17 6
			£750	0 0

November 1st, 1754.—Then settled the Accounts between the Rev. Mr. Richard Walter and John and Paul Knapton; and we hereby acknowledge that all Accounts between us are adjusted and balanced, and that nothing remains due on either side.

Richard Walter.
John and Paul Knapton.

Mr. Walter's father belonged to the Fishmongers' Company, and in consequence they subscribed fifty guineas to the publication of the work. Would they have paid such a compliment to any one but to his son? The Messrs. Knapton continued the friends of Mr. Walter as long as they lived; and

one of them stood godfather to his eldest child, to whom he presented some beautifully bound book, which remains still in the family. I take the liberty of sending you the following extract from the work, wherein you will perceive that Mr. Walter speaks particularly of himself. The author indeed of it only could so write of himself in the first person :—" A short time before this, Captain Saunders took his passage to England on board a Swedish ship, and was charged with despatches from the Commodore; and in the month of December, Captain Mitchell, Colonel Cracherode, and Mr. Isabel, one of the agent victuallers, with his nephew, Mr. Charles Herriet, embarked on board some of our companies' ships; and *I*, having obtained the Commodore's leave to return home, embarked with them." Now, Lord Anson had hinted, as strongly as he dared, to Mr. Walter, what his intentions were on leaving Macao; but he was so impatient to see old England again, that he would not understand him, and therefore lost his share of the Acapulco ship. And it is a remarkable circumstance, that on landing in his native country, at Sallyport, Portsmouth, so grateful was he for his safety, that he actually knelt down and kissed the shore.

I must now apologize for troubling you with this subject, but, to use the common adage, as it is always desirable " to place the saddle on the right horse," if you or any of your numerous readers will assist me in doing so, respecting the authorship of Anson's Voyage, you will much oblige

Your obedient servant,
" CENTURION."

[We have no doubt that the MS. of the work alluded to is in existence; and as there would be no great difficulty in proving the handwriting of Mr. Walter, we should be glad of an opportunity of doing so, and of receiving any information from our readers on this subject.—ED.]

VI.—DEVIL'S ROCK.

To the Editor of the Nautical Magazine.

Liverpool, 26th October, 1834.

SIR—Observing, in the last number of the United Service Journal, an article entitled " The Devil's Rock," I read it over several times, in order to endeavour to convince myself whether it is a fictitious narrative, or one founded on sober reality. I also read it over to several nautical men, all of whom considered it as a statement of an actual occurrence; whilst, since that time, another gentleman insists, from the contradictions about the moon's light, that it is merely a fiction.

If a true narrative, I cannot help thinking the intelligent editor of the U. S. J. ought, through his correspondent, (who, I presume,

was only a passenger in the vessel,) to obtain a knowledge of the position assigned to so extensive a danger, by the master or officers of the vessel, and give it publicity, *pro bono publico;* and if it is a fiction, he certainly ought to declare it so; as, from the extensive circulation of the U. S. J., it may cause many navigators miserably anxious nights, from being apprehensive of its existence, and the uncertainty of its situation.

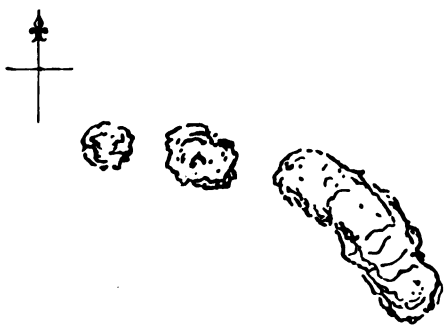
I firmly believe that the Devil's Rock exists; and I think its position has been pretty accurately ascertained; but if what I saw in 1820 is really a danger, it cannot be the same as the Devil's Rock, and also must be a far more extensive one.

My journal of the voyage made from Greenock to Gibraltar has unfortunately been lost; but, if memory serves me, I communicated the situation of the breakers I saw to my respected friend and celebrated hydrographer, Mr. John Purdy, as lat. 46° 19½′ N. and long. about 12° 50′ W. The latitude, I consider, must be very nearly accurate, as at noon I measured the supplementary altitude from the northern horizon, while my mate and second mate (both good observers) observed by the fore observation. Their observed altitudes precisely agreed: my supplementary one gave a minute more or less (I forget which) latitude than theirs; and I assumed the mean.

About two, p. m., (sitting on the weather (starboard) hencoop, but looking to leeward, I saw nearly abreast of the forechains, and scarcely ten fathoms to leeward, what I at first supposed a bottle, but soon after, from its triangular appearance, thought it was a shark's back fin, and called down the companion, to the mate, that we had just passed a very large shark, expressing a wish that we had a shark-hook, as I thought he would soon be *sculling* after us. However, if shark it was, it did not follow us, but retained the same triangular shape, and I was rather surprised that from the way in which the water rose over it, that it seemed much like a fixture; yet not the least idea entered my head of its being a danger. In a few minutes after I had spoken to my mate, he came on deck, and asked me where the shark was. I pointed astern, in the direction I had last seen the object (which it may be proper to state, never appeared more than six or seven inches above water;) and he exclaimed, "God bless me! Sir, do you see these breakers?" I replied by asking where; and he said, "Look under the main-boom," (the vessel was a brig schooner), which I did, and plainly saw three patches of broken water, with two intervening places where the water did not break. The most westerly was nearly of a circular form, and perhaps two cables' length in diameter; the next (with a gap of about one cable's length between them) also nearly circular, and considerably larger than the first, and the easternmost breaker (the gap between which and the middle one was wider than that between the latter and

the westernmost breaker) extended so far to leeward, that I could not for certain distinguish its termination from the deck; and my height of eye was about eleven feet.

My mate asked permission to lower the jolly-boat, and examine the breakers; but the boat had only been painted that forenoon, and I did not like to have her paint spoiled, as I considered the breakers nothing more than current ripples, such as I have frequently observed in crossing the bay. I had tried the temperature of the sea at two, p. m., and, on trying it again at four, p. m., I found it two degrees warmer. Then, and not until then, I began to feel sorry I had not acceded to my mate's request; and often since, I have deeply and sincerely regretted not having done so.



The westernmost breaker was about a quarter of a mile to leeward (i. e. to the eastward) of the small object I had seen in the water, and I perceived no discoloration of the water. I annex a sketch of the form of the breakers, as well as I can from memory.

The article in the United Service Journal has led me to be prolix on this subject; yet I can scarcely think it possible that so extensive a danger can exist in that situation; at least there seems strong negative evidence, from so many vessels crossing the bay; and except the article in the U. S. J. and what I saw myself, no positive notice of an appearance of any danger but the Devil's Rock.

I am, with much respect, Sir,
Your most obedient servant,
ANDREW LIVINGSTON.

VII.—ON THE PROTECTION OF SHIPS FROM LIGHTNING.

By W. S. Harris, F.R.S.

(Continued from p. 484, No. 30.)

N. V.

Objections to the Employment of fixed Conductors of Lightning to Ships—considered.

68. THE objections to the use of the fixed conductors of lightning on ship-board, described in the last paper, (No. IV.) may be divided into three classes:—

1st. Theoretical Objections, including those which discourage

the use of lightning conductors generally, under whatever form applied.

2nd. Practical Objections to the application of lightning conductors to the masts of ships.

3rd. Economical Objections to the expense incurred by the employment of such conductors.

The many objections which have been advanced under these different heads, are for the most part extremely fair, and merit a candid examination.

69. The arguments against the use of lightning rods, under whatever form applied, have been fully considered in a preceding paper, (No. III.) and therefore do not require to be again stated. It has been, however, further insisted on, that since we can never know the actual quantity of electricity which may be evolved at the time of a thunderstorm, the conductors may not afford the required protection; that in consequence of their fusion, very extensive damage may ensue. That in fixing conductors of lightning in the masts, we can only have surface; whereas a dense mass of metal is requisite, if we would avoid the fusion of the conductor, and effectually guard against danger. That superficial conductors fixed in the masts are the more objectionable, inasmuch as the masts pass immediately through the hull of the vessel, and near the magazines, which is considered to be very objectionable.

70. The notion that a ship can possibly be in *a worse* condition as concerns lightning, *with* than *without* the system of defence above-mentioned, (No. IV.) has been already shewn, upon general principles, to be erroneous. (47.) Indeed, the reverse of such an opinion seems, on an appeal to experience, to be much nearer the truth; for although it should be admitted, that we can never estimate the actual quantity of electricity discharged in a stroke of lightning, we have nevertheless, by completing the conducting power of the masts and hull, greatly multiplied the chances of escape. Mr. Cavendish has proved, that the conducting power of sea water is a million of times less than that of iron wire; and it appears from a notice of some experiments given by that distinguished philosopher, that iron-wire conducts about four hundred millions of times better than distilled water; the chances of escape, by perfecting the conducting power of the masts, must, therefore, be very greatly increased indeed.

(λ.) This was clearly shewn on board His Majesty's frigate Dryad, one of the few ships in the British navy fitted with the fixed lightning conductors above-mentioned. (No. IV.) This ship, during a tornado, on the coast of Africa, was assailed by severe lightning at different times. The electric matter fell on the conductors on the fore and mizen masts so freely, that in passing down the masts it produced a sort of luminous atmosphere, attended by a whizzing noise resembling the violent boiling of water.*

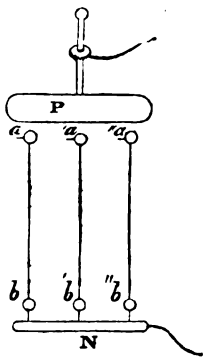
* Commander Turner, R.N.

(μ.) Now it is worthy of remark, that His Majesty's ship Owen Glendower, on the same coast, not furnished with conductors of this kind, was severely damaged by lightning in a similar storm.

71. With respect to the absolute fusion of the masses of metal incorporated with the masts and hull, it may be laid down as an axiom, that a given quantity of metal can always transmit an accumulation of natural electricity equal to its fusion; this is evident, since the fusion of the metal is the result of the electricity actually transmitted. But on a review of all the known cases of damage by lightning, it cannot be inferred that a conductor equal in mass to that of a copper rod 1.05 inches in diameter, and 210 feet in length, which may be taken as the mean value of the conductor on one mast of a frigate of 50 guns, (651) is at all likely to become fused. In short, the evidence we possess from experience is conclusive on this point, (45) and sufficiently proves, that nothing short of an atmospheric convulsion from electrical action, calculated to involve the ship and every thing on board in one common ruin, would be likely to dissipate so great a quantity of metal. Such unknown convulsions, existing for the most part only in imagination, we pretend not to have the power of withstanding: we may, however, still observe, that even in very severe discharges of atmospheric electricity, a ship is safe from the immediate operation of the particular shock which destroys a conductor (22). (*t*) (*u*).

72. In these observations we have only considered the action of the conductors on one mast; but it is consistent with the results of experiment to suppose, that the conductors on each mast would be called into action before *either would undergo fusion*. The following experiments are strikingly illustrative of this point.

Exp. 4. Let an extremely fine wire of iron, *a b*, about 14 inches in length, be secured, between the insulated brass ball *a*, and the ball *b*, attached to the conductor N, the latter being connected with the negative side of a charged jar or battery. Let a large insulated conductor P, be placed immediately over *a*; continue to charge the battery until an accumulation is obtained, which discharged from P to N, and over the wire *a b*, is just sufficient to ignite that wire; the quantity of electricity requisite may be easily ascertained by any of the methods of measurement in ordinary use;* the discharge may be effected by connecting P with the positive side of the charged battery. Let two wires similar to the former, *a b*, *a′ b′*, be now placed under the



* "Elementary Laws of Electricity," Transactions of Royal Society for 1834, Pt. 2, p. 217, sec. 13.

conductor P, and let the same quantity of electricity be again discharged from P as before, the explosion will break on both the wires, but neither will be fused. If a charge be now accumulated just equivalent to the fusion of the two wires $a\,b$, $a'\,b'$, then if three such wires $a\,b$, $a'\,b'$, $a''\,b''$, be placed under P, the same explosion will divide upon the three, and not melt either. The discharge is supposed here to pass on spheres, but if a pointed termination be given to the wires, then a much greater quantity of electricity will be required to fuse either of them.

72. We may hence infer, that previously to either of the conductors becoming fused, the other would come into action, and hence we may calculate on the fusion of the whole, or none. If, therefore, we add to the great capacity of the conductors in question, their conjoint action, and the very favourable conditions, under which they are placed, that is, pointed terminations above, and a perfectly free action below, we have every reason to repose confidence in their efficiency; so that, instead of the disastrous consequences so frequently arising to ships from lightning, we should find the electrical action very rapidly dissipated, and transmitted, as shewn (70) (λ) in a state of comparatively low tension to the sea.

73. It is a mistake to suppose that the conductors, although superficially applied to the masts, are without considerable powers, even though considered in relation to their thickness, as may be seen by referring to the table given in the preceding paper (65). But admitting, that quantity of metal be the great desideratum in a lightning conductor, it must still be equally efficient under whatever form applied: this is evident, since the conducting power of the mass must consist of the conducting power of all the parts. Now it would be absurd to suppose, that a mass of metal expanded into any extent of surface, so as to diminish its thickness, would not still conduct in every part; indeed, we know from actual experiment that it does so, and that it is quite impossible to destroy a portion of a perfectly homogeneous metallic surface of a *uniform density and thickness*, by an artificial accumulation of electricity, without destroying the whole. We do not consider here any single point or part, upon which the discharge becomes concentrated at the time of its exit or entry upon the conducting plane.

74. It would seem from the very conclusive experiments of Sir H. Davy,* that a considerable advantage is obtained by giving a mass of metal an extended surface, in consequence of its becoming exposed to a greater extent of air, by which its temperature is kept down, and therefore the heat produced by the electrical discharge diminished. That the conducting power of metallic bodies is impaired by an increase of temperature, is a fact quite

* Transactions of Royal Society.

beyond dispute; the very few experiments adduced to the contrary being altogether inconclusive. A given quantity of metal therefore, formed into a hollow tube, might possibly withstand an intense discharge of lightning, whilst under the form of a solid rod it would be melted.

75. The circumstance of the conductors passing *through*, or rather *into* the hull of the ship, is not an objection of any importance, as will appear on a due consideration of all the circumstances under which a ship is exposed to strokes of lightning. We have already shewn (26), that the protection of a ship from damage by natural electricity, depends on a perfect completion of the conducting power of the whole mass, so as to remove, as it were, all impediment to the process of electrical diffusion. It is a common observation, that in cases of damage by lightning at sea, all the danger is past when the electricity has reached the well. That the electric action may be safely transmitted through the ship, or equalized upon it and the surrounding sea, is very evident; it is, in fact, owing to the metallic fastenings which freely admit of this operation, that so many ships struck by lightning are saved from very severe damage in the hull. This is peculiarly the case in His Majesty's fleets, where metallic bolts, and other masses of metal, in connection with the sea, greatly abound; and it is not a little remarkable, that the more serious cases of damage in the hull have occurred in merchant vessels, where such masses of metal are not so common. We may, in further illustration of this important fact, cite the case of His Majesty's ship London, whose foremast was shivered into the step by lightning, whilst the keelson and keel remained perfect. Now, immediately at the step of the mast, we have a great number of keelson bolts in connection with the sea.

76. In addition to these considerations, we may further observe, as already insisted on (36), that the masts themselves are most commonly the points upon which the electrical action is concentrated; and that these are necessarily placed immediately in the ship. If their conducting power, therefore, be *not* efficient, they must transmit the lightning with damage to the hull, since they determine it in that direction. Hence, by defending the masts themselves, we guard against the evils arising out of their position. That the conductors pass *near* the magazines is allowed; but such is the case in all magazines on shore defended by lightning rods; they are purposely placed *near* them, in order to afford the required protection: for it is well known that the electric matter will *not* leave a good and efficient conductor, in *the line of its action*, to pass upon detached or less perfect conductors out of that line (56).* The following experiment is simple, but important in its consequences, as connected with this grand principle in electricity:—

* See the experimental illustration of the oxidated gold in the former paper.

Exp. 5. Let a small mast, *a b*, of about eight or ten feet in length, be constructed in two vertical parts, having within it an interrupted line of metal, *a c d b*: place at the discontinuous points at *c d*; some percussion powder and common gunpowder. Let an electrical charge be accumulated, sufficiently powerful to pass with force through these points, when discharged, from *a* to *b*. If we now attach to this mast, externally, a fine continuous slip of tin or silver leaf, or otherwise an extremely fine wire, so as to be continuous from *a* to *b*, the electric matter *will not enter the substance of the mast;* whereas, without such a protecting slip of metal, the gunpowder will become ignited, and the parts of the mast forced asunder. If the distances in the points *c d* be somewhat great, about half an inch, or less, then a charge will be transmitted with safety to the mast, equal to the fusion of a fine iron wire, employed for its protection. We may infer from this experiment, that a mast having a lightning conductor of a superficial kind attached to its surface, would remain perfect under a discharge of lightning equivalent to the fusion of the metal.

77. The objections arising out of the mechanical relations of the conductors to the masts with which they are incorporated, are of great consequence, and demand a fair and rigorous investigation. It would seem at first doubtful how far the application of a continuous line of metal to the more flexible spars, would be consistent with the conditions under which such spars were likely to be placed; since it may be inferred, that changes of temperature, pressure of sail, &c. &c., would be very likely to disjoint and displace the metallic plates of which the conductor is constructed. Such objections as these can only be met by an appeal to experiment. Now, the general results of the trials hitherto made are extremely favourable to the use of the conductors; with the exception of one or two trifling instances, in some of the ships first fitted, little or no defect has occurred. As an example, we may cite the case of H. M. frigate, Dryad, fitted with the conducting plates, in midwinter, at Plymouth. This ship passed subsequently into a burning climate, and returned, after an absence of two years, with the conductors perfect. The masts were frequently submitted to a heavy press of sail in chase,* but "this had no effect whatever detrimental to the position of the line of metal in the masts." Indeed, from the circumstances of the construction in many parts (57), there appears great reason for believing, that when perfectly applied the conductor is of great advantage to the mast; and will accommodate itself to, or resist, any action to which it may be subject, consistent with the safety of the mast itself.

(To be concluded in our next.)

* Commander Turner, R. N.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

An Elementary Essay on the Principle of Masting Ships, with Graphic Illustrations of the Practice hitherto pursued in the Royal Navy, and of a Proposed New Method of Proportioning Masts, Yards, Sails, &c., upon Fixed Principles. By Henry Chatfield, Member of the School of Naval Architecture. Hearle, Devonport. 1834.

The design of this work is to bring forward a uniform system of regulating the dimensions of the masts and yards of the royal navy, and the author has prefixed to it an exposition of the principles on which the quantity of sail is apportioned to a ship, the title therefore should have been to that effect. The announcement of an "elementary essay on the principle" of masting led us to look for a popular treatment of some of the more advanced points of the subject, as the position and rake of the masts, but Mr. Chatfield has confined himself to the mere quantity of sail. He first lays down in a concise and simple manner the principles of stability, from which he draws four of the principal conclusions—that the stability is greater, first when the centre of gravity is lower,—secondly, when the breadth is greater,—thirdly, when the body of the vessel is full within the limits of the parts emerged and immersed by inclination,—fourthly, when the breadth is carried well forward and aft. He then gives Chapman's principle that the quantity of sail assigned to a ship of the line should be such, that in a top-gallant breeze, under courses and top-gallant sails, she should fight her lower decks guns well, for which she should not heel more than 7°; and then gives the dimensions of the sails, as referred by Chapman to the foot of the main-top sail as the standard, or unity of the whole.

Mr. Chatfield's account thus far is well worth the perusal of those who may not yet have paid any attention to the subject, but we think he would have done better to omit Chapman's formula for calculating the foot of the main-topsail itself from the known stability of the ship. We hold that the writer of an elementary essay on a subject partly theoretical and partly empirical, should strive to give the reader a pretty distinct notion of what part of a question is laid down by theory independent of trial, and what part is left to trial, independent of theory. Now as this formula contains, among other things, the angle at which the wind blows on the sail, and as our knowledge on this point amounts to little better than none at all, the formula must be defective. The formula itself, it seems to us, might have been more elegantly expressed by assuming one sail as a given quantity, by which the variable angle of the wind, which is the same for all sails, would have been eliminated from the expression.

As respects the force of the wind, it is surely very unaccountable that in so many useless experiments with planes of a few inches square, no one has ever yet taken the trouble to set up two sails of different sizes, turned through different angles, and with greater or less degrees of flatness, and thus by actual trial settle the question once and for ever.

The reader then to whom this part of the work is chiefly addressed should, we conceive, have been informed that theory decides some points completely;

that in many cases where it cannot do this absolutely, it effects it relatively, that is, refers one question to another, of which the answer is known by trial; and that the system in which much must after all be left to convenience, is therefore one of *trial* and *error*, which tends ultimately to set itself right by the assistance of theory in combining observed facts. Thus, though the placing of masts is pretty well understood, yet it often happens that they are the better for being altered, as was proved in the experimental cruises, in which several of the masts were moved aft, none forward, and which led to the observation that the same might probably be done with advantage in many other ships. It was the exercise of a happy sagacity, in thus combining theory and observation, that has caused Chapman to be considered the chief authority in these matters. But this system of observation has the disadvantage that every material change brings to light some facts unperceived before, or at least not generally appreciated, which must, until the proper measure of them is obtained, or they are met by other alterations, disturb the designs of the constructor.

In section 2, on the evils of the present system of masting, the author gives a list of twenty-two ships, from 120 to 16 guns, and the dimensions of their principal spars, illustrating the subject by a diagram, in which the spars of each kind follow each other in pretty irregular succession. Though this method of illustration by the linear dimensions of the spars is evident, it does not so well exhibit the defects of the present system, nor consequently make so strongly for his argument, as a consideration of their actual magnitude and strength, which we shall therefore adopt.

With this view we will take the main top-masts of the three first ships in page 19, which are of equal length.

	Length.	Thickness.
Caledonia	69-0	21½ inches.
Kent	69	21
Vengeance.....	69	20¾

The first point to examine is the size of the main top-sails on these three spars, which are as follows :—

	Foot.	Head.	Mean Breadth.	Depth.	Product or the two last, or area.
Caledonia	98.6	66.4	82.5	62.2	5131.5
Kent	93.2	60.9	77	Do.	4793.1
Vengeance	96.	62.8	79.4	Do.	4938.7

Now, the strengths of these spars of equal length being as the cubes of their diameters, the

Strength Caled.'s top-mast : Do. Kent's :: $(21\frac{1}{2})^3 : 21^3 :: 9939 : 9261$,

that is, the strengths of these two spars are exactly in proportion to the sail they carry; not forgetting, however, to observe that the Caledonia's main-top-sail yard is heavier than the Kent's in the proportion of 27 : 20, and as the top-mast has to sustain, besides the pressure of the sail set at the time, the weight of the yard in a heavy plunge, which is a separate consideration, it would appear that if the Kent's top-mast be of the proper size the Caledonia's is too small; or if the Caledonia's be large enough, the Kent's is larger than it need be.

To compare now the Kent's and Vengeance's main top-mast: We have the strength of the Vengeance's top-mast : that of the Kent :: $(20\frac{3}{4})^3 : 21^3$,

or as 8934 : 9261, or the strength of the Vengeance's mast is nearly four per cent. less than the Kent's, while the sail spread on it is three per cent. greater, making a discrepancy of seven per cent in the two masts, and the duties they have to perform, to which, though a consideration of no great amount itself, it is to be added that the Vengeance's main-top-sail yard is about thirty-seven per cent heavier than the Kent's.

But the vagaries of the system are most conspicuous amongst the topsail and top-gallant yards. It might be argued with some shew of reason, that a ship would be better for being squarer below, and narrower aloft than another, but this would not prove that the ship which has the narrower top-sail yard should yet have the squarer top-gallant yard; such differences as these can only result from accident, and are the evidences of want of system.

The author observes, that the difference between the Vengeance's and Kent's top-masts, of $\frac{1}{2}$ of an inch, is indeed a small quantity, but on the wrong side; but we have seen that linear dimensions convey no idea of relative strength; thus in the two spars of 21 inches, and $21\frac{1}{2}$ in diameter, the difference of strength caused by the increase of $\frac{1}{2}$ an inch in the lesser, will be 3 multiplied by $\frac{1}{2}$, divided by 21, or $\frac{1}{14}$ of its whole strength.

In section 3, the author proposes his scheme, which is, that spars and sails should not be distinguished as heretofore by "rate" and "class," but by *number*. He observes justly, that *anchors* are designated by *weight*, *cables* by *size*, *boats* by *length*, that is, by distinctions arising out of their own nature, and not depending on any distinction of rate or class, and he recommends that spars and sails should be made equally independent of foreign or arbitrary distinctions. Another argument that "rate" and "class" are unnecessary, is, that spars are made according to given length and thickness, and not according to rate and class.

Mr. Chatfield then proposes that the topmasts of the navy, from the largest of 72 ft. 10 in. length to the shortest of 27 ft. 4 in., should be arranged in forty different magnitudes, proceeding by a constant difference of 14 inches in length from each to the next; and he further advocates that the thickness of each should bear the same proportion to the length. Thus, for instance, the Dartmouth being in want of top-masts, he would propose that, instead of demanding the main, fore, and mizen top-masts of a fifth rate, she should demand top-masts Nos. 17, 23, and 29 of the general scale; and in like manner, she would demand her yards.

Against the principle of one scale of length we see no possible objection. It is simple, and would be attended with convenience, the economy would be complete, as spars would be ready for service without alteration, and other advantages would follow.

As relates to the storekeeper's accounts, the author says, p. 25, "the ledger states, sixteen fore-topmasts of third-rates to be in store at Plymouth, (at the date.) The Kent and Agincourt are third-rates, but their topmasts are 62 ft. 2 in. by 21 in. in diameter, and 57 ft. 8 in. by $19\frac{1}{2}$ in."

The above is, we apprehend, definitive as to the uselessness of the present system of rates and classes in the mast department.

At p. 29 the author gives the complete scale for top-masts and yards, in which it appears that a constant difference of 14 inches in the top-masts would be attended with a constant difference of 21 inches in the lower yards, 15 inches in the top-sail yards, 10 inches in the top-gallant yards, and thus the whole would form one system. As to the question whether 14 inches in the top-masts is not too sudden a transition from one top-mast to another, it is to be observed, that if it be reduced, the number on the scale must be carried

beyond forty. We are inclined to think the inconvenience of the latter, if it be one, the lesser evil of the two.

We now come to the consideration of the size of the top-masts. Some reason, of acknowledged validity, we may suppose, has led to the universal equality of thickness of the fore and main top-masts. As the convertibility of the spars of the same ship is a matter of more consequence than that of the fleet in general, for the former may be a matter of necessity, the latter is one of convenience only, a good reason for this equality is the size of the caps: this reason alone, however, would easily be got over by a cap-lining. Another reason to favour the greater proportionate thickness of the fore-top-mast, is its greater motion or angular velocity; but this we do not think alone a sufficient reason, especially as the yard is lighter than the main top-sail yard. The most probable reason is, that the fore-topmast has more to do than the main; it carries the jibs, and, besides these, the fore-topmast studding-sail, in strong breezes with a good deal of sea, the latter constantly tending to twist the top-mast, when the main topmast carries the topsail and topgallant-sail only. Now, the reduction of the thickness of the fore in the proportion of that of the main-topmast, that is, from 1 to $\frac{9}{10}$, would diminish the strength from 1 to $(\frac{9}{10})^3$ or .73, that is, nearly 27 per cent.; hence, to prove that this can be done with safety, it is first necessary to prove that the fore-topmast at present stands longer than the main in the proportion of 10 to 7 nearly; but we believe that the fore-topmast is oftener carried away than the main. It appears, however, that the author would increase the thickness of the main-topmast in the same proportion as the fore, which would increase its weight nearly a fourth; if this were not advisable, there would be two thicknesses of every topmast below a few of the largest, and fore-topmasts would be marked to distinguish them from the main. This does not apply to the yards, which are all similar figures. On this point we consider the suggestion of an undeviating scale, founded on a progression by constant differences, as one not only of great merit, but which, under some form or other, must form the basis of any regular system. The scale being fixed, the same number would always be the same for the same lengths, and therefore either one or the other would be a distinction. The system has, it appears, already undergone partial changes, and therefore it would be easy gradually to introduce a new one by causing new spars, as required, to be made according to a general scale, and suffering the old spars to be worn out.

NARRATIVE OF A VOYAGE TO THE SOUTHERN ATLANTIC OCEAN, in the years 1828-29-30, performed in His Majesty's ship Chanticleer, under the command of the late Captain Henry Foster, F.R.S., &c., by order of the Lords Commissioners of the Admiralty. From the private journal of W. H. B. Webster, Surgeon of the sloop, in two vols. 8vo. Richard Bentley.

The peculiar nature of the objects for which this voyage was performed, renders it perfectly distinct from all others that have preceded it, and one of extraordinary interest to men of science. Those objects were principally pendulum experiments at various places, and the commencement of a chain of meridian distances, measured with great precision, to be continued afterwards round the globe. While the former are valuable to science for the purpose of determining the figure of the earth, by the difference in the force of gravity at

those places, the seaman will readily perceive that the latter are invaluable to him, as giving him so many new meridians, whose well-established longitude he might rely on, by which to obtain rates for his chronometer; and it is to be regretted that such a magnificent project is yet left to be completed. In addition to these objects, the subject of magnetism, and the numerous branches of natural history, formed points of research, all of which tended to place this voyage far above any that have yet been undertaken. We must reserve for another opportunity a few extracts for our readers. The narrative is given in an easy and familiar style, and possesses all that richness of interest which especially belongs to works of this kind.

GUIDE TO THE HIGHLANDS AND ISLANDS OF SCOTLAND, including Orkney and Zetland, descriptive of their Scenery, Statistics, Antiquities, and Natural History; with numerous Historical Notes. By George and Peter Anderson. Murray. 1834.

To those of our readers who are meditating a visit to that romantic portion of our country named in the above title, we cordially recommend this little volume. It is accompanied by a map on a large scale, by Arrowsmith, and is interspersed with historical anecdotes, which render it an amusing, as well as a valuable travelling companion.

TOUGH YARNS—A series of Naval Tales and Sketches, to please all hands, from the Swabs on the Shoulders, down to the Swabs in the Head. By the Old Sailor. Effingham Wilson. 1835.

"Once more," says the author, "I present myself before the public in a book, and, whatever all hands may think of it, I can assure them it is no joke to keep one's brains, like a winch, continually spinning yarns. However, as my "GREENWICH HOSPITAL" met with a favourable reception, (which I attribute principally to the engravings of my friend GEORGE CRUIKSHANK,) I have been induced to try another launch, and here I am, at the service of my friends." Now, as we always respect his brethren, the Old Sailor may depend on us as among his friends, and right glad to welcome his appearance with his new budget. "Tough Yarns" are as good as his "Greenwich Hospital;" and as he has taken care to embellish them with the engravings of his friend Cruikshank, (to whose assistance he *modestly* attributes his former favourable reception,) we have no doubt they will "go down" equally as well. We shall be tempted to pick out one or two of them in a future number, in the mean time assuring our readers, that they are rich in amusing anecdotes of naval heroes, a kind of entertainment which should be most prized in a maritime country. By the way, we think the Old Sailor might try another edition of his "Greenwich Hospital," uniform with his present volume of "Tough Yarns."

ILLUMINATING BUOYS.

To the Editor of the Nautical Magazine.

SIR—Having noticed the remarks of "A Tar," in an endeavour to make the buoys or marks for shoal water more distinct, and having tried several experiments for that purpose, I beg to suggest one or two which I think could be

carried into effect, without much trouble or cost. Your correspondent, I fear, has puzzled the most experienced chemist. My plan is to have buoys made of such a shape as to allow of reflectors being arranged at different angles.* By this means, the least light would be reflected; such, for instance, as a light suspended at the jib-boom. This would be very useful to vessels nearing the shore, where frequently the marks are under the shade of a bank, and on more dangerous shoals or rocks.

I would also recommend buoys to have a bell suspended from them, which, from their motion, would constantly be ringing, and thus apprize vessels of their danger: either plan would not be attended with much expense. A great saving might be effected by constructing buoys of copper, instead of wood; and by condensing air into them, they would not be liable to be indented by any outward violence. Buoys constructed of copper would be perfectly tight, while those constructed of wood require frequent pumping.

Should you think these remarks worthy a place in your valuable work, by inserting the same, you will oblige

Yours, &c.

Bristol, August 28, 1834. JOHN BRAHAM.

To the Editor of the Nautical Magazine.

August 9, 1834.

SIR.—Every thing, which enables the valuable members of our Navy to extend their researches, is a means of national advantage; and even contrivances, which may tend to their convenience and the indulgence of their rational curiosity are deserving of attention. It was well therefore to notice, as you have done (p. 428) the water telescope: and the assistance, which it might afford in the search after any one who had fallen overboard, adds so much to its possible utility, that some further remarks on the instrument may not be without their interest.

The want of light is commonly the great impediment to our being able to distinguish objects under water, and this does not admit of remedy from any optical instrument. But the sea is sometimes transparent to a great depth. It is unnecessary to illustrate this by example from proofs, when a large portion of your readers may know it from actual experience, and many of them might smile at quotations of what appears extraordinary to others, when they may have themselves witnessed the facts to a much greater extent. Now, in this case, as for a distant view on land, the size of a real telescope may be very advantageous, where, as the description of Mr. Leslie's tube conveys the idea of its being terminated by a plane glass. When the rays, however, from the water impinge on one side of the object glass, while the emergence, on the other carries them into the air, the curved form given to the lens must be accommodated to the required effect. All this has been considered long ago in our own country. Books multiply so fast, that in order to keep up with the science and literature of the day, many older works of value are neglected. It may be well occasionally to recall the public attention to them. In 1813 Sir David Brewster published a "Treatise of New Philosophical Instruments" and in chap. i. book 4. he gives a "Description of Instruments for viewing objects under water." The subject was suggested to him, as he mentions, (p. 225,) by the Academy of Sciences of Copenhagen, having offered their

* Would not the spherical form proposed in page 486 do better, as, let the reflectors be placed at any angle, there must be spaces (increasing according to their distance from the buoy) not illuminated. ED.

mathematical prize to the inventor of an hydraulic tube, by means of which objects might be distinctly seen at the bottom of the sea. We have, therefore, an anterior and more complete invention, made by one of our own countrymen, although we may be indebted to our transatlantic friends, for recalling it to our recollection, and for stimulating us, by useful rivalry, to endeavour to bring it into practice.

N. R. D.

To the Editor of the Nautical Magazine.

City, 23d October, 1834.

Sir,—As a principal object of your valuable periodical is to warn voyagers of all descriptions of the danger to which they may be exposed, I trust that the one to which I beg to request your attention, will not be deemed too unimportant or too improbable for your notice.

Steam-vessels, with sometimes upwards of one thousand passengers aboard, have been plying all this summer and autumn on the Thames, between London and Gravesend, and will most probably ply in still greater numbers in the season of next year. Now, what would be the consequence, were one of these heavily-laden vessels, by any accident, such as collision with another boat, &c., to be run down or capsized? Is it not but too likely that the *majority* of the *thousand human beings* crowded on her decks, and in her cabins, would meet with a watery grave? Racing at a dangerous speed is now too much the practice among this description of craft, and this evil threatens to increase, inasmuch as *steamers are now building*, under contract that their machinery shall enable them to distance all other craft on the river! Let us only consider for a moment the consequences of two of these rapid meteors coming into contact when at their full speed, in opposite directions, and at a comparatively unfrequented part of the river; how could effectual assistance be rendered? What proportion of the mass of passengers would be able to effect their escape by swimming, even supposing their efforts to be unincumbered by the natural attempts of others not so fortunate, to preserve their lives?

In fact, would not the whole kingdom be startled, from one end to the other, by the announcement of the appalling fact, that hundreds upon hundreds of our fellow-creatures, men, women, and children, had perished in a few minutes, in the midst of mirth and hilarity; not in "the great deep," but in the bosom of the peaceful Thames, and almost within sight of their own homes? Would not the authorities be justly blamed for suffering matters to go on until such an astounding event could by possibility occur?

Supposing even that half should escape, (a high estimate, indeed,) still, what a waste of life would have to be lamented! But, it is not to be hoped that the result would be so favourable. *When the Comet was run down upon the Clyde, what was the proportion saved?*

Feeling that the Editor of the Nautical Magazine will not deem the subject frivolous, merely because the danger bears so homely and unromantic an air, and trusting that the publication of this note will excite attention to the matter in question,

I remain, Sir, yours, respectfully,
A Fresh-water Sailor.

[We fully participate in the feelings of our correspondent, and think with him, that it is better to point out an evil to be remedied before the ill effects of it overtake us. Doubtless, a certain speed, in a crowded river like ours, should

not be surpassed. This has already been determined on, and we have no doubt the proper authorities will enforce the regulation. If they do not, they will neglect their duty, and encourage the practice of thus endangering the lives of His Majesty's subjects.]

To the Editor of the Nautical Magazine.

SIR—As I do not know the address of Mr. Harris, who has lately written on Lightning Conductors, in the Nautical Magazine, I shall feel obliged, if you will insert, for his information, the subjoined account of a series of accidents that befell H. M. ship Cumberland, from lightning. On the 25th of August, 1810, the Cumberland, 74, Captain Hon. P. Wodehouse, being at anchor near Faro Point, Sicily, about midnight was struck by lightning, which ruined the main-mast, and set the main-top on fire, which was soon extinguished by heavy rain, and other aid. Next day, a small splinter from the main sky-sail fell, and was found on the flying jib: this circumstance is remarkable, because when the accident occurred which detached the splinter, the ship was riding head to wind, which however, was light. The main-mast was surveyed and condemned, but as the ship was employed on a service that would not admit of diminution of defensive force, and was also of a nature to keep her stationary, it was determined to *fish* the mast. This work was in progress of completion, when, on the third or fourth day, soon after eight A. M. the same devoted spar was again struck, and received such additional injury, that, separately considered, the effects of the second stroke was as fatal as those of the first to the efficiency of the mast, and the ship was forthwith sent to Malta for a new one. In this instance, fortunately, the ship's company were at breakfast, (or in all probability some of the men would have been killed,) who had just previously been employed upon the mast. On the 25th of February, 1812, the Cumberland, Captain Thomas Baker, off Torbay, in a gale of wind, about noon, was again struck on her main-mast; several perforations caused by the electric fluid, were plainly visible, some of the iron hoops were burst asunder, and this mast was also rendered unserviceable. In these three similar accidents, which happened within eighteen months, it is an astonishing truth, that providentially no person was seriously hurt. On the first two occasions, several ships of war, and many smaller vessels, were anchored in different parts of the strait of Messina, within three or four miles from us: and on the last, the Vengeur 74, and Fawn 18, were in company, but I believe none of them suffered from the lightning.

The circumstance, however, that is most germane to the purpose of Mr. Harris, is, that (if my memory be correct) the lightning conductor was not in use upon any of these occurrences: probably, the omission may be referred to an opinion which partially prevailed, of the inutility, or rather danger, of resorting to that instrument for safety. The results which at present have attended Mr. Harris's inquiries, appear decidedly opposed to this opinion. The above relation affords a strong auxiliary plea in favour of his invention being submitted to an extensive course of experiment, on the score of economy alone, when the value of two main-masts for a seventy-four gun ship, at the time referred to, is considered.

August 4th, 1834. W. H. BRADY, Lieut. R. N.

NORTH-WEST PASSAGE.—Letters from Captain Back were received yesterday morning at the office of the Royal Geographical Society, the latest date being the 29th of April last, when the intelligence had just reached him of Captain Ross's return.

Their contents are of a mixed character. He and his party were all well, with the exception of Augustus, the Esquimaux interpreter, who had accompanied Sir John Franklin in both his journeys, and was now despatched by the Hudson's-Bay Company to join this third enterprize, but perished by the way. The winter had indeed been extraordinarily severe. "We have had," says Captain Back, "a most distressing winter in this more than Siberian solitude, where desolation reigns in unbroken repose. Even the animals have fled from us, as it were by instinct, and many, very many, of the unhappy natives have fallen victims to famine in situations the most revolting to human nature. The fish also, on which I in some measure relied, left us; in places which we were told never before failed we have not caught a fish; and during the whole season scarcely a living creature has been seen, except on one occasion a raven, which, in wheeling over the house, startled me with his croak, so uniform was the silence around us. I ran out, but when it saw me it screamed, and again made off to the western mountains, in the dark shade of which it was speedily lost. My party has been thus much dispersed in quest of food, and every message has brought me tidings of their encountering severe privations. Mr. M'Leod (an agent of the Hudson's Bay Company attached to the party) and his young family are at this moment somewhere on the lake, fishing; and you may imagine what it costs me to see them also exposed to the rigours of this severest of all winters, for the mean of three thermometers has been far below the lowest we ever registered in our former expeditions. After this narrative, you may believe that, in spite of all my care and economy, some part of the provisions laid up for our voyage has been necessarily consumed. The most experienced man in the country could not have foreseen this; nor was there any possibility of avoiding it. My anxiety is immeasurable on account of it; but I still hope that the Indians may be enabled to procure us dry food, or in short something that may afford sustenance, so that the fondest wishes of my heart may not be frustrated. Of that, however, in one sense, there is no danger, for come the worst, I can always reduce my men, and go in one boat. Do not, therefore, let this affect you, for I feel confident of overcoming it. Another misfortune is, that pinched as we are for provisions, we must drag our boats and luggage almost 100 miles over rock and ice before we can reach open water. This we have ascertained through the winter; but never mind, this also shall be done, and it will be a new feature in discovery. In our former expeditions we had none of these tremendous obstructions to contend with, though we had to take our bark canoes some distance in sledges. But I have perfect confidence in my men, and they, good fellows, think that I cannot err.

The above was written before the arrival of the express announcing Captain Ross's return; and, pressed for time, only a few lines are added subsequent to that event. They are, however, so characteristic of the gallant writer, that they ought not to be omitted:—"I have this moment received your despatch, with an account of Ross's return. I am all gratitude and happiness. My heart is too full to write: but I shall pay attention to all that is recommended to me; of this assure the committee. What a triumph is this return of Ross's to us all who 'hoped against hope!' And what do the croakers say? Will they acknowledge the lesson afforded by it of the power of stubborn perseverance?" &c.

From a private letter which we have seen, it may be interesting to some to add the following scrap:—My day is chiefly spent thus—before breakfast I read a portion of scripture, and afterwards attend to my observations, study, draw, (I have plenty of pencil sketches,) work up my survey, take notes on Aurora, &c. At the same time I have my eye on whatever duty is going on,

have an evening school twice a week, and read the service in French and English every Sunday. My guitar is cracked, and jars abominably; but you will not be surprised at this when I add, that I have been obliged to grease my hands daily to prevent their cracking also, for such is the dryness of the atmosphere that nothing can stand it."

It may also allay the anxiety of friends and relations to add, that Hearne found abundance of game along the banks of the Thlew-ee-cho, so that, as the season advances, Captain Back's hunters may reasonably be expected to be equally fortunate. His prudence, based on a long experience, may also be relied on, as well as his enterprise. His buoyancy of temper, and the confidence reposed in him by his companions, will support all their spirits. In a word, his task is arduous, more arduous than had been imagined, previous to the receipt of these letters; but it could not be in better hands. And it is very satisfactory to know, from other letters received by the committee of the Hudson's Bay Company, that ample supplies have been since forwarded to him, which will support him during the ensuing winter. Early next spring he and his whole party will set forward on their return.

ONE OF THE CONSEQUENCES OF THE LATE FIRE HAPPILY AVERTED.—The Standard Yard of 1760, which was selected and adopted by the Commissioners of Weights and Measures, and established by Act 5, George IV., Chap. lxxiv., as the only legal integer of length; and as such, deposited in the custody of the Clerk of the House of Commons, we are concerned to say, has been destroyed by the late fire.

The Standard Troy Pound of 1758, adopted and deposited in like manner, and also established by Act 5, Geo. IV., Chap. lxxiv., as the only legal integer of weight, and upon which the whole of the new Imperial weights and measures of capacity were constructed, is not yet found, and, if not destroyed, will most likely no longer be useful as a standard weight.

These valuable Standards were, however, happily perpetuated by several accurate copies made of each (the yard by Mr. Dollond, and the pound by Mr. Bate) in 1825. The copies having then been carefully examined and adjusted by Captain Kater, the active member of the Commission, who has given an account of his proceedings in the Philosophical Transactions, were deposited in the Exchequer, the Mint, and the Guildhalls of the cities of London, Edinburgh, and Dublin.

NAUTICAL SURVEYING.—At present we can only make known the appearance of Captain Belcher's work on this subject among our naval friends, to whom we shall take another opportunity of pointing out its merits.

MARINE ARTIFICIAL HORIZON.—Numerous attempts have been made to invent a machine which shall answer this important purpose, without success. We are happy to inform our readers that Lieut. A. B. Becher, R.N. of the Admiralty, has at length succeeded in producing one which combines simplicity with compactness, and with which the altitude may be obtained within very small limits. The principle is that of the same fluid preserving its level when distributed in different tubes of glass, and the fluid used is mercury. It was tried in the North Sea last summer, by order of the Lords Commissioners of the Admiralty, by Capt. Hewett, in H.M.St.V. Fairy, and was found to answer for observation by day. We shall take an early opportunity of describing it to our readers.

SURVEY OF THE PORT OF LIVERPOOL.—In a former page, 504, we have alluded to the discovery of a new ship channel into the Mersey, by Lieutenant Denham, which being available at all times of tide, will contribute no little towards the commercial importance of Liverpool. We understand that the active zeal of the Dock Trustees of that place, and the City of Dublin Steam Company, to forward the completion of so important a survey as that of the port of Liverpool, has enabled Lieut. Denham to perform this service in much less time than he could have done with the means placed at his disposal by the Admiralty. While the former readily defrayed the various expenses of the tide-guage, the latter, with no less liberality, supplied Lieut. Denham with the use of a steam-boat; by which joint means the survey was completed in a comparatively short space of time.

Nor has the confidence of the Admiralty in trusting this survey to Lieut. Denham, or the desire of assisting him in it on the part of the Trustees and Steam Company, been misplaced. We understand that this officer has had the high satisfaction of proving to several of the most influential gentlemen of Liverpool the perfect accuracy of his work. The Mayor, Mr. John Wright, Mr. Horsfall, Sir John Tobin, Mr. Ripley, Mr. Smith, Mr. Leatham, Mr. Potter, all members of the Dock Committee, accompanied by the Chairman of the Pilot's Committee, the Commanders and Agents of H.M. packets, several Merchants and Ship-owners, and Masters, the Harbour-Master, and several other gentlemen, embarked in a steam-boat on the 4th of November, and, attended by Lieut. Denham and his party, proceeded to examine the various channels and their depth of water, as laid down in Lieut. Denham's chart. The result of the examination, as we have before observed, was completely satisfactory, and, without reference to the occasion of it, we congratulate Lieut. Denham and his officers on having thus publicly established the veracity of their work, and proved it to be in every way worthy of the most implicit confidence, without which it would be worse than useless. This survey will not only be of great importance to Liverpool, but interesting to those who delight in observing the changes continually going forward at the mouths of rivers, in the direction and depths of the channels. A comparison between this survey and any future one will, no doubt, afford some very interesting data, to which the partial one of Mr. Thomas, made some time ago, will contribute its share.

THE EUPHRATES EXPEDITION.—The expedition down the Euphrates, as a new route to India, or rather the old route in the time of Solomon, is rapidly progressing. Captain Chesney, of the Royal Artillery, many years stationed in this garrison, has the merit to originate this expedition. During a residence of three years in Turkey, he twice went down the Euphrates (nearly 2000 miles) on an open raft, and, on his return to England, brought with him a chart of that interesting river. Upon his report, a committee of the House of Commons was appointed, and so satisfactory was the result, that a sum of money was voted for the purpose of the expedition, and he was elected Fellow of the Royal Society. The whole arrangement of the expedition has been placed under Captain Chesney's management, who goes out early in December. Two steam boats are building at Liverpool for the navigation of the Euphrates; and we are informed that two lieutenants of the navy, two passed mates, besides a surgeon, engineers, a party of sappers and miners, &c. are to accompany this expedition. The mates, it is expected, will be promoted at the termination of the voyage at Bombay. As the objects of this expedition are partly to open a commercial intercourse with the Arabs, specimens of our principal manufactures are to be taken out. Besides the officers appointed, whose names were

mentioned in a former paper, Mr. Charlewood, of the Salamander, having undergone a most satisfactory examination, previous to his nomination, has been since appointed. In expressing our warmest wishes for the success of this interesting expedition, we would refer the reader to our first page, where the subject of a steam and rail-road communication with our Indian possessions, is placed in a very important point of view by the present able Governor-General of India, and the enlightened Pacha of Egypt.—*Hants Tel.*

We understand that it was intended to have held a public meeting of the inhabitants of this place, to consider the propriety of petitioning Parliament to institute an inquiry into the unsafe condition of merchant shipping generally, and more particularly with reference to emigrant ships, and that it is only deferred until Parliament meets.—*Fifeshire Journal.*

Extract of a letter from an Officer of his Majesty's ship Vestal, dated Bermuda July 1, 1834.—"There is nothing we have met with since we left England that can touch us. The Challenger we beat repeatedly on our passage to Madeira. As for the Sapphire, we beat her ten miles dead to windward in a five hours' trial; and this in a fiery double-reefed topsail breeze, with a lump of a head sea, outcarrying and outsailing her; and we have served the Forte the same, both on a wind and going large. In fact, there is nothing on this station that has a chance with us, unless it is the Vernon, and we have never had an opportunity for trial with her, though we have often wished it."

The Vernon.—A correspondent of the *Naval and Military Gazette* writes as follows:—It is with no small astonishment I have heard it asserted, since my arrival in England, that H. M. S. Vernon was recalled from the North American station on account of an unfavourable report of her qualities having been transmitted from thence by Sir George Cockburn and Captain Westphall. I can positively assure you there is not a particle of truth in this report, and that it was generally known at Halifax that she was sent for home at the request of, it was said, the surveyor, and every officer admitted the Vernon and Vestal to be, without comparison, the finest ships on the station. Having belonged to the Vernon when she took the admiral out, and subsequently to the President, and hearing his opinion respecting both ships, as well as the others on the station, I think it but justice to the Surveyor of the Navy to make this statement: for it is impossible, that, after what I have heard both the Admiral and Captain repeatedly declare, that they could ever make a report so contrary to their avowed opinions.—*Plymouth Herald.*

It is intended to establish a communication between the island of Portsea and Gosport, by means of a floating bridge, from the Point Beach to the opposite shore. It has long been a subject of surprise to visitors, that, the distance being only 700 yards, there should not have been constructed a means of conveying, with facility and at small expense, carriages, horses, &c. to and fro, as the port is well sheltered, and presents no difficulty whatever in itself. The plan which has been adopted in similar situations, as that between Torpoint and Devonport, across the river Tamar, and in the midst of men-of-war in ordinary, and between Saltash and Devonshire, across the river Dart, both of which answer the intended purpose exceedingly well, is most satisfactory, both as to the practicability and stability of the undertaking. The general idea is, the floating bridge being formed, it will be moved to and fro by a small steam-engine, a chain passing round a barrel and fastened to each shore, on touching which a platform falls down, and cattle, carriages, and passengers walk out,

without any delay or impediment. The size of the bridge will preserve it from motion, and, being only two feet draught of water, it will present little or no resistance to the in-coming or out-going tide. It cannot be questioned that such a mode of communication will mutually benefit both places, as well as the neighbouring country places; as has been the result at Torpoint, where a new road is now contemplated to Falmouth, purposely to facilitate the mail communication. The "Portsea Island and Gosport Floating Bridge," is contemplated as being established by a joint stock company, forming a capital of 10,000*l.* to be raised by four hundred 25*l.* shares. Whatever plan facilitates communication with distant places, must eventually be productive of general benefit. We understand that means will be taken by the projectors of the measure to protect the interests of the watermen plying on the ferry.—*Hants. Tel.*

A gold medal, with a suitable inscription, has been transmitted by the French government, accompanied with a highly-complimentary letter from the minister of marine, to Lieutenant Saunders, R.N. of Alnwick, (late in command of the Coast Guard at Newton) for his meritorious exertions, with the men under his command, in saving several French fishing vessels and their crews, off the coast of Newton, in the tremendous gales in the latter end of August and 1st September last year.—*Devon. Her.*

New Paddle Wheel.—We understand that an experiment of a most interesting kind, is about to be tried with a paddle wheel for a steam-boat, of an entirely new construction, the purpose of which is to effect that great desideratum so long looked for, namely, to work without producing back-water. This has been already done by Morgan's wheel, but with the addition of much machinery. The inventor of the new wheel to which we are now alluding, as about to be tried, is Mr. Symington, the son of the celebrated individual who is well known as the inventor of modern steam navigation. A model of the wheel, as well as the wheel itself, has been submitted to our inspection, we have been much pleased with its great simplicity, and anticipate its success. An angular movement is given to the paddle while in revolution; by this process, the paddle, which is divided, enters and leaves the water in a direction nearly parallel to the side of the vessel, and therefore it is expected that no backwater whatever will be made, and the paddle will have its best effect when acting in a vertical direction. The same principle is applicable to the sails of wind-mills as well as water wheels. The experiment we understand is about to be tried on a government steam-vessel, the Alban. The neatness and elegance of the invention justly entitle it to that success which would render the son as celebrated as the father already is in the annals of steam navigation. We shall take the first opportunity of laying the result before our readers, with a description of the wheel.

The foregoing was in type for our last number, but excluded from want of room. Since then, the experiment has taken place, and has justified the expectations of the inventor. The Alban proceeded down the river on the 19th ult. from Woolwich, and returned in a few hours. During the trial, the superiority of the new paddle was remarkably conspicuous by the minuteness of the wave produced in the track of the vessel, compared with that from the common paddle on the opposite side. We understand the trial was made under several unfavourable circumstances, which, when they are removed, the great superiority of the invention will, we have no doubt, be established.

NAVAL REGISTER.

COMMISSIONERS *for executing the Office of* LORD HIGH ADMIRAL *of the United Kingdom of Great Britain and Ireland.*

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THE ROYAL NAVY IN COMMISSION—NOVEMBER 21ST, 1834.

At Home.

PORTSMOUTH.

Admiral, Sir Thomas Williams, G C.B. *Appointed* 23d Jan. 1833. *Flag-Lieut.* T. R. Eden; *Secretary*, Thomas Williams.—*Flag-Ship*, VICTORY, 104.

PLYMOUTH.

Admiral Sir William Hargood, G.C.B., G.C.H. *Appointed* 27th April, 1833. *Flag-Lieut.* C. H. M. Buckle; *Secretary*, J. Loudon.—*Flag-Ship*, SAN JOSEF, 110.

NORE.

Vice-Admiral, Hon. C. E. Fleeming. *Appointed* 16th Aug. 1834. *Flag-Lieut.* Granville G. Loch; *Secretary*, G. B. Harrison.—*Flag-Ship*, OCEAN, 80.

ACTÆON,* 28.—Capt. Lord Edward Russell, Portsmouth, fitting.
ASTREA—Capt. A. King, foreign packets, Falmouth.
CURLEW,† 10—Lieut. Com. Hon. J. Denman, Portsmouth, fitting, said for South America.
EXCELLENT, 58—Capt. T. Hastings, Portsmouth.
PORTSMOUTH, *Yacht*—Lieut. Com. J. Maitland, Portsmouth.
OCEAN, 80—Flag of Vice-Admiral the Hon. C. E. Fleeming, Capt. A. Ellice; Sheerness.
PELICAN,‡ 16—Com. B. Popham, at Chatham, fitting.
PIQUE, 36—Capt. the Hon. H. J. Rous, Hamoaze, fitting.
PRINCE REGENT *Yacht*—Capt. G. Tobin, C.B. Deptford.
ROLLA, 10—Lieut. Com. F. H. H. Glasse, 19th Aug. sailed for coast of Scotland, to protect the fisheries.
ROVER,‖ 16—Com. C. Eden, at Plymouth, fitting.
ROYAL GEORGE *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Wednesday 27th Aug. returned to Portsmouth from Woolwich.
ROYAL SOVEREIGN *Yacht*—Capt. C. Bullen, C.B., Pembroke.
SAN JOSEF, 110—Flag of Admiral Sir W. Hargood, G.C.B., G.C.H., appointed 27th April, 1833—Capt. G. T. Falcon, Hamoaze.
SCYLLA,§ 18—Com. ————, at Chatham, fitting.
SEAFLOWER, *Cutter*, 4—Lt. Com. J. Morgan, 6th Sept. sailed for Jersey, to protect the oyster fishery.
SEAGULL, 6—Lieut. Com. J. Parsons, Sheerness, fitting.
SPEEDY, *Cutter*—Lieut. C. H. Norrington, Portsmouth station.
VERNON, 50—Capt. M'Kerlie, Sheerness, 25th to sail for Malta.
VICTORY, 104—Flag of Admiral Sir T. Williams, G.C.B., appointed 23d Jan. 1833—Captain R. Williams, Portsmouth.
WATERWITCH, 10—Lieut. Com. J. Adams, Portsmouth, fitting, said for the packet service.
WILLIAM AND MARY, *Yacht*—Captain S. Warren, C.B., Woolwich.

Abroad.

LISBON STATION.

Rear-Admiral W. H. Gage. *Appointed* 9th April, 1834. *Flag-Lieut.* James L. Parkin; *Secretary*, John Irving.—*Flag-Ship*, HASTINGS, 74.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 26th Oct. in the Tagus.
HASTINGS, 74—Flag of Rear-Admiral W. H. Gage, appointed 9th April, 1834—Capt. H. Shiffner, 26th Oct. in the Tagus.
LEVERET—Lt. Com. G. Traill, 28th Sept. in the Tagus: arrived 20th.
NIMROD, 20—Com. J. Mc. Dougal, 17th Oct. arrived at Lisbon from Cadiz.
RINGDOVE, 16—Com. W. F. Lapidge, 21st Oct. at Madeira; 24th Oct. at Santander.
SARACEN, 10—Lieut. Com. T. P. Le Hardy, 5th June arrived at Lisbon from Cadiz.
STAG, 46—Capt. N. Lockyer, C.B., 26th Oct. in the Tagus. Arrived 13th.

* See page 442 for previous service.
‡ See page 314 for previous service.
† See page 636 for previous service.
‖ See page 698 for previous service.
§ See page 314 for previous service.

MEDITERRANEAN STATION.

Vice-Admiral Sir Josias Rowley, Bart., G.C.B. *Appointed* 18th Dec. 1833. *Flag-Lieut.* H. B. Young; *Secretary*, T. Triphook.—*Flag-Ship*, CALEDONIA, 120.

BRITANNIA, 120—Captain P. Rainier, 31st Oct. at Vourla.

CALEDONIA, 120—Flag of Vice-Adm. Sir Josias Rowley, Bart., G. C. B., appointed 18th Dec. 1833—Captain T. Brown, 31st Oct. at Vourla.

CANOPUS, 84 — Hon. J. Percy, 31st Oct. at Vourla.

CARRON, St. V.—Lieut. Com. J. S. Duffil, 31st Oct. at Malta. To return home, her engines said to be defective.

CEYLON, 2—Lieut. J. G. M'Kenzie, Malta.

CHILDERS, 16 — Com. Hon. H. Keppel, 3d Sept. sailed from Malta; 31st Oct. at Zante.

COLUMBINE, 18—Com. T. Henderson, 26th Oct. at Malta; 21st Oct. sailed for Vourla.

EDINBURGH, 74—Capt. James R. Dacres, 31st Oct. at Vourla.

ENDYMION, 50—Capt. Sir Samuel Roberts, C.B., 27th Sept. at Vourla; 31st Oct. at Smyrna.

FAVORITE, 18—Com. G. R. Mundy, 2d Oct. left Malta for Tripoli: 31st Oct. at Tripoli.

JASEUR, 18—Com. J. Hackett, 4th Oct. arr. at Gibraltar from Malaga; at Gibraltar 31st Oct.

MADAGASCAR, 46 — Capt. E. Lyons, C.B, 31st Oct. at Nauplia. Ordered home: daily expected.

MALABAR, 74—Capt. Sir W. A. Montagu, K.C.H., 27th Oct. arrived at Malta from Plymouth.

MEDEA, 6—Com. H. T. Austen, 7th Oct. left Plymouth for the Mediterranean; 12th arr. at Gibraltar; 17th arrived at Malta, with dispatches, in the incomparably short passage of *ten days* and five hours from Plymouth, during which the fire was put out seven hours, to cleanse the boilers. She is the first steam-vessel that has made the voyage out without stopping at an intermediate port for coals. The Medea sailed on the 21st to join the squadron at Vourla.

ORESTES, 18—Com. H. J. Codrington, 7th Sept. sailed from Portsmouth, and 12th Sept. left Plymouth for the Mediterranean.

PORTLAND, 52—Captain D. Price, 26th Sept. arrived at Malta from England; 21st Oct. sailed for Vourla.

REVENGE, 78 — Capt. W. Elliott, C.B., 19th Oct. left the Tagus for the Mediterranean.

SCOUT, 18 — Com. W. Holt, 31st Oct. at Vourla; 10th Sept. at Smyrna.

TALAVERA, 74—Capt. E. Chetham, C.B., 31st Oct. at Vourla.

THUNDERER, 84—Capt. W. F. Wise, C.B., 2d Oct. left Malta, to join the squadron at Vourla.

TRIBUNE, 24—Capt. J. Tomkinson, 5th Oct. arrived at Gibraltar from Portsmouth, on her way to Malta; 18th arrived at Malta.

TYNE, 28—Capt. Rt. Hon. H. J. C. Viscount Ingestrie, C.B., 1st Aug. and 31st Oct. at Alexandria.

VOLAGE, 28 — Capt. G. B. Martin, C. B., 31st Oct. at Malta, going to Constantinople.

CAPE AND AFRICAN STATION.

Rear-Admiral P. Campbell, C.B. *Appointed* 30th May, 1834. *Flag-Lieut.* James Maitland; *Secretary*, J. B. Hutchings.—*Flag-Ship*, THALIA, 46.

BRISK, 3—Lieut. Com. J. Thompson, Sept. on the Gold Coast.

BRITOMART, 10 — Lieut. W. H. Quin, 16th Sept. at the Gambia; 12th Oct. sailed for Goree.

BUZZARD, 10—Lieut. Com. A. W. Milward, 12th Oct. sailed for Cape of Good Hope.

CHARYBDIS, 3—Lieut. Com. S. Mercer, 12th Oct. at Sierra Leone.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, Bight of Benin.

FORESTER—Lieut. G. G. Miall, Sept. on the Gold Coast.

GRIFFON, 3—Lieut. J. E. Parlby, Sept. and Oct. at Ascension.

ISIS, 50—Flag of Rear-Admiral F. Warren, appointed 5th Aug. 1831—Capt. J. Polkinghorne, 7th Sept. left Ascension for Sierra Leone and the Gambia; 21st Nov. arrived at Spithead. Left the Cape 27th July; 12th Oct. resigned the command to Rear-Admiral Campbell. To be paid off at Chatham.

The Isis brought invalids, and part of the reduced garrison of Ascension, which now consists only of one Captain-Commandant, (Bate,) one Captain, three Subalterns, and 130 men. The island was very healthy, the new fort progressing, the tanks full of water, with abundance of vegetation on the mountains. Mr. Pratt had been appointed naval officer. The Isis left Ascension on the 7th Sept.

LYNX, 10—Lieut. Com. H. V. Huntley, Oct. at Ascension.

PELORUS, 18—Com. R. Meredith, Sept. in the Bight of Biafra; 10th July at Fernando Po.

PLUTO, St. V. — Lieut. J. R. Sullivan, see steam-vessels.

THALIA, 46 — Capt. R. Wauchope, flag of Rear-Admiral P. Campbell, C.B., 22d Sept. arrived at Madeira; 24th sailed for Africa; 12th Oct. sailed for Cape of Good Hope, from the Gambia.

TRINCULO, 18—Com. J. R. Booth, 4th May arrived at the Cape, from Ascension; 29th lying there.

EAST INDIA STATION.

Rear-Admiral Hon. Sir T. B. Capel. *Appointed* 30th May, 1834. *Flag-Lieut.* Hon. J. R. Drummond; *Secretary*, .—*Flag-Ship*, WINCHESTER, 52.

ALGERINE, 10 — Lieut. Com. G. Stovin, 30th Aug. arrived at Plymouth; 6th Sept. sailed for the Cape. Spoken with 17th Sept. Lat. 38° N., long. 13° W.

ALLIGATOR, 28—Captain G. R. Lambert, 9th March arrived at the Bay of Islands; 22d sailed for Wangaroa.

ANDROMACHE, 28—Capt. H. D. Chads, C. B.

6th May arrived at the Cape from Rio, on her way to Canton, with Lord Napier and suite; 24th June passed Anjeer.

CURAÇOA, 26—Capt. D. Dunn, ordered home, 18th June at Madras.

HARRIER, 18—Com. S. L. H. Vassal, 27th March left Singapore for Malacca.

HYACINTH, 18—Com. F. P. Blackwood, 2d April arrived at Madras from Trincomalee; 6th sailed on a cruize. To proceed to New South Wales, to relieve Alligator.

IMOGENE, 18—Captain P. Blackwood, 29th March arrived at Bombay from Zanzibar. Ordered home.

MAGICIENNE, 24—Capt. J. H. Plumridge, ordered home. 5th April sailed from Bombay for Zanzibar, Africa. Ordered home.

MELVILLE, 74—Vice-Admiral Sir John Gore, K.C.B., appointed 16th Dec. 1831—Capt. H. Hart, 8th June arrived at Mauritius.

RALEIGH, 16—Com. M. Quin, 12th Oct. left Plymouth for the East Indies.

ROSE, 18—Com. W. Barrow, 30th Aug. touched at Madeira, on her way to the East Indies. 21st Sept. spoke in lat. 5° 55′ N. long. 19° 18′ W.

WINCHESTER, 52—Capt. E. Sparshott, K.H. Flag of Rear-Adm. Hon. Sir T. B. Capel, K.C.B., Oct. sailed for the East Indies. Passenger, Lieut. R. Tyron, to join the Thalia.

WOLF, 18—Com. E. Stanley, 15th Oct. arrived at Madeira from Plymouth; 18th sailed for the Cape.

ZEBRA, 16—Com. R. C. M'Crea, 24th Sept. left Portsmouth for the Cape, Mauritius, and Bombay.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral The Right Hon. Sir G. Cockburn, G.C.B. *Appointed* 6th Dec. 1832. *Flag-Lieut.* H. W. Willes; *Secretary*, T. Woodman.—*Flag-Ship*, PRESIDENT, 52.

ARACHNE, 18—Com. J. Burney, 24th Sept. at Jamaica. Ordered home.

BELVIDERA, 42—Capt. C. B. Strong, 5th Sept. at Barbadoes. Sailed for Trinidad.

CHAMPION, 18—Commander R. Fair, K.H., sailed from Plymouth 10th Oct. Passenger, Capt. H. Prescott, R.N., appointed Governor of Newfoundland.

COMUS, 18—Com. W. P. Hamilton, 21st Oct. at Halifax.

CRUIZER, 18—Com. James M'Causland, 28th Sept. sailed from Port Royal for Bermuda, to repair damages from getting ashore at San Juan di Nicaragua: 8th Oct. at Bermuda.

DEE, 4—Com. W. Ramsay, 23d Sept. arrived at Madeira from Plymouth; 25th sailed for West Indies.

DISPATCH, 18—Com. G. Daniell, Sept. at St. Kitt's.

DROMEDARY—R. Skinner, Bermuda.

FIREFLY, 2—Lieutenant J. M'Donnel, 29th Aug. left Jamaica for Cuba.

FLY, 10—Com. P. M'Quhae, 24th Sept. at Jamaica.

FORTE, 44—Captain W. O. Pell, 24th Sept. at Port Royal, Jamaica.

GANNET, 18—Commander J. B. Maxwell, 21st Oct. at Halifax.

LARNE, 18—Com. W. S. Smith, 24th Sept. at Jamaica; 15th arrived from Carthagena.

MAGNIFICENT, 4—Lieutenant J. Paget, Port Royal.

NIMBLE, 5—Lieut. C. Bolton, 12th Aug. at Nassau, New Providence. 29th Sept. at Halifax.

PEARL, 20—Com. R. Gordon, 7th July arr. at Jamaica from Havana. Ordered home. 29th Aug. at Vera Cruz; to sail for England about 10th Sept. Daily expected.

PICKLE, 5—Lieut. Com. A. G. Bulman, Sept. sent to Halifax.

PINCHER, 5—Tender to flag-ship, 21st Oct. at Halifax.

PRESIDENT, 52—Flag of Vice-Admiral Sir G. Cockburn, G.C.B., appointed 6th Dec. 1832—Capt. James Scott, 21st Oct. at Halifax.

RACEHORSE, 18—Com. Sir J. E. Home, Bt. 24th Sept. at Jamaica.

RACER, 16—Com. J. Hope, 1st Sept. arr. at Jamaica.

RAINBOW, 28—Capt. Thomas Bennet, Sept. at Grenada.

RHADAMANTHUS, St. V.—Com. G. Evans, 24th Sept. at Port Royal, Jamaica.

SAVAGE, 10—Lieut. R. Loney, 23d July sailed for the North American station, to touch at Salem; arrived there 29th Aug. Sailed, and arrived at Halifax 7th Sept.

SERPENT, 16—Com. J. C. Symonds, 27th Aug. arrived at Trinidad from Barbadoes.

SKIPJACK, 5—Lieut. Com. W. H. Willes, (*act.*) Bahamas.

VESTAL, 26—Capt. W. Jones, 3d Sept. sailed for Newfoundland from Halifax.

WASP, 18—Com. J. S. Foreman, 23d Aug. arrived at Trinidad from St. Kitt's.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hammond, K.C.B. *Flag-Lieut.* A. S. Hammond; *Secretary*, E. E. Vidal.—*Flag-Ship*, SPARTIATE, 74.

BLONDE 46—Capt. F. Mason, C.B., 25th July arrived at the Falkland Islands from Rio; to sail next day for Valparaiso.

CHALLENGER, 28—Capt. M. Seymour, 13th June at Callao from Valparaiso.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

CONWAY, 28—Capt. H. Eden, 21st May left Valparaiso for the northward; 1st June arrived at Arica. To return to Valparaiso in Sept.

HORNET, 6—Lieut. Com. F. R. Coghlan, running between Monte Video and Rio Janeiro.

NORTH STAR, 28—Capt. O. V. Harcourt, 27th July sailed for Rio Janeiro, with H. Hamilton, Esq., Minister Plen. at Buenos Ayres, and P. Scarlett, Esq., for Rio Janeiro. Left Madeira 14th Aug.

RAPID, 10 — Lieut. Com. P. Patten, 26th Aug. at Rio Janeiro; arrived 6th from Falkland Islands.

SAMARANG, 28 — Captain C. H. Paget, 4th June arrived at Lima from Valparaiso. To leave the Pacific in Oct. Ordered home.

SATELLITE, 18 — Com. R. Smart, ordered home: 25th July at Rio Janeiro.

SNAKE, 16—Com. W. Robertson, 5th Aug. arrived at Bahia from Rio.

SPARROWHAWK, 18—Com. C. Pearson, 8th July left Rio for the Falkland Islands.

SPARTIATE, 76—Captain R. Tait, 26th Aug. at Rio Janeiro.

TALBOT, 28—Capt. F. W. Pennell, 20th Oct. sailed for Rio Janeiro, with the newly-appointed Admiral, who hoisted his flag on the 15th.

TROOP SHIPS.

ATHOL, *Troop Ship*—Master Com. A. Karley, 22d Oct. arrived at Cork, on way to Barbadoes; 1st November sailed for West Indies, with a company of Artillery, under Major Darby, and reinforcements for 37th and 56th regiments.

BUFFALO, *Store Ship*—Master Com. F. W. R. Sadler, 17th Nov. arrived at Plymouth from New Zealand.—The Buffalo has made a most interesting voyage. It will be recollected that she embarked female convicts, at Portsmouth, in May, 1833, and, taking on board Captain Sir R. and Lady Spencer, with a family of nine children and twelve servants, she sailed on the 12th of that month,* with the party, and complete stock, for a new colony in Western Australia. On the 18th September the party was landed all safe in King George's Sound, which affords good and safe anchorage, especially Princess Royal Harbour, which is situated at the head of the Sound. The Buffalo proceeded from hence to Sydney, where she landed her convicts, all in perfect health; and, on the 10th Nov. 1833, sailed to her destination, New Zealand, to procure a cargo of Kowri topmasts, in which she has completely succeeded, having brought to England the finest cargo ever imported, landed partly at Kwahou, entrance to the river Thames, and part at Wangaroa —notorious for the horrid murder of Capt. Thompson, and the crew of the Boyd merchant ship, in 1809. Mr. Sadler, who appears to have made himself thoroughly acquainted with that part of the country, describes the natives as lively and good-natured, though, beyond all doubt, cannibals. They are a fine, stout, athletic race of men; the women horridly disgusting and filthy. She sailed from New Zealand on the 26th of June, and Rio Janeiro on the 11th Sept., performing the voyage in four months less than the Dromedary, and seven months less than the Coromandel.

COLUMBIA, *St. V.*—Master Com. James Henderson, Woolwich, fitting.

JUPITER, *Troop Ship* — Master Com. R. Easto, 11th Oct. arrived at Gibraltar with troops. To proceed to Malta.

ROMNEY—Master Com. James Wood, 10th Oct. arrived at Gibraltar with troops; 16th sailed for Malta and Corfu; 26th arrived at Malta; 31st Oct. remained.

STEAM VESSELS.

AFRICAN—Lieut. J. West. See Packets.

ALBAN — Lieut. Com. J. B. Roepel, Woolwich.

BLAZER—Chatham.

COLUMBIA—See Troop Ships.

CARRON—Lieut. Com. J. S. Duffil. See Mediterranean Station.

COMET—Woolwich.

CONFIANCE, 2—Lieut. Com. J. M. Waugh. See Packets.

DEE, 4—See North American Station.

FIREBRAND—Mr. J. Allen, Woolwich.

FIREFLY—See Packets.

FLAMER, 6—Lieut. Com. C. W. G. Griffin, 27th Aug. arrived at Woolwich, from Falmouth.

LIGHTNING—Mr. T. Allen, 24th Oct. arrived at Cuxhaven, with loss of anchors and chain cable, on her way to the river.

MEDEA, 6—Com. H. T. Austen, see Mediterranean station.

MESSENGER, 1—Com. Mr. J. King, Channel Station: running between Thames, Portsmouth and Plymouth, and Milford.

METEOR—Woolwich.

PHŒNIX—Com. J. H. Nurse, Woolwich.

PLUTO—Lieut. T. R. Sullivan, 14th Nov. arrived at Plymouth from Ascension; moved into harbour to refit; 21st Nov. sailed for Woolwich.

RHADAMANTHUS—See West Indian station.

SALAMANDER — Commander W. L. Castle, 2d Nov. left Portsmouth for the river; 9th returned from Sheerness, having towed the Ant lighter thither from Portsmouth. She proceeded then to Cowes, and came back the next day with the yacht brig Waterwitch, late the property of Earl Belfast, which vessel has been purchased, and ordered to be fitted as a packet.

SPITFIRE, 6—Lieut. Com. A. Kennedy. See Packets.

TARTARUS — Lieut. Com. H. James, see Packets.

SURVEYING VESSELS ABROAD.

ÆTNA, 6—Lieut. Com. W. Arlett, 8th Nov. moved from Portsmouth to Spithead; 11th Nov. sailed for Madeira and Teneriffe, whence he will proceed to survey the coast of Africa, to the northward of Cape Bojador, and thence the line of coast to the Straits of Gibraltar.

BEACON — Com. R. Copeland, surveying in the Archipelago; 31st Oct. at Scio.

BEAGLE, 10—Com. R. Fitz-Roy, surveying

* See pages 358, 422, &c. of vol. ii.

the coasts of Patagonia and Chili; 24th July at Valparaiso.

FAIRY, 10—Com. W. Hewett, Nov. returned to Woolwich, from the survey of the North Seas.

GULNARE, *Hired Schooner*—Captain H. W. Bayfield, surveying the Gulf of St. Lawrence.

INVESTIGATOR, 16, — Mr. G. Thomas, Nov. returned to Woolwich, Mr. Thomas having completed his arduous and difficult survey of the Shetland Islands. This is the only correct trigonometrical survey ever made of these islands, and will remain a lasting memorial of the valuable services of Mr. Thomas in this scientific branch of his profession.

JACKDAW — Lieutenant Com. E. Barnett, 11th May at Port Royal, from Nassau, refitting. Surveying the Mosquito coast.

MASTIFF, 6 — Lieutenant Com. T. Graves, surveying in the Archipelago; 31st Oct. at Smyrna.

RAVEN, *Cutter*—Lieut. H. Kellett, 8th Nov. moved from Portsmouth to Spithead.

THUNDER — Com. R. Owen, surveying the Mosquito coast.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; *Assistants, Lieuts.* J. Harding, G. A. Frazer.—Coast of Ireland.

Lieutenants, M. A. Slater; W. L. Sheringham, H. C. Otter.—East Coast of Great Britain.

Lieutenants, H. M. Denham; C. G. Robinson.—West Coast of Great Britain.

PAID OFF.

TWEED, 20—Com. (act.) Hon. G. Hamilton, 2d Sept. left Jamaica for Halifax; 21st Oct. left Halifax, and on 8th Nov. arrived at Spithead; 10th moved into harbour; 22d Nov. paid off. The Tweed has suffered very severely from yellow fever during the last two months of her servitude in the West Indies. The disease first made its appearance after she left Belize, and continued to prevail during her passage from that place to Nassau, (New Providence,) and from Nassau to Jamaica. Scarcely an individual escaped; she had in all 160 cases, out of which number seventeen died on board, and a great many were left dangerously ill in Jamaica hospital. On her passage from Jamaica to Bermuda, seven died, but since leaving the latter place, on the 1st Oct., she has been perfectly healthy. The Tweed left her guns behind at Halifax, to be conveyed to the Cruizer by H.M.S. Gannet, as that ship was obliged to throw her guns overboard, to lighten her.

COMMISSIONED.

CURLEW, 10—19th Nov., Portsmouth.
ROVER, 16—Plymouth.
SCYLLA, 18—Chatham.
PIQUE—17th Nov., Plymouth.
PELICAN, 16—At Chatham.
ACTÆON, 28—At Portsmouth.
WATERWITCH, 10—20th Nov., Portsmouth.
ALBAN, St.V.—Woolwich.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains—W. Hamley, J. Townshend, Hon. A. Duncombe.

Commanders—H. B. Richards, E. Herrick, Hon. G. Hamilton, Hon. P. P. Carey. C. Eden.

Lieutenants— — Ellicombe, C. O. Hayes, F. Wise, — Vincent, R. E. Cleaveland, G. H. L. Bazeley, H. Wellington, J. G. Clerk, G. Elliot, H. Byng, G. Vincent, T. Chaloner.

Surgeons—Jas. Gordon, J. Robertson.

Flag-Lieutenant to Sir Geo. Cockburn—W. H. Willes.

APPOINTMENTS.

ACTÆON, 21—*Captain,* Lord E. Russell; *Lieuts.* Hon. B. C. F. P. Carey, G. Elliot; *Master,* W. W. Thompson; *Surg.* B. Browning, M.D.; *Purser,* W. Harris.—*Lieut. Mar.* — Herriott; *Assist. Surg.* W. Durie; *Master,* G. Beaumont.

ALBAN, *St. V.*—*Lieut.* J. B. Roepel.

ÆTNA, *Sur. Ves.*—*Lieut. Com.* M. Arlett; *Master,* W. King: *Mates,* E. W. Saunders; W. S. Saunders; *Second Master,* A. P. Brickwood; *Ass. Surg.* J. Chalmers.

ALGERINE, 10—*Surg.* D. Kennedy.

BUZZARD, 10—*Lieut.* A. W. Milward.

CHAMPION, 18—*Com.* R. Fair, R.H.

COAST GUARD—*Commanders,* T. Greene, D. Mayne.

Lieuts.—C. Smith, James Jowin, George Spong, J. S. Godden, E. Biffin, W. S. Petch.

CHEERFUL, *Rev. Cut.*—*Lieut.* J. Sothery.

CURLEW, 10—*Lieut. Com.* Hon. J. Denman; *Second Master,* R. Frampton; *Mate,* T. Crawford; *Master's Assist.* P. Wellington; *Clerk,* J. S. Jones.

DOVE, *Rev. Cut.*—*Lieut.* G. Pearne.

DOLPHIN, *Rev. Cut.*—*Lieut.* G. Elliott.

EDINBURGH, 74—*Lieut.* J. Tulford.

ENDYMION, 50—*Lieut.* W. Johnson.

EXCELLENT, 76—*Lieut.* T. Mitchell, (*b*); *Mate,* E. W. Sanders; *Assistant Surgeon,* W. Lambert.

GREYHOUND, *Rev. Cut.*—*Lieutenant,* J. G. Raymond.

HASLAR—*Hospital Mate,* J. H. Martin.

LAPWING, *Packet*—J. Evison.

PELICAN, 16—*Com.* B. Popham.

PIQUE—*Captain,* Hon. J. Rous; *Lieuts.* P. Hast, F. Birch, J. S. Tindal; J. Richardson; *Master,* W. Hemsley; *Surg.* J. Lawrence; *Purser,* J. Howard.

PLYMOUTH HOSPITAL—*Assistant Surgeon,* G. Auston.

PINCHER, *Tender*—*Lieut.* R. Douse.

POWERFUL, 84—*Master,* J. Trivick.

PRESIDENT, 52—*Assist. Surg.* W. ORR.—Mr. William Orr, Assistant-Surgeon of the Tweed, who was Acting-Surgeon during nearly the whole period of her sickness (the Surgeon having been one of the first who

died from the disease), has been appointed Assistant-Surgeon of the flag-ship. The unremitting professional exertions of this Officer, who had himself a severe attack of the disease, and his humane attention to the sick, were beyond all praise, and will long be gratefully remembered by all on board.

RACER—*Surg.* J. Robertson, (*b*); *Purser Act.* — Jeffroy; *Mate*, J. Shute.

RALEIGH, 16—*Purser*, W. Gradidge.

RAVEN, *Tender—Ass. Surg.* J. Kirk, M.D.

ROVER, 18—*Commander*, C. Eden; *Purser*, J. Pinhorn.

SAN JOSEF, 110—*Purser*, — Purser; *Chaplain*, N. Hennah; *Assist. Surg.* J. Frazer.

SALAMANDER, *St. Ves.—Col. Mate*, G. R. Halliday.

SEMAPHORE, *at Compton Down — Lieut.* — Wilday.

SKYLARK, *Packet—Lieut.* G. Palmer.

SPARTIATE, 76—*Lieut.* T. J. Clarke.

SPEEDY, *Cutter—Master Assist.* W. Blackford.

STORK, *Rev. Cut.—Lieut.* W. Fothergill.

TWEED, 20—*Lieut.* J. Bosanquet; *Surg.* James Gordon; *Purser*, A. H. Gilbert.

VERNON, 50—*Lieuts.* G. G. Napier, P. Duthy, E. Wilson.

VICTORY, 104—*Purser*, R. Halliday; *Chaplain*, A. Fielding; *Assist. Surg.* A. C. Bell; *Sup. Assistant Surgeon*, J. Taylor; *Clerk*, J. Mitchell.

WATERWITCH, 10—*Lieut. Com.* J. Adams, (*b*); *Second Mast.* R. Frampton; *Mate*, T.C. Crawford.

WASP, 16—*Surg. Act.* W. Doak.

WINCHESTER, 52—*Com.* J. Shepherd. (*b*)

ADMIRALTY ORDERS.

TERMS UPON WHICH THE CROWN LANDS WILL BE DISPOSED OF IN NEW SOUTH WALES AND VAN DIEMEN'S LAND.

IT has been determined by His Majesty's Government, that no land shall, in future, be disposed of in New South Wales or Van Diemen's Land, otherwise than by public sale; and it has therefore been deemed expedient to prepare, for the information of settlers, the following summary of the rules which it has been thought fit to lay down for regulating the sales of land in those Colonies.

1. A division of the whole territory into counties, hundreds, and parishes, is in progress. When that division shall be completed, each parish will comprise an area of about twenty-five square miles.

2. All the lands in the Colony, not hitherto granted, and not appropriated for public purposes, will be put up to sale. The price will, of course, depend upon the quality of the land and its local situation; but no land will be sold below the rate of 5*s.* per acre.

3. All persons proposing to purchase lands not advertised for sale, must transmit a written application to the Governor, in a certain prescribed form, which will be delivered at the Surveyor General's office, to all persons applying, on payment of the requisite fee of 2*s.* 6*d.*

4. Those persons who are desirous of purchasing will be allowed to select, within certain defined limits, such portions of land as they may wish to acquire in that manner. These portions of land will be advertised for sale for three calendar months, and will then be sold to the highest bidder, provided that such bidding shall at least amount to the price fixed by Article 2.

5. A deposit of £10. per cent. upon the whole value of the purchase, must be paid down at the time of sale, and the remainder must be paid within one calendar month from the day of sale, previous to which the purchaser will not be put in possession of the land; and in case of payment not being made within the prescribed period, the sale will be considered void, and the deposit forfeited.

6. On payment of the money, a grant will be made in fee simple to the purchaser, at the nominal quit-rent of a pepper-corn. Previous to the delivery of such grant, a fee of forty shillings will be payable to the Colonial Secretary for preparing the grant, and another fee of five shillings to the Registrar of the Supreme Court for enrolling it.

7. The land will generally be put up to sale in lots of one square mile, or 640 acres; but smaller lots than 640 acres may, under particular circumstances, be purchased, on making application to the Governor, in writing, with full explanations of the reasons for which the parties wish to purchase a smaller quantity.

8. The Crown reserves to itself the right of making and constructing such roads and bridges as may be necessary for public purposes in all lands purchased as above; and also the right to such indigenous timber, stone, and other materials, the produce of the land, as may be required for making and keeping the said roads and bridges in repair, and for any other public works. The Crown further reserves to itself all mines of precious metals.

Colonial Office, 20th January, 1831.

TERMS UPON WHICH THE CROWN LANDS WILL BE DISPOSED OF IN THE NEW SETTLEMENT IN WESTERN AUSTRALIA.

IT has been determined by His Majesty's Government, that land shall, in future, be disposed of in Western Australia, upon the same principles as in New South Wales and Van Diemen's Land; but the encouragement hitherto given to persons who might incur the expense of taking out labouring persons to the Colony, will not be entirely withdrawn at present.

The following is a summary of the Rules which it has been thought fit to substitute for those dated the 20th of July, 1830:—

1. A division of the whole territory into counties, hundreds, and parishes, is in progress. When that division shall be completed, each parish shall comprise an area of about twenty-five square miles.

2. All the lands in the Colony not hitherto granted, and not appropriated for public purposes, will be put up to sale. The price will, of course, depend upon the quality of the

land and its local situation, but no land will be sold below the rate of 5*s.* per acre.

3. All persons proposing to purchase lands not advertised for sale, must transmit a written application to the Governor, in a certain prescribed form, which will be delivered at the Surveyor-General's Office to all persons applying, on payment of the requisite fee of 2*s.* 6*d.*

4. Those persons who are desirous of purchasing will be allowed to select, within certain defined limits, such portions of land as they may wish to acquire in that manner. These portions of land will be advertised for sale for three calendar months, and will then be sold to the highest bidder, provided that such bidding shall at least amount to the price fixed by Article 2.

5. A deposit of £10. per cent. upon the whole value of the purchase must be paid down at the time of sale, and the remainder must be paid within one calendar month from the day of sale, previous to which the purchaser will not be put in possession of the land; and in case of payment not being made within the prescribed period, the sale will be considered void, and the deposit forfeited.

6. On payment of the money, a grant will be made, in fee simple, to the purchaser, at the nominal quit-rent of a pepper-corn. Previous to the delivery of such grant, a fee of forty shillings will be payable to the Colonial Secretary for preparing the grant, and another fee of five shillings for enrolling it.

7. The land will generally be put up to sale in lots of one square mile or 640 acres, but smaller lots than 640 acres may, under particular circumstances, be purchased, on making application to the Governor, in writing, with full explanations of the reasons for which the parties wish to purchase a smaller quantity.

8. The Crown reserves to itself the right of making and constructing such roads and bridges as may be necessary for public purposes in all lands purchased as above, and also to such indigenous timber, stone, and other materials, the produce of the land, as may be required for making and keeping the said roads and bridges in repair, and for any other public works. The Crown further reserves to itself all mines of precious metals.

9. Those Settlers who may incur the expense of taking out labouring persons to the Settlement, will be entitled to an abatement of the price at which the land may have been purchased, at the rate of £20 for the passage of every married labourer and his family.

10. Persons claiming such an abatement from the price paid for land, will be held responsible for any expense the Colonial Authorities may be compelled to incur for the maintenance (during the first year of their arrival) of the labourers in respect of whom it has been allowed.

Colonial Office, 1st March, 1831.

The Columbia steam-vessel, now fitting at Woolwich as a troop-ship, is destined, we understand, for the West Indies. She will be ready for the embarkation of detachments by the end of the present month. It is also, we believe, intended to employ steam-vessels for the conveyance of the mails between the Leeward Islands and Jamaica; in consequence of which, the Falmouth packets will in future go no farther than Tortola or St. Thomas's, but return from thence direct to England, and thus establish a direct communication by a packet between the whole of the West India islands (Jamaica included) and England once in every fortnight, instead of once a month, as at present. The advantage of the new system will also be particularly felt in the return voyage from Jamaica to the Leeward Islands, between which a direct communication will then for the first time be established—it being well known that at present there is no means of sending even a letter from Jamaica to any of the islands to windward of it, except by way of North America or England. The establishment of this easy and certain means of communication will also be an inducement for many persons to visit Jamaica from the Leeward Islands, and *vice versa* the Leeward Islands from Jamaica, who have never yet been able to accomplish it; the trade wind, while it favours communication in one direction, being a bar to it in the other; in consequence of which want of communication it is, that the planters in the West India islands are scarcely better acquainted with Jamaica than they are with the Mauritius or Ceylon. The steamer, on its return from Jamaica, will touch either at Tortola or St. Thomas's, and at such of the principal islands in the Caribbean chain as lie to the northward of Barbadoes. When these arrangements are completed, there will be at least three large government steam-vessels in the West Indies, the advantages of which, under present circumstances, must be sufficiently apparent.—*Devon. Her.* October.

FALMOUTH, 20TH NOVEMBER.

LISBON—Sails every Tuesday.

Packet.	Commander.	Sailed.	Last Spoken.	Where.	Due.
SCORPION	Lt. Com. A. Robilliard..	8 Novem.	———	———	6 Dec.

[*A Mail for Falmouth leaves Lisbon every Sunday.*]

MEDITERRANEAN—(by steamers)—51 days; sails 1st of every Month.—ROUTE—*To Cadiz Gibraltar, Malta, Zante, Patras,* and *Corfu,* and thence returns in the same rotation.

TARTARUS, st. v.	Lt. Com. H. James	3 Novem.	———	———	24 Dec.

NORTH AMERICA—9 weeks: sails 1st Wednesday every Month.—ROUTE—*To Halifax and back to Falmouth.*—[This Packet takes the mail for the United States of America, which is forwarded from Halifax to Boston.]

GOLDFINCH.....	Lt. Com. E. Collier	4 Oct.	———	———	6 Dec.
ECLIPSE.....	Lt. Com. W. Forester ..	19 Novem.	———	———	21 Jan.

LEEWARD ISLANDS—12 weeks: sails 3rd Wednesday every Month.—ROUTE—*To Barbadoes, St. Lucie, Martinique, Dominique, Guadaloupe, Antigua, Montserrat, Nevis, St. Kitts, Tortola, St. Thomas, and Falmouth. Answers picked up by mail-boats and brought to St. Thomas to the packet.*

REYNARD	Lt. Com. G. Dunsford..	20 Sept.	———	———	13 Dec.
DUKE OF YORK	Lt. Com. W. James	20 Oct.	———	———	12 Jan.
LYRA	Lt. Com. J. St. John....	22 Novem.	———	———	13 Feb.

JAMAICA—14 weeks: sails 1st Wednesday every Month.—ROUTE—*To Barbadoes, St. Vincent, Grenada,* JAMAICA, *Crooked Island, and Falmouth.*

SHELDRAKE	Lt.Cm.A.R. Passingham	8 Sept.	———	———	15 Dec.
TYRIAN	Lt. Com. E. Jennings ..	5 Oct.	———	———	11 Jan.
NIGHTINGALE ..	Lt. Com. G. B. Fortescue	12 Novem.	———	———	18 Feb.

MEXICO, JAMAICA, and HAYTI—18 weeks: sails 3rd Wednesday everyMonth.—ROUTE—*To St. Domingo, Jamaica, Belize,* VERA CRUZ, *Tampico, Vera Cruz, Havana, and Falmouth.*—[This Packet takes the *Carthagena* mail, which is sent to Jamacia by a Schooner, and returns to meet the regular Jamaica Packet]

SWALLOW	Lt. Com. S. Griffith	21 July	24 Aug.	Jacmel	24 Nov.
LAPWING	Lt. Com. G B. Forster..	23 Aug.	———	———	27 Dec.
REINDEER	Lt. Com. H. P. Dicken.	20 Sept.	———	———	24 Jan.
STANMER	Lt. Com. R. S. Sutton..	20 Oct.	———	———	23 Feb.
LADY M. PELHAM	Lt. Com. H. Carey	22 Novem.	———	———	27 Mar.

MADEIRA, BRAZILS, and BUENOS AYRES—20 weeks: sails 1st Tuesday every Month.—ROUTE—January to August inclusive; to *Madeira, Teneriffe, Rio de Janeiro, Bahia, Pernambuco, and Falmouth.*—September to December inclusive: *to Madeira, Teneriffe, Pernambuco, Bahia, Rio de Janeiro, and Falmouth.*

CAMDEN	Com. Mr. J. Tilley	4 July	26 Aug.	Rio Jan.	21 Nov.
PLOVER	Lt. Com. W. Downey ..	8 Aug.	14 Sept.	Pern'buco	26 Dec.
PIGEON	Lt. Com. J. Binney	10 Sept.	23 Sept.	Madeira	28 Jan.
SKYLARK	Lt. Com. C. P. Ladd ...	11 Oct.	———	———	28 Feb.
LORD MELVILLE	Lt. Com. C. Webbe	8 Novem.	———	———	30 March.

Persons desirous of proceeding as passengers in any of the Falmouth Packets may secure berths, and obtain every information, at the Foreign Newspaper Office, 30, St. Martin's-le-Grand.

IN PORT.

AFRICAN, st.v.—Lt. Com. J. West, 17th Oct. returned from Lisbon.

BRISEIS—Lieut. Com. J. Downey, 4th Nov. arrived from Jamaica.

CONFIANCE, st. v.—Lt. Com. J. M. Waugh, 8th Nov. returned from Lisbon.

ESPOIR—Lieut. Com. C. W. Riley, 4th Nov. arrived from Lisbon.

FIREFLY, st. v.—Lt. Com. R. Baldock, 19th Oct. arrived from Mediterranean.

MUTINE—Lieut. Com. R. Paule, 4th Nov. arrived from the Brazils.

NAUTILUS—Lt. Com. W. Crooke, 4th Nov. arrived from Lisbon.

OPOSSUM—Lt. Com. R. Peters, 8th Nov. arr. from the Leeward Islands.

PANDORA — Lt. Com. M. Croke, 10th Oct. arrived from Mexico.

PIKE—Lieut. Com. A. Brooking, 22d Nov. arrived from Lisbon.

SPEY—Lieut. Com. R. B. James, 7th Nov. arrived from Halifax.

SPITFIRE—Lt. Com. A. Kennedy, 19th Nov, arrived from Mediterranean.

VIPER—Lt. Com. L. A. Robinson, 22d Oct. arrived from Lisbon.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1834.

Continued from page 702.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
291	Aid	Cromie	Newcastle	Cromartie	Bridlington	Nov.	Crew lost.
292	Albertus				Off Calais	Oct.	All lost.
293	Ann	Thompson	Shields	Petersburg	Lynn Dps.	22 Oct.	Crew saved.
294	Ariel	Keith	London	Petersburg	Dagoe	9 Oct.	
295	Betsey	Greg	Lynn	Leith	Sutton	Oct.	4 drowned.
296	Brothers	of Falmouth	Foundered	—	Eng. Channel	Oct.	Crew saved.
297	Catherine	Taylor	Goole	Liverpool	Burbo B.	Oct.	Crew saved.
298	Champion	Barnett	Aberdeen	London	Gunfleet	27 Oct.	Crew saved.
299	Ellen	———	Newcastle	Liverpool	Lassowe L.	22 Oct.	Crew saved.
300	Gipsy	———	Peterahurg	Belfast	Off Bornhlm	23 Oct.	Crew saved.
301	Goodwill	———	Sunderland	Dordrecht	Zandboort	18 Oct.	Crew saved.
302	Guardian	———	Sunderland	Rotterdam	Catusk	18 Oct.	Crew saved.
303	Hannibal	Springer	Dantsic	London	Texel	35 Oct.	Abandoned.
304	Harriett	———	Liverpool	———	Davis Straits	10 June	Crew saved.
305	Hawk	Hough	Newcastle	Oporto	Off Ostend	25 Oct.	Foundered, 4 dr.
306	Hazard	Prudo	Sunderland	Aberdeen	Holy Island	24 Oct.	Crew saved.
307	Hercules	Allen	Shields	———	Herd Sd.	23 Oct.	Crew saved.
308	Hope	Miller	Petersburg	Belfast	Stromness	21 Oct.	Crew saved.
309	James	Lindsay	London	Petersburg	Bornholm	Oct.	
310	James & Ann	Carss	Newcastle	Rotterdam	Orfordness	24 Oct.	1 saved.
311	Jane	Clark	Of Whitby	———	Off Flambro' Head	Nov.	Crew saved.
312	Jean	McMillan	Belfast	Liverpool	N. Bank	22 Oct.	
313	Jean	Bowman	London	Dundee	N. Sea	2 Nov.	Abandoned.
314	John	Windles	Inverness	———	Hartlepool	20 Oct.	
315	Lark	Jolla	———	———	Foundered off Minehead	Oct.	Crew lost.
316	Lark	of Boscastle	———	———	Foundered off Minehead	30 Oct.	Crew saved.
317	Launceston Trader	Tucker	Bristol	———	Breakwater	6 Nov.	Crew saved.
318	Malta	Foster	Sunderland	Shoreham	Off Calais	Oct	Crew saved.
319	Marion	of Arbroath	———	———	Left Archang	2 Aug.	Not heard of since.
320	Mary	———	Lowestoffe	Medona bk.	C. Holland	17 Oct.	1 saved.
321	Mary Ann	Lordins	Whitby	———	Off Whitby	21 Oct.	Crew saved.
322	Mary Ann	———	Gainsbro	London	Sea Reach	Oct.	Run down.
323	Midas	Forster	Shorein	———	Off Calais	Oct.	Crew saved.
324	Neva	Ritchie	London	Quebec	At sea	18 Aug.	Abandoned.
325	Neptune	Martin	Loudon	Ipswich	Burrows	18 Oct.	Crew saved.
326	New Prospect	Knox	Liverpool	Savana	Liverpool	17 Oct.	Crew saved.
327	Perseverance	Drinkwater	Petersburg	Chepetow	C. Holland	24 Oct.	
328	Pomona	———	Forth	Dodrecht	Hook Hold		
329	Prescott	Dick	Leith	Petersburg	Maarstrad	9 Oct.	Crew saved,
330	Providence	———	Stockton	Weymth	Nieuport	28 Oct.	3 drowned.
331	Rebecca	Cleet	Of Newcstl	London	Lowestoffe	17 Oct.	Crew saved.
332	R. Garden	Milne	Sunderland	Aberdeen	Herd Sd.	21 Oct.	Crew saved.
333	St. Andrew	White	Berwick	London	Thames	30 Oct.	Run foul of.
334	Sir W Wallace	Anderson	Quebec	Aberdeen	Hebrides	24 Oct.	Crew saved.
335	Standard	———	Of Dundee	———	G. Finland	7 Oct.	
336	Success	Reynolds	Newcastle	London	N. Sea	24 Oct.	Abandoned.
337	Superb	Steamer	London	Rotterdam	———	Nov.	
338	Susannah	Webb	Yarmouth	Cardiff	Knock S.	20 Oct.	3 drowned.
339	Swift	Howard	Of London	———	Lost off Vilaviciosa	6 Oct.	Crew saved.
340	Swift	Agee	Port Rush	Liverpool	Southport	24 Oct.	Crew lost.
341	Telegraph	McKay	Greenock	———	———	10 Oct.	
342	Union	———	St. Ubes	Stockholm	Ostend	25 Oct.	Master lost.
343	William Scott	Gelling	Whitehav'n	Isle of Man	Off Whitehv'n	21 Oct.	All lost.
344	Zephyr	Babb	Girgenti	Newcastle	Penzance	7 Nov.	1 drowned,

FALMOUTH, Nov. 5. This morning a brig, Mars, of Newcastle, Irving, master, arrived in this port from Fernando Po, having sailed from thence on the 11th of August. She brings as passengers, Mr. Butler, assistant surgeon, R.N., and a medical officer of the establishment at that island (a resident there for the last four years), and Mr. Richard Kearns Oldfield, who left this country about two years since assistant-surgeon of the Alburkha iron steam-boat, employed with the Quorra in the commercial expedition of the ill-fated Lander

up the river Niger, and who is the last of the survivors of that vessel. It is already known that poor Lander was on his progress up the Niger, with a view of joining Mr. Oldfield in the Alburkha, when he was treacherously attacked at Hyamma, and so severely wounded as to cause his death a week or so after. Previously thereto, he, however, despatched, through the influence of king Obi, a letter to Mr. Oldfield, announcing the unfortunate event, but which communication did not reach the hands of the latter till two months subsequently, when he almost immediately returned, and about the beginning of July reached Fernando Po with the Alburkha, having been also attacked at Hyamma on their passage down, and narrowly escaped with their lives. The above gentlemen, together with Captain Irving, on hearing that subscriptions were opened for the purpose of erecting a memorial to the intrepid traveller in this his native county, expressed their desire to contribute, in which they have been gratified.

Births.

At Somerset Place, Stoke, on the 6th inst. the lady of Commander Hillyar, of H.M. ship Revenge, of a son.

The lady of Lieut. Charles Haswell, R. N. Coast Guard Service, Winchelsea, Sussex, of a son.

At Eastbourne, Sussex, the lady of Lieut. J. Hall, R.N. of a daughter.

At Falmouth, on the 18th inst., the lady of T. Brenan, Esq. R.N. of a daughter.

At Grimsby, the lady of Captain Hudson, R.N. of a son.

In Montague-square, the lady of Captain R. H. Fuller, R.N. of a daughter.

At Barford House, in the county of Warwick, the lady of Capt. Rattray, R.N. of a son.

At Falmouth, the lady of Captain A. King, C. B. Superintendent of the Packet Establishment at that port, of a still-born son.

At Portsea, the lady of John Richards, R.N. Esq. of a son.

Marriages.

At Minster, Sheppy, Capt. F. W. Kennedy, R.N. Superintendent of the Dock-yard, Sheerness, to Mrs. Kennedy, widow of the late Dr. Kennedy, Medical Staff.

At Deal, Lieut. George Bazely, R. N. third son of the late Vice-Admiral Bazely to Catherine Mary, daughter of the late J. Cameron. Esq. of Deal.

On the 1st inst. at Kingston Church, by the Rev. J. V. Stewart, Lieut. Keane, R.N. to Sarah Ladd, eldest daughter of J. Peake, Esq. Master Shipwright of this yard.

At Sheviock, Lieut. James Bate, R.N. of Coombe Cottage, to Miss Grace Hawkins, niece of John Edwards, Esq. Stockaton, St. Stephens.

Deaths.

At Waterhouse, near Bath, Edmund Crawley, Esq. Admiral of the White, aged eighty, father of the Rev. E. J. Crawley, Minister of Trinity Church, in that city.

At Tichfield, aged 66 years, Captain David Colby, R.N., an old and meritorious officer; he lost his right arm on the 12th Oct. 1798, when first lieutenant of the Robust, in the action with L'Hoche, off Tory Island, for which he was made a Commander, and for other active services was promoted to the rank of Post Captain, in April, 1802.

On the 4th of September, on board H. M. ship Madagascar, the Rev. C. W. Dodd, Chaplain of that ship, leaving a young widow and infant child, at Malta, to mourn his loss.

Lately, at Jamaica, Mr. J. Wesley, Surgeon of H.M. ship Racer.

Lately, Commanders John P Linton and George Gratrix, on the Retired List.

Lately, at Jamaica, Mr. Henry Holmes, Assistant Surgeon of H.M. ship Magnificent.

On the 22d of July, off the Brazil Coast, from the effects of a fall from the rigging, Mr. R. S. Hurt, Midshipman of the Snake, son of R. Hurt, Esq. of Wicksworth, Derby.

On the 31st ult., at Marchwood, near Southampton, Lieut. Charles Martelli, Royal Navy, aged 34, who was lately promoted to that rank, for his long services as a Midshipman, and merits as the author of "The Naval Officer's Guide for Preparing Ships at Sea."

On the 28th ult. at Deptford, Dr. William Kent, eldest son of the late M. S. Kent, Esq. M.D. formerly Surgeon of his Majesty's Dock Yard there.

On the 31st ult. at Jersey, Mr. John Evans, Purser, R.N. (1833.)

Lately, at Jamaica, Lieut. Wm. Everard, R.N. (1811) one of the Stipendiary Magistrates.

On the 12th of September, on his passage home from the West Indies, in H.M. ship Tweed, aged 24, Alexander Hassall Budd, fourth son of the late T. H. Budd, Esq., of Bedford-Row, and late Mate of H.M. ship Larne.

A few days since, at Tenby, Capt. Hugh Cook, R.N. 1806.

At Kilham, aged 55, Lieut. Robert Readly, R.N. (1815.)

On the 7th Nov. in Thistle Grove, Chelsea, Captain John Baker, Royal Navy (1810.)

At Millbrook, near Southampton, on the 14th Nov. Captain G. M. Bligh, R.N. (1808,) aged 50, son of the late Admiral Richard Rodney Bligh.

On the 15th inst. at Exmouth, Captain Timothy Curtis, R.N, (1826,) in his 41st year, nephew of the late Sir W. Curtis.

In the West Indies, Mr. T. Clarke, Surgeon of H.M.S. Forte.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

OCTOBER, 1834.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength			
		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.
				°	°	°	°						
1	W.	30·15	30·13	50	58	42	60	E.	E.	3	3	Bw.	Bv.
2	Th.	30·10	30·06	52	60	38	60	E.	S E.	1	1	Fw.	B.
3	F.	30·18	30·18	46	61	37	61	S.E.	S.E.	1	1	Bg.	Bm.
4	S.	30·21	30·21	50	65	40	65	E.	S.E.	1	1	F.	Bv.
5	Su.	30·17	30·18	63	70	43	73	S.	S.	2	2	Bmw.	Bm.
6	M.	30·25	30·25	61	73	53	74	S.	S.W.	1	2	Bmf.	Bv.
7	Tu.	30·21	30·20	59	69	56	69	S.W.	S.W.	3	1	Bc.	Bm
8	W.	30·17	30·21	59	62	54	63	S.W.	S.W.	3	6	B.	Bc.
9	Th.	29 96	29·92	61	65	55	67	N.E.	N.E.	4	3	O.	Bc.
10	F.	30·01	30·01	55	57	51	58	N.E.	N.E.	2	1	Bc.	B.
11	S.	30·11	30·06	44	54	36	56	N.E.	N.E.	1	1	B.	Bc.
12	Su.	30·15	30·06	49	60	40	61	W.	N.W.	1	2	B.	B.
13	M.	80·11	30·02	54	61	43	62	S.	S.	3	3	Bv.	Bv.
14	Tu.	29·77	29·70	58	65	46	65	S.	S.W.	3	4	O.	B c p (4
15	W.	29·76	29·71	19	55	45	57	W.	S.W.	3	5	B.	Op (3)
16	Th.	29·68	29·41	50	58	38	60	S.	S.W.	5	5	O.	Or 3)
17	F.	2	·9·13	53	52	50	56	S.W.	N.W.	8	7	Bcm.	Op (3)
18	S.	:	29·72	46	50	53	52	N.W.	N.W.	7	7	Bcm.	Bcm.
19	Su.	:	29 94	46	57	35	58	S.W.	S.W.	5	5	Od 2)	Od (3
20	M.	25	29·75	57	59	52	60	S.W.	S.W.	5	5	O.	Od (3
21	Tu.	30·02	30·18	54	48	47	55	S.W.	N.	3	4	O.	O.
22	W.	29·92	29·81	19	53	36	54	W.	S.W.	5	7	O.	O.
23	Th.	29·59	29·57	53	53	50	53	N W.	N.W.	6	8	Op (1) (2)	Oqp (3) (4
24	F.	29·74	29·78	37	43	33	41	N.W.	N.W.	7	9	Bm.	Bcm.
25	S.	30·10	30·12	42	45	37	45	N.W.	N.W.	5	5	Bcm.	Oq.
26	Su.	30·35	30·39	43	47	33	48	N.W.	N.	3	4	Bv.	Bc.
27	M.	30·43	30·42	46	51	35	52	N.W.	N.W.	1	2	O.	B c.
28	Tu.	30·51	30·53	51	52	47	54	N.W.	N.W	1	2	O.	Opd (4)
29	W.	30 67	30 63	48	49	45	50	N.E.	N.E.	2	1	Opd (1)	O.
30	Th.	30·46	30·37	46	52	43	53	S.W.	S.W.	1	3	Bcm.	O.
31	F.	30 22	30·16	50	58	42	58	S.W.	S.W.	5	5	Bm.	Bcm.

OCTOBER—Mean height of Barometer=30·046 inches; Mean Temperature=50·8 degrees; Depth of Rain fallen=0·44 inches.

Abbreviations used in the columns "Weather," and "Strength of Wind."

WIND.

0 Calm.
1 Light Air.
2 Light Breeze.
3 Gentle Breeze.
4 Moderate Breeze.
5 Fresh Breeze.
6 Strong Breeze.
7 Moderate Gale.
8 Fresh Gale.
9 Strong Gale.
10 Whole Gale.
11 Storm.
12 Hurricane.

WEATHER.

b Blue Sky—whether clear or hazy atmosphere.
c Clouds—detached passing clds.
d Drizzling Rain.
f Foggy—f Thick fog.
g Gloomy dark weather.
h Hail.
l Lightning.
m Misty hazy atmosphere.
o Overcast—or the whole sky covered with thick clouds.
p Passing temporary showers.
q Squally.
r Rain—continued rain.
s Snow.
t Thunder.
u Ugly threatening appearances.
v Visible clear atmosphere.
w Wet Dew.
· Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, *i.e.* from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of the six hours, and both together denote the whole interval. They are intended to express the time nearly when rain fell. Thus, 2) signifies that rain fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained the whole six hours from 6 A.M. to noon; (3) ditto from noon to 6 P.M.

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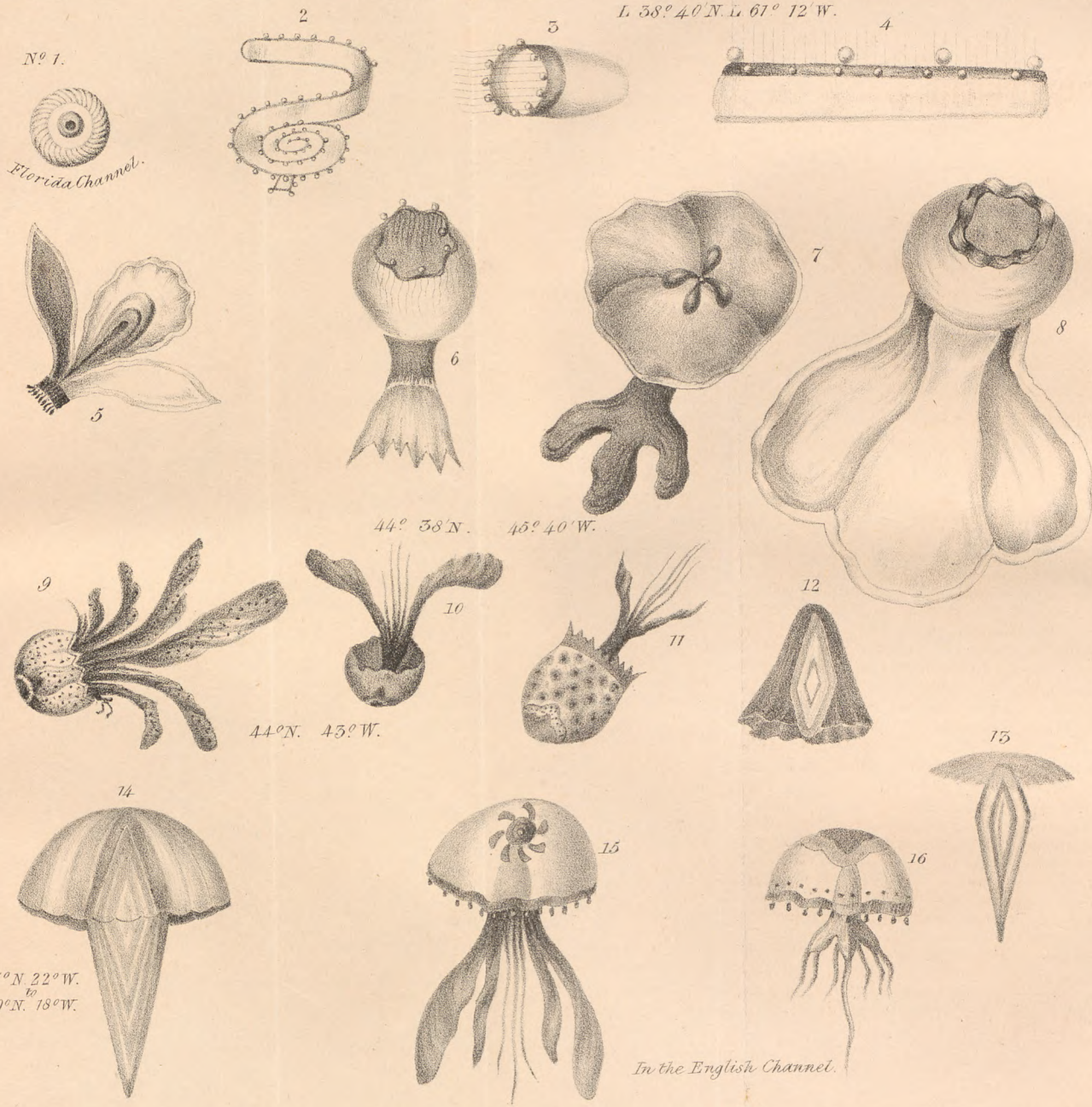

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for

1834.

A

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Supplement

TO THE

NAUTICAL MAGAZINE,

&c.

DECEMBER, 1834.

THE MARINE BAROMETER.

EVERY one at all acquainted with the mechanism of a Barometer, is aware that its construction originated in a discovery, that the mean density of the atmosphere is capable of supporting a column of mercury equal to about thirty inches in length; hence it follows that every deviation of the quicksilver from this height, is the result of a correspondent change in the actual gravity of the surrounding atmosphere, the trifling effect of the cohesive properties of the tube being duly allowed for. But although this may be sufficiently evident to a common observer, it is certain that these changes depend upon so many hidden causes, and are generally so minute that they are scarcely perceptible to the eye, and are frequently unaccompanied by any visible change of the weather. It is a well-established fact, that the Barometer undergoes but little or no variation throughout the region of the tropics, unless when it happens to be under the influence of an approaching hurricane, and then it is no less certain that the quicksilver falls rapidly and considerably; a natural consequence, it would seem, of the origin of these storms, which exceed in violence those of the more boisterous climates of Europe, as much as the situations in which they are generated, at other times exceed them in mildness. An infinite scope still remains for a philosophical inquiry into the theory of winds, nor have I yet met with any satisfactory explanation of the course of these awful phenomena in the heavens. If I may presume to venture an opinion on so abstruse a subject, I should say that a tropical hurricane is produced by the rays of a vertical sun acting upon some portion of the atmosphere that happens to be unusually loaded with the electric matter so abundantly generated within a few degrees of the equator, whereby a rapid rarefaction of the circumjacent atmosphere takes place, repelling in its escape the surrounding air, until the

existing cause has exhausted its influence, when a reaction commences, by the condensed air rushing towards the centre of the atmospheric rarefaction until the equilibrium is restored.

If this theory should prove to be well founded, it would, perhaps, sufficiently account for the great and sudden falling of the quicksilver on such extraordinary occasions; but, as Dr. Franklin very justly observes, in his Treatise on Electricity, "it is not of much importance to know the manner in which nature executes her laws; it is enough if we know the laws themselves;" so it may be said, that on all these occasions, whatever may be the immediate cause of the fall, provided we are aware of what is to follow, we are furnished with all the requisite information to guard us against the consequences. A thorough knowledge of these consequences is only to be acquired in the school of experience, and it is perhaps for that reason that I feel anxious to impart the benefits of my own, knowing that the warnings of this infallible monitor have been but too often fatally slighted. Because, forsooth, that part of the ocean to which these remarks have reference, is frequently sailed over without the occurrence of any thing approaching to a storm, and because the Barometer may and does frequently remain nearly stationary throughout the whole of this large portion of the voyage to and from India; is it therefore reasonable to infer that its utility ceases! on the contrary, the fact of the Barometer not being affected by any change in the atmosphere except when under the influence of an approaching storm, is the very circumstance which, in my opinion, more particularly enhances its value. In high latitudes, the eye of an experienced seaman will prove a tolerably correct substitute for a Barometer; but the tropical hurricane, unlike the storms of higher latitudes, but seldom gives any warning of its approach, and consequently the index of the Barometer affords the only indication to be relied on. The practical inference which I think myself at liberty to draw from these premises is, that whenever or wherever, within the tropics, or rather when in the more immediate neighbourhood of the equator, a rapid and considerable fall of the quicksilver is observed to take place, it may be taken for granted that an extraordinary degree of rarefaction of the surrounding air is in progress, and that it will speedily be followed by a violent reaction. From that moment the ship may be considered to have perforated the confines of a circle, the centre of which will shortly become the focus of a tornado; which, like the centre of a whirlpool in a different element, cannot be approached but at the hazard of her destruction; a lot which may befall her in spite of any exertions, however indefatigable, of the most skilful and able-bodied crew. I am aware, however, that instances are to be adduced of ships having encountered hurricanes without sustaining any serious injury; but I have reason to believe that, in most of these instances, if not in all, it would be found, were it possible to ascertain the fact, that the brunt of the storm was in reality not encountered at all, that these ships were throughout far nearer the verge of the circle of rarefaction than its centre, that having been warned of its approach by the Barometer, they had sufficient good sense and foresight not to neglect it. But however this may be, no prudent man in command of a ship, knowing as he must that the lives of all under his command depend upon the promptness as well as the wisdom of his decision, will allow himself to be influenced by any such precedents to brave the storm, in order to evince his courage, or through any fastidious fear of committing a blunder, but that, taking the Barometer for his safest, if not his only guide, he will, from the moment of any extraordinary fall, bring his ship to the wind, and make every possible preparation to meet it. Nor will he be diverted from his purpose by any flattering appearances in the heavens.

Even if, at the moment, the sky should be cloudless, the atmosphere motionless, and no other indication of a storm throughout the whole visible horizon, than that which this invaluable instrument affords him, still he will take his measures with the same degree of promptitude and energy, as though the danger had already commenced; and when the flattering gale springs up to favour his course, he will not be tempted to pursue it through any fallacious notion of shortening the period of his voyage; for, if my theory be correct, he may rest assured that, the farther he advances, the greater will be the fury of the tempest; that it is a principle of every hurricane, to narrow its sphere in proportion to its duration; and that wherever the storm commences, there will it soonest terminate; and, consequently, that his shortest way to escape from its fury is to remain as stationary as possible. I should not have dwelt on some of these points, had I not been aware that a notion is but too prevalent among seamen, that scudding before the gale is the shortest way to get out of it, an error which is attended with this additional evil, that those precious moments which intervene between the fall of the quicksilver and the rising of the storm, are expended (perhaps never to be retrieved) in a proceeding which, in my opinion, is fraught with nothing but mischief.

Neither should I have ventured thus boldly to advance a theory of so much importance to the interests of navigation, were I not prepared to support it by the result of many years' experience, while traversing those seas to which it is more immediately applicable.

The following particulars of one of those awful hurricanes which are known to prevail in certain parts of the Indian ocean at particular seasons of the year, and which it was on this occasion my lot to encounter, will be found to embrace all the most material points on which I have ventured to ground this theory of storms, and I trust that the relation of them will not excite needless apprehensions in the breasts of those, among the fair sex in particular, whose destiny it may be to follow in the track of my adventures, but rather that they will yield their consolation from the reflection that the greater the danger, and the more awful the consequences, the more essential it is that all such particulars should be faithfully recorded, as a beacon for the guidance of others under similar trials; knowing, too, as they must, that in traversing the wide expanse of ocean comprised between England and India, ships will be safe in proportion as the dangers they may have to encounter are accurately described. Under such circumstances, then, to withhold from publication a narrative of facts, however painful its perusal, the object of which is to prevent a recurrence of the misfortunes it details, would be no less inconsistent than to hurl the Barometer into the sea as a useless appendage to a ship, merely because, through idleness or folly, it may sometimes fail to point out the danger, or at other times prove a source of needless alarm.

It was in October of the year 1808, that I left Madras on board one of the East India Company's ships, with eight others, under the convoy of a seventy-four gun-ship. On reaching the latitude of 10° south, and the longitude of 78° east, we unfortunately encountered one of the most tremendous hurricanes that was, perhaps, ever experienced by a ship that did not actually founder. It is impossible to convey to the minds of those who have never witnessed such a storm any adequate idea of the fury with which it blew during the three days and nights of its continuance, the sound resembling more a succession of peals of thunder, or the roaring of cannon, than of wind; whilst the sea formed one continued breach over the ship, sweeping every thing moveable before it. During nearly the whole of this period, the passengers, officers, and crew were, without distinction of persons, employed in pumping or bailing, cutting away masts, securing guns, or in other work essential to the safety of the ship;

whilst, owing to the impracticability of getting into the hold through the body of water always lodged on the gun-deck, the chief part of the period was passed without food, or even a drop of water to allay the thirst of the men at the pumps, who were with difficulty, and occasionally could not be prevented from swallowing the bilge water as it ascended from the well. And had it not been for the fortunate circumstance of a quantity of this precious beverage being found in the lockers of the great cabin, which had been bottled and placed there by one of the cabin passengers, which was latterly served out at the pumps in wine-glasses, the probability is that we should have literally perished through the want of a liquid, of which there was an abundance in the hold. Our distress, too, was not a little aggravated by two of the twelve-pounders being adrift at once on the gun-deck, causing the greatest consternation lest some port should be stove by their means. Notwithstanding the fore-mast, mizen-mast, main-top-mast, and bowsprit were, at the peril of our lives, alternately cut away; at the close of the third day, we were left with seven feet of water in the hold, and four feet in parts of the gun-deck, frequently with three out of the four pumps choked at a time, and without the slightest prospect of any abatement of the storm. Providence only knows whether the wonderful alteration which soon took place after the close of this day in our desperate situation, was owing to an especial Divine interference; but if the elements by which this globe is governed, in its course, are ever for a moment turned aside for the benefit of frail mortality, a scene was now exhibited which might have been deemed sufficiently appalling by an all-merciful Being, to call forth such an interposition.

I have been a witness to many a distressing scene on the ocean in the course of my practice, the recollection of which may in some degree account for these serious reflections, and form some apology for their intrusion here. I have seen a ninety-gun ship take fire, burn nearly to the water's edge, and blow up—a noble ship, which had twelve hundred people on board at the time, many of whom perished in her, notwithstanding every possible exertion was made, with the assistance of the engines of thirty sail of the line and frigates to extinguish the flames, and to rescue the men from destruction.

I was once awoke out of my sleep by an explosion which proved to arise from the blowing up of an Indiaman, at no great distance from the ship I was in, owing, as it was supposed, from the state of the weather, to a flash of lightning having entered the magazine, where five hundred barrels of gunpowder were stowed, destined for the Cape. I need scarcely add, that the crew, one hundred in number, were blown into the air, and that not a soul survived to explain the cause, or to record the fact. I was once myself in a ship that was struck by lightning, when some of the masts were shivered into a thousand pieces; and, had not the lightning taken a diagonal direction at the critical moment of its entrance into the body of the ship, the probability is that her destruction would have followed. On another occasion, I was in a ship which took fire, when such a formidable volume of flame rushed from the deck beneath, as to render every chance of quenching it apparently hopeless; it was, however, eventually got nnder by an extraordinary display of skill on the part of an individual, backed by the exertions of the crew. I have been in a storm off the Cape, when, after a sudden shift of wind, the commodore of the fleet, in one of the strongest ships ever built, on her first voyage to sea, crowded with passengers from Calcutta, suddenly disappeared, and was never seen or heard of more; the natural inference was, that she had gone down stern foremost, and that every soul on board had perished. I have experienced the shock of an earthquake at sea, several hundred miles from any land, and consequently beyond the reach of any soundings; the fact having subsequently

been proved by accounts from Manilla, the nearest land, where an earthquake on the same day, and nearly at the same moment, had occasioned considerable devastation. So violent was the shock we experienced, that one of the ships of the fleet leaked considerably in consequence. It is the only instance of the kind I ever heard of at such a distance from land; I should like, therefore, to see this extraordinary phenomenon philosophically accounted for. The water was not unusually agitated, the wind was moderate, the sky serene, and no one indication of such an event throughout the horizon. Was it, allow me to ask, the effect of electricity? If so, I should wish to be informed how the electric fluid came in contact with the ship, for, if the sea became its only conductor, (the fleet being spread over several miles of space, and every ship more or less sustaining the shock,) the whole of that part of the ocean must have been impregnated with it. I once landed from a ship in Table Bay, when, within a few hours of my reaching the shore, she parted from her anchors in a sudden north-wester, and became a wreck. My family were all on board at the time, who, after a night of infinite peril, expecting every moment to be their last, the rudder beaten off, and the ship nearly filled with water, were with difficulty rescued from a watery grave. These and many other distressing scenes of a minor description have I witnessed, but never, in the course of my practice, have I been present at one half so distressing, at least to my own feelings, as the one which I have now more immediately under consideration. Those which I have just taken a cursory review of were, it is true, in some instances, infinitely more fatal in their consequences; and in one case, the momentary pang of affliction could not, I admit, have been surpassed; but the scene I have already given an outline of, and am now drawing to a close, was one of peculiar excitement, painful feelings, and of heavy responsibility. Well may the psalmist say, "These men see the works of the Lord, and his wonders in the deep." But, to return from this digression. At the close of the third day of this awful hurricane, the cabins below being no longer habitable, the passengers were crowded into one side of the round-house, as being the only cabin from which the water could be effectually excluded. Here, then, a scene of wo was exhibited which baffles description, and was sufficiently appalling to rend the stoutest heart in twain, more especially of his on whom all eyes were turned for consolation or assistance, neither of which was it in his power to offer, even to her who had the strongest of all claims on him for both, and whose peculiarly interesting situation demanded the utmost stretch of his sympathy. The ship, if not absolutely water-logged, was now observed to be settling fast forward. Every countenance exhibited a picture of despair; when, at this critical moment, the wind rapidly began to subside, which was no sooner announced to the people at the pumps, than their labours, which, from a feeling of despondency, had previously languished, were resumed with renewed vigour; and such was the rapidity of the change in our favour, that one of the most dreadful of all storms was speedily lulled into a perfect calm, the ship once more rose freely to the sea, and, by day-light on the following morning, all the water was discharged from her.

The scene which now presented itself was of a very different description, but still it was not without its alloy, and under any other circumstances might have excited feelings of despondency, instead of excess of joy. The ship lay a helpless wreck on the water, exposed to every surge of the sea, which had not subsided so rapidly as the wind, and which occasioned her to roll most awfully; and now, as she rose on the mountainous billow, every eye eagerly swept the horizon in search of the fleet, but all in vain, for not a ship could be seen; we therefore trembled for their fate. The bowsprit, fore-mast, mizen-mast, and main-topmast, as before intimated, were all gone by the board, the

whole of the live stock, (with a trifling exception,) consisting of 150 sheep, 30 pigs, 4 cows, 3 calves, 8 goats, and many hundred head of poultry, were washed over-board, or otherwise destroyed; nearly all the captain's stores, the medicine chest, and the seamen's chests, with their contents, were in the same predicament. After an anxious scrutiny of the charts, no friendly port was found to be within reach of us; the nearest towards the east was Bencoolen, which, on account of the season of the year, was difficult of approach, and incapable of affording the relief we stood in need of. Towards the west was the Isle of France, then in possession of the French. To proceed direct to the Cape was an undertaking which, at the first blush of our situation, nobody conceived to be practicable. Still, upon a closer inspection of our resources, many difficulties were obviated, and our situation appeared to be far less desperate than we had at first imagined. Our stock of water and salt provisions, which was considerable, was happily found to be uninjured: we had rice and spirits in abundance. Our spare stock of spars, which was also considerable, and well secured before the storm commenced, was safe; we had spare sails, canvass, and cordage sufficient, and we knew our situation to be on the verge of the south-east trade-wind, which blew direct towards the Cape, and the season for entering Table Bay was favourable. After due deliberation at a meeting of the officers of the ship, and the principal passengers, it was unanimously resolved to undertake the voyage to the Cape; and, as an encouragement to the crew to give their spontaneous exertions in favour of this great undertaking, a subscription was immediately entered into, with a view to replace their chests, clothes, &c., which were lost in the storm. Seven hundred pounds were raised for this purpose in the course of a few minutes, (perhaps an unprecedented act of liberality,) which was no sooner communicated to the crew, than they gave three hearty cheers, and declared their readiness to perform every duty required of them; and never was a promise more strictly fulfilled: however, in spite of these but seldom-paralleled exertions, we were eleven weeks in reaching the destined port, after suffering many privations. Still I consider this as one of the happiest periods of my life; and judging from the number of cheerful countenances, and the unanimity which reigned throughout the ship, I much doubt whether it were not the lot of every soul on board.

I cannot account for the fact, unless it was owing to the peculiar frame of mind which we had imbibed from our recent deliverance,—a frame of mind which philosophy would spurn at, but which religion might have hailed as the precursor of the only solid happiness destined for man.

The day of our arrival in Table Bay was one of intense excitement, anxious as we naturally were, to ascertain the fate of a fleet from which we had separated eleven weeks before under such unpropitious circumstances. This suspense, however, was of short duration; our worthy Commodore, with five of his convoy, were soon discovered to be safe at anchor in the Bay, the remaining three ships were missing, and, sad to tell, have never since been heard of. Of those which were safe, four, including the seventy-four gun-ship, had been in more or less danger of foundering in the storm, whilst two escaped without injury; owing, as it appeared, from a comparison of journals, to their having escaped the brunt of the storm by being considerably to windward of the others; thus corroborating the theory with which I commenced, in my endeavours to prove that where the storm begins, there will it soonest end; a great part of the third day, which was by far the most tempestuous with us, these two ships lay perfectly becalmed.

Such were the disastrous effects of this memorable hurricane, from a summary of which I think myself entitled to draw the following practical inference;

namely, that had we instantly attended to the timely warning of the Barometer, by bringing the ship to the wind, and making preparations for the storm, instead of scudding before it until we could scud no longer, we should have escaped with as little injury as the two ships I have just alluded to, and that, had the three unfortunate ships which foundered in the storm pursued a similar course, which it may be fairly presumed they did not, a very different fate might have befallen them too.

But, lest the fatal catastrophe of this hurricane should not be deemed sufficiently conclusive, I shall mention the result of another, no less fatal in its consequences, which was encountered in the following season by another fleet of Indiamen, nearly in the same latitude and longitude, whilst under convoy of the late Lord Exmouth. On this occasion four of the finest ships of the fleet, crowded with passengers from Calcutta, were supposed to have foundered, as they were missing immediately after the storm, and were never heard of more. The last time they were seen was by Lord Exmouth himself, when they were observed to be scudding before the gale, while the rest of the fleet were lying to.

Here, then, we have another melancholy instance in point, which, coupled with the preceding, ought to satisfy the mind of the most sceptical seamen, as to the infallibility of the Barometer in indicating the approach of hurricanes, within the tropics more particularly, and consequently of the inestimable value of this instrument to every commander of a ship, and more especially to those whose destination is India.

MERCURIUS.

THE MEDUSÆ OF THE OCEAN.

To the Editor of the Nautical Magazine.

SIR—THE accession to our knowledge of the natural history of the ocean, as well also of those parts of the world which have hitherto been but imperfectly known, has, of late years, been greatly increased through the indefatigable researches of individuals, distinguished alike by their zeal and their ability; and who have, fortunately for the advancement of science, been attached to voyages of discovery; or, who have followed the bent of original inclination, by wandering into distant regions; or, employed by their respective governments, have traversed various parts of the habitable world, in search of the subjects of their delight. Among these worthies, none, perhaps, more eminently deserve the commendation of the literary world than the French and German naturalists. In doing justice, however, to the particular merits of these scientific foreigners, we do not mean or desire to exclude from their full share of praise, those gentlemen of our own country, who have pursued the same study, and who have aided the general information by their researches, their observations, and their discoveries.

That the subject, on which I am about to offer a few cursory remarks, may ultimately prove of importance to navigation, must

be left, perhaps, to the joint industry of the physiologist and the scientific voyager. At all events, it is an object worthy the attention of every intelligent navigator; and the pains bestowed in investigating and throwing new light upon it, would become a source of gratification and pleasure to him. It is from a desire of drawing the notice of these gentlemen, who have it so much in their power to be useful in such matters, to this subject, that I have been induced, Mr. Editor, to submit this paper to your and their attention.

On a late voyage across the North Atlantic, I was greatly amused and delighted in observing the extraordinary race of animals, known under the generic term of Medusæ, and, in nautical phraseology, "Sea-Blubber," which covered the ocean in many parts of our course. The varieties in shape and colour were almost infinite, and although my pencil was always in readiness, I was so much absorbed with the contemplation of the singularly beautiful objects as they passed in review, that I found it impossible to sketch but a very limited number indeed, when compared with the legions which were seen. During our progress, one circumstance struck me forcibly, which I have since found confirmed by the previous observations of the French naturalists, M. M. Péron and Lesueur:* I mean, that certain distinct species of the genus occupy certain portions of the ocean; and that, as we advanced to the eastward, new varieties displayed themselves in our aqueous path. The idea, however, of making this circumstance subservient to the purposes of navigation, never struck me until recently, whilst perusing extracts from the preliminary treatise to the magnificent work of the French naturalists named.

A great deal remains to be effected before any practical application can be expected to result; and even then, I am free to confess that this might prove of no great assistance to the navigator; still the object seems worthy of being followed up, if only for the satisfaction of determining the location (if I may be allowed the expression) of the different species of these jelly-like and extraordinary animals.

The two grand points to attain are—First, to fix the limits of the spaces of water, N. and S., and E. and W., occupied by different tribes; for, it must be observed, that many kinds are found together; yet, however numerous and various in shape and colour these may be, they differ in some essential points from those found in other spaces. Second, To obtain faithful representations of the larger and the more striking of the species found between certain parallels and meridians. These certainly are points which will require much careful and patient investigation, and multiplied corroborations throughout a series of voyages; but to those

* Preliminary Observations to the History of the Medusæ, or Sea-Blubber, by M. M. Pèron and Lesueur. See Annales du Muséum d'Histoire Naturelle. Vol xiv., p. 219.

who are not easily discouraged, the object, although apparently beset with difficulties from various causes, may not be deemed altogether unattainable. The tempests incident to the ocean may seem an insurmountable obstacle to the attainment, by destroying, or driving the animals out of the limits of their respective spaces, and thus break in upon the observer's investigations; but it is highly probable that, on the approach of stormy weather, the natural instinct which every creature endowed with life possesses, would operate in this instance, and the animal, sensitive of an approaching change of weather, would allow itself to sink to a certain depth, beyond the reach of the warring elements, and there remain, to appear again on the surface when the danger had ceased.

Willing, however, not to occupy too much of your space with my own reflections, I shall, Mr. Editor, add some extracts from the preliminary treatise already named, and give a few specimens of these singular and beautiful animals, which I sketched during the passage; leaving to your zeal for the sciences, to set the subject in motion, by recommending it to the notice of those of your intelligent readers, whose pursuits lead them to the "Great Waters."

INVESTIGATOR.

"Of all the zoophytes which nature has scattered over the surface of the ocean, none are more numerous or more extraordinary than those to which the great Linnæus has given the name of Medusæ. Every sea supports different tribes of these singular creatures: they live in the midst of the almost frozen waters of Spitzbergen, of Greenland, and of Iceland; they multiply under the heat of the equator, and the Great Southern Ocean also nourishes rich and numerous species of them."——"From the time of Pliny down to our own age, more than one hundred and fifty writers, of all the nations of Europe, have occupied themselves with their history."

"However simple may be the organization of the Medusæ, still they are not scattered indiscriminately over the surface of the ocean; each species has its proper sphere of existence, beyond the limits of which it does not seem to extend. It may be that the temperature of the waves, the nature or the abundance of its food, retains it there, or that the limited power of locomotion which characterizes these animals, does not permit them to go far from the places where they have been originally established by nature. Whichever of these be the true cause, it is not less certain that, to such and such latitudes belong exclusively such and such species of Medusæ: it is in such situations that the astonished observer meets with those immense shoals of similar individuals, in the midst of which he sometimes sails for several days, but of which the ocean afterwards furnishes him with no traces. This curious circumstance in the existence of the animals of which we are speaking, having been the object of our special attention, we shall not fail to join to the history of each genus a geographical table of the distribution of all the species of which it is composed."

"There are, in the same way, different seasons when the Medusæ show themselves in different countries, and this observation becomes particularly valuable as regards the history of those which live in our own seas. These zoophytes do not in fact appear on the coasts of Italy, of Spain, of France,

of England, of Sweden, of Denmark, of Iceland, of Greenland, and of Spitzbergen, until the middle of spring: they are most particularly abundant there during the dog-days; their number diminishes on the approach of autumn, and about the middle of November their countless legions disappear, and go, perhaps, like many other marine animals, to bury themselves, and become insensible in the depths of the sea. In the seas under the equator, on the contrary, the Medusæ cover the waters even in the midst of the winter of those countries, and every thing shows that these latter species are strangers to the migrations, or rather hybernation, of the Medusæ of our climates. Considered under this point of view, our work will, we think, offer some new and interesting results."

The following is the outline of the principles of the classification proposed by M. M. Péron and Leuseur, for these animals:—

1st. The Medusæ which are entirely gelatinous.

2d. Those which have a vesicular membrane, containing air, attached to the upper part of the body.

Of the first division, some of the Medusæ have the margin of their disk ciliated; others, the margin simple. Some have no stomach, the *Agastria*; others possess that cavity; and of these some have a single aperture leading to it, the *Monostoma*; while others have many apertures, the *Polystoma*. Again, some Medusæ have a central peduncle, dependent from them, while others are destitute of this appendage. Such are the points of structure which these naturalists have adopted as foundations of their primary divisions of this singular and beautiful group of animals.—Zool. Mag. No. 5.

1828.—No. 1. In the Florida Channel. April. Orbicular; purple spot in the centre, surrounded by a band of a pink colour; then one of white; and, lastly, a broad yellow band ribbed in a curved direction. Many small green-coloured Medusæ were seen in the Mexican Sea, and also in the Florida Channel.

Nos. 2, 3, 4. 38° 40′ N. 61° 12′ W. 29th May. These extraordinary animals we saw during a calm. The temperature of the surface water was 69°, that of the air 64°.

No. 2, which had all the appearance of a semi-transparent serpent, was about six feet in length, and two inches in breadth; flat; some were coiled up as in the represented figure; others progressed with a waving sort of motion. The centre of the body was of a light delicate purple, and the edges blue, with gold coloured balls along the upper ridge.

Nos. 3. and 4. have the same tints. 3. Cone-shaped; on the ridge of the blue border, gold-coloured balls; the edge ciliated. The globe-like protuberances of No. 4. pearly, or silver coloured. Among these, we saw also the Physalis, or Portuguese man-of-war, which appear not to be confined to any particular latitudes, as they are met with from the equator to 45° or 50° north. We met with these curiosities four days before we passed the banks or N. F. L. We saw nothing like them before or after, although the varieties were very great.

Nos. 5, 6, 7, 8. 44° 38′ N. 45° 40′ W. No. 5. The base, brown, with small fringe; centre, pink; left wing-like appendage, blue; right one, colourless; margin all round, yellow; a foot in length.

No, 6. Very much in shape like the "puff-balls" found on our heaths or downs; the body, which is orbicular, of a pink colour; margin blue, with blue fringe depending, and ornamented with gold-coloured balls; below the body was a sort of tail, blue and yellow.

No. 7. This individual, which was very large, had all the appearance of a

flower, somewhat like the gigantic rafflesia of Sumatra and Java; the petals if I may use the term by way of description, were of a light blue, edged with yellow; the peduncle having three branches, of a fine carmine colour, and the cross or star at top, of the same colour.

No. 8, which was five or six feet in length, had an orbiculated pink-coloured body, with the margin of the opening waved, and of a blue colour; the tail, or appendage, colourless, with two flaps, one blue, the other pink; the three parts edged with a yellow band. June.

Nos. 9, 10, 11. 44° 00′ N. 43° 00′ W. No. 9. Colourless ground, semi-transparent, with minute purple spots; the star, or base of the peduncle, (which is distinguished through the body,) purple, as also the tentaculæ, or feelers; the edge, serrated, of a brown tint; shape, orbicular.

No. 10. Semi-globular: body of a beautiful emerald green, the peduncle and feelers purple; margin, waved.

No. 11. Semi-oval; body colourless, with purple spots shaded off; the edge or disk, serrated, and of a blue colour; the peduncle purple, with a double star at the base, of a pink colour. June.

Nos. 12, 14, 14. Between 47° N. and 22′ W., and 49° N. and 18′ W. June. These beautiful species were tinted with the prismatic colours, as bright as the rainbow; and were, I believe, more admired on this account, than from the beauty, delicacy, and symmetry of their forms, which the sailors likened to decanter-stoppers! There were a great variety of shapes and colours among these tribes: some were like fillets ornamented with pearls and variously coloured precious stones; others of the shape of peaked caps; and some in the form of the triple-crown, with prismatic colours in the centre; whilst others were like necklaces of a beautiful blue colour, with regular rows of pearl-like dots, and pink-coloured ovals.

Those of the English Channel were large, of the orbicular tribe; yellow the prevailing tint of the body, but various in shade; most of the disks were purple, some ciliated, others fringed; the star, or circles at the pole, and the concentric rays (mostly curved) proceeding therefrom, distinguished the individuals, and were of different colours, principally purple, pink, and brown. June. I.

MAGNETIC VARIATION.

ALTHOUGH the science of Magnetism has been pursued with considerable assiduity in some of its branches, and although, from time to time, observations have been made to ascertain the variation of the needle, yet it does not appear that these observations have been, of late years, conducted with that due regard to those considerations which alone can render them worthy of being received as the ground of any just conclusions. Indeed, the variation of the magnetic needle, and more especially the progression or retrogradation of that variation, are subjects which a few isolated experiments can but imperfectly elucidate: for, unless a *series* of observations be carefully made on the same spot, and as nearly as is practicable under the same circumstances of time, atmospheric temperature, &c., it will be impossible to separate the influence arising from local or temporary causes, from that which really produces the change in the magnetic meridian.

The following few particulars, recently received from Professor

Barlow, of Woolwich, and J. G. Children, Esq., the Secretary of the Royal Society, while they shew what has been already done, will, at the same time, point out how much yet remains to be accomplished before any very satisfactory results can be obtained.

The variation in London is stated to have been 24° 1′ W. in 1800, and 24° 18′ in 1818; but it is to be regretted that the exact place of observation is not named.

In 1817, 18, and 19, Colonel Beaufoy made very accurate observations on the variation, and found that the *noon* variation was nearly stationary during that period.

The variation at Stanmore Heath was then (March, 1819) 24° 41′ 42″ W., but at the same time it was considered to be in London 24° 30′. Mr. Barlow suggests as desirable, that a series of observations should be made on the same spot that Colonel Beaufoy selected at Stanmore in 1819, by which the question of retrogradation might be decided.

The following are collected from the volumes of the Philosophical Transactions:—

YEAR.	VARIATION.	DIP.
1806,	24° 8′ 6″	
1807,	24 10 2	
1808,	24 10 0	70° 1′ 0″
1809,	——	
1810,	——	
1811,	24 14 2	70 32 30
1812,	24 16 30	
1813,	24 16 40	
1814,	24° 19′ 5″*	
1815,	24 17 50	
1816,	24 17 54	
1817,	24 17 0	
1818,	24 15 43	About 70° 51′
1819,	24 14 47	About 71 6
1820,	24 11 44	

In September, 1832, the variation (from a mean of twelve observations) at the Royal Society, with a small Magnetic Transit, by Dollond, was found to be 24° 4′ 10″ W. The locality of Somerset House, however, is not considered favourable for ascertaining the *absolute* variation of the needle. Greenwich Observatory is allowed to be very preferable for this and for all other magnetic experiments.

The Monthly Mean of the Variation at Greenwich Observatory, in the Years 1818, 19, *and* 20.

1818, June, 24° 16′ 30″w	1819, June, 24° 22′ 0″w	1820, Apr. 24° 23′ 0″w
„ July, 24 18 45	„ July, 24 22 45	„ May, 24 22 0
„ Aug. 24 21 0	„ Aug. 24 22 0	„ June, 24 21 15
„ Sept. 24 18 0	„ Sept. 24 22 0	„ July, 24 21 30
„ Oct. 24 20 0	„ Oct. 24 23 0	„ Aug. 24 22 0
„ Nov. 24 21 0	„ Nov. 24 21 0	„ Sept. 24 24 0
„ Dec. 24 23 0	„ Dec. 24 21 0	„ Oct. 24 22 30
1819, Mar. 24 23 0	1820, Jan. 24 23 0	„ Nov. 24 22 0
„ Apr. 24 23 0	„ Feb. 24 21 0	„ Dec. 24 24 30
„ May, 24 22 0	„ Mar. 24 22 0	

* 1814, June, 24° 16′ 42″ Aug. 24° 21′ 10″
July, 24 17 54 Sept. 24 20 35

Dr. Roget, in his Treatise on Magnetism (p. 29), published by the Society for the Diffusion of Useful Knowledge, says, "At London the westerly variation continued to increase till the year 1818, when it amounted to 24° 36′. This appears to have been its maximum: for since that time it has somewhat diminished, and is at present about 24°."

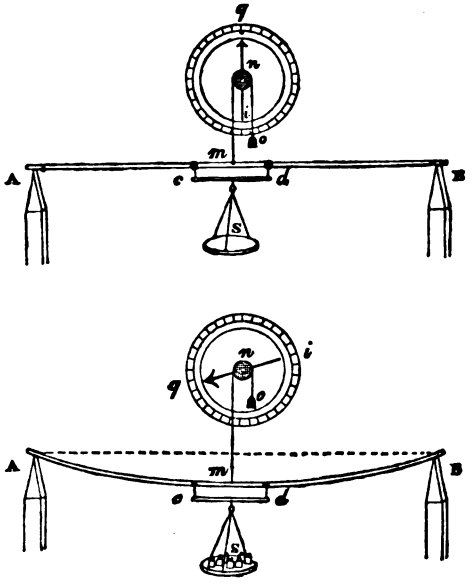
The foregoing is but a brief notice; but, trusting that it may lead to further investigations, we lay it before our readers without apology, feeling well assured, that even a few hints on a subject so interesting are always acceptable to them.

IV.—On the Protection of Ships from Lightning.

By W. S. Harris, F. R. S.

(Concluded from page 744)

78. The following experiments with a very flexible spar, carried on in H. M. dock-yard at Portsmouth, are not undeserving of consideration:—



A B represents the flying jib-boom of a sloop of war, sustained on the props A B immediately at its extremities. Length between the props 34 feet; diameter of the spar in the middle point m, 7 inches; diameter at the extremities, 5 inches. c d is a small stretcher of

about a foot in length, secured about the centre of the spar: s a scale-pan affixed to the stretcher, for the purpose of receiving the weights requisite to bend the spar to any given extent; *n* is a small pulley of about an inch in diameter, having an index, *i q*, attached to it, and moved by a fine silk line, *m n o*, attached to centre of spar at *n*; *o*, a small weight affixed to the extremity of the line, for the purpose of keeping the line tense; *i q o*, a graduated circle, placed immediately behind the pulley *n*, which, by means of the pulley *n* and index *i q* will indicate small deflections of the spar from a right line, true to the one-hundredth of an inch. The spar having been first made to coincide with a horizontal line, or nearly so, the deflections were taken due to its own weight alone, and determined by placing it successively on each of its octagonal sides, terminating the extremities A B; weights were now placed in the scale-pan at s, and the deflections observed, independently of the weight of the spar, as far as that produced by a quarter of a ton placed in the scale, the index at the commencement of each experiment being adjusted to zero. This being determined, the spar was fitted with the copper-plates, according to the method already described (58), and the same experiments repeated.

In the following tables are given the results of the experiments; first, *without*, secondly, *with* the conductor applied; a weight of a quarter of a ton being placed in the scale-pan s: A B C D, &c. represent the eight sides upon which the flexure was produced; the conductor is supposed to be inserted on the side G; the flexure is estimated in inches from the middle point of the spar:—

TABLE 2.

SIDES UPPERMOST.	A	B	C	D	E	F	G	H
Without the Conductor	3,45	3,4	3,45	3,5	3,48	3,42	3,4	3,5
With the Conductor	3,42	3,2	3,0	32,5	3,46	3,23	2,81	3,1

79. By this table it appears, first, that the spar was actually strengthened by the application of the conductor, in every position; second, that the greatest strength was evinced when the conductor was on the upper or concave side, as at G; next when on the lower or convex side, as at C; least, when on the edges, as at E and A; and intermediate on the oblique sides, as at D F H B. The weights requisite to be added, in order to bring the index to the same point *with* the conductor as *without* it, were as follows:

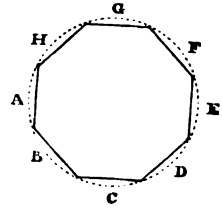


TABLE 3.

SIDES UPPERMOST.	A	B	C	D	E	F	G	H
Weight in lbs. . .	7	58	63	35	5	35	98	66

When, therefore, the side G, in which the conductor was inserted, became compressed, the resistance to the given point of flexure was increased by nearly one-sixth; the respective weights *with* and *without* the conductors being 560 lbs., and (560 + 98.) lbs.

In all these experiments, the conductor was observed to play freely with the bending of the spar, and the elasticity of the whole appeared so perfect, that, on removing the weights in the scale-pan S, the index returned again to zero on the graduated circle, or very nearly so, the difference being very small, and no greater than those previously observed, when the conductor was not present.

The regularity of the march of the index in these experiments, as successive weights were added, from a quarter of a hundred to five hundred weight, is not altogether unworthy of notice, the deflections indicated on the graduated circle being nearly in the ratio of the weights placed in the scale-pan S, as may be seen in the following table, which contains, by way of illustration, the results obtained with the side C uppermost, and with the conducting plates attached to the spar.

TABLE 4.

Weights in Cwts.	¼	½	¾	1	1½	2	2½	3	4	5
Deflections of Spar	,14	,28	,41	,54	,85	1·11	1·4	1·69	2·28	2·81

80. The objections to the use of fixed lightning conductors in ships, arising out of the expense necessarily incurred in consequence of their use, will be found, on inquiry, of much less moment than may at first be imagined, even when taken only in relation to the actual cost. If taken in relation to the amount of damage, so frequently sustained in His Majesty's Navy alone, and which, as already shewn, (No. I.) involves the actual loss of the ship, the lives of the seamen, and the chance of placing the country in precarious circumstances in time of war, *almost any objection* on the ground of economy must necessarily vanish.

We will, however, proceed to the consideration of the actual cost to the country of the fixed conductors we have proposed, without relation to other circumstances.

81. The expense of the conductors in some of the ships at first fitted with them, appeared somewhat considerable: this, however,

arose in consequence of the work being new, and the process of fitting not completely perfected and understood. It will, however, be immediately perceived, that the expense of the first experiments, made in almost any department of the mechanical arts, cannot be taken as a fair criterion of the *real* expense attending a new contrivance, when reduced by experience to a working system. Hence the amount of expense, as *now* likely to be incurred, is extremely reduced, the system of fitting the conductors perfectly, and speedily, being very complete.

82. I shall avail myself of some extracts from a report by a gentleman who was sent from His Majesty's dockyard at Chatham, by order of the Commissioners of the Navy, to estimate and inspect the work, and who, being a naval engineer, and otherwise a person of great intelligence, was considered by them equal to the task.

(Copy.)

His Majesty's Dockyard, Chatham, July 9, 1834.

Sir,—In obedience to instructions received from the principal officers of this yard, in conformity with your official communication of the 1st instant, I herewith enclose a statement (in a condensed form) of what would be the expense in labour and materials of applying Mr. Harris's lightning conductors to each class of ships, supposing them fitted at the most eligible time. I have likewise ventured to append a few cursory remarks, which seemed necessary, in order to afford a criterion of what may probably be the *ultimate expense* to the public, in the event of the plan being generally adopted in the service. With this view, I beg further to transmit schemes of prices for labour, for different artificers employed on the work, upon which, it should be added, the accompanying estimate has been made.

I have the honour to be, &c. &c.

W. M. Rice.

To G. J. Smith, Esq., Secretary of H.M. Navy, &c.

Mr. Rice then proceeds to give a complete table of particulars in the fitting each part of a ship according to the plan above mentioned, (57), (58), &c., the whole of which it is not necessary to detail here. It will be sufficient to state the general results as they appear in the last columns of his Table.

TABLE 5.

Class of Ships.	Total for Masts and Hull.					
	Labour, &c.			Reconvertible Copper Materials.		
	£.	s.	d.	£.	s.	d.
120 guns	60	18	0	305	12	2
84 ..	56	18	0	292	19	11
74 ..	54	17	0	263	2	3
50 ..	50	16	0	235	17	3
46 ..	45	15	0	190	16	4
28 ..	38	14	0	123	13	3
18 ..	29	12	6	89	14	8
10 ..	24	10	0	77	16	9

83. Upon this report, Mr. Rice offers the following remarks :—

"This estimate is grounded on the supposition that Mr. Harris's plan be applied to ships at the most eligible time, viz. during the progress of building or repairing, when the essential or original fastenings of the hull may be made to subserve as conductors; much delay will be thus prevented, and many contingent expenses saved.

"As the prompt execution of work much depends upon the facilities afforded to the workmen, I beg, without further recapitulation, to refer particularly to the arrangements proposed in the letters and drawings which I had the honour, on a former occasion, to submit for the consideration of the Commissioners of his Majesty's Navy, humbly conceiving that they will greatly assist the desirable object contemplated by Mr. Harris, inasmuch as, by adopting them, the practical process will be greatly simplified, and the general introduction of the plan much facilitated.

It may be proper to make a few observations on the subject of expense. Referring to the accompanying condensed statement, the last column *but one* denotes the *money absolutely sunk* upon the first ship of each class fitted with lightning conductors, and the *last* column,* the outlay upon *reconvertible materials*, which must be viewed as other articles of a ship's furniture for the protection of lives and property, such as *life-buoys*, &c. &c., with due allowance for wear and tear. In taking, therefore, a prospective view of the expense, very considerable abatement will be made upon the first cost by the return of copper into store, which it is presumed will have suffered very little deterioration after many years' service; moreover, the straps over the heads and heels of masts, nuts, and screws, vanes, and vane-spindles, and the branch conductors under the beams, when removed from any ship, may all be placed in store, to be again replaced in other ships of the same class; the plates taken out of masts may probably be made serviceable by redressing, or, at most, will only suffer a loss at the rate of one penny per pound for remanufacturing; the plates removed from ships' hulls may certainly serve for many ships successively. Hence, should the plan be generally adopted, the amount of labour will be much reduced by the appropriation of serviceable articles to several ships, so that the loss alone upon the material must not be charged again upon a second or third ship.

* These columns are given in table 5.

The absolute expense to the public is really the aggregate of the amount of labour, &c. as money sunk, with interest, together with the interest upon the first cost for copper for a given time. It would be difficult to assign any scale of per centage for the protection of ships by lightning conductors; but, in order to form some notion, within certain limitations, let the value of a first rate, when fully equipped, be assumed in round numbers as worth £110,000, the value of property simply considered, neglecting the consideration of lives, and the dangers and disasters arising from a disabled ship, and taking the average of five years' run only upon the principal and interest, the annual premium would be less than £30, making the per centage under *six pence halfpenny*.

If we extend the term of years, the aliquot part of the money sunk will of course be less, and therefore the per centage will be reduced in like proportion. But, if this view of the expense be carried forward to a second, or a third ship, the *money sunk* will be very considerably less, on account of the diminution of labour, &c., whilst the term of years is still further increased; and therefore the premium, or per centage, would be ultimately trifling.

Signed, W. M. Rice.

Chatham yard, July 9, 1831.

83. The above report seems sufficiently explicit, and appears to include a very fair estimate of the expense, taken without reference to other circumstances; but we must not altogether neglect the saving to the country likely to be effected at various times, on the supposition that ships can, by the method above detailed, be effectually secured against damage by lightning, and which may really, on inquiry, be found of great consequence.

Let us take by way of illustration, the damage sustained by His Majesty's ships in the Mediterranean only, in the years 1829 and 1830, and which occurred within the space of fifteen months, or thereabouts. In these years the following ships suffered from lightning :—

Madagascar	50 guns.
Mosquito	10 guns.
Ocean, Melville, Gloucester,	Line of battle ships.

I am not aware what the loss to the country really amounted to in these few cases, and therefore omit any statement not grounded on an actual knowledge of the facts. I believe it, however, to have been considerable. The Madagascar was obliged to have a new foremast, topmast, &c., and her mizen-mast was also damaged; the Ocean suffered in her main-topmast; and the Gloucester and Melville, I am informed, were obliged to return to Malta harbour to repair damage, having been struck by lightning whilst going to sea, after a complete refit at Malta. Now, the value of a frigate's lower mast is not less than £200, and a line-of-battle-ship's from £300 to £450; topmasts and other spars in proportion. If we add to this the expense incidental to the repairs, the detention of the ships, &c. &c., it furnishes a most important feature in our

consideration of the objections to the new conductors on the grounds of economy.

84. In this and the preceding papers on the protection of ships from lightning, which have appeared successively in the Nautical Magazine, it has been my endeavour to *adhere carefully to facts*, and by never deviating from the direct and safe path of the inductive philosophy, to arrive at useful conclusions on a subject of immense importance to the national interests. Few would hesitate, on due reflection, to admit the great advantages which must arise, not only to His Majesty's ships, but also to our mercantile marine, could we provide them with an efficient protection against one of the most fearful operations of nature; and although the subject has not been duly appreciated by some persons, under an impression that the chances of damage from lightning are too few and inconsiderable to warrant even the little trouble and expense requisite to avoid them, yet I trust to have made it appear that such opinions are not founded on an adequate induction, and that a judicious application of lightning protectors on ship-board is not only extremely desirable for shipping generally, but is in a great variety of instances quite essential to their preservation.

Plymouth, September 29, 1834.

MISCELLANEOUS INTELLIGENCE.

The following extract from the second volume of the American Philosophical Transactions, p. 307, shews that neither the paddle-wheel for propelling vessels, nor twin-boats, were considered as new inventions in 1785 by the people of the United States.

Extract of a letter from Dr. Benjamin Franklin to M. Alphonsus Le Roy, member of several academies at Paris, containing sundry maritime observations:—

"At sea, on board the London Packet, Captain Truxton, August, 1785. Read Dec. 2, 1785.

"Several mechanical projectors have at different times proposed to give motion to boats, and even to ships, by means of circular rowing, or paddles placed on the circumference of wheels, to be turned constantly on each side of the vessel; but this method, though frequently tried, has never been found so effectual as to encourage a continuance of the practice.

"I do not know that the reason has hitherto been given; perhaps it may be this, that great part of the force employed contributes little to the motion; for instance, of the four paddles, *a b c d*, all under water, and turning, to move a boat from *x* to *y*, *c* has the most power, *b* nearly, though not quite as much; their motion being nearly horizontal; but the force employed in moving *a* is consumed in pressing almost downright upon the water, till it comes to the place of *b*, and the force employed in moving *c* is consumed in lifting the water, till *d* arrives at the surface, by which means much of the labour is lost.

It is true, that, by placing the wheels higher out of the water, this waste labour will be diminished in a calm; but when a sea runs, the wheels must unavoidably be dipt deep in the water, and the turning of them thereby rendered very laborious, to little purpose."

Page 304, same letter.—"The islanders in the great Pacific Ocean, though they have no large ships, are the most expert boat-sailors in the world, navigating the sea safely with their proas, which they prevent oversetting by various means. Their boats moved by oars, or rather paddles, are, for long voyages, fixed two together, by cross bars of wood that keep them at some distance from each other, and so renders their oversetting next to impossible. How far this may be practicable in larger vessels, we have not yet sufficient experience; I know of but one trial made in Europe, which was about one hundred years since, by Sir William Petty: he built a double vessel to serve as a packet-boat between England and Ireland; her model still exists in the museum of the Royal Society, where I have seen it."

Flag Adopted by the Chiefs of New Zealand.—By the arrival of the Japan, South-seaman, from the Bay of Islands, we have an account of an interesting transaction which occurred at that place in March last, namely, the adoption of a national flag by the New Zealand chiefs. It appears that several large vessels had been built in that country by the enterprise of British subjects, which had been seized by the custom-house officers on their arrival at Sydney, having been, though owned by subjects of Great Britain, neither built in a British possession, nor in a country where a recognized government existed, from whose flag they might have claimed protection.

Under these circumstances, Mr. Busby, the gentleman whose eminent abilities and distinguished character have recommended him to the situation of British Resident at New Zealand, had suggested to the governor of New South Wales the expediency of inducing the chiefs of New Zealand to adopt a flag which should be respected as the flag of an independent nation, and under the protection of which, ships built at New Zealand might trade to the British possessions; and General Bourke, the present Governor of New South Wales, having coincided in these views, had taken the opportunity of his Majesty's ship Alligator proceeding to New Zealand, to forward to the British President three flags, from which the chiefs might select a flag for their country.

The chiefs accordingly assembled, to the number of between twenty and thirty, with a large body of followers; and what we believe may be called the first New Zealand Parliament, was held under a large awning formed by sails from his Majesty's ship Alligator, near the house in progress of erection for the British Resident. The three flags having been exhibited, Mr. Busby addressed the chiefs on the nature and importance of the business for which they were assembled, and recommended each chief to give his vote freely for the flag which he preferred; a recommendation which they fully acted up to, as the flag finally chosen was only carried by a majority of two votes.

On being hoisted as the flag of New Zealand, it was saluted by the frigate with twenty-one guns.

At the time of this occurrence, eleven British and three American ships were at the Bay of Islands, and it will surprise most of our readers to learn, that from fifty to sixty persons of respectability, and all, with two or three exceptions, British subjects, were assembled to witness the ceremony. This party, which consisted of the officers of the Alligator, the commanders of the ships in the harbour, missionaries, and respectable settlers, sat down after the conclusion of the ceremony to an entertainment which was served up in one of the rooms

of the Resident's house, finished off for the occasion by the aid of the flags of the ship of war. The chiefs, and their followers, were entertained in a different fashion, being abundantly supplied with a mess of boiled flour and sugar, with which they appeared better pleased than they probably might have been if all the science of Mr. Ude himself had been put in requisition for the gratification of their palates.

The Birth-place of Christopher Columbus.

Sir—To a native of this continent, to which, however, by a strange injustice, posterity has not given his name, the birth-place of Columbus must always be an object of interest. A house is still shewn in the village of Cogoletto, near Genoa, as that in which he was born. At the door of the building is a stone, on which the following inscription in Italian has been inscribed since 1650. It bears the name of a priest of the same family. The two other inscriptions in Latin have been recently added. Like the birth-place of our own Shakspeare, at Stratford-on-Avon, that of Columbus is visited by all curious travellers. Some time ago, a party made a pilgrimage to the spot, and entered the house in silence, with their heads uncovered, regarding the birth-place of the great discoverer of the New World as one of the most interesting sites on their route. I subjoin the inscriptions, and have attempted an imitation. It will be perceived, that in the Italian there is a play upon the meaning of Colombo, which would be ineffective in the translation.

Elogii

Di Cristoforo Colombo, scopritor dell' America l'anno 1492—scritti nella casa di sua nascita, nel paese di Cogoletto, contrada Giuggiolo—

I.

Con generoso ardir dall' arca all' onde
Ubbidiente il vol Colomba prende,
Corre, s'aggira, terren' scopre, e fronde
D'olivo, in segno, al gran Noe ne rende.
L'imita in cio Colombo, ne s'asconde,
E da sua patria il mar solcando fende;
Terreno al fin scoprendo diede fondo,
Offrendo al' Ispano un nuovo Mondo.

Il 2 Decembre, 1650.

Prete Antonio Colombo.

II.

Hospes siste gradum; Fuit H I C lux prima Colombo,
Orbe viro majori; Heu! nimis arcta Domus!

III.

Unus erat Mundus; Duo sunt, ait I S T E; fuerunt.

The above imitated:—

In Praise

Of Christopher Columbus, discoverer of America, in the year 1492—*written in the house of his birth, in the country of Cogoletto, in the district of Giuggiolo.*

I.

Swift from the ark, above the watery waste,
The dove, obedient, flies with generous haste;
Still onward speeds, nor pauses in her flight,
Until the long-sought land relieves her sight—

Thence, as a token of the welcome strand,
An olive branch she bears to Noah's hand!
Like her, Columbus scorns inglorious ease,
Far from his country ploughs the maiden seas—
Nor cast he anchor, nor a sail he furl'd,
Until to Spain he gave another world!

II.

Stay, traveller, stay! before these narrow walls
Awhile thy weary pilgrimage restrain—
Here first Columbus breath'd the vital air:
This roof held one—the world could not contain!

III.

The world was one—Columbus said, they are two—
He found a world, and made the saying true!

I am, Sir, &c., J. C. F.

Quebec, April 12, 1834.

MERCHANT SEAMEN.—A Summary of an Act, being the 4th and 5th Wm. IV. ch. 52, for the benefit of Merchant Seamen of Great Britain and Ireland, their widows and children, which is to come into operation on the 1st of January, 1835.

Clause 1. Repeals the act 20 Geo. II. c. 38, except so much as relates to the incorporation of the president and governors for the relief and support of sick, maimed, and disabled seamen, and the widows and children of such as shall be killed, slain, or drowned, in the merchant service; and so much of the 37 Geo. III. c. 73, as relates to the wages of seamen dying while employed in ships trading to His Majesty's West India colonies.

2. Enacts that seamen, disabled by sickness, wounds, or other accidental misfortunes, and those who are decrepit or worn out by age, are to be relieved by pensions or otherwise, as to the president and governors shall seem meet, and most for the advantage of the charity; and also to relieve the widows, and children under fourteen years of age, of seamen killed, slain, or drowned; and also the widows and children of seamen as shall die after having contributed for twenty-one years to the corporation; and also the widows and children of such seamen as, at the time of their death, shall have been receiving, or have been entitled to receive pensions, as worn out seamen; and then enacts what certificates of proof are to be produced.

3. Persons forging certificates to be punished.

4. President and committee empowered generally to apply monies of the corporation for the objects of the charity, and to appoint the officers and salaries.

5. All masters of ships belonging to Great Britain or Ireland to pay two shillings per month out of their wages, during the time they are employed; and provides, that, in case of need, themselves or their families are to be allowed a proportionate increase of pension.

6. All seamen to pay one shilling per month, but exempts those employed in any boats in taking of fish which are brought fresh ashore, and boats and vessels trading from place to place within any river in Great Britain or Ireland.

7. Empowers masters to deduct one shilling from the seamen's wages, and to pay the same over to the receivers appointed.

8. Receivers to be appointed at London and the out ports.

9. Masters to keep muster-rolls, as per schedule to the act, and deliver copies thereof to the receivers, under penalty of £5.

10. Empowers masters of vessels to deduct any forfeiture from seamen's wages, and to deliver a verified account of the same to the receiver, under penalty of £20.

11. Collectors may summon masters of vessels, and may examine them as to their muster-rolls, &c.

12. Secretaries of admiralty, victualling, post-office, &c., to give a list of ships employed in their departments.

13. Duties to be paid at the port in Great Britain or Ireland, where the ship of vessel discharges her cargo. No ship to be cleared inwards by the officers for the customs, until a receipt for the duty is produced. The duty from vessels not belonging to the port where the same is paid, to be transmitted to the receiver at the port of London, who is to remit the same to the port to which the vessel belongs.

14. Masters not producing certificates of payment of duty, tide-waiters to be continued on board at the expense of the ship.

15. Penalties under the act, not exceeding £20, recoverable before a magistrate.

16 and 17. Owners and masters of ships at the out ports empowered to appoint trustees for such respective ports, who are to have the same powers as the president and governors have in London for carrying the intention of the act into effect. Instrument of trust to be forwarded within sixty days of the appointment to the president and governors, to be confirmed.

18. Trustees heretofore appointed at the several out ports to be subject to the provisions of this act.

19. The corporation of the merchant-venturers of Bristol appointed trustees for that port.

20. The guild of the Trinity-house of Kingston-upon-Hull appointed trustees for that port.

21. The ports of Glasgow, Greenock, and Port-Glasgow, to be deemed one united port, for the purposes of this act.

22. Accounts of president and governors, together with those of the trustees at the out ports, to be laid before the House of Commons annually.

23. Collectors appointed by trustees not to send duplicates of muster-rolls belonging to their respective ports, to the president and governors.

24. Seamen not liable to pay duty, not entitled to benefit of the act.

25. Those who have served and paid longest to be first provided for.

26. Maimed seamen to be provided for at the port where the accident may happen.

27. Decrepit or worn out seamen to be provided for at the port where they have paid most for the last five years of their service at sea.

28. Shipwrecked seamen may be relieved.

29. When certificates, as pointed out by the act, cannot be obtained, others may be admitted.

30, 31, and 33. Wages of deceased seamen to be paid to the receivers of duty at London and out ports, on ship's arrival, for the benefit of the widows and children, or the executor or administrator of such deceased seaman, as the case may be; and if not claimed within three years, to be forfeited to the trustees at the port where the ship belongs, for the benefit of the charity at such port.

32. Empowers the president and governors in London to pay to the Seaman's Hospital Society there, a sum equivalent to five per cent. on the net

amount of duty received from vessels belonging to the port of London, for the benefit of that charity.

34 and 35. Relate to the recovery of penalties and limitation of actions.

36. This act to be deemed a public act.

By an act also passed this session, the 6d. per month now payable to Greenwich Hospital by merchant seamen, will cease from and after the 31st of December, 1834.

Admiralty Court Decisions.

The Trusty—Salvage.—The Edinburgh Castle, a smack of 190 tons, with a crew of thirteen men, and the Trusty, a smack of 153 tons, with the same number of hands, belonging to two shipping companies, sailed from Leith to London, with a general cargo, and passengers, on the 5th of April. In the night of the 7th, in the Wold, off Cromer, the Trusty was run foul of by the Faith brig, and her fore-bow was stove in. She hailed the Edinburgh Castle, which sent a boat, with the mate and four men on board, and afterwards canvass, nails, tar, and a carpenter. The damage was temporarily repaired; the Edinburgh Castle stayed with the Trusty during the night, and towed her next day into Yarmouth harbour, where she was repaired, and she then completed her voyage. The weather was fair, and it was not alleged that any risk was incurred, or enterprise exhibited. A tender of thirty guineas for the service was made by the owners of the Trusty, and refused.

After hearing the King's Advocate for the salvors, and Dr. Phillimore for the owners of the vessel saved,

The Court pronounced against the tender as insufficient, and decreed £100 as remuneration, not merely for the labour, but as an encouragement to vessels which incurred some risk in rendering assistance; for, even if the weather was fair, it might alter, and their policies of insurance might be vitiated by a departure from their course.

At the opening of the court, Sir John Dodson was recognized as His Majesty's Advocate-General, and took his seat at the head of the bar.

George Fielder, Esq., was also admitted a proctor in this court, with the usual formalities.

Seaman's Wages.—A case of great importance to masters of vessels came on for hearing before Mr. Broderip, at the Thames Police Office, not long ago.

Captain John Begg, the master of the barque Alice, lying in Cox and Curling's dock, appeared before Mr. Broderip, to show cause why he refused to pay the sum of £19. 19s. 6d., the balance of wages due to James Woolf, a seaman, for his services on board during a voyage from London to Grenada, and other places, and back.

The complainant said he had been eleven months and thirteen days on board, and did his duty as able seaman a portion of the time, and the remainder as second mate. The gross sum claimed by him was £28. 17s. and the balance claimed was due.

The captain said the gross amount was only £27. 17s. 6d.

The sailor.—But you promised to give me 5s. extra a month for acting as second mate.

The captain shewed that his first agreement with the sailor was £2. 5s. a month, and that he had allowed him in his account 5s. a month extra, while he was acting as second mate.

The sailor contended that he was entitled to £2. 10s. a month from the time of the ship leaving London.

Mr. Broderip decided that the seaman could not be entitled to wages as mate until he entered into office.

The captain then read over the account of money laid out, and paid over to the complainant during the voyage, from which it appeared that Woolf had been attacked by fever while at Grenada, and that the captain paid £4 for sick attendance, and £5. 17s. 4d. for a doctor, which he wished to deduct from complainant's wages.

Mr. Broderip, after referring to many books on the subject, particularly the work "Abbot on Shipping," said that it had appeared, from the several authorities he had consulted, that the captain was liable for the charge of medical attendance, and could not deduct it from the seaman's wages, provided that he fell sick during the voyage, and not in the pursuit of his own private concerns.

The seaman said he was engaged in the hold, and, while sweating from every pore, he was sent on the deck in the cold, during a heavy shower of rain, to discharge some corn meal on the wharfs at Grenada, the consequence of which was he caught cold, and fever ensued.

Mr. Broderip.—According to the authorities I have quoted, the man must be cured at the expense of the ship. These were the very words of Lord Tenterden, in his excellent work on maritime affairs.

The captain said that he could not deny that the seaman's illness was caused in the way he had stated. He alleged, however, that he had got drunk at another place, and had left the ship without leave, and come ashore, and abused him.

Mr. Broderip said that had nothing to do with the present case, except the captain meant to charge the sailor with mutinous conduct, and with refusing to obey orders, as a ground for not paying him his wages.

The captain said he did not mean to do that. There was medical assistance on board the vessel, and the man ought to have remained.

Mr. Broderip.—You are not charged for his expenses ashore. You have therefore no reason to grumble. Perhaps it was to your advantage that the man did go ashore, for he no doubt recovered much sooner than he would in the close atmosphere of a ship's berth.

The captain said he had been master of a vessel twenty-six years, and the payment of doctor's bills had never been questioned before.

Mr. Broderip.—Very likely the point was never raised before.

The worthy magistrate then ordered the amount claimed to be paid, and 3s. costs.

The captain now began to charge the seaman with generally disorderly and mutinous conduct.

Mr. Broderip said he was not going to be played fast and loose with. The captain had just stated he had no charge of the sort to make, nor had he accused the man with mutinous conduct when he offered to pay him all but the sum in dispute, at the owner's office.—The money was then paid.

The following remark by Captain the Hon. G. Trefusis, while commanding in H M. S. Sapphire in the West Indies, is worthy the attention of our commanders :—

In these hot climates ships should have the water pumped out and fresh let

in, two or three times during the night, as this not only cools the air on the deck where the people are sleeping, but acts also as an air-pump, and purifies the ship.

Height of the Thermometer.

On the lower deck	83°
In the tier	82
On the main deck.	81
On the quarter deck	80
In the pumps before letting water in	79
Ditto, after.	76

The following are the dimensions of ships building at this Yard, viz:—

	Guns.	Tonnage.	Length. Feet	In.	Breadth. Feet	In.	Depth. Feet	In.
Hindostan	74 ..	2028 —	185	8 —	49	1 —	21	0
St. George	120 ..	2690 —	205	5½ —	54	6 —	23	2
Nile	92 ..	2598 —	205	6 —	53	6 —	23	2
10 Gun-Brigs	— ..	230 —	90	0 —	24	6 —	11	0

Plymouth Journal.

A Captain in port has furnished us with a few particulars of the Sandwich Islands, which may be interesting to our commercial readers.—Oahu, the capital of the Sandwich Islands, has a beautiful harbour, not equal, but next to that of Port Jackson, on whose surface may be generally seen floating from fifty to a hundred vessels, from all nations. There are some excellent wharfs, or forts, on which are placed about fifty guns, under the superintendence of a Governor and troops, who are drilled every morning at daylight; the soldiers are all natives, and when accoutred present an imposing appearance. The king of the Islands, Kaukouri, (or Tamahamaha the third,) lives in his palace at Oahu, and when he appears in public is generally surrounded by his nobility. He often presides at the courts of judicature, and is remarkably polite to Europeans. The English and American residents have stores and shops, containing goods of all descriptions for sale. An extensive trade is carried on by the natives of Oahu and China. To the latter place they export sandal wood, &c., for which they receive in exchange China goods, and these are taken over to California, where they are converted into specie. There is a church at Oahu, which is a neat building, and the Sabbath is most religiously observed by the inhabitants. His majesty Tamahamaha has a number of vessels of his own, which are navigated entirely by Sandwich Islanders, who trade and carry on their sovereign's affairs. On the 8th March last, an amateur theatre was opened, and "*Raising the Wind*" performed to a respectable house; the entertainments were to be repeated every Thursday evening. The native ladies ride, not on side-saddles, as their sisters of St. James's, but like *generals*, and when on horse back arevery handsomely attired. At Owhyhee, the largest of the Sandwich Islands, there are thousands of cattle, which afford the means of carrying on an extensive trade, supplying the shipping at Oahu with fresh and salt beef. The Sandwich Islanders have to thank Captain Vancouver for the introduction of the ox, he having left a number of those animals at Owhyhee, in 1798. Beef is 2½d per pound., and other provisions in proportion. The following are the regulations for the port of Honolulu, Oahu:—

1. All commanders of vessels arriving at this island are to produce their certificates of registry to the pilot or port captain; also a list of their crew:

and no seaman is to be left on the island without the consent of the Governor, in writing, under a penalty of 30drs. for each person so left.

2. No vessel shall leave the harbour until a certificate from the harbour-master is granted, certifying that the port regulations have been complied with: for which he is entitled to demand one dollar.

3. Seamen deserting will be taken up, and (unless returned to their respective ships) be kept at hard labour for six months.

4. Commanders of vessels are to give immediate notice to the Governor of the Island, in case of any of their crew deserting, that they may be apprehended and returned; and on delivery to their respective commanders, the Governor is to receive six dollars for each person so apprehended.

5. Ships entering the harbour for the purpose of refreshing or refitting only, are to pay the following rates:

For the outer harbour, ... 6 cents per ton.
—— inner harbour, ... 10 cents per ton.

6. Ships entering the harbour for the purpose of trading, are to pay the following rates:

For the outer harbour, ... 50 cents per ton.
—— inner harbour, ... 60 cents per ton.

7. The pilotage shall be at the following rate:

For taking a vessel in, ... 1dr. per foot.
For taking a vessel out, ... 1dr. per foot.

KALAIMOKU. [L. S.]

Oahu, Sandwich Islands,
June 2, 1825.

Disastrous Occurrence.—The brig Janets, Mitchell, of Dundee, lately arrived there from Archangel, brings the following melancholy intelligence:—Having taken a pilot on board, on the morning of the 25th September, at the guard-ship in the Neva, the brig set sail and crossed the bar, with a strong gale blowing from W.S.W. Instead of the master, (who, it seems, was somewhat "groggy,") putting the pilot ashore on the small island, a few miles below, as is customary on such occasions, he hoisted a press of sail, and bore onwards, notwithstanding the cries and expostulations of the poor Russian pilot, and the risk which the vessel ran of being every moment thrown on her beam ends. When they had run about thirty miles below the bar, being fully two miles from the shore, the master ordered the mate and some of the men to launch the small boat and put the pilot ashore. The order, under such circumstances, being deemed that of a madman, was at once rejected by the crew. The master became infuriated at their refusal, and instantly resolved on going himself, accompanied with a Shetlandman, named Laurence Lamb, and a Swede boy, named Alexander Mitchell. After ordering the mate to "fill upon her, and near in to the depth of five fathoms," he set off in defiance of all remonstrance, at twelve at noon, with the small skiff, for the purpose of landing the pilot. The Janets accordingly stood in under double-reefed topsails—reaching seven fathoms the first cast, and five the second. At this time it was blowing very hard from the sea, and the vessel running the hazard of being thrown on a lee shore. The mate went up into the top with the spy-glass to watch the progress of the skiff, and saw it distinctly founder and disappear about a quarter of a mile from the shore. Nothing, as far as could be seen, appeared again on the surface of the troubled waters. Notwithstanding the hazardous situation of the vessel, she was kept "off and on," with a light hoisted till ten o'clock at night, when, in addition to the strong gale, the whether became dark and thick, with a heavy fall of snow. They were

then compelled to bear away to save the vessel; and by daylight next morning, it was found impossible to work back, even although they had had their full complement of hands. The Janets fell in with the schooner Brothock, of Arbroath, on the following day, and, on relating the melancholy occurrence, got on board one of her men to enable her to proceed on the homeward voyage.

Loss of the Ketch Buccleugh.—On Thursday, the 6th November, at eight o'clock at night, the ketch Buccleugh, 136 tons burden, Joseph Gales master, from Denia, with a cargo of dry fruit, bound to London, struck on some rocks to the westward of Guernsey, and foundered. Just before the fatal accident occurred, they were going to try soundings. As soon as the vessel struck, the boat was launched overboard, and the captain and crew, consisting of six men, got into her for the preservation of their lives. The danger was so imminent, on account of the tempestuous state of the weather, that they were unable to save anything whatever, nor had the captain time to secure the ship's papers. They had but two oars in the boat, and with those scanty means they endeavoured to reach Guernsey, but could not, the men being quite exhausted. They then bore away before the wind with a pocket handkerchief serving as a sail, and, after being twenty-four hours in the fragile embarkation, they succeeded in reaching the eastern part of the island of Alderney, a little to the north of Rat Island, about seven o'clock on Friday evening, having broken their oars, so that their safety may be considered almost miraculous.

The crew were found by the serjeant-major belonging to the garrison, in a very exhausted state,—some were bruised and cut by the rocks on which they landed, others were without shoes or scarcely any clothing to cover their bodies, not having had time to provide themselves therewith when the vessel struck. The only provision they had in the boat consisted of a few raisins and a bottle of rum. The serjeant-major who found them in the state already described, took the whole of them (with the exception of the mate, who was too weak to walk to town,) to Major Baynes, the commanding officer at Alderney, about 9 o'clock at night, who very humanely rendered them every assistance in his power, and did his utmost to alleviate their sufferings. Captain Gales was the sole owner of the Buccleugh, and he does not know whether his brother had insured her. The crew have since been sent to Guernsey.

Loss of the Tasmania, of Whitby; Mennel, master.—An account has been received that the above-named vessel was lost on the coast of Holland. It seems she was overtaken, on her homeward passage, by a tremendous gale, on Friday, Oct. 17, whilst off New Deep, near the Hayse. Breakers were discovered to leeward at two o'clock P.M., but there was no possibility of keeping the ship off the shore. By the combined violence of the wind and the force of the sea, the vessel was carried over a reef, on which it seems vessels are generally lost that touch it, and plunged into deep water within it. In going over, she was struck by a heavy sea, which stove in part of her stern and her dead lights, washed the boats, and almost every thing else upon deck, overboard, and nearly filled her with water. They then let go their anchors, but found the ship would not ride. The topmasts were cut away, but neither did this relieve her, and she parted her last cable at six o'clock P.M, and was immediately thrown upon the beach. Here the crew remained lashed to the rigging for about five hours, during which period it seems Captain Mennel, the cook, and one seaman perished.—Cargo and ship's materials saved.

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COMMISSIONED OFFICERS OF THE ROYAL NAVY IN COMMAND OF HIS MAJESTY'S SHIPS AND VESSELS.

See pages 54, 120, 185, 250, 317, 376, 440, 501, 564, 631, 694, 766.

The number next to the name is that of the page in which it will be first found; where two occur, the second is that of the last in which it appears.

ROYAL NAVY IN COMMISSION.

See pages 54, 120, 185, 256, 316, 376, 440, 501, 564, 631, 694, 766.

The number *next* to the name is that of the page in which it will be first found. Where two occur, the second is that of the last in which it appears.

REFERENCE TO NOTICES OF THE DEATHS OF COMMISSIONED AND OTHER OFFICERS OF THE ROYAL NAVY.

NOTICES OF NEW BOOKS.

LIST OF PLATES.

ERRATA.

Page.	Line.	
293	7	For "dale," read "tale."
585	16	For "Owen," read "Owner."
586	5	For "was," read "were."
587	2	For "*cusens*," read "*cuscus*."
589	14	From bottom, for "tempore," read "tempora."
591	11	For "laws," read "saws."
—	21	For "performed," read "profound."
645	17	For "Vendavales," read "Vendevales."
653	24	For "Lieut. Mr. Hardy," read "Lieut. M'Hardy."
673	1	For "has," read "have."
602	5	From top, for "; " insert ", "
603	15	From bottom, after "floating," insert "body."
—	6	From bottom, after "floating," insert "body."
609	20	From top, for "when," read "where."
—	30	From top, for "when," read "where."
611	8	From top, for "wind," read "weight."
704	Sept. 1st,	for "Barom. 29·62 | 29·64," read "29·92 | 29·94."
754	3	From bottom, for "H.M. St.V." read "H.M. surveying-vessel."

Figure 1—Where the line *w r* intersects the line *s t*, insert "*j*"
..... Where the line *w r* intersects the line *u v*, insert "*e*"

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE STREET.

TABLE III.

For reducing Spanish varas to English feet, and English feet to Spanish varas.

1 Castilian vara = 2·74252399 English feet.
1 English foot = 0·36462762 Castilian vara.

Varas or Feet.	English Feet and Dec. parts.	Castilian Varas and Dec. parts.	Varas or Feet.	English Feet and Dec. parts.	Castilian Varas and Dec. parts.	Varas or Feet.	English Feet and Dec. parts.	Castilian Varas and Dec. parts.
1	2·743	0·365	33	104·216	13·856	75	205·689	27·347
2	5·485	0·729	39	106·958	14·220	76	208·432	27·712
3	8·228	1·094	40	109·701	14·585	77	211·174	28·076
4	10·970	1·459	41	112·443	14·950	78	213·917	28·441
5	13·713	1·823	42	115·186	15·314	79	216·659	28·806
6	16·455	2·188	43	117·929	15·679	80	219·402	29·170
7	19·198	2·552	44	120·671	16·044	81	222·144	29·535
8	21·940	2·917	45	123·414	16·408	82	224·887	29·899
9	24·683	3·282	46	126·156	16·773	83	227·629	30·264
10	27·425	3·646	47	128·899	17·137	84	230·372	30·629
11	30·168	4·011	48	131·641	17·502	85	233·115	30·993
12	32·910	4·376	49	134·384	17·867	86	235·857	31·358
13	35·653	4·740	50	137·126	18·231	87	238·600	31·723
14	38·395	5·105	51	139·869	18·596	88	241·342	32·087
15	41·138	5·469	52	142·611	18·961	89	244·085	32·452
16	43·880	5·834	53	145·354	19·325	90	246·827	32·816
17	46·623	6·199	54	148·096	19·690	91	249·570	33·181
18	49·365	6·563	55	150·839	20·055	92	252·312	33·546
19	52·108	6·928	56	153·581	20·419	93	255·055	33·910
20	54·850	7·293	57	156·324	20·784	94	257·797	34·275
21	57·593	7·657	58	159·066	21·148	95	260·540	34·640
22	60·336	8·022	59	161·809	21·513	96	263·282	35·004
23	63·078	8·386	60	164·551	21·878	97	266·025	35·369
24	65·821	8·751	61	167·294	22·242	98	268·767	35·734
25	68·563	9·116	62	170·036	22·607	99	271·510	36·098
26	71·306	9·480	63	172·779	22·972	100	274·252	36·463
27	74·048	9·845	64	175·522	23·336	200	548·505	72·925
28	76·791	10·210	65	178·264	23·701	300	822·757	109·388
29	79·533	10·574	66	181·007	24·065	400	1097·010	145·851
30	82·276	10·939	67	183·749	24·430	500	1371·262	182·314
31	85·018	11·303	68	186·492	24·795	600	1645·514	218·777
32	87·761	11·668	69	189·234	25·159	700	1919·767	255·239
33	90·503	12·033	70	191·977	25·524	800	2194·019	291·702
34	93·246	12·397	71	194·719	25·889	900	2468·272	328·165
35	95·988	12·762	72	197·462	26·253	1000	2742·524	364·628
36	98·731	13·127	73	200·204	26·618	2000	5485·048	729·254
37	101·473	13·491	74	202·947	26·982	3000	8227·572	1093·883

The above table is to supersede that in page 285 of No. 27.

Table V.

For reducing Portuguese palms to English feet, and English feet to Portuguese palms.

1 Lisbon palm = 0·7171718 English foot.
1 English foot = 1·3943660 Lisbon palm.

Lisbon Plm. or Eng. Ft.	English Feet and Dec. parts.	Lisbon Palms and Dec. parts.	Lisbon Plm. or Eng. Ft.	English Feet and Dec. parts.	Lisbon Palms and Dec. parts.	Lisbon Plm. or Eng. Ft.	English Feet and Dec. parts	Lisbon Palms and Dec. parts.
1	0·717	1·394	38	27·253	52·986	75	53·788	104·577
2	1·434	2·789	39	27·970	54·380	76	54·505	105·972
3	2·152	4·183	40	28·687	55·775	77	55·222	107·366
4	2·869	5·577	41	29·404	57·169	78	55·939	108·761
5	3·586	6·972	42	30·121	58·563	79	56·657	110·155
6	4·303	8·366	43	30·838	59·958	80	57·374	111·549
7	5·020	9·761	44	31·556	61·352	81	58·091	112·944
8	5·737	11·155	45	32·273	62·746	82	58·808	114·338
9	6·455	12·549	46	32·990	64·141	83	59·525	115·732
10	7·172	13·944	47	33·707	65·535	84	60·242	117·127
11	7·889	15·338	48	34·424	66·930	85	60·960	118·521
12	8·606	16·732	49	35·141	68·324	86	61·677	119·916
13	9·323	18·127	50	35·856	69·718	87	62·394	121·310
14	10·040	19·521	51	36·576	71·113	88	63·111	122·704
15	10·758	20·915	52	37·293	72·507	89	63·828	124·099
16	11·475	22·310	53	38·010	73·901	90	64·545	125·493
17	12·192	23·704	54	38·727	75·296	91	65·263	126·887
18	12·909	25·099	55	39·444	76·690	92	65·980	128·282
19	13·626	26·493	56	40·162	78·084	93	66·697	129·676
20	14·343	27·887	57	40·879	79·479	94	67·414	131·070
21	14·061	29·282	58	41·596	80·873	95	68·131	132·465
22	15·778	30·676	59	42·313	82·268	96	68·849	133·859
23	16·495	32·070	60	43·030	83·662	97	69·566	135·254
24	17·212	33·465	61	43·747	85·056	98	70·283	136·648
25	17·929	34·859	62	44·465	86·451	99	71·000	138·042
26	18·646	36·254	63	45·182	87·845	100	71·717	139·437
27	19·364	37·648	64	45·899	89·239	200	143·434	278·873
28	20·081	39·042	65	46·616	90·634	300	215·152	418·310
29	20·798	40·437	66	47·333	92·028	400	286·869	557·746
30	21·515	41·831	67	48·051	93·423	500	358·586	697·183
31	22·232	43·225	68	48·768	94·817	600	430·303	836·620
32	22·949	44·620	69	49·485	96·211	700	502·020	976·056
33	23·667	46·014	70	50·202	97·606	800	573·738	1115·493
34	24·384	47·408	71	50·919	99·000	900	645·455	1254·929
35	25·101	48·803	72	51·636	100·394	1000	717·172	1394·366
36	25·818	50·197	73	52·354	101·789	2000	1434·344	2788·732
37	26·535	51·592	74	52·071	103·183	3000	2151·516	4183·098

The above table is to supersede that in page 408 *of No.* 29.